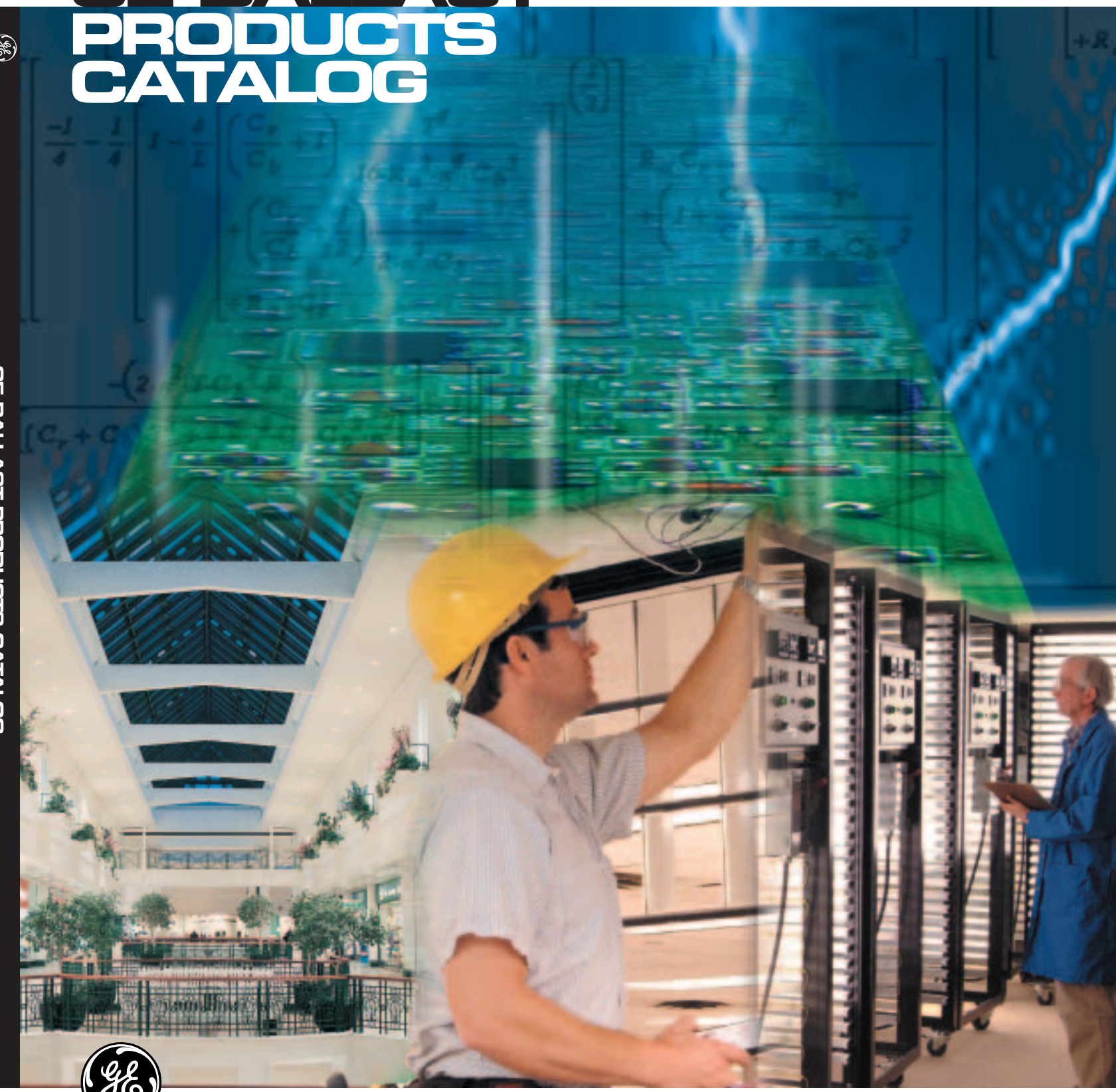
GE BALLAST PRODUCTS CATALOG



GE Lighting

TRANSFORMING THE POWER OF LIGHT™

FEATURING: ULTRAMAX™ ELECTRONIC BALLASTS

GE BALLAST PRODUCTS CATALOG

FEATURING

ULTRAMAX™ ELECTRONIC BALLAST

Breakthrough technology that dramatically improves efficiency, simplifies installation and delivers optimal lamp performance.

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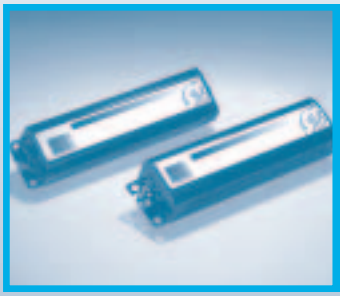


PRODUCT OVERVIEW

A COMPREHENSIVE RANGE OF SOLUTIONS... FROM THE NAME YOU TRUST

GE introduced the first fluorescent ballast more than 60 years ago. Today we are providing high frequency electronic ballasts for almost every fluorescent application.

With our UltraMax™ Ballasts, we are bringing you the future in ballast performance.

GE revolutionizes lighting again with new, breakthrough technology. Our patented UltraMax™ electronic ballasts transform the power of light into efficiency and savings from store shelves to the installation site. It all starts with UltraMax's Multi-Voltage Control (MVC), which automatically adjusts to handle voltage from 120V through 277V. That cuts the ballast models you need to stock from 40 down to 13, which can dramatically reduce inventory carrying costs. UltraMax™ ballasts have ArcGuard Protection, too, with a UL Type CC Anti-Arc Rating. Plus, they're ultra lamp friendly, with an industry low Lamp Current Crest Factor of 1.4 for optimal lamp performance. And the small, low-profile design of the UltraMax™ ballasts makes retrofits effortless at the job site.

GE offers electronic ballasts for a wide range of applications.

GE revolutionizes lighting again with new, breakthrough technology.

In the GE labs, our engineers have developed a new breed of ballasts to make lighting systems that save more energy, are more adaptable, and deliver optimal lamp performance. The innovative, patented technology in our new UltraMax™ electronic ballasts exceeds expectations, and is like nothing else available.

Multi-Voltage technology means a single UltraMax™ model handles voltage from 120 through 277.

UltraMax™ Ballasts can virtually "read" the incoming voltage and adapt automatically to any voltage from 108V to 305V. The benefits of Multi-Voltage Control (MVC) are obvious:

- Fewer models handle more jobs, eliminating inventory hassles.
- MVC simplifies installation and eliminates guesswork at the job site.
- MVC compensates for incoming voltage fluctuations or variations from unreliable power.

UltraMax™ is the only full line of T8 ballasts with a UL Type CC Anti-Arc Rating.

UL Type CC Rating is a stringent designation of protection against arcing in electrical devices. GE's Arc-Guard design eliminates the damaging effects arcing can have on lamps, ballasts and sockets.

High efficiency delivers up to 40% energy savings.

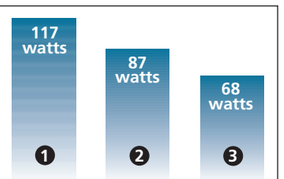
Ballasts are the new frontier of energy efficiency. Systems combining UltraMax™ electronic ballasts and T8/WM lamps can deliver up to 40% energy savings over standard electromagnetically ballasted T12 systems. Since energy costs are typically 80% of the overall cost of light, a more efficient system can pay for itself in a very short time and provide an excellent return on investment.

UltraMax™ is ultra lamp friendly.

With an industry low lamp current crest factor (LCCF) of 1.4, UltraMax™ ensures optimal lamp operation and maximum lamp life, which can save on lamp and maintenance costs.

COMPARE THE ENERGY USE OF A THREE LAMP FIXTURE

1. STANDARD T12/WM SYSTEM
2. STANDARD ELECTRONIC T8 SYSTEM
3. ULTRAMAX™ L SYSTEM WITH GE T8 WATT-MISER



Active Current Regulation (ACR) technology is a patented advantage.

UltraMax's patented ACR modular design means individual inverter modules regulate the output current to each lamp. So, unlike conventional ballasts, if one lamp fails, the remaining lamps are not forced to operate at a higher current. This ensures optimal lamp performance.

Anti-Striation Control for better light quality, with no striations.

UltraMax™ is the only line of T8 ballasts with Anti-Striation Control. This advanced technology eliminates the maintenance issues caused by striating lamps, often referred to as spiraling or swirling. This provides a flicker- and worry-free environment.

Fully parallel independent lamp operation makes system easier to maintain.

If one lamp fails, all the others in the system stay lit. That means system maintenance is easier to manage.

UltraMax™ is ultra-cool.

UltraMax's high efficiency design results in ultra-cool operation that can provide additional AC energy savings, especially during peak demand periods.

A big idea in a small package.

The UltraMax™ housing is smaller, lower-profile and lightweight. That can be a big help in retrofits. It also means future fixture designs can be more compact and streamlined.

Every unit is tested and proven before it's shipped.

GE does 100% burn-in on every UltraMax™ ballast using our extreme open/short test, which simulates undesirable and harsh-use situations, so you are assured of a system you can rely on right out of the box.

GE Six Sigma quality backed by a full 5-year warranty.

UltraMax™ is designed by GE's expert engineers and custom-manufactured to our exacting Six Sigma specifications, all backed by a full 5-year warranty.

A FULL FAMILY OF HIGH EFFICIENCY MULTI-VOLTAGE BALLASTS FOR ALL T8 APPLICATIONS.

ULTRAMAX ELECTRONIC BALLAST **L**

The Low watt option for Max energy savings.
With a ballast factor of .77, the L line is the most energy efficient choice. It provides adequate illumination for most applications. For 1, 2, 3, and 4 T8 lamps in 2', 3', and 4' lengths.

ULTRAMAX ELECTRONIC BALLAST **N**

The Normal light option balances **efficiency and illumination.** The most-used type of ballast, the N line saves energy without sacrificing lumens. A ballast factor of .87 meets most application needs. For 1, 2, 3, and 4 T8 lamps in 2', 3', 4', and 8' lengths.

ULTRAMAX ELECTRONIC BALLAST **H**

The choice for High light output.
With a ballast factor of 1.15, UltraMax™ H delivers the most lumens for maximum light or when you want more savings using fewer lamps. This is the first high-efficiency high-light output line for 2, 3 and 4 T8 lamps.

UltraMax™ electronic ballasts have 5% more energy efficiency than standard electronic ballasts. When combined with GE T8 Watt-Miser® lamps, it means up to 40% in energy savings.

See for yourself how different UltraMax™ ballasts perform.

	BALLAST FACTOR	*SYSTEM LUMENS (2850 Lumens/Lamp)	*INPUT WATTS	LUMENS PER WATT
L	.77	4389	48	91
N	.87	4959	53	94
H	1.15	6555	73	90

* For a 2-Lamp F32T8 System at 277V

Safety

- No PCBs
- UL Listed
  - Class P, Type 1
  - Type CC
  - Type HL (Hazardous Location)

Application Information

- Minimum Starting Temperature: 0°F, -18°C
- Maximum Ambient Temperature: 105°F, 40°C
- Sound Rated A
- Remote Mounting: 18' maximum lead length, 18 AWG
- High Frequency Lamp Operation: Above 60 kHz

Physical Parameters
(Except for the 4H model)
Length: 9.50 in.
Width: 1.70 in.
Height: 1.2 in.
Weight: 1.4 lbs.

Applications:

Offices	Plants
Retail	Hotels
Schools	Warehouses
Universities	Hospitals

WHEN YOU WANT LIGHTING DONE RIGHT, START WITH GE.

Up to 40% in energy savings

13 models can replace more than 40 conventional electronic ballasts

MVC Multi-Voltage Control

One patented GE ballast handles 120V through 277V

GE Lighting

TRANSFORMING THE POWER OF LIGHT™

A SMALLER, LOWER PROFILE DESIGN IS A BIG IDEA FOR EFFICIENT INSTALLATION.

It's easy to see how smaller, lower-profile UltraMax™ ballasts make even the toughest retrofits into easy fits.

PHYSICAL DIMENSIONS

For Ballast types L, N and H (except 4H)

OVERALL DIMENSIONS

A (length)
8.375 in.
(21.273 cm)

B (width)
1.25 in.
(3.175 cm)

C (height)
1.125 in.
(2.858 cm)

MOUNTING DIMENSIONS

D (length)
8.875 in.
(22.54 cm)

E (width)
1.4375 in.
(3.651 cm)

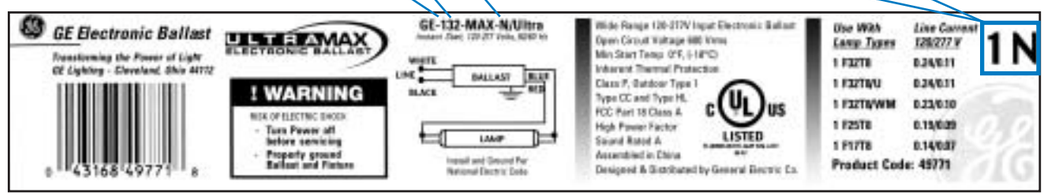
WEIGHT RANGE

1.00 to 1.50 lbs.
(0.454 to 0.6804 kg.)

CHOOSING THE RIGHT BALLAST IS SIMPLE.

The easy-to-understand model numbering system helps you choose and install the right model. Instructions and wiring diagrams on each ballast label help assure a correct installation the first time.

1 = Maximum number of lamps supported by this ballast.
32 = Lamp watts (primary lamp)
N = Normal ballast (ballast factor of .87)



TOTAL PERFORMANCE SYSTEM™ WARRANTY

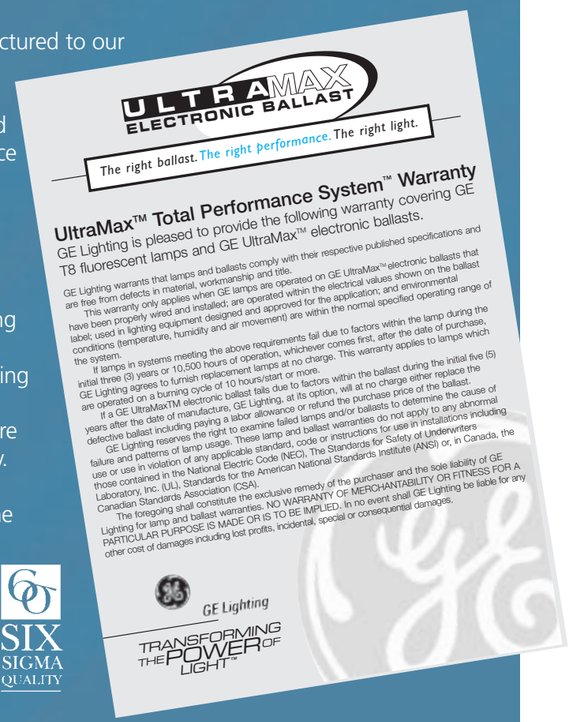
Here are the facts behind the promise.

It starts with precision manufacturing.

GE UltraMax™ Electronic Ballasts are custom-manufactured to our exacting specifications. We work to assure you the reliability and quality you expect from GE. Manufacturing processes include rigorous testing and quality control. Quality standards are further assurance of trouble-free performance.

- 100% burn-in of units to assure reliability.
- GE's extreme open/short Test which tests units' ability to withstand severe current conditions.
- Careful component selection and extensive testing of elements prior to final approval.
- Critical component placement and extensive testing of elements prior to final approval.
- Extensive lamp/ballast system testing which ensure optimal operating performance and compatibility.
- Comprehensive testing under adverse field and accelerated life conditions to prevent failure in the field.
- Commitment to Six Sigma standards for world-class product and service excellence.
- Power line voltage spike protection that passes the IEEE surge test (where a 6000V pulse is applied to input leads). Compliance with all appropriate regulatory standards.
- Contact your GE representitive for specific warranty details.

SIX SIGMA QUALITY


ULTRAMAX ELECTRONIC BALLAST

The right ballast. The right performance. The right light.

UltraMax™ Total Performance System™ Warranty

GE Lighting is pleased to provide the following warranty covering GE T8 fluorescent lamps and GE UltraMax™ electronic ballasts.

GE Lighting warrants that lamps and ballasts comply with their respective published specifications and are free from defects in material, workmanship and title.

This warranty only applies when GE lamps are operated on GE UltraMax™ electronic ballasts that have been properly wired and installed; are operated within the electrical values shown on the ballast label; used in lighting equipment designed and approved for the application; and environmental conditions (temperature, humidity and air movement) are within the normal specified operating range of the system.

If lamps in systems meeting the above requirements fail due to factors within the lamp during the initial three (3) years or 10,500 hours of operation, whichever comes first, after the date of purchase, GE Lighting agrees to furnish replacement lamps at no charge. This warranty applies to lamps which are operated on a burning cycle of 10 hours/start or more.

If a GE UltraMax™ electronic ballast fails due to factors within the ballast during the initial five (5) years after the date of manufacture, GE Lighting, at its option, will at no charge either replace the defective ballast including paying a labor allowance or refund the purchase price of the ballast.

GE Lighting reserves the right to examine failed lamps and/or ballasts to determine the cause of failure and patterns of lamp usage. These lamp and ballast warranties do not apply to any abnormal use or use in violation of any applicable standard, code or instructions for use in installations including those contained in the National Electric Code (NEC). The Standards for Safety of Underwriters Laboratory, Inc. (UL), Standards for the American National Standards Institute (ANSI) or, in Canada, the Canadian Standards Association (CSA).

The foregoing shall constitute the exclusive remedy of the purchaser and the sole liability of GE Lighting for lamp and ballast warranties. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OR IS TO BE IMPLIED. In no event shall GE Lighting be liable for any other cost of damages including lost profits, incidental, special or consequential damages.

GE Lighting

TRANSFORMING THE POWER OF LIGHT™

SYSTEM PERFORMANCE COMPARISON MATRIX

Compare the overall performance of a GE UltraMax™ system to conventional lamp and ballast systems.

Lamps	Electromagnetic Ballasts	Electronic Ballasts				
2-Lamp System Performance 4' Fluorescent						
	Electromagnetic E.S.	**Rapid Start**	**Low Power (L)**	**Normal**	**UltraMax™ L**	**UltraMax™ N**	**UltraMax™ H**
Watt-Miser T12 (CW)	Watts: 74 BF: 0.90 Light: 100% RLPW: 100%	Watts: 64 BF: 0.86 Light: 96% RLPW: 110%	Not Available	Not Available	Not Available	Not Available	Not Available
F32T8 & F32T8/XL (SP)	Watts: 69 BF: 0.88 Light: 116% RLPW: 125%	Watts: 63 BF: 0.88 Light: 116% RLPW: 137%	Watts: 51 BF: 0.78 Light: 103% RLPW: 149%	Watts: 58 BF: 0.88 Light: 116% RLPW: 148%	Watts: 48 BF: 0.77 Light: 102% RLPW: 157%	Watts: 53 BF: 0.87 Light: 115% RLPW: 160%	Watts: 73 BF: 1.15 Light: 152% RLPW: 154%
F32T8/WM ULTRA & XL (SP)	Not Recommended	Not Recommended	Watts: 48 BF: 0.78 Light: 102% RLPW: 157%	Watts: 54 BF: 0.88 Light: 115% RLPW: 157%	Watts: 46 BF: 0.77 Light: 100% RLPW: 161%	Watts: 52 BF: 0.87 Light: 113% RLPW: 161%	Watts: 70 BF: 1.15 Light: 150% RLPW: 158%
3-Lamp System Performance 4' Fluorescent						
	Electromagnetic E.S.	**Rapid Start**	**Low Power (L)**	**Normal**	**UltraMax™ L**	**UltraMax™ N**	**UltraMax™ H**
Watt-Miser T12 (CW)	Watts: 117 BF: 0.91 Light: 100% RLPW: 100%	Watts: 93 BF: 0.86 Light: 95% RLPW: 119%	Not Available	Not Available	Not Available	Not Available	Not Available
F32T8 & F32T8/XL (SP)	Watts: 105 BF: 0.88 Light: 115% RLPW: 128%	Watts: 93 BF: 0.88 Light: 115% RLPW: 145%	Watts: 77 BF: 0.78 Light: 102% RLPW: 155%	Watts: 87 BF: 0.88 Light: 115% RLPW: 155%	Watts: 72 BF: 0.77 Light: 101% RLPW: 163%	Watts: 80 BF: 0.87 Light: 114% RLPW: 166%	Watts: 109 BF: 1.15 Light: 150% RLPW: 161%
F32T8/WM ULTRA & XL (SP)	Not Recommended	Not Recommended	Watts: 72 BF: 0.78 Light: 101% RLPW: 163%	Watts: 81 BF: 0.88 Light: 113% RLPW: 164%	Watts: 68 BF: 0.77 Light: 99% RLPW: 171%	Watts: 77 BF: 0.87 Light: 112% RLPW: 170%	Watts: 104 BF: 1.15 Light: 148% RLPW: 167%
4-Lamp System Performance 4' Fluorescent						
	Electromagnetic E.S.	**Rapid Start**	**Low Power (L)**	**Normal**	**UltraMax™ L**	**UltraMax™ N**	**UltraMax™ H**
Watt-Miser T12 (CW)	Watts: 148 BF: 0.90 Light: 100% RLPW: 100%	Watts: 128 BF: 0.86 Light: 96% RLPW: 110%	Not Available	Not Available	Not Available	Not Available	Not Available
F32T8 & F32T8/XL (SP)	Watts: 138 BF: 0.88 Light: 116% RLPW: 125%	Watts: 120 BF: 0.88 Light: 116% RLPW: 143%	Watts: 100 BF: 0.78 Light: 103% RLPW: 152%	Watts: 114 BF: 0.88 Light: 116% RLPW: 151%	Watts: 96 BF: 0.77 Light: 102% RLPW: 158%	Watts: 107 BF: 0.87 Light: 115% RLPW: 159%	TBD
F32T8/WM ULTRA & XL (SP)	Not Recommended	Not Recommended	Watts: 95 BF: 0.78 Light: 102% RLPW: 158%	Watts: 107 BF: 0.88 Light: 115% RLPW: 159%	Watts: 91 BF: 0.77 Light: 100% RLPW: 163%	Watts: 103 BF: 0.87 Light: 113% RLPW: 163%	TBD

Notes:
Light refers to "mean" lumen output relative to highlighted T12 Electromagnetic E.S. (energy saving) ballast systems.
RLPW is mean system Lumens/Watt relative to highlighted T12 Electromagnetic E.S. (energy saving) ballast systems.
Watts shown at 277 Volts.

ORDERING GUIDE AND SYSTEM WATTAGE

There's a combination of GE UltraMax™ ballasts and T8 lamps that can make virtually any lighting system perform better. The chart below lets you see for yourself.

Starting	Power	# Lamps	GE UltraMax Ballasts			F32T8 Input Watts			F32T8/WM Input Watts			F28T8/WM Input Watts			Units Per Case
			Product Code	Description	Input Voltage	Input Watts†	In Fixture△ Open	In Fixture△ Enclosed	Input Watts†	In Fixture△ Open	In Fixture△ Enclosed	Input Watts†	Input Fixture△ Open	Input Fixture△ Enclosed	
Instant Start	Low	1	49706	GE-132-MAX-L/Ultra	Multi-Volt 120	25	24	24	24	23	23	22	TBD	TBD	10
					277	25	24	24	24	23	23	22	TBD	TBD	
		2	49707	GE-232-MAX-L/Ultra	Multi-Volt 120	48	48	47	46	46	45	44	TBD	TBD	10
					277	48	48	47	46	46	45	44	TBD	TBD	
		3	49708	GE-332-MAX-L/Ultra	Multi-Volt 120	73	72	71	69	68	67	65	TBD	TBD	10
					277	72	71	70	68	67	66	65	TBD	TBD	
		4	49709	GE-432-MAX-L/Ultra	Multi-Volt 120	97	95	93	92	90	88	87	TBD	TBD	10
					277	96	93	92	91	89	87	86	TBD	TBD	
	Normal	1	49771	GE-132-MAX-N/Ultra	Multi-Volt 120	28	28	27	27	26	26	25	TBD	TBD	10
					277	28	28	27	27	26	26	25	TBD	TBD	
		2	49772	GE-232-MAX-N/Ultra	Multi-Volt 120	54	54	53	53	52	51	49	TBD	TBD	10
					277	53	53	52	52	51	50	48	TBD	TBD	
		3	49773	GE-332-MAX-N/Ultra	Multi-Volt 120	82	80	78	78	77	74	72	TBD	TBD	10
					277	80	78	77	77	75	73	71	TBD	TBD	
		4	49774	GE-432-MAX-N/Ultra	Multi-Volt 120	109	105	103	105	101	98	98	TBD	TBD	10
					277	107	103	101	103	99	97	96	TBD	TBD	
	High	2	49775	GE-232-MAX-H/Ultra	Multi-Volt 120	74	71	69	71	69	67	66	TBD	TBD	10
					277	73	70	68	70	68	66	65	TBD	TBD	
		3	49776	GE-332-MAX-H/Ultra	Multi-Volt 120	111	105	102	106	102	97	97	TBD	TBD	10
					277	109	103	100	104	100	96	96	TBD	TBD	
		4	49777	GE-432-MAX-H/Ultra	Multi-Volt 120	151	TBD	TBD	145	TBD	TBD	133	TBD	TBD	10
					277	147	TBD	TBD	141	TBD	TBD	131	TBD	TBD	

		GE UltraMax Ballasts			F96T8 Input Watts			F96T8/WM Input Watts			Units Per Case
		Product Code	Description	Input Voltage	Input Watts†	In Fixture△ Open	In Fixture△ Enclosed	Input Watts†	In Fixture△ Open	In Fixture△ Enclosed	
Normal	1	49766	GE-159-MAX-N/Ultra	Multi-Volt 120	56	TBD	TBD	54	TBD	TBD	10
				277	55	TBD	TBD	53	TBD	TBD	
	2	49767	GE-259-MAX-N/Ultra	Multi-Volt 120	112	TBD	TBD	107	TBD	TBD	10
				277	110	TBD	TBD	105	TBD	TBD	

† Denotes standard laboratory non-fixture open bench testing.

△ In fixture watts represent typical field operating conditions with ballast and lamps in fixture/luminaire. Open fixture denotes non-lensed fixture/luminaire. Enclosed fixture denotes lensed fixture/luminaire.

PRODUCT OVERVIEW

AccuStart® and Universal Voltage Low Profile High Performance (HP-A & HP-B)

AccuStart® ballasts are ideal for frequently switched applications or as a rapid start alternative. They incorporate patented programmed rapid start technology to properly heat the lamp filaments, which yields an increase in lamp life up to 50%. The 1-4 lamp models offer universal input voltage.

Our low profile High Performance ballasts with THD <10% offer the convenience of universal input voltage (108-305 Volts) as a standard feature. Universal input is "installer-friendly" – ensuring that you have the right voltage ballast every time. Our low profile models also feature a package and cross-section that can offer greater flexibility in fixture design (1.0" height x 1.5" width). Since the mounting and wiring footprints are the same as a standard ballast, our low profile HP models will easily retrofit into any T12 or T8 fixture.

Low Profile Reduced Harmonic (RH-A)

Our low profile RH ballasts are over 45% smaller and 30% lighter. They feature a space-saving package (1.18" height x 1.7" width) and cross section for greater flexibility in fixture design. The 1-4 lamp model features parallel lamp operation, with standard mounting footprint and wiring for ease of replacement. They offer high efficiency performance with THD <20%.

Low profile RH ballasts.

AccuStart® ballasts for frequently switched applications.

Flexible fixture design options for T5 lamps.

T5 BALLASTS FOR INDIRECT, HIGH-END ARCHITECTURAL APPLICATIONS

T5 systems are gaining greater popularity for high-end architectural applications. GE provides a wide range of T5 solutions, from 14 to 54 watts. Our T5 ballasts operate multiple (1 or 2) F35T5, F28T5, F21T5 and F14T5 lamps. Additionally, our T5HO ballasts operate multiple (1 or 2) F54T5HO, F39T5HO and F24T5HO lamps. Moreover, they make your life easier with standard features that include universal input voltage (108-305 Volts), programmed rapid start technology for longer lamp life and end of lamp life shutdown circuit with auto-reset.

T5 Standard Output

Our standard output ballasts for T5 applications support multiple lamp operation (including 14, 21, 28, and 35 watts). They're ideal for indirect pendant mount, surface mount, cove, undercabinet or task lighting. With a small cross section (1.0"height x 1.18"width), our T5 models give you more options for slim fixture design. Standard features include universal input voltage, end-of-lamp-life shutdown circuit and programmed rapid start technology.

T5 High Output

High output T5 ballasts from GE support 24-, 39- and 54-watt lamps and they offer the same standard features and compact dimensions as our T5 standard output. They're also well-suited to applications where space is at a premium, including slim pendant mounted fixtures, cove and task lighting.

SAFETY

NEC & UL Requirements

Ballast installation presents the possibility of exposure to potentially hazardous voltages and should be performed only by qualified personnel. All installation, inspection, and maintenance should be performed only with power to the fixture turned off. Additionally, all fixtures and ballasts must be installed and operated in compliance with the National Electrical Code, Underwriters Laboratories Inc. (UL) requirements, and all local applicable codes and regulations.

Polarity

Polarity refers to the proper connection of ballast lead wires to line wires. To aid you in making a correct installation, GE ballast leads are color-coded for easy identification. The WHITE ballast lead is to be connected to the neutral (grounded) and the BLACK (or black with white tracer) lead always to the phase ("hot") line wire. Systems where neither of the line wires are at ground potential require specially designed ballasts. A change in polarity may result in the voltage from the lead to the ground exceeding UL-specified limits. In some types of ballasts, a change in polarity may decrease voltage from the lead to the ground, thereby impeding the starting dependability of the ballast.

Grounding

Ballast cases and fixtures must always be grounded. The ballast case may be grounded to the fixture or otherwise grounded. It could be hazardous to make contact with an ungrounded fixture or ballast when in operation. Neglecting to properly ground the ballast and fixture combination may also result in failure of certain lamps to start or for unacceptable levels of electromagnetic noise to be conducted onto the power lines.

Operating Line Voltage Limits

To receive the full benefits of rated lamp output and to prolong ballast life, it is essential that voltage supplied to an installation be maintained within limits prescribed for each circuit. These limits are listed in the next column.

	VOLTAGE RANGE	
Nominal Voltage	**Minimum**	**Maximum**
120	108	132
220	198	242
277	249	305
347	312	382
120-277 (UNV)	108	305

Subjecting a ballast to excessive voltage for an extended period results in the deterioration of the insulation. This insulation breakdown will cause early ballast failure.

Low voltage has no damaging effect on the ballast. However, lamps may not start reliably, and early lamp failure could result.

Internal Ballast Protection

Class P Classification—Since January 1, 1984, the National Electrical Code requires that "where Fluorescent fixtures are installed indoors, the ballast shall have thermal protection integral within the ballast except for simple reactance ballasts." This ruling applies to replacement ballasts as well as to those contained within new fixtures.

In compliance with the National Electrical Code, UL has established a Class P ballast classification for fluorescent light fixtures. A Class P ballast must employ internal thermal protection limiting its operating temperature.

GE UL-approved Class P ballasts comply with the National Electrical Code requirement and are equipped with an automatic resetting thermal protector, built-in and adjacent to the transformer coils. The resetting thermal protector functions as a thermostat, which will open and temporarily deactivate the ballast when it exceeds the permissible temperature. It will reset when the ballast cools to a safe operating temperature. The ballast will continue to cycle until the cause of overheating is eliminated. If the ballast is defective, it must be replaced. If the cause is external, a Class P ballast will resume normal operation after abnormal conditions are eliminated.

SAFETY

Dimming Ballasts - Ballastar® dimming ballasts from GE are controlled by using 10-0vDC. Care should be taken to ensure that the line voltage (AC) wires are not connected to the low voltage DC wires. Ballastar® electronic dimming ballasts have protection (safety) circuitry that will sense the error so as not to harm the installer or the ballast. Dimming ballasts manufactured after May 1999 have the protection circuit. Dimming ballasts manufactured before this date do not have low voltage circuit protection.

Fusing - Class P ballasts do not require fusing. Fusing can be used when a single circuit has a large number of fixtures/ballasts.

Grounding - ANSI C82.1 recommends all fixtures and ballasts be grounded. GE requires all electronic ballasts be grounded.

Thermal Protection - All GE electronic ballasts meet UL 935 Standard for thermal protection. These ballasts are designated Class P. A Class P ballast will disconnect the ballast from input power in the event of internal over-temperature.

PERFORMANCE

Lamp Connections

Fluorescent ballasts are designed to generate voltages in excess of 300 Volts. It is imperative that proper connection to quality sockets be assured in accordance with wiring diagrams on each page of the catalog and on product labels. Some applications may not require the use of all of the ballast output leads. If any leads are not to be connected, each should be individually capped and insulated to at least 600 Volts.

Application Versatility

Many GE models are designed to allow for applications with different types or quantities of lamps. Lamp applications not listed on label cannot be warranted.

Audible Noise (Sound)

Electrical equipment, including most fluorescent lamp ballasts, produces some noise. Care must be taken to select a ballast with the proper sound rating for a particular lighting installation. Secure mounting can reduce the potential for audible noise. Typically, electronic ballasts operate up to 75% quieter than electromagnetic ballasts for fluorescent lamps.

Remote Mounting

Excessive hot or cold temperatures, audible noise requirements, or a desire to operate lamps in more than one fixture with the same ballast (master/slave), may make it desirable to mount the ballast remotely. Care must be taken to allow for ballast heat dissipation and proper grounding.

In any application, the wire used to extend leads must be at least as large as the wire supplied on the ballast (18 AWG) with an insulation rating of 1000 VAC at 90°C.

Lead lengths in excess of those noted, cause loading effects that can dramatically impact ballast performance and void the warranty. GE T8 instant start and programmed (rapid) start electronic ballasts can be mounted remotely, from the lamp sockets, up to 18 feet. GE T8 rapid start electronic ballasts can be mounted remotely, from the lamp sockets, up to 12 feet.

PERFORMANCE, continued

Lamp Starting Dependability

Fluorescent lamps are inherently more difficult to start at low temperatures. All ballasts have limitations as to their ability to start lamps at low ambient temperatures. In this catalog, the low starting point for each lamp/ballast combination appears in the column marked "Minimum Starting Temperature."

Four lamp instant start ballasts can operate at a minimum starting temperature down to -18°C (0°F) under the following conditions:

1. Lead lengths to the lamps are those supplied, by GE, with the ballast or shorter.
2. The distance from the lamp to the ground plane is no greater than 3/4".
3. The line voltage supplied to the ballast is no less than rated nominal.
4. The ballast or lamps are not remotely mounted.
5. The lamps have been burned in per lamp manufacturer requirements (typically 100 hours).

Contact GE for lamp operating characteristics and requirments below 15°C (50°F).

Light Output

Optimum light output from fluorescent lamps is achieved when the lamp wall is at 100-110°F. Any substantial excursion (either colder or warmer) will result in a reduction in light output.

Ballast Life

A fluorescent lamp ballast, like any other electrical device, generates heat during its normal operation. Ballast temperatures should be kept as low as possible. Maximum dissipation of heat through fixture design and proper ballast installation will help. Although excessive temperature may not cause the ballast to fail immediately, it can shorten ballast life. To assure maximum life, the ballast case temperature should not exceed 75°C, in a maximum ambient (fixture cavity) of 40°C.

Causes of ballast overheating:

- Incorrect line voltage or frequency
- Incorrect size, type or number of lamps
- Incorrect wiring
- Poor heat dissipation due to surrounding insulation
- Sealed (Vapor Tight) Fixtures - Unusual heat build-up due to lack of ventilation in fixtures may cause thermal (on/off) cycling of certain ballasts. Consult GE for specific recommendations.

Recommendations:

- Selection of a proper ballast to match the requirements of the lamp, fixture, voltage and installation
- Mounting of ballast within the fixture with as much surface contact as possible between the ballast and metal portions of the fixture.Secure mounting will aid in proper heat dissipation and can minimize the potential for ballast hum.
- The use of heat-conducting dissipators (radiators), if necessary, which increases surface contact between the ballast and fixture.
- If necessary, locate the ballast in a remote, cooler area outside the fixture.
- Consult GE for remote mounting recommendations.

Starting Method Legend

IS=Instant Start
PRS=Programmed Rapid Start
RS=Rapid Start
PAR-IS=Parallel Instant Start
PAR-PRS=Parallel Programmed Rapid Start
PAR-RS=Parallel Rapid Start
SER-RS=Series Rapid Start

TYPICAL SPECIFICATIONS FOR ULTRAMAX MULTI-VOLTAGE, INSTANT START, HIGH EFFICIENCY BALLASTS

Section I – Physical Characteristics

1.1 The electronic ballast shall be physically interchangeable with standard electromagnetic and standard electronic ballast.
1.2 The electronic ballast shall have a maximum height of 1.2 in. and maximum weight of 1.5 lbs. (except 4H).
1.3 The electronic ballast shall be furnished with integral leads, color-coded to ANSI C82.11.

Section II – Performance Requirements

2.1 The electronic ballast shall operate throughout wide range of input line voltage 120-277 Volts, with +/-10% variation tolerance 50/60 Hz for Multi Voltage Control /Universal Voltage.
2.2 Ballast shall be classified "hi-efficiency" and shall provide a minimum of 3 watts energy savings over comparable standard electronic ballasts.
2.3 The electronic ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when used with the primary lamp at 120 Volts. It shall be less than 20% on other approved lamps.
2.4 The electronic ballast shall have a Power Factor greater than 98% when used with primary lamp at 120 Volts and greater than 95% at 277 Volts.
2.5 The electronic ballast shall be Sound Rated A.
2.6 The electronic ballast output frequency to the lamps shall be above 60 kHz to minimize interference with infrared control systems and eliminate visible flicker.
2.7 The electronic ballast shall meet ANSI C82.11 for Electronic Ballast Performance.
2.8 The electronic ballast shall withstand transients specified in ANSI C62.41, Location Category A3.
2.9 The electronic ballast shall be Instant Start with independent parallel lamp operation.
2.10 The electronic ballast shall have a Lamp Current Crest Factor of <1.5.
2.11 Lamps may be remote or tandem mounted up to a maximum of 18ft. overall lead length between ballasts and lamps.
2.12 Ballast shall have a minimum starting temperature of 0ºF for F32T8, F25T8 and F17T8.

Section III – Regulatory

3.1 The electronic ballast shall meet the requirements of the Federal Communications Commission rules and regulations, Title 47 CFR part 18, for Non-Consumer equipment.
3.2 The electronic ballast shall comply with all applicable state and federal efficiency standards.
3.3 The electronic ballast shall be Underwriters Laboratories (UL) Listed Class P & Type HL.
3.4 The electronic ballast shall provide UL Class CC, Closed Cabinet protection to prevent ignition of non-UL–controlled thermoplastic diffuser and overheating of bi-pin lampholders.

Section IV – Other

4.1 The electronic ballast shall not contain Polychlorinated Biphenyl (PCBs).
4.2 The electronic ballast shall carry a five year warranty form the date of manufacture. Warranty shall be valid for maximum case temperature of 70ºC.
4.3 The electronic ballast shall eliminate lamp striation (spiraling effect).
4.4 The electronic ballast shall be available in 1, 2, 3, & 4 lamp versions for F32T8 and 1 & 2 lamp versions for F96T8.
4.5 The F32T8 electronic ballast shall be available with Ballast Factor of .77 Low, .87 Normal, and 1.15 High Power.
4.6 The electronic ballast shall have constant Ballast Factor if one or more lamps fail.

TYPICAL SPECIFICATIONS FOR INSTANT START BALLASTS FOR:

- **RH** (Reduced Harmonics)
- **L** (Low Wattage)
- **RHH** (Reduced Harmonics High Light)

1. Ballasts (1-4 lamp) shall operate as a Parallel Circuit, allowing remaining lamp(s) to maintain full light output if one or more lamps fail.
2. Ballasts shall operate from 60 Hz input source of 120, 277 Volts, and sustained variations of ±10% (Voltage & Frequency) with no damage to the ballasts.
3. Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 20 kHz.
4. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-1993.
5. Ballasts shall tolerate operation in ambient temperatures up to 105°F (40°C) without damage.
6. Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (Radiated).
7. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991, Location A2.
8. Ballasts shall operate lamps with no visible flicker (< 3% flicker index).
9. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage.
10. Ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type 1 Outdoor, and CSA certified where applicable.
11. Ballast shall have a Ballast Factor greater than .85 per ANSI C82.11-1993. Ballast Factor for Low Power (L) models shall be greater than .77.
12. Input current Total Harmonic Distortion shall not exceed 20% for the primary lamp applications.
13. Ballasts shall have a Power Factor greater than .95 for primary lamp applications.
14. The ballasts do not contain any PCBs.
15. The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
16. Ballast shall be manufactured in an ISO 9001 Certified Facility.
17. Ballasts shall provide instant starting sequence consistent with ANSI standard C82.11-1993.
18. GE model _____ (or approved equal).

TYPICAL SPECIFICATIONS FOR INSTANT START BALLASTS FOR:

Universal Voltage Performance

- **HP** (High Performance)

1. Ballasts (1-4 lamp) shall operate as a Parallel Circuit, allowing remaining lamp(s) to maintain full light output if one or more lamps fail.
2. Ballasts shall operate from 50/60 Hz input source of 120 through 277 Volts, and sustained variations of ±10% (Voltage & Frequency) with no damage to the ballasts.
3. Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 42 kHz to minimize interference with infrared control systems.
4. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-1993.
5. Ballasts shall tolerate operation in ambient temperatures up to 105°F (40°C) without damage.
6. Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (Radiated).
7. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991, Location A2.
8. Ballasts shall operate lamps with no visible flicker (<3% flicker index).
9. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage.
10. Ballasts shall be Underwriters Laboratory UL 935) listed, Class P, Type 1 Outdoor, and CSA certified where applicable.
11. Ballast shall have a Ballast Factor greater than .85 per ANSI C82.11-1993.
12. Input current Total Harmonic Distortion shall not exceed 10% for the primary lamp.
13. Ballasts shall have a Power Factor greater than .98 for primary lamp.
14. The ballasts shall not have any PCBs.
15. The manufacturer shall provide written warranty against defects in material or workmanship,including replacement, for five years from date of manufacture.
16. Manufacturer shall have been manufacturing electronic ballasts for at least fifteen years.
17. Ballast shall be manufactured in an ISO 9001 Certified Facility.
18. Ballasts shall provide instant starting sequence consistent with ANSI standard C82.11-1993.
19. Ballast shall be Bx32IUNVHP-B (x=1 or 2) or Bx32IUNVHP-A (x=3 or 4) depending upon the quantity of lamps per fixture.
20. GE model _____ (or approved equal).

TYPICAL SPECIFICATIONS FOR INSTANT START BALLASTS FOR:

- **HP** (High Performance)
- **HPL** (High Performance Low Power)
- **HPH** (High Performance High Light)

1. Ballasts (1-4 lamp) shall operate as a Parallel Circuit, allowing remaining lamp(s) to maintain full light output if one or more lamps fail (except T12 High Output).
2. Ballasts shall operate from 50/60 Hz input source of 120, 277, and 347 Volts, and sustained variations of 10% (Voltage & Frequency) with no damage to the ballasts.
3. Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 20 kHz.
4. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-1993.
5. Ballasts shall tolerate operation in ambient temperatures up to 105°F (40°C) without damage. Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (Radiated).
6. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991, Location A2.
7. Ballasts shall operate lamps with no visible flicker (< 3% flicker index).
8. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage.
9. Ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type 1 Outdoor, and CSA certified where applicable.
10. Ballast shall have a Ballast Factor greater than .85 per ANSI C82.11-1993. Ballast Factor for Low Power (L) models shall be greater than .77.
11. Input current Total Harmonic Distortion shall not exceed 10% for the primary lamp.
12. Ballasts shall have a Power Factor greater than .98 for primary lamp.
13. The ballasts do not contain any PCBs.
14. The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
15. Ballast shall be manufactured in an ISO 9001 Certified Facility.
16. Ballasts shall provide instant starting sequence consistent with ANSI standard C82.11-1993.
17. GE model_____(or approved equal).

TYPICAL SPECIFICATIONS FOR RAPID START BALLASTS

1. Ballasts (1-4 lamp) shall operate as a Parallel Circuit, allowing remaining lamp(s) to maintain full light output if one or more lamps fail (except T12 High Output).
2. Ballasts shall operate from 60 Hz input source of 120, 277 Volts, and sustained variations of ±10% (Voltage & Frequency) with no damage to the ballasts.
3. Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 20 kHz.
4. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-1993.
5. Ballasts shall tolerate operation in ambient temperatures up to 105°F (40°C) without damage.
6. Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (Radiated).
7. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991, Location A2.
8. Ballasts shall operate lamps with no visible flicker (< 3% flicker index).
9. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage.
10. Ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type 1 Outdoor, and CSA certified where applicable.
11. Ballast shall have a Ballast Factor greater than .85 per ANSI C82.11-1993.
12. Input current Total Harmonic Distortion shall not exceed 10% for the primary lamp applications.
13. Ballast shall be manufactured in an ISO 9001 Certified Facility.
14. Ballasts shall have a Power Factor greater than .98 primary applications.
15. The ballasts do not contain any PCBs.
16. The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
17. Ballasts shall provide rapid starting sequence consistent with ANSI standard C82.11-1993.
18. GE model_____ (or approved equal).

TYPICAL SPECIFICATIONS FOR PROGRAMMED (RAPID) START BALLASTS

1. Ballasts shall have a minimum start temperature of 0°F.
2. Ballasts shall operate from a 50/60 Hz input source of 120 through 277 Volts, and sustained variations of ±10% (Voltage & Frequency) with no damage to the ballasts.
3. Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 42 kHz to minimize interference with infrared control systems.
4. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-1993.
5. Ballasts shall tolerate operation in ambient temperatures up to 105°F (40°C) without damage.
6. Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (Radiated).
7. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991, Location A2.
8. Ballasts shall operate lamps with no visible flicker (<3% flicker index).
9. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage.
10. Ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type 1 Outdoor, and CSA certified where applicable.
11. Ballast shall have a Ballast Factor greater than .85, per ANSI C82.11-1993.
12. Input current Total Harmonic Distortion shall not exceed 10%.
13. Ballasts shall have a Power Factor greater than .98, for primary application.
14. The ballasts shall not have any PCBs.
15. The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
16. Ballast shall be manufactured in an ISO 9001 Certified Facility.
17. Ballast shall be manufactured in North America.
18. Ballast shall be GE AccuStart HP Product Bx32PUNVHP-A (x=1,2,3, or 4).
19. GE model _____ (or approved equal).

TYPICAL SPECIFICATIONS FOR T5 AND T5 HIGH OUTPUT (HO) BALLASTS

1. Ballast shall be Programmed Rapid Start.
2. Ballast shall incorporate lamp shutdown circuitry for end of lamp life protection.
3. Ballast shall allow for re-lamping without the need to cycle power.
4. Ballasts shall operate from 50/60 Hz input source of 108-305 Volts, with no damage to the ballasts.
5. Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 20 kHz.
6. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-1993.
7. Ballasts shall tolerate operation in ambient temperatures up to 105°F (40°C) without damage.
8. Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (Radiated).
9. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991, Location A2.
10. Ballasts shall operate lamps with no visible flicker (< 3% flicker index).
11. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage.
12. Ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type 1 Outdoor, and CSA certified where applicable.
13. Ballast shall have a Ballast Factor greater than .95 per ANSI C82.11-1993.
14. Input current Total Harmonic Distortion shall not exceed 10% for the primary lamp.
15. Ballasts shall have a Power Factor greater than .98.
16. The ballasts do not contain any PCBs.
17. The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
18. Ballast shall be manufactured in and ISO 9001 Certified Facility.
19. GE model _____ (or approved equal).

ELECTRONIC
FLUORESCENT BALLASTS

BALLAST MATRIX

BALLAST MATRIX

Lamp	Starting	Power	# Lamps	GE Electronic Ballasts: Ballast Factor		Product Code	Description	Input Voltage		GE Ballast Cross Reference for T8 Lamps: GE/Universal Ltg. Technologies (Magnetek) Std. RH	HP	High Efficiency	Advance Std. Discrete	Advance Centium	Sylvania High Efficiency	Sylvania Std. Quicktronic	Sylvania QT PRO
Four-Foot T8, F32, F32/U, F25, F17, F32WM	Instant Start	Low Power	1	L	0.77	49706	GE-132-MAX-L/Ultra	Multi-Volt	120				REL-1P32-LW-SC		ROP-2P32-LW-SC		QTP1x32T8/120 RSL-A
									277				VEL-1P32-LW-SC		VOP-2P32-LW-SC		QTP1x32T8/277 RSL-A
			2	L	0.77	49707	GE-232-MAX-L/Ultra	Multi-Volt	120	B232I120L-A		B232I120EL/Ultra	REL-2P32-LW-SC	RCN-2P32-LW	ROP-2P32-LW-SC	QT2x32/120LP	QTP2x32T8/120 RSL-A
									277	B232I277L-A		B232I277EL/Ultra	VEL-2P32-LW-SC	VCN-2P32-LW	VOP-2P32-LW-SC	QT2x32/277LP	QTP2x32T8/277 RSL-A
			3	L	0.77	49708	GE-332-MAX-L/Ultra	Multi-Volt	120	B332I120L-A		B332I120EL/Ultra	REL-3P32-LW-SC	RCN-3P32-LW	ROP-2P32-LW-SC	QT3x32/120LP	QTP3x32T8/120 RSL-A
									277	B332I277L-A		B332I277EL/Ultra	VEL-3P32-LW-SC	VCN-3P32-LW	VOP-2P32-LW-SC	QT3x32/277LP	QTP3x32T8/277 RSL-A
			4	L	0.77	49709	GE-432-MAX-L/Ultra	Multi-Volt	120	B432I120L-A		B432I120EL/Ultra	REL-4P32-LW-SC	RCN-4P32-LW	ROP-2P32-LW-SC	QT4x32/120LP	QTP4x32T8/120 RSL-A
									277	B432I277L-A		B432I277EL/Ultra	VEL-4P32-LW-SC	VCN-4P32-LW	VOP-2P32-LW-SC	QT4x32/277LP	QTP4x32T8/277 RSL-A
		Standard	1	N	0.87	49771	GE-132-MAX-N/Ultra	Multi-Volt	120	B132I120RH-A	B132IUNVHP-B		REL-1P32-SC	RCN-1P32-SC	ROP-2P32-SC	QT1x32/120IS-SC	QTP1x32T8/120 ISN-D
									277	B132I277RH-A			VEL-1P32-SC	VCN-1P32-SC	VOP-2P32-SC	QT1x32/277IS-SC	QTP1x32T8/277 ISN-D
			2	N	0.87	49772	GE-232-MAX-N/Ultra	Multi-Volt	120	B232I120RH-A	B232IUNVHP-B	B232I120HE/Ultra	REL-2P32-SC	RCN-2P32-SC	ROP-2P32-SC	QT2x32/120IS-SC	QTP2x32T8/120 ISN-D
									277	B232I277RH-A		B232I277HE/Ultra	VEL-2P32-SC	VCN-2P32-SC	VOP-2P32-SC	QT2x32/277IS-SC	QTP2x32T8/277 ISN-D
			3	N	0.87	49773	GE-332-MAX-N/Ultra	Multi-Volt	120	B332I120RH-A	B332IUNVHP-A	B332I120HE/Ultra	REL-3P32-SC	RCN-3P32-SC	ROP-2P32-SC	QT3x32/120ISN-SC	QTP3x32T8/120 ISN-A
									277	B332I277RH-A		B332I277HE/Ultra	VEL-3P32-SC	VCN-3P32-SC	VOP-2P32-SC	QT3x32/277ISN-SC	QTP3x32T8/277 ISN-A
			4	N	0.87	49774	GE-432-MAX-N/Ultra	Multi-Volt	120	B432I120RH-A	B432IUNVHP-A	B432I120HE/Ultra	REL-4P32-SC	RCN-4P32-SC	ROP-2P32-SC	QT4x32/120ISN-SC	QTP4x32T8/120 ISN-A
									277	B432I277RH-A		B432I277HE/Ultra	VEL-4P32-SC	VCN-4P32-SC	VOP-2P32-SC	QT4x32/277ISN-SC	QTP4x32T8/277 ISN-A
		High	2	H	1.15	49775	GE-232-MAX-H/Ultra	Multi-Volt	120	B232I120RHH	B232I120HPH		REL-2P32-HL-SC			QT2x32/120PLUS	
									277	B232I277RHH	B232I277HPH		VEL-2P32-HL-SC			QT2x32/277PLUS	
			3	H	1.15	49776	GE-332-MAX-H/Ultra	Multi-Volt	120	B332I120RHH			REL-3P32-HL-SC			QT3x32/120PLUS	
									277	B332I277RHH			VEL-3P32-HL-SC			QT3x32/277PLUS	
			4	H	1.15	49777	GE-432-MAX-H/Ultra	Multi-Volt	120								
									277								
	Program Rapid Start	Standard	1	N	0.88	47532	B132PUNVHP-A	Multi-Volt	120	B132P120RH	B132PUNVHP-A			RCN-1S32-SC			QTP1x32T8/120 PSN-F
									277	B132P277RH				VCN-1S32-SC			QTP1x32T8/277 PSN-F
			2	N	0.88	47533	B232PUNVHP-A	Multi-Volt	120	B232P120RH	B232PUNVHP-A			RCN-2S32-SC			QTP2x32T8/120 PSN-F
									277	B232P277RH				VCN-2S32-SC			QTP2x32T8/277 PSN-F
			3	N	0.88	41008	B332PUNVHP-B	Multi-Volt	120	B332P120RH	B332PUNVHP-B			RCN-3S32-SC			QTP3x32T8/120 PSN-SC
									277	B332P277RH				VCN-3S32-SC			QTP3x32T8/277 PSN-SC
			4	N	0.88	41009	B432PUNVHP-B	Multi-Volt	120	B432P120RH	B432PUNVHP-B			RCN-4S32-SC			QTP4x32T8/120 PSN-SC
									277	B432P277RH				VCN-4S32-SC			QTP4x32T8/277 PSN-SC
											Varible dimming	3-level switch dim					
	Dimming	Standard	2	N	0.88	80355	B232SR120V5		120		B232SR120V5	B232SR120S30		RZT-2S32			QT2x32/120DIM5-B
						80356	B232SR277V5		277		B232SR277V5	B232SR277S30		VZT-2S32			QT2x32/277DIM5-B
			3	N	0.88	80357	B332SR120V5		120		B332SR120V5	B332SR120S30		RZT-3S32			QT3x32/120DIM5-Q
						80358	B332SR277V5		277		B332SR277V5	B332SR277S30		VZT-3S32			QT3x32/277DIM5-Q
8-Ft. T8 F96	Instant Start	Standard	1	N	0.87	49766	GE-159-MAX-N/Ultra	Multi-Volt	120	B159I120RH							
									277	B159I277RH							
			2	N	0.87	49767	GE-259-MAX-N/Ultra	Multi-Volt	120	B259I120RH	B259IUNVHP	B259I120HE/Ultra	REL-2P59-S-RH-TP	RCN-2P59			
									277	B259I277RH		B259I277HE/Ultra	VEL-2P59-S-RH-TP	VCN-2P59			
													REL-2P59-S-RH-TP	RCN-2P59		QT2x59/120IS	QTP2x59T8/120 ISN-A
													VEL-2P59-S-RH-TP	VCN-2P59		QT2x59/277IS	QTP2x59T8/277 ISN-A
		High	2	H	1.15	TBA	GE-259-MAX-H/Ultra	Multi-Volt	120	B232I120RHH	B232I120HPH		REL-2P59-HL			QT2x59/120PLUS	
									277	B232I277RHH	B232I277HPH		VEL-2P59-HL			QT2X59/277PLUS	
8-Ft. HO	IS-(vs-Rs)	Standard	1	N	0.93	80286	B286I120RH		120	B286I120RH				RCN-2S86			
						80287	B286I277RH		277	B286I277RH				VCN-2S86			
			2	N	0.88	80286	B286I120RH		120	B286I120RH			REL-2S86 series RS	RCN-2S86			
						80287	B286I277RH		277	B286I277RH			VEL-2S86 series RS	VCN-2S86			

FOR (1), (2), (3) & (4) F17T8 LAMPS

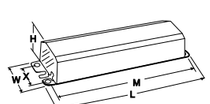
GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F17T8 - One Lamp Applications															
49771	1	IS	120	GE-132-MAX-N/Ultra	•	•	•	0.14	17	>.99	1.05	<10	0/-18	1A	-A
			277					0.07		>.90	1.05	<22			
47532	1	PRS	120	B132PUNVHP-A	•			0.15	17	>.99	0.91	<10	0/-18	2	-A
			277					0.07		>.96		<15			
F17T8 - Two Lamp Applications															
49707	2	PAR-IS	120	GE-232-MAX-L/Ultra	•	•	•	0.24	28	>.99	.95	<12	0/-18	1B	-A
			277					0.11	29	>.93		<24			
49772			120	GE-232-MAX-N/Ultra	•	•	•	0.27	32	>.99	1.05	<10	0/-18	1B	-A
			277					0.12		>.94		<20			
47533	2	SER-PRS	120	B232PUNVHP-A	•			0.28	34	>.99	0.95	<10	0/-18	30	-A
			277					0.13		>.95		<15			
F17T8 - Three Lamp Applications															
49708	3	PAR-IS	120	GE-332-MAX-L/Ultra	•	•	•	0.35	42	>.99	0.95	<10	0/-18	1C	-A
			277					0.16		>.96		<19			
49773			120	GE-332-MAX-N/Ultra	•	•	•	0.40	48	>.99	1.05	<10	0/-18	1C	-A
			277					0.18		>.97		<17			
41008	3	SER-PRS	120	B332PUNVHP-A	•			0.40	48	>.98	0.92	<10	0/-18	23	-A
			277					0.19		>.90					
F17T8 - Four Lamp Applications															
49709	4	PAR-IS	120	GE-432-MAX-L/Ultra	•	•	•	0.47	56	>.99	0.95	<10	0/-18	1D	-A
			277					0.21		>.96		<19			
49774			120	GE-432-MAX-N/Ultra	•	•	•	0.54	65	>.99	1.05	<10	0/-18	1D	-A
			277					0.24	64	>.97		<18			
41009	4	SER-PRS	120	B432PUNV-HP-B	•			0.57	67	>.90	0.92	<25	0/-18	8	ST
			277					0.24	67	>.90	0.92	<25	0/-18	8	ST

SEE WIRING DIAGRAMS Pages 1-38 and 1-39

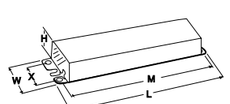
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A, -B

Draw #	Overall Dimensions L	W	H	Mounting Dimension M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″
-B	9.50″	1.50″	1.00″	8.89″	0.88″

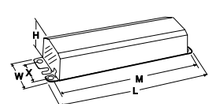
FOR (1), (2), (3) & (4) F25T8 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F25T8 - One Lamp Applications															
49706	1	IS	120	GE-132-MAX-L/Ultra	•	•	•	0.18	21	>.99	0.94	<10	0/-18	1A	-A
			277					0.08		>.92		<20			
49771			120	GE-132-MAX-N/Ultra	•	•	•	0.24	23	>.99	0.94	<10	0/-18	1A	-A
			277					0.09	24	>.93		<18			
47532	1	PRS	120	B132PUNVHP-A	•			0.20	24	>.99	0.91	<10	0/-18	2	-A
			277					0.09		>.98					
F25T8 - Two Lamp Applications															
49707	2	PAR-IS	120	GE-232-MAX-L/Ultra	•	•	•	0.34	40	>.99	0.84	<10	0/-18	1B	-A
			277					0.15		>.96		<19			
49772			120	GE-232-MAX-N/Ultra	•	•	•	0.21	53	>.96	0.87	<15	0/-18	1B	-A
			277					0.38	45	>.99	0.94	<10			
47533	2	SER-PRS	120	B232PUNVHP-A	•			0.40	47	>.99					
			277					0.17	46	>.97	0.94	<10	0/-18	30	-A
F25T8 - Three Lamp Applications															
49708	3	PAR-IS	120	GE-332-MAX-L/Ultra	•	•	•	0.50	60	>.99	0.84	<10	0/-18	1C	-A
			277					0.22	59	>.97		<14			
49773			120	GE-332-MAX-N/Ultra	•	•	•	0.56	67	>.99	0.94	<10	0/-18	1C	-A
			277					0.24	66	>.98		<13			
80136			347	B332I347HP	•			0.20	68	>.99	0.91	<10	0/-18	6	ST
41008	3	SER-PRS	120	B332PUNVHP-A	•			0.77	92	>.99	.89	<10	0/-18	8	-A
			277					0.33	89	>.95					
F25T8 - Four Lamp Applications															
49709	4	PAR-IS	120	GE-432-MAX-L/Ultra	•	•	•	0.67	80	>.99	0.84	<10	0/-18	1D	-A
			277					0.30	79	>.97		<15			
49774			120	GE-432-MAX-N/Ultra	•	•	•	0.76	91	>.99	0.94	<10	0/-18	1D	-A
			277					0.33	89	>.98		<14			
41009	4	SER-PRS	120	B432PUNVHP-A	•			0.77	92	>.99	0.89	<10	0/-18	8	-A
			277					0.33	89	>.95					

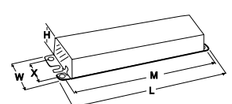
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A, -B

Draw #	Overall Dimensions L	W	H	Mounting Dimension M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″
-B	9.50″	1.50″	1.00″	8.89″	0.88″

FOR (1), (2), (3) & (4) F28T8 LAMPS (F28T8/UMX – GE ULTRAMAX SYSTEM)

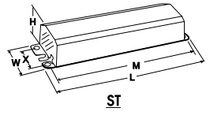
GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F28T8 - One Lamp Applications															
49706	1	IS	120 277	GE-132-MAX-L/Ultra	•	•	•	TBD	22	TBD	TBD	TBD	TBD	1A	-A
49771			120 277	GE-132-MAX-N/Ultra	•	•	•	TBD	25	TBD	TBD	TBD	TBD	1B	-A
F28T8 - Two Lamp Applications															
49707	2	PAR-IS	120 277	GE-232-MAX-L/Ultra	•	•	•	TBD	44	TBD	TBD	TBD	TBD	1B	-A
49772			120 277	GE-232-MAX-N/Ultra	•	•	•	TBD	49 48	TBD	TBD	TBD	TBD	1B	-A
49775			120 277	GE-232-MAX-H/Ultra	•	•	•	TBD	66 65	TBD	TBD	TBD	TBD	1B	-A
F28T8 - Three Lamp Applications															
49708	3	PAR-IS	120 277	GE-332-MAX-L/Ultra	•	•	•	TBD	65	TBD	TBD	TBD	TBD	1C	-A
49773			120 277	GE-332-MAX-N/Ultra	•	•	•	TBD	72 71	TBD	TBD	TBD	TBD	1C	-A
49776			120 277	GE-332-MAX-H/Ultra	•	•	•	TBD	97 96	TBD	TBD	TBD	TBD	1C	-A
F28T8 - Four Lamp Applications															
49709	4	PAR-IS	120 277	GE-432-MAX-L/Ultra	•	•	•	TBD	87 86	TBD	TBD	TBD	TBD	1D	-A
49774			120 277	GE-432-MAX-N/Ultra	•	•	•	TBD	98 96	TBD	TBD	TBD	TBD	1D	-A
49777			120 277	GE-432-MAX-H/Ultra	•	•	•	TBD	133 131	TBD	TBD	TBD	TBD	ST	

DIMENSIONS

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start

STARTING METHOD LEGEND
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start

PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



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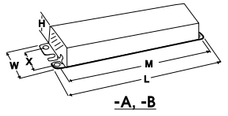


-A, -B

Overall Dimensions			Mounting Dimension		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″
-B	9.50″	1.50″	1.00″	8.89″	0.88″

FOR (1) F32T8 LAMP

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8 - One Lamp Applications															
49706	1	IS	120 277	GE-132-MAX-L/Ultra	•	•	•	0.22 0.10	25	>.99 >.94	0.77	<10 <18	0/-18	1A	-A
49771			120 277	GE-132-MAX-N/Ultra	•	•	•	0.42 0.19	28	>.99 >.98	0.87	<10 <15	0/-18	1A	-A
49707			120 277	GE-232-MAX-L/Ultra	•	•	•	0.24 0.11	28 29	>.99 >.93	0.87	<10 <23	0/-18	1B	-A
49772			120 277	GE-232-MAX-N/Ultra	•	•	•	0.26 0.12	31	>.99 >.94	0.87	<10 <20	0/-18	1B	-A
47532	1	PRS	120 277	B132PUNVHP-A	•			0.26 0.11	31 30	>.99 >.98	0.88	<10	0/-18	2	-A
47533			120 277	B232PUNVHP-A	•			0.27 0.12	32	>.99 >.95	1.00	<10 <15	0/-18	30	-A

FOR (1) F32T8/WM LAMP

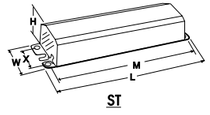
GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8/WM - One Lamp Applications															
49706	1	IS	120 277	GE-132-MAX-L/Ultra	•	•	•	0.21 0.09	24	>.99 >.93	0.77	<10 <18	0/-18	1A	-A
49707			120 277	GE-232-MAX-L/Ultra	•	•	•	0.22 0.11	26 27	>.99 >.93	0.87	<11 <25	0/-18	1B	-A
49772			120 277	GE-232-MAX-N/Ultra	•	•	•	0.25 0.12	29	>.99 >.94	0.87	<10 <21	0/-18	1B	-A
47532	1	SER-PRS	120 277	B132PUNVHP-A	•			0.23 0.10	28	>.99 >.98	0.88	<10	60/16	2	-A

DIMENSIONS

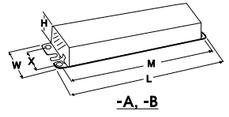
IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start

STARTING METHOD LEGEND
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start

PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A, -B

Overall Dimensions			Mounting Dimension		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″
-B	9.50″	1.50″	1.00″	8.89″	0.88″

FOR (2) F32T8 LAMPS

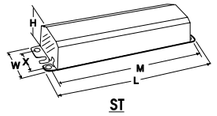
GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8 - Two Lamp Applications															
49707	2	PAR-IS	120	GE-232-MAX-L/Ultra	•	•	•	0.42	48	>.99	0.77	<10	0/-18	1B	-A
			277					0.19		>.97		<17			
49772			120	GE-232-MAX-N/Ultra	•	•	•	0.47	54	>.99	0.87	<10	0/-18	1B	-A
			277					0.21	53	>.96		<15			
49775			120	GE-232-MAX-H/Ultra	•	•	•	0.84	74	>.99	1.15	<10	0/-18	1B	-A
			277					0.37	73	>.98		<13			
49708			120	GE-332-MAX-L/Ultra	•	•	•	0.45	53	>.99	0.87	<10	0/-18	1C	-A
			277					0.20		>.97		<16			
49773			120	GE-332-MAX-N/Ultra	•	•	•	0.49	58	>.99	0.87	<10	0/-18	1C	-A
			277					0.22		>.97		<14			
47533	2	SER-PRS	120	B232PUNVHP-A	•			0.52	62	>.99	0.88	<10	0/-18	30	-A
			277					0.22	60	>.98					

SEE WIRING DIAGRAMS Pages 1-38 and 1-39

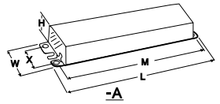
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″

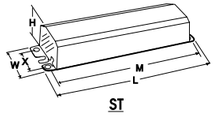
FOR (2) F32T8/WM LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8/WM - Two Lamp Applications															
49707	2	PAR-IS	120	GE-232-MAX-L/Ultra	•	•	•	0.40	46	>.99	0.77	<10	0/-18	1B	-A
			277					0.18		>.97		<17			
49772			120	GE-232-MAX-N/Ultra	•	•	•	0.45	53	>.99	0.87	<10	0/-18	1B	-A
			277					0.20	52	>.96		<15			
49708			120	GE-332-MAX-L/Ultra	•	•	•	0.42	49	>.99	0.87	<10	0/-18	1C	-A
			277					0.19		>.97		<17			
49773			120	GE-332-MAX-N/Ultra	•	•	•	0.46	55	>.99	0.87	<10	0/-18	1C	-A
			277					0.21		>.97		<15			
47533	2	SER-PRS	120	B232PUNVHP-A	•			0.50	60	>.99	0.88	<10	60/16	30	-A
			277					0.21		>.98					

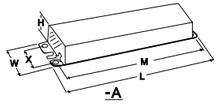
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″

FOR (3) F32T8 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8 - Three Lamp Applications															
49708			120	GE-332-MAX-L/Ultra	•	•	•	0.63	73	>.99	0.77	<10	0/-18	1C	-A
			277					0.27	72	>.98		<13			
49773			120	GE-332-MAX-N/Ultra	•	•	•	0.70	82	>.99	0.87	<10	0/-18	1C	-A
			277					0.30	80	>.98		<13			
49776			120	GE-332-MAX-H/Ultra	•	•	•	0.92	111	>.99	1.15	<10	0/-18	1C	-A
			277					0.40	109	>.98		<13			
49709	3	PAR-IS	120	GE-432-MAX-L/Ultra	•	•	•	0.65	78	>.99	0.87	<13	0/-18	1D	-A
			277					0.29	77	>.97		<16			
49774			120	GE-432-MAX-N/Ultra	•	•	•	0.72	85	>.99	0.87	<13	0/-18	1D	-A
			277					0.32	84						
49777			120	GE-432-MAX-H/Ultra				TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			277												
80136			347	B332I347HP	•			0.25	88	>.99	0.88	<10	0/-18	6	ST
41008	3	SER-RS	120	B332PUNVHP-A*	•			0.77	92	>.99	0.88	<10	0/-18	23	-A
			277					0.34	90	>.95					
41009	3	SER-PRS	120	B432PUNVHP-A	•			0.77	92	>.99	0.93	<10	0/-18	23	-A
			277					0.34	90	>.98					

* Preliminary performance data

FOR (3) F32T8/WM LAMPS

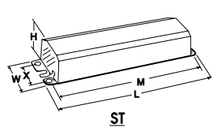
GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8/WM - Three Lamp Applications															
49708			120	GE-332-MAX-L/Ultra	•	•	•	0.60	69	>.99	0.77	<10	0/-18	1C	-A
			277					0.26	68	>.98		<13			
49773			120	GE-332-MAX-N/Ultra	•	•	•	0.66	78	>.99	0.87	<10	0/-18	1C	-A
			277					0.29	77	>.98		<13			
49776	3	PAR-IS	120	GE-332-MAX-H/Ultra	•	•	•	0.89	106	>.99	1.15	<10	0/-18	1C	-A
			277					0.39	104	>.98		<13			
80136			347	B332I347HP	•			0.25	88	>.99	0.88	<10	0/-18	6	ST
41008	3	SER-PRS	120	B332PUNVHP-A*	•			0.73	87	>.99	0.88	<10	0/-18	23	-A
			277					0.32	85	>.95					

* Preliminary performance data

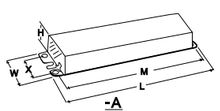
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″

FOR (4) F32T8 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8 - Four Lamp Applications															
49709			120	GE-432-MAX-L/Ultra	•	•	•	0.84	97	>.99	0.77	<10	0/-18	1D	-A
			277					0.37	96	>.98		<13			
49774	4	PAR-IS	120	GE-432-MAX-N/Ultra	•	•	•	0.94	109	>.99	0.87	<10	0/-18	1D	-A
			277					0.40	107	>.98		<13			
49777			120	GE-432-MAX-H/Ultra*	•	•	•	TBD	151	TBD	TBD	TBD	TBD	TBD	TBD
			277						147						
41009	4	SER-PRS	120	B432PUNVHP-A	•			1.00	119	>.99	0.88	<10	0/-18	8	-A
			277					0.42	115	>.95					

FOR (4) F32T8/WM LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8/WM - Four Lamp Applications															
49709			120	GE-432-MAX-L/Ultra	•	•	•	0.80	92	>.99	0.77	<10	0/-18	1D	-A
			277					0.36	91	>.98		<14			
49774	4	PAR-IS	120	GE-432-MAX-N/Ultra	•	•	•	0.90	105	>.99	0.87	<10	0/-18	1D	-A
			277					0.39	103	>.98		<13			
49777			120	GE-432-MAX-H/Ultra*	•	•	•	TBD	145	TBD	TBD	TBD	TBD	TBD	TBD
			277						141						
41009	4	SER-PRS	120	B432PUNVHP-A*	•			0.95	114	>.99	0.88	<10	0/-18	8	-A
			277					0.41	110	>.95					

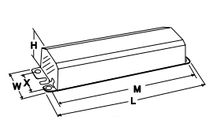
* Preliminary performance data

SEE WIRING DIAGRAMS Pages 1-38 and 1-39

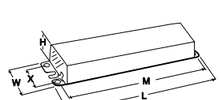
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A

Overall Dimensions			Mounting Dimension		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″

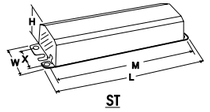
FOR (1), (2) & (3) F40T8 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F40T8 - One Lamp Applications															
49766	1	IS	120	GE-159-MAX-N/Ultra	•	•	•	0.32	38	>.99	0.94	<10	0/-18	1A	-A
			277					0.15		>.95		<18			
49767			120	GE-259-MAX-N/Ultra	•	•	•	0.39	46	>.99	0.94	<10	0/-18	1B	-A
			277					0.18		>.95		<20			
TBD			120	GE-132-MAX-N/Ultra	•	•	•	TBD	TBD	TBD	TBD	TBD	TBD	1A	-A
			277												
F40T8 - Two Lamp Applications															
49767	2	PAR-IS	120	GE-259-MAX-N/Ultra	•	•	•	0.66	77	>.97	0.94	<10	0/-18	1B	-A
			277					0.29	76			<18			
49773			120	GE-332-MAX-N/Ultra	•	•	•	TBD	TBD	TBD	TBD	TBD	TBD	1B	-A
			277												
49776			120	GE-332-MAX-H/Ultra	•	•	•	TBD	TBD	TBD	TBD	TBD	TBD	1C	-A
			277												
F40T8 - Three Lamp Applications															
49774	3	PAR-IS	120	GE-432-MAX-N/Ultra	•	•	•	TBD	TBD	TBD	TBD	TBD	TBD	1C	-A
			277												
49777			120	GE-432-MAX-H/Ultra	•	•	•	TBD	TBD	TBD	TBD	TBD	TBD	TBD	ST
			277												

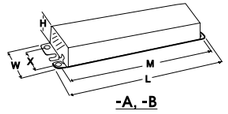
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A, -B

Overall Dimensions			Mounting Dimension		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″
-B	9.50″	1.50″	1.00″	8.89″	0.88″

FOR (1) AND (2) F96T8 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F96T8 - One Lamp Applications															
49766	1	IS	120	GE-159-MAX-N/Ultra	•	•	•	0.45	56	>.99	0.87	<10	0/-18	1A	-A
			277					0.21	55	>.95		<15			
49767			120	GE-259-MAX-N/Ultra	•	•	•	0.53	62	>.99	0.87	<10	0/-18	1B	-A
			277					0.24		>.97		<20			
80142			120	B259I120HPL	•			0.51	60	>.98	0.92	<10	50/10	14	ST
80143			277	B259I277HPL	•			0.22	60	>.98	0.92	<10	50/10	14	ST
F96T8 - Two Lamp Applications															
49767	2	PAR-IS	120	GE-259-MAX-N/Ultra	•	•	•	0.95	112	>.99	0.87	<10	0/-18	1B	-A
			277					0.41	110	>.98		<15			
80148			120	B259I120RHH	•			1.30	150	>.98	1.18	<20	32/0	14	SL
80149			277	B259I277RHH	•			0.56	150	>.98	1.18	<20	32/0	14	SL
80142			120	B259I120HPL	•			0.84	100	>.98	0.78	<10	50/10	14	ST
80143			277	B259I277HPL	•			0.36	100	>.98	0.78	<10	50/10	14	ST

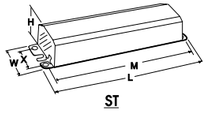
FOR (1) AND (2) F96T8/WM LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F96T8/WM - One Lamp Applications															
49766	1	IS	120	GE-159-MAX-N/Ultra	•	•	•	0.46	54	>.99	0.87	<10	0/-18	1A	-A
			277					0.20	53	>.95		<15			
F96T8/WM - Two Lamp Applications															
49767	2	PAR-IS	120	GE-259-MAX-N/Ultra	•	•	•	0.90	107	>.99	0.87	<10	0/-18	1B	-A
			277					0.39	105	>.98		<15			

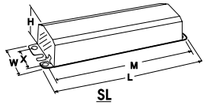
DIMENSIONS

STARTING METHOD LEGEND

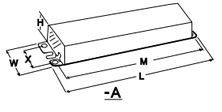
IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



SL



-A

Overall Dimensions			Mounting Dimension		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
SL	11.75″	3.13″	1.78″	11.41″	2.00″
-A	9.50″	1.70″	1.18″	8.89″	1.69″

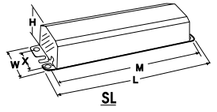
FOR (1) & (2) F48T8HO, F60T8HO, F72T8HO & F96T8HO LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F48T8HO - One Lamp Applications															
80286	1	IS	120	B286I120RH	•	•		0.47	48	> .90	1.00	< 30	-20/-29	3	SL
80287			277	B286I277RH	•	•		0.20	47	> .90	1.00	< 30	-20/-29	3	SL
F60T8HO - One Lamp Applications															
80286	1	IS	120	B286I120RH	•	•		0.56	60	> .90	0.99	< 30	-20/-29	3	SL
80287			277	B286I277RH	•	•		0.23	57	> .90	0.98	< 30	-20/-29	3	SL
F72T8HO - One Lamp Applications															
80286	1	IS	120	B286I120RH	•	•		0.64	71	> .90	0.98	< 30	-20/-29	3	SL
80287			277	B286I277RH	•	•		0.26	67	> .90	0.98	< 30	-20/-29	3	SL
F96T8HO - One Lamp Applications															
80286	1	IS	120	B286I120RH	•	•		0.79	92	> .90	0.96	< 25	-20/-29	3	SL
80287			277	B286I277RH	•	•		0.32	87	> .90	0.93	< 25	-20/-29	3	SL
F48T8HO - Two Lamp Applications															
80286	2	PAR-IS	120	B286I120RH	•	•		0.70	80	> .95	0.85	< 25	-20/-29	3	SL
80287			277	B286I277RH	•	•		0.30	77	> .90	0.84	< 25	-20/-29	3	SL
F60T8HO - Two Lamp Applications															
80286	2	PAR-IS	120	B286I120RH	•	•		0.85	99	> .95	0.85	< 20	-20/-29	3	SL
80287			277	B286I277RH	•	•		0.36	96	> .95	0.84	< 20	-20/-29	3	SL
F72T8HO - Two Lamp Applications															
80286	2	PAR-IS	120	B286I120RH	•	•		1.00	117	> .95	0.85	< 20	-20/-29	3	SL
80287			277	B286I277RH	•	•		0.42	114	> .95	0.84	< 20	-20/-29	3	SL
F96T8HO - Two Lamp Applications															
80286	2	PAR-IS	120	B286I120RH	•	•		1.30	151	> .95	0.81	< 20	-20/-29	3	SL
80287			277	B286I277RH	•	•		0.53	144	> .95	0.81	< 20	-20/-29	3	SL

DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



SL

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
SL	11.75″	3.13″	1.78″	11.41″	2.00″

T5 FOR F14, F21, F28 & F35T5 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F14T5 - One Lamp Applications															
47536	1	PRS	120	B228PUNV-C	•			0.15	18	>.98	1.05	<10	0/-18	4a	-C
			277					0.07		>.90		<15			
F14T5 - Two Lamp Applications															
47536	2	SER-PRS	120	B228PUNV-C	•			0.28	34	>.98	1.00	<10	0/-18	4a	-C
			277					0.13		>.95					
F21T5 - One Lamp Applications															
47536	1	PRS	120	B228PUNV-C	•			0.21	25	>.98	1.03	<10	0/-18	4a	-C
			277					0.10		>.95		<15			
F21T5 - Two Lamp Applications															
47536	2	SER-PRS	120	B228PUNV-C	•			0.41	49	>.98	1.00	<10	0/-18	4a	-C
			277					0.18	48						
F28T5 - One Lamp Applications															
47536	1	PRS	120	B228PUNV-C	•			0.28	33	>.98	1.00	<10	0/-18	4a	-C
			277					0.12		>.95					
F28T5 - Two Lamp Application															
47536	2	SER-PRS	120	B228PUNV-C	•			0.55	66	>.98	1.00	<10	0/-18	4a	-C
			277					0.23	64						
F35T5 - One Lamp Applications															
47536	1	PRS	120	B228PUNV-C	•			0.34	40	>.98	1.00	<10	0/-18	4a	-C
			277					0.15		>.95					
F35T5 - Two Lamp Applications															
47536	2	SER-PRS	120	B228PUNV-C	•			0.67	81	>.98	1.00	<10	0/-18	4a	-C
			277					0.28	78						

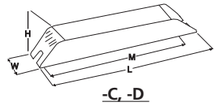
SEE WIRING DIAGRAMS Pages 1-38 and 1-39

DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start

T5 ballasts incorporate poke in connectors, for easy installation



-C, -D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
-C	14.25″	1.18″	1.00″	13.75″	—
-D	16.88″	1.18″	1.00″	16.20″	—

T5HO FOR F24, F39, F28 & F54 T5HO LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F24T5HO - One Lamp Applications															
47534	1	PRS	120	B224PUNV-C	•			0.23	28	>.98	1.06	<10	0/-18	4b	-C
			277					0.10		>.95					
47540			120	B239PUNV-D	•			0.27	32	>.98	1.25	<10	0/-18	4b	-D
			277					0.13		>.90					
F24T5HO - Two Lamp Applications															
47534	2	SER-PRS	120	B224PUNV-C	•			0.45	53	>.98	1.00	<10	0/-18	4b	-C
			277					0.19	52						
47540			120	B239PUNV-D	•			0.51	59	>.98	1.15	<10	0/-18	4b	-D
			277					0.22		>.95					
F39T5HO - One Lamp Applications															
47534	1	PRS	120	B224PUNV-C	•			0.34	41	>.98	0.95	<10	0/-18	4b	-C
			277					0.15	40						
47540			120	B239PUNV-D	•			0.39	47	>.98	1.10	<10	0/-18	4b	-D
			277					0.18		>.95					
F39T5HO - Two Lamp Applications															
47540	2	SER-PRS	120	B239PUNV-D	•			0.75	89	>.98	1.00	<10	0/-18	4b	-D
			277					0.32	88						
F54T5HO- One Lamp Applications															
47542	1	PRS	120	B254PUNV-D	•			0.54	64	>.98	1.10	<10	0/-18	4b	-D
			277					0.24		>.95					
F54T5HO- Two Lamp Application															
47542	2	SER-PRS	120	B254PUNV-D	•			1.03	121	>.98	1.00	<10	0/-18	4b	-D
			277					0.43	117						

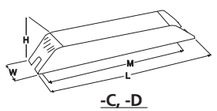
FOR F40T10 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F40T10 - One Lamp Applications															
80152	1	RS	120	B140R120HP	•			0.34	39	> .98	0.89	< 10	50/10	2	ST
80153			277	B140R277HP	•			0.15	39	> .98	0.89	< 10	50/10	2	ST
80154			120	B240R120HP	•			0.44	48	> .98	1.03	< 10	50/10	4	ST
80155			277	B240R277HP	•			0.19	48	> .98	1.03	< 10	50/10	4	ST
F40T10 - Two Lamp Applications															
80154	2	PAR-RS	120	B240R120HP	•			0.67	80	> .98	0.90	< 10	50/10	4	ST
80155			277	B240R277HP	•			0.29	80	> .98	0.90	< 10	50/10	4	ST
F40T10 - Three Lamp Applications															
80156	3	PAR-RS	120	B340R120HP	•			0.98	116	> .98	0.90	< 10	50/10	5	ST
80157			277	B340R277HP	•			0.43	116	> .98	0.90	< 10	50/10	5	ST

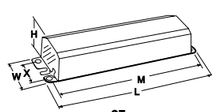
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



-C, -D



ST

Draw #	Overall Dimensions L	W	Mounting Dimensions H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-C	14.25″	1.18″	1.00″	13.75″	—
-D	16.88″	1.18″	1.00″	16.20″	—

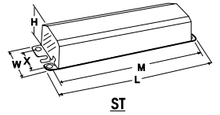
FOR (2), (3) & (4) F25T12 (ANSI ONLY) LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F25T12 - Two Lamp Applications															
49707	2	PAR-IS	120	GE-232-MAX-L/Ultra	•	•	•	0.36	42	>.99	TBD	<10	0/-18	1B	-A
			277					0.16		>.96		<19			
49772			120	GE-232-MAX-N/Ultra	•	•	•	0.41	48	>.99	TBD	<10	0/-18	1B	-A
			277					0.18		>.97		<16			
F25T12 - Three Lamp Applications															
49708	3	PAR-IS	120	GE-332-MAX-L/Ultra	•	•	•	0.53	63	>.99	TBD	<10	0/-18	1C	-A
			277					0.24		>.97		<13			
49773			120	GE-332-MAX-N/Ultra	•	•	•	0.61	72	>.99	TBD	<10	0/-18	1C	-A
			277					0.27	71	>.98		<13			
80136			347	B332I347HP	•			0.21	71	>.99	0.79	<10	0/-18	6	ST
F25T12 - Four Lamp Applications															
49709	4	PAR-IS	120	GE-432-MAX-L/Ultra	•	•	•	0.71	84	>.99	TBD	<10	0/-18	1D	-A
			277					0.31	83	>.97		<15			
49774			120	GE-432-MAX-N/Ultra	•	•	•	0.81	96	>.99	TBD	<10	0/-18	1D	-A
			277					0.35	95	>.98		<13			

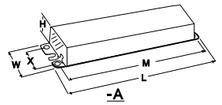
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-A

Draw #	Overall Dimensions L	W	Mounting Dimensions H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
-A	9.50″	1.70″	1.18″	8.89″	1.69″

FOR (1), (2) & (3) F30T12 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c(UL)us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F30T12 - One Lamp Applications															
80152	1	RS	120	B140R120HP	•			0.26	30	> .95	0.91	< 10	50/10	2	ST
80153			277	B140R277HP	•			0.11	30	> .95	0.91	< 10	50/10	2	ST
80154			120	B240R120HP	•			0.33	37	> .95	1.05	< 10	50/10	4	ST
80155			277	B240R277HP	•			0.14	37	> .95	1.05	< 10	50/10	4	ST
F30T12 - Two Lamp Applications															
87049	2	PAR-RS	120	B240R120RH	•			0.51	59	> .95	0.92	< 20	50/10	4	ST
80154			120	B240R120HP	•			0.50	60	> .95	0.92	< 10	50/10	4	ST
80155			277	B240R277HP	•			0.22	60	> .95	0.92	< 10	50/10	4	ST
F30T12 - Three Lamp Applications															
80156	3	PAR-RS	120	B340R120HP	•			0.75	90	> .98	0.91	< 10	50/10	5	ST
80157			227	B340R277HP	•			0.33	90	>.98	0.91	<10	50/10	5	ST

FOR (1), (2) & (3) F30T12/WM LAMPS

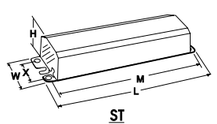
GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c(UL)us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F30T12/WM - One Lamp Applications															
80152	1	RS	120	B140R120HP	•			0.24	27	> .97	0.86	< 10	60/16	2	ST
80153			277	B140R277HP	•			0.10	27	> .97	0.86	< 10	60/16	2	ST
80154			120	B240R120HP	•			0.30	33	> .95	1.00	< 10	60/16	4	ST
80155			277	B240R277HP	•			0.13	33	> .95	1.00	< 10	60/16	4	ST
F30T12/WM - Two Lamp Applications															
80153	2	PAR-RS	120	B240R120HP	•			0.46	53	> .98	0.88	< 10	60/16	4	ST
80157			277	B240R277HP	•			0.20	53	> .98	0.88	< 10	60/16	4	ST
F30T12/WM - Three Lamp Applications															
80156	3	PAR-RS	120	B340R120HP	•			0.64	76	> .98	0.88	< 10	60/16	5	ST
80157			277	B340R277HP	•			0.28	76	> .98	0.88	< 10	60/16	5	ST

SEE WIRING DIAGRAMS Pages 1-38 and 1-39

DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50"	2.40"	1.55"	8.89"	1.69"

FOR (1), (2) & (3) F40T12 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c(UL)us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F40T12 - One Lamp Applications															
80152	1	RS	120	B140R120HP	•			0.33	39	> .99	0.88	< 10	50/10	2	ST
80153			277	B140R277HP	•			0.14	39	> .99	0.88	< 10	50/10	2	ST
87219			120	B240R120RH	•			0.41	46	> .90	1.09	< 20	50/10	4	ST
80154			120	B240R120HP	•			0.42	46	> .98	1.02	< 10	50/10	4	ST
80155			277	B240R277HP	•			0.18	46	> .98	1.02	< 10	50/10	4	ST
F40T12 - Two Lamp Applications															
87219	2	PAR-RS	120	B240R120RH	•			0.62	73	> .98	0.89	< 20	50/10	4	ST
80154			120	B240R120HP	•			0.65	75	> .99	0.88	< 10	50/10	4	ST
80155			277	B240R277HP	•			0.28	74	> .99	0.90	< 10	50/10	4	ST
80156			120	B340R120HP	•			0.70	84	> .98	1.04	< 10	50/10	5	ST
80157			277	B340R277HP	•			0.31	84	> .98	1.04	< 10	50/10	5	ST
F40T12 - Three Lamp Applications															
80156	3	PAR-RS	120	B340R120HP				0.94	113	> .99	0.88	< 10	50/10	5	ST
80157			277	B340R277HP	•			0.41	113	> .99	0.88	< 10	50/10	5	ST

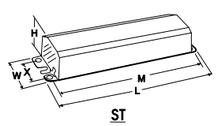
FOR (1), (2) & (3) F40T12/WM LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c(UL)us	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F40T12/WM - One Lamp Applications															
80152	1	RS	120	B140R120HP	•			0.28	33	> .98	0.86	< 10	60/16	2	ST
80153			277	B140R277HP	•			0.12	33	> .98	0.86	< 10	60/16	2	ST
87219			120	B240R120RH	•			0.36	39	> .89	1.10	< 20	60/16	4	ST
80154			120	B240R120HP	•			0.35	39	> .98	0.97	< 10	60/16	4	ST
80155			277	B240R277HP	•			0.15	39	> .98	0.97	< 10	60/16	4	ST
F40T12/WM - Two Lamp Applications															
87219	2	PAR-RS	120	B240R120RH	•			0.53	62	> .95	0.89	< 20	60/16	4	ST
80154			120	B240R120HP	•			0.54	64	> .99	0.86	< 10	60/16	4	ST
80155			277	B240R277HP	•			0.23	64	> .99	0.86	< 10	60/16	4	ST
FF40T12/WM - Three Lamp Applications															
80156	3	PAR-RS	120	B340R120HP	•			0.78	93	> .99	0.86	< 10	60/16	5	ST
80157			277	B340R277HP	•			0.34	93	> .99	0.86	< 10	60/16	5	ST

DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50"	2.40"	1.55"	8.89"	1.69"

FOR F48T12 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F48T12 - One Lamp Applications															
80160	1	IS	120	B260I120HP	•			0.39	47	> .95	1.08	< 10	0/-18	14	SL
80161			277	B260I277HP	•			0.18	47	> .95	1.08	< 10	0/-18	14	SL
F48T12 - Two Lamp Applications															
80158	2	PAR-IS	120	B260I120RH	•			0.68	76	> .95	0.92	< 25	0/-18	14	SL
80159			277	B260I277RH	•			0.29	76	> .95	0.92	< 25	0/-18	14	SL
80160			120	B260I120HP	•			0.61	74	> .98	0.91	< 10	0/-18	14	SL
80161			277	B260I277HP	•			0.27	74	> .98	0.91	< 10	0/-18	14	SL

FOR F48T12/WM LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F48T12/WM - One Lamp Applications															
80160	1	IS	120	B260I120HP	•			0.36	42	> .95	1.08	< 15	60/16	14	SL
80161			277	B260I277HP	•			0.16	42	> .95	1.08	< 15	60/16	14	SL
F48T12/WM - Two Lamp Applications															
80158	2	PAR-IS	120	B260I120RH	•			0.60	64	> .95	0.92	< 25	60/16	14	SL
80159			277	B260I277RH	•			0.25	64	> .95	0.92	< 25	60/16	14	SL
80160			120	B260I120HP	•			0.57	66	> .95	0.93	< 10	60/16	14	SL
81161			277	B260I277HP	•			0.25	66	> .95	0.93	< 10	60/16	14	SL

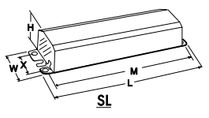
FOR F72T12 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F72T12 - One Lamp Applications															
80158	1	IS	120	B260I120RH	•			0.60	66	> .90	1.04	< 25	0/-18	14	SL
80159			277	B260I277RH	•			0.25	66	> .90	1.04	< 25	0/-18	14	SL
80160			120	B260I120HP	•			0.55	67	> .95	1.06	< 10	0/-18	14	SL
80161			277	B260I277HP	•			0.25	67	> .95	1.06	< 10	0/-18	14	SL
F72T12 - Two Lamp Applications															
80158	2	PAR-IS	120	B260I120RH	•			0.92	107	> .95	0.90	< 20	0/-18	14	SL
80159			277	B260I277RH	•			0.39	107	> .95	0.90	< 20	0/-18	14	SL
80160			120	B260I120HP	•			0.90	107	> .99	0.91	< 10	0/-18	14	SL
80161			277	B260I277HP	•			0.39	107	> .99	0.91	< 10	0/-18	14	SL

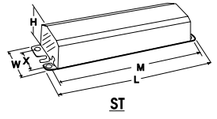
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



SL



ST

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
SL	11.75″	3.13″	1.78″	11.41″	2.00″

FOR F96T12 LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F96T12 - One Lamp Applications															
80158	1	IS	120	B260I120RH	•			0.73	83	> .95	1.02	< 25	0/-18	14	SL
80159			277	B260I277RH	•			0.31	83	> .95	1.02	< 25	0/-18	14	SL
80160			120	B260I120HP	•			0.70	84	> .98	1.05	< 10	0/-18	14	SL
80161			277	B260I277HP	•			0.31	84	> .98	1.05	< 10	0/-18	14	SL
F96T12 - Two Lamp Applications															
80158	2	PAR-IS	120	B260I120RH	•			1.16	133	> .95	0.86	< 20	0/-18	14	SL
80159			277	B260I277RH	•			0.50	133	> .95	0.86	< 20	0/-18	14	SL
80160			120	B260I120HP	•			1.16	137	> .99	0.88	< 10	0/-18	14	SL
80161			277	B260I277HP	•			0.50	137	> .99	0.88	< 10	0/-18	14	SL

FOR F96T12/WM LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F96T12/WM - One Lamp Applications															
80158	1	IS	120	B260I120RH	•			0.60	66	> .90	1.05	< 25	60/16	14	SL
80159			277	B260I277RH	•			0.26	66	> .90	1.05	< 25	60/16	14	SL
80160			120	B260I120HP	•			0.59	70	> .98	1.05	< 10	60/16	14	SL
80161			277	B260I277HP	•			0.26	70	> .98	1.03	< 10	60/16	14	SL
F96T12/WM - Two Lamp Applications															
80158	2	PAR-IS	120	B260I120RH	•			0.93	107	> .95	0.88	< 20	60/16	14	SL
80159			277	B260I277RH	•			0.40	107	> .95	0.88	< 20	60/16	14	SL
80160			120	B260I120HP	•			0.96	112	> .99	0.88	< 10	60/16	14	SL
80161			277	B260I277HP	•			0.40	112	> .99	0.88	< 10	60/16	14	SL

FOR T12 HIGH OUTPUT LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F72T12HO - Two Lamp Applications															
80162	2	SER-RS	120	B295SR120HP	•			1.40	169	> .99	0.95	< 10	-20/-29	4	SL
80163			277	B295SR277HP	•			0.61	169	> .99	0.95	< 10	-20/-29	4	SL
F73T12/BL/HO - Two Lamp Applications															
80664	2	SER-RS	120	493B2	•			1.60	180	> .90	1.00	< 25	50/10	4	ST
F84T12HO - Two Lamp Applications															
80162	2	SER-RS	120	B295SR120HP	•			1.60	185	> .99	0.89	< 10	- 20/-29	4	SL
80163			277	B295SR277HP	•			0.69	185	> .99	0.91	< 10	- 20/-29	4	SL
F96T12HO - Two Lamp Applications															
80162	2	SER-RS	120	B295SR120HP	•			1.77	208	> .99	0.90	< 10	- 20/-29	4	SL
80163			277	B295SR277HP	•			0.76	208	> .99	0.90	< 10	- 20/-29	4	SL

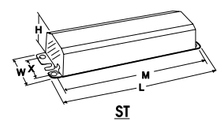
FOR T12HO/WM HIGH OUTPUT LAMPS

GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification cULus	Certification UL Type CC	Certification UL Type HL	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F96T12HO/WM - Two Lamp Applications															
80162	2	SER-RS	120	B295SR120HP	•			1.47	174	> .99	0.88	< 10	60/16	4	SL
80163			277	B295SR277HP	•			0.63	174	> .99	0.88	< 10	60/16	4	SL

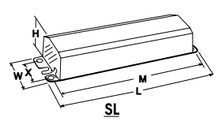
DIMENSIONS

STARTING METHOD LEGEND

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



SL

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50″	2.40″	1.55″	8.89″	1.69″
SL	11.75″	3.13″	1.78″	11.41″	2.00″

WIRING DIAGRAMS

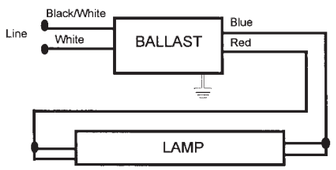


DIAGRAM 1

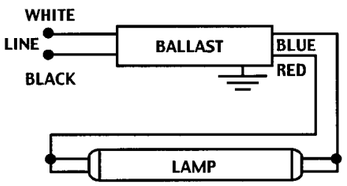


DIAGRAM 1A

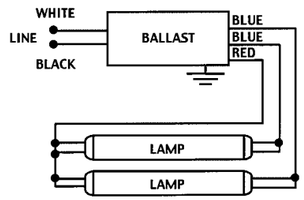


DIAGRAM 1B

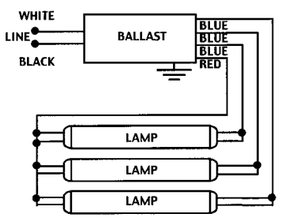


DIAGRAM 1C

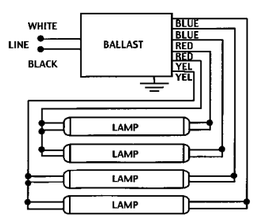


DIAGRAM 1D

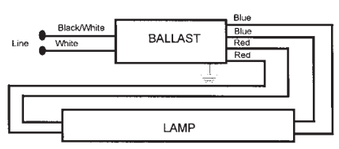


DIAGRAM 2

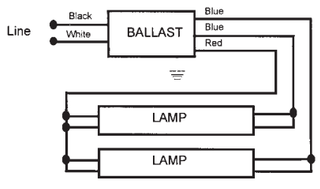


DIAGRAM 3

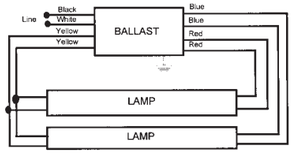
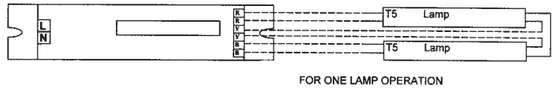
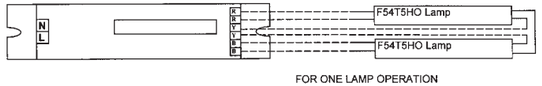


DIAGRAM 4



FOR ONE LAMP OPERATION
CAP YELLOW LEADS INDIVIDUALLY

DIAGRAM 4A



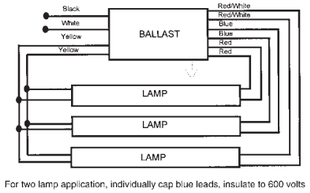
FOR ONE LAMP OPERATION
CAP YELLOW LEADS INDIVIDUALLY

DIAGRAM 4B

ELECTRONIC
FLUORESCENT BALLASTS

WIRING DIAGRAMS

WIRING DIAGRAMS



For two lamp application, individually cap blue leads, insulate to 600 volts

DIAGRAM 5

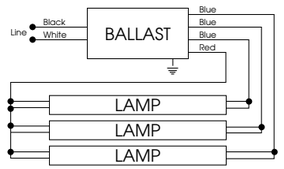


DIAGRAM 6

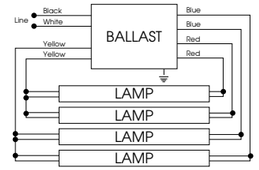


DIAGRAM 7

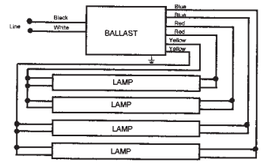


DIAGRAM 7A

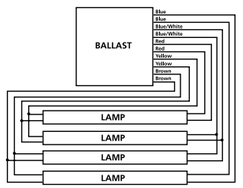


DIAGRAM 8

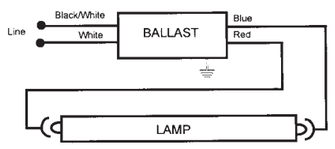


DIAGRAM 13

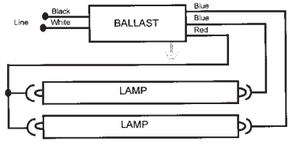


DIAGRAM 14

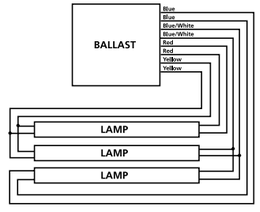
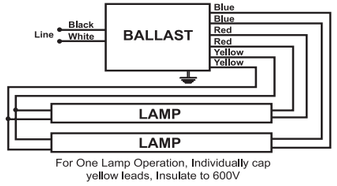


DIAGRAM 23



For One Lamp Operation, Individually cap
yellow leads, Insulate to 600V

DIAGRAM 30

DIMMING PRODUCT OVERVIEW

The effective dimming of fluorescent lights delivers a wide range of benefits: greater control of workspace lighting, ability to create a mood, energy savings, and more. Our electronic T8 fluorescent dimming products help you save as much as 30% on energy bills—and they meet today's toughest specification requirements, including ASHRAE 90.1 and California Title 24.

GE offers three options for variable lighting control: continuous dimming (100% to 5%) and two forms of light level switching (either 100/50% or 100/60/30%).

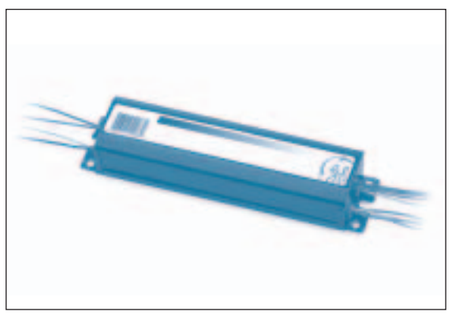
Dimming ballasts from GE are designed to ensure optimum lamp performance. Their Lamp Current Crest Factors are well below the maximum 1.7 ANSI standard — and they start the lamps according to ANSI recommendations throughout the entire dimming range. Both of these important design parameters ensure optimum lamp performance. In addition, our dimming ballasts actually increase cathode heating when dimming to maintain the cathode's proper temperature, which enhances lamp life and performance stability.

Continuous Dimming (V5)

- 1, 2 & 3 lamp models with full range dimming (100% to 5%)
- Designed for optimal lamp performance
  — Cathode voltage increases as lamps dim
  — Positive starting at all dimming levels
  — No lamp dropout
  — No flicker at all dimming levels
- Line voltage control circuit protection
  — Miswiring of control leads will not damage the ballast
- Compatible with all 0 to 10 Volt DC controls and photocells
- Maximum energy savings versus comparable ballasts on the market
- THD <10% throughout the entire dimming range
- 120, 277 and 347 Volt models available

Light Level Switching (S30 & S50)

- 1, 2, & 3 lamp models for 120 & 277 Volt
- Switches to preset light levels, keeping all lamps illuminated
- Eliminates the dark spots associated with inboard/outboard
- Connects with two line voltage power leads
  — Wires the same as an inboard/outboard fixture
  — No special controls required; uses two wall switches
- Meets all ASHRAE 90.1 and California Title 24 requirements for lighting control
- THD <10%
- Lower installed costs; less wiring and equipment required



GE dimming ballasts help you save as much as 30% on energy bills.

GE Light Level Switching for ultimate control.

APPLICATION AND OPERATING INFORMATION

SAFETY

Dimming ballasts follow the same guidelines as electronic ballasts in regard to the application and operating information. In addition to the section for electronic ballasts, the following applies specifically to dimming electronic ballasts. See pages 1-13 and 1-14 for electronic ballast application and operating information.

V5 dimming ballasts are controlled by using 10-0vDC. Care should be taken to ensure that the line voltage (AC) wires are not connected to the low voltage DC wires. Electronic dimming ballasts have a protection circuit that will sense if the ballast has been connected in this manner and not harm the ballast or the installer. If connected in this mode, the lamps will dim to the 30% level.

New Lamp Installation

When new lamps are installed, they must operate at a full bright level for a minimum of 100 hours prior to dimming. Failure to do this will effect lamp life and cause the lamps to not dim properly. Consult your lamp manufacturer for further lamp information.

Light Level Switching Installation Note

The two power leads for the light level switching ballasts must be connected to the same power circuit. The leads should connect to separate switches or relays for control of the light level switching operation. Connection of the input leads to separate power circuits can damage the ballasts and cause electrical system problem.

Note:
Do not connect any other ballast to the load side of the switches controlling the switched dimming ballast.

Compatible Dimming Controls

For a listing of compatible controls for the V5 dimming ballasts, please see page1-45 in this catalog.

Fusing

Class P ballasts do not require fusing. Fusing can be used when a single circuit has a large number of fixtures/ballasts. For a comprehensive list of appropriate fuses, contact your GE representative.

TYPICAL SPECIFICATIONS FOR DIMMING BALLASTS

Continuous Dimming & Light Level Switching

1. Ballasts shall operate from 60 Hz input source of 120, 277 Volts, and sustained variations of ±10% (Voltage & Frequency) with no damage to the ballasts.
2. Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 20 kHz.
3. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-1993.
4. Ballasts shall tolerate operation in ambient temperatures up to 105°F (40°C) without damage.
5. Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (Radiated).
6. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991.
7. Ballasts shall operate lamps with no visible flicker (<3% flicker index).
8. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage.
9. Ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type 1 Outdoor, and CSA certified where applicable.
10. Ballast shall have a Ballast Factor greater than .85 per ANSI C82.11-1993, in the 100% light position.
11. Input current Total Harmonic Distortion shall not exceed 10% for the primary lamp.
12. Ballasts shall have a Power Factor greater than .98 for primary lamp.
13. The ballasts shall not have any PCBs.
14. The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
15. Ballast shall be manufactured in an ISO 9001 Certified Facility.
16. Ballasts shall provide rapid starting sequence consistent with ANSI standard C82.11-1993.
17. GE model _____ (or approved equal).

Continuous Dimming: From 100% to 5% (V5 Ballast)

- Ballast 10-0 Volt (DC) control leads shall have safety/protection circuitry to protect the ballast against improper wiring of line voltage (AC) to control leads (DC).
- In the event of improper wiring, the ballast will operate with no harm to the ballast or user. The ballast will dim to a 30% light level.
- All lamps must remain on at low light levels (No Lamp Dropout).

Light Level Dimming: From 100% to 60% to 30% or 100% to 50% (S30/S50 Ballasts)

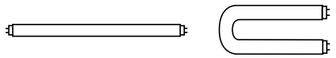
- Ballast(s) must be operable with two standard wall switches or relays.
- Both switches must be wired on same phase of circuit.
- Ballast(s) must be compatible with Power Line Carrier (PLC) Systems.
- Ballast must provide equal lamp current to each lamp at all settings.

CONTROLS CROSS REFERENCE

Company Name & Phone	Slide Dimmer or Modules	Photo Sensor 10-0 Volts
Electronics Diversified 800-547-2690 Prolight Dimming System	MX Dimming System Versa-Pak Dimming System	
Honeywell 800-345-6770 use with EL7305A1010	EL7315A1019 EL7315A1009	
Hunt Dimming 970-484-9048	PS-010-xxx	
Leviton 800-824-3005 DPSPE-212	Centura Illuma Tech IP7	Centura Photocell: 0DC0P
Lightolier Controls 800-526-2731 Vega Slider	Sunrise Slider Momentum Slider	
LEQ BC **Lithonia Controls** 800-533-2719 SQ1DC	LEQ LVBC SLD LVBC	LEQ DPC
Novitas 310-568-9600		01-PCx
PLC Multipoint 425-353-7552		EDSAB RCD
Prescolite Controls 800-DIMMERS PA7	Element EW-EF	
Sensor Switch 800-727-7483		CM-ALC
Thomas Industries 601-842-7212	DHC-LSD	
UNENCO 800-227-0452		Daylight Tracker DT-D
Watt Stopper 800-879-8585	LS-4 use with LCD-101 and LCD-103	LCD-1xx LS-xxx
Compatible Ballasts	B332SRxxxV5 (xxx = 120 or 277) B232SRxxxV5 (xxx = 120, 277 or 347) B132RxxxV5 (xxx = 120, 277 or 347	

Data Subject to Change Without Notice

DIMMING BALLASTS FOR (1) & (2) F25T8 LAMPS



GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F25T8 - One Lamp Applications														
80365	1	RS	120	B132R120S30 @ 100%	•	•	0.20	24	> .99	0.93	< 10	50/10	15	ST
				B132R120S30 @ 60%	•	•	0.16	19	> .99	0.62	< 10	50/10	15	ST
				B132R120S30 @ 30%	•	•	0.10	12	> .98	0.29	< 15	50/10	15	ST
80366			277	B132R277S30 @ 100%	•	•	0.10	27	> .98	0.91	< 10	50/10	15	ST
				B132R277S30 @ 60%	•	•	0.08	21	> .95	0.63	< 25	50/10	15	ST
				B132R277S30 @ 30%	•	•	0.06	13	> .90	0.28	< 25	50/10	15	ST
80359			120	B132R120S50 @ 100%	•	•	0.24	29	> .99	0.92	< 10	50/10	15	ST
				B132R120S50 @ 50%	•	•	0.13	16	> .98	0.46	< 10	50/10	15	ST
80360			277	B132R277S50 @ 100%	•	•	0.10	27	> .98	0.91	< 10	50/10	15	ST
				B132R277S50 @ 50%	•	•	0.06	17	> .95	0.47	< 20	50/10	15	ST
80353			120	B132R120V5 @ 100%	•	•	0.22	26	> .99	0.90	< 10	50/10	18	ST
				B132R120V5 @ 5%	•	•	0.06	7	> .90	0.05	< 15	50/10	18	ST
80354			277	B132R277V5 @ 100%	•	•	0.10	26	> .99	0.90	< 10	50/10	18	ST
				B132R277V5 @ 5%	•	•	0.03	7	> .90	0.05	< 20	50/10	18	ST
86446			347	B132R347V5 @ 100%	•	•	0.08	26	> .99	0.90	< 10	50/10	18	ST
				B132R347V5 @ 5%	•	•	0.02	7	> .90	0.05	< 30	50/10	18	ST
F25T8 - Two Lamp Applications														
80362	2	SER-RS	277	B232SR277S50 @ 100%	•	•	0.18	48	> .99	0.88	< 10	50/10	16	ST
				B232SR277S50 @ 50%	•	•	0.11	29	> .95	0.45	< 20	50/10	16	ST

DIMMING BALLASTS FOR (1) F32T8 LAMPS

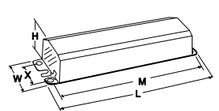
GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8 - One Lamp Applications														
80365	1	RS	120	B132R120S30 @ 100%	•	•	0.27	32	> .99	0.89	< 10	50/10	15	ST
				B132R120S30 @ 60%	•	•	0.19	23	> .99	0.60	< 10	50/10	15	ST
				B132R120S30 @ 30%	•	•	0.12	14	> .98	0.28	< 10	50/10	15	ST
80366			277	B132R277S30 @ 100%	•	•	0.13	33	> .99	0.89	< 10	50/10	15	ST
				B132R277S30 @ 60%	•	•	0.09	25	> .98	0.63	< 15	50/10	15	ST
				B132R277S30 @ 30%	•	•	0.06	15	> .95	0.28	< 20	50/10	15	ST
80359			120	B132R120S50 @ 100%	•	•	0.27	32	> .99	0.89	< 10	50/10	15	ST
				B132R120S50 @ 50%	•	•	0.16	19	> .98	0.44	< 10	50/10	15	ST
80360			277	B132R277S50 @ 100%	•	•	0.13	36	> .99	0.89	< 10	50/10	15	ST
				B132R277S50 @ 50%	•	•	0.07	19	> .95	0.45	< 20	50/10	15	ST
80353			120	B132R120V5 @ 100%	•	•	0.27	32	> .99	0.88	< 10	50/10	18	ST
				B132R120V5 @ 5%	•	•	0.07	8	> .90	0.05	< 10	50/10	18	ST
80354			277	B132R277V5 @ 100%	•	•	0.12	32	> .99	0.88	< 10	50/10	18	ST
				B132R277V5 @ 5%	•	•	0.03	8	> .90	0.05	< 15	50/10	18	ST
86446			347	B132R347V5 @ 100%	•	•	0.09	32	> .99	0.88	< 10	50/10	18	ST
				B132R347V5 @ 5%	•	•	0.02	8	> .90	0.05	< 20	50/10	18	ST

DIMENSIONS

IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start

STARTING METHOD LEGEND

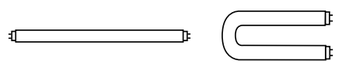
PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50”	2.40”	1.55”	8.89”	1.69”

DIMMING BALLASTS FOR (2), (3) & (4) F32T8 LAMPS



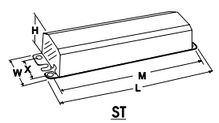
GE Product Code (C Pack)	Lamp Qty.	Lamp Starting Method	Line Volts	Catalog Number	Certification c UL us	Certification UL Type CC	Line Current (Amps)	Input Power (Watts)	Power Factor (PF)	Ballast Factor (BF)	THD %	Min. F/C Start Temp	Wiring Diag.	Dim.
F32T8 - Two Lamp Applications														
80367	2	SER-RS	120	B232SR120S30 @ 100%	•	•	0.52	62	> .99	0.88	< 10	50/10	16	ST
				B232SR120S30 @ 60%	•	•	0.38	45	> .95	0.58	< 10	50/10	16	ST
				B232SR120S30 @ 30%	•	•	0.24	28	> .95	0.27	< 10	50/10	16	ST
80368			277	B232SR277S30 @ 100%	•	•	0.23	62	> .99	0.88	< 10	50/10	16	ST
				B232SR277S30 @ 60%	•	•	0.17	45	> .95	0.58	< 10	50/10	16	ST
				B232SR277S30 @ 30%	•	•	0.11	28	> .95	0.27	< 10	50/10	16	ST
80361			120	B232SR120S50 @ 100%	•	•	0.52	62	> .99	0.88	< 10	50/10	16	ST
				B232SR120S50 @ 50%	•	•	0.31	37	> .95	0.48	< 10	50/10	16	ST
80362			277	B232SR277S50 @ 100%	•	•	0.23	62	> .99	0.88	< 10	50/10	16	ST
				B232SR277S50 @ 50%	•	•	0.14	37	> .95	0.48	< 10	50/10	16	ST
80355			120	B232SR120V5 @ 100%	•	•	0.52	62	> .99	0.88	< 10	50/10	19	ST
				B232SR120V5 @ 5%	•	•	0.12	13	> .90	0.05	< 10	50/10	19	ST
80356			277	B232SR277V5 @ 100%	•	•	0.23	62	> .99	0.88	< 10	50/10	19	ST
				B232SR277V5 @ 5%	•	•	0.05	13	> .90	0.05	< 15	50/10	19	ST
86448			347	B232SR347V5 @ 100%	•	•	0.18	62	> .99	0.88	< 10	50/10	19	ST
				B232SR347V5 @ 5%	•	•	0.04	13	> .90	0.05	< 15	50/10	19	ST
80362			277	B232SR277S50 @ 100%	•	•	0.23	62	>.99	0.88	<10	50/10	16	ST
				B232SR277S50 @ 50%	•	•	0.14	37	>.90	0.48	<10	50/10	19	ST
F32T8 - Three Lamp Applications														
80369	3	SER-RS	120	B332SR120S30 @ 100%	•	•	0.78	93	> .99	0.88	< 10	50/10	17	ST
				B332SR120S30 @ 60%	•	•	0.61	69	> .95	0.60	< 10	50/10	17	ST
				B332SR120S30 @ 30%	•	•	0.40	43	> .95	0.30	< 10	50/10	17	ST
80370			277	B332SR277S30 @ 100%	•	•	0.34	94	> .99	0.88	< 10	50/10	17	ST
				B332SR277S30 @ 60%	•	•	0.26	69	> .95	0.60	< 10	50/10	17	ST
				B332SR277S30 @ 30%	•	•	0.16	43	> .95	0.30	< 10	50/10	17	ST
80363			120	B332SR120S50 @ 100%	•	•	0.78	93	> .99	0.88	< 10	50/10	17	ST
				B332SR120S50 @ 50%	•	•	0.50	57	> .95	0.48	< 10	50/10	17	ST
80364			277	B332SR277S50 @ 100%	•	•	0.34	93	> .99	0.88	< 10	50/10	17	ST
				B332SR277S50 @ 50%	•	•	0.22	57	> .95	0.48	< 10	50/10	17	ST
80357			120	B332SR120V5 @ 100%	•	•	0.77	92	> .99	0.88	< 10	50/10	20	ST
				B332SR120V5 @ 5%	•	•	0.17	20	> .90	0.05	< 10	50/10	20	ST
80358			277	B332SR277V5 @ 100%	•	•	0.33	92	> .99	0.88	< 10	50/10	20	ST
				B332SR277V5 @ 5%	•	•	0.07	20	> .90	0.05	< 15	50/10	20	ST
F32T8 - Four Lamp Applications														
?????	4	SER-RS	277	B432SR277V5 @ 100%	•	•	0.42	112	> .99	0.88	< 10	50/10	26	-ZZ
				B432SR277V5 @ 5%	•	•	0.11	27	> .90	0.05	< 15	50/10	26	-ZZ

DIMENSIONS

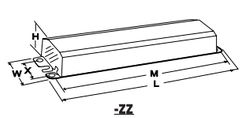
IS = Instant Start
PRS = Programmed Rapid Start
RS = Rapid Start

STARTING METHOD LEGEND

PAR-IS = Parallel Instant Start
PAR-PRS = Parallel Programmed Rapid Start
PAR-RS = Parallel Rapid Start
SER-RS = Series Rapid Start



ST



-ZZ

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
ST	9.50”	2.40”	1.55”	8.89”	1.69”
-ZZ	16.40”	2.40”	1.50”	15.88”	1.69”

DIMMING WIRING DIAGRAMS

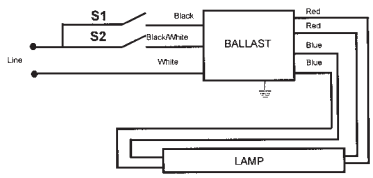


DIAGRAM 15

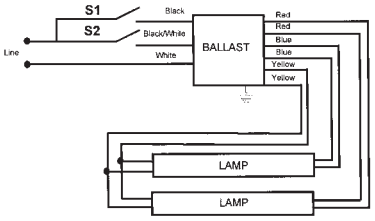


DIAGRAM 16

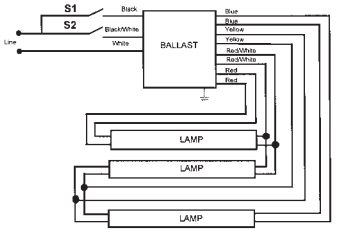


DIAGRAM 17

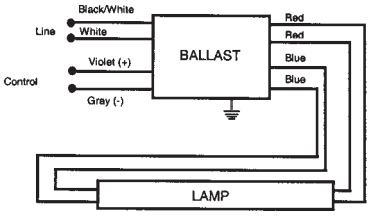


DIAGRAM 18

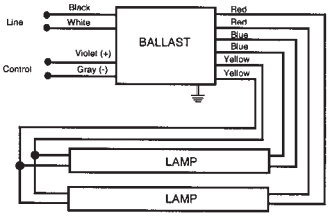


DIAGRAM 19

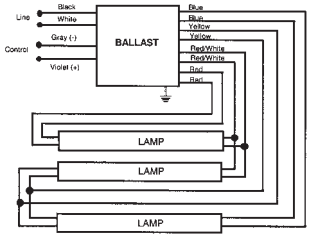
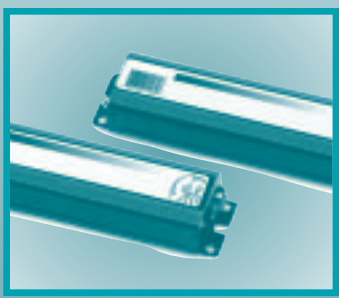


DIAGRAM 20

A WIDE PRODUCT LINE TO MEET ALL YOUR NEEDS

Our comprehensive line of magnetic ballasts offers outstanding performance and value. These energy-efficient ballasts are available for a wide variety of applications.

GE's full spectrum of solutions includes ballasts for T12/T10/T8 applications, plus Slimline, Circline, trigger-start and preheat ballasts. We also make rugged weatherproof ballasts...and models specifically engineered for the fast growing export market.



ELECTROMAGNETIC FLOURESCENT BALLASTS

GE has a comprehensive line of energy-efficient magnetic ballasts for T12, T10 and T8 applications.

PRODUCT OVERVIEW

Rapid Start Ballasts

These ballasts provide smooth starting to rapid start lamps – reaching full brightness in about two seconds without the use of starters. They have built-in filament windings that energize the low-voltage cathodes in rapid start lamps. Because electrodes are continuously heated, less voltage is required to strike an arc through a rapid start lamp than a slimline one.

Ballasts for T12/T10 Applications

GE offers a wide variety of T12 and T10 ballasts to operate 1-3 rapid start lamps. This lamp/ballast system provides smooth, virtually instant starting without the use of starters (30-and 40-watt T12 models and 40-watt T10 models are available). Models for U-lamp applications are also available. These "hybrid" type ballasts incorporate an electronic switch which disconnects power to the lamp cathodes after start-up, saving additional energy.

Slimline Ballasts

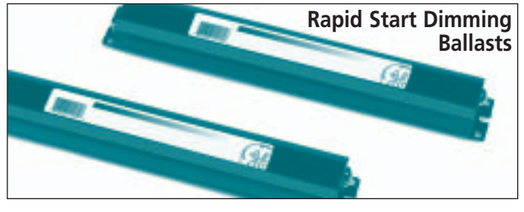
Our slimline models are designed for use with single-pin slimline lamps. They do not require the use of starters. These ballasts deliver a high-starting voltage to the lamps, enabling an arc to strike through the tube without preheating the lamp cathodes (which are specially constructed to withstand the shock).

Ballasts for T8 Applications

GE's T8 product offering includes models for F17, F25, F32 and F40 type T8 lamps. This product line features OcTek™ electromagnetic ballast models. These models are low initial cost energy efficient options for use with F32T8, 4-foot rapid start lamps. These models are available in several variations, including full, medium, low light output and hybrid versions (OkTek™ Plus). These models maximize energy savings and provide effective choices when retrofitting 4-foot T12 fixtures.

Rapid Start Dimming Ballasts

Light levels produced by fluorescent lamps can be adjusted by using rapid start dimming ballasts in conjunction with proper control devices. These ballasts are generally for one- and two-lamp operation of 40-watt rapid start lamps – and they may also be used with 30-watt rapid start lamps. However, 30-watt lamps and 40-watt lamps should not be mixed on the same dimming control. Different colors and brands of lamps, or different ballast brands, also should not be mixed on the same dimming control. All dimming ballasts are recommended for use with phase controlled-type dimming controls only and subject to the approval of the dimming control manufacturer.



PRODUCT OVERVIEW

Circline Ballasts

These products are available in 430 mA rapid start and preheat types, designed for use with circline lamps. The operating characteristics are the same for both circline and conventional lamps. All circline socket wires are fully sleeved.

Trigger-Start Ballasts

These ballasts are designed for use with general fluorescent lamps and do not require the use of starters. They contain preheat windings which allow regular lamp filaments to be heated in one second. However, they require a higher open-circuit voltage than rapid start ballasts.

Preheat Ballasts

These units are designed for use with general fluorescent lamps and require the use of starters. These ballasts deliver an open-circuit voltage high enough to activate the starter to preheat lamp filaments to a temperature approximately 1750°F. After a few seconds, the starter opens the filament circuit. This provides an additional power surge to enable an electric arc to strike through the lamp and ignite it. Lamp current is then limited by the ballast to an operating level proper for the lamp.

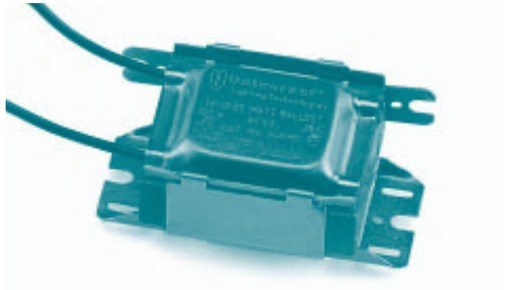
Weatherproof Ballasts

Ballasts designated as "weatherproof" are designed to withstand direct exposure to rain and snow and are Underwriters Laboratories, Inc.–approved for this purpose. The weatherproof ballasts listed within the catalog are enclosed in a round extruded aluminum can with the cover sealed be a double-rolled seam. It is supplied with a detached aluminum mounting bracket containing four keyholes and a stainless steel band with a threaded fastener. The mounting bracket can be located at any point on the cylinder portion of the ballast. There is no junction box supplied with the ballast. A standard 3/4", 14 N.P. thread nipple is provided at one end of the ballast to allow for the selection of a weathertight junction box most applicable to the particular needs and local electrical code requirements.

Export (50/60 Hz) Ballasts

Our export product offering consists of a variety of one- and two-lamp models for rapid start, preheat, high output, slimline, and 1500 mA lamps. Included in this product line are ballasts for 50 and 60 Hz applications, including 110, 120, 127, 220, 230, 240, and 277 Volts. Many of these models are available with resetting thermal protection.

Preheat Ballast



Export (50/60 Hz) Ballast

ELECROMAGNETIC
FLUORESCENT BALLASTS

APPLICATION AND OPERATING INFORMATION

SAFETY

NEC & UL Requirements

Ballast installation presents the possibility of exposure to potentially hazardous voltages and should be performed only by qualified personnel. **All installation, inspection, and maintenance should be performed only with power to the fixture turned off.** Additionally, all fixtures and ballasts must be installed and operated in compliance with the National Electrical Code, Underwriters Laboratories Inc. (UL) requirements, and all local applicable codes and regulations.

Polarity

Polarity refers to the proper connection of ballast lead wires to line wires. To aid you in making a correct installation, GE ballast leads are color-coded for easy identification. The WHITE ballast lead is to be connected to the neutral (grounded) and the BLACK (or black with white tracer) lead always to the phase ("hot") line wire. Systems where neither of the line wires are at ground potential require specially designed ballasts. A change in polarity may result in the voltage from the lead to the ground exceeding UL-specified limits. In some types of ballasts, a change in polarity may decrease voltage from the lead to the ground, thereby impeding the starting dependability of the ballast.

Grounding

Ballast cases and fixtures must always be grounded. The ballast case may be grounded to the fixture or otherwise grounded. It could be hazardous to make contact with an ungrounded fixture or ballast when in operation. Neglecting to properly ground the ballast and fixture combination may also result in failure of certain lamps to start or for unacceptable levels of electromagnetic noise to be conducted onto the power lines.

Operating Line Voltage Limits

To receive the full benefits of rated lamp output and to prolong ballast life, it is essential that voltage supplied to an installation be maintained within limits prescribed for each circuit. These limits are listed in the next column.

	VOLTAGE RANGE	
Nominal Voltage	**Minimum**	**Maximum**
120	110	125
220	205	232
240	220	250
277	255	290
347	315	364
480	450	505
600	570	630

Subjecting a ballast to excessive voltage for an extended period results in the deterioration of the insulation. This insulation breakdown will cause early ballast failure.

Low voltage has no damaging effect on the ballast. However, lamps may not start reliably, and early lamp failure could result.

Internal Ballast Protection

Class P Classification – Since January 1, 1984, the National Electrical Code requires that "where Fluorescent fixtures are installed indoors, the ballast shall have thermal protection integral within the ballast except for simple reactance ballasts." This ruling applies to replacement ballasts as well as to those contained within new light fixtures.

In compliance with the National Electrical Code, UL has established a Class P ballast classification for fluorescent light fixtures indoors. A Class P ballast must employ internal thermal protection limiting its operating temperature.

GE UL-approved Class P ballasts comply with the National Electrical Code requirement and are equipped with an automatic resetting thermal protector, built-in and adjacent to the transformer coils. The resetting thermal protector functions as a thermostat, which will open and temporarily deactivate the ballast when it exceeds the permissible temperature. It will reset when the ballast cools to a safe operating temperature. The ballast will continue to cycle until the cause of overheating is eliminated. If the ballast is defective, it must be replaced. If the cause is external, a Class P ballast will resume normal operation after abnormal conditions are eliminated.

Fusing

Class P ballasts do not require fusing. Fusing can be used when a single circuit has a large number of fixtures/ballasts. For more information, contact your GE Lighting representative or visit www.gelighting.com.

APPLICATION AND OPERATING INFORMATION

APPLICATION AND OPERATING INFORMATION

PERFORMANCE

Lamp Connections

Electromagnetic fluorescent ballasts are designed to generate voltages in excess of 300 Volts. It is imperative that proper connection to good quality sockets be assured in accordance with wiring diagrams throughout this catalog and on product labels. Some applications may not require the use of all of the ballast output leads. If any leads are not to be connected, each should be individually capped and insulated to at least 600 Volts.

Application Versatility

Many GE models are designed to allow for applications with different types or quantities of lamps. Use of products other than noted is not covered by UL Listing and/or CSA certification and cannot be warranted.

Audible Noise (Sound)

Electrical equipment, including most fluorescent lamp ballasts, produces some noise. Care must be taken to select a ballast with the proper sound rating for a particular lighting installation. Ballast sound will be noticeable only when it exceeds the ambient sound level.

Although no industry standards currently exist, the generally accepted criteria for sound rating specifications are as follows:

Location	Average Ambient Noise	Ballast Recommendation
Typical Office	< 30 decibels	A
Noisy Office or Retail	31-36 decibels	B
Factory, Outdoor	> 36 decibels	C

Remote Mounting

Excessive hot or cold temperatures, audible noise requirements, or a desire to operate lamps in more than one fixture with the same ballast (master/slave), may make it desirable to mount the ballast remotely. Care must be taken to allow for ballast heat dissipation and proper grounding.

In any application, the wire used to extend leads must be at least as large as the wire supplied on the ballast (18 AWG) with an insulation rating of 1000 VAC at 90°C. Lead lengths in excess of those noted cause loading effects that can dramatically impact ballast performance and void the warranty.

Electromagnetic and hybrid ballasts may be remote mounted according to the table below:

Wire size	30-40 Watt Rapid Start		800 mA - HO 1500 mA - VHO		Instant Start (Slimline)
	Red/Blue Leads	Yellow Leads	Red/Blue Leads	Yellow Leads	All Leads
#6	544'	384'	272'	192'	544'
#8	340'	240'	170'	120'	340'
#10	214'	150'	107'	75'	214'
#12	134'	94'	67'	47'	134'
#14	84'	60'	42'	30'	84'
#16	52'	36'	26'	18'	52'
#18	30'	20'	21'	15'	30'

Operating Temperature

Most fluorescent ballasts and lamps are designed to provide optimum performance at an ambient temperature of 77°F. Three key performance attributes can be impacted by the ambient (room) temperature of the installation:

- **Lamp Starting Dependability**
  Fluorescent lamps are inherently more difficult to start at low temperatures. All ballasts have limitations as to their ability to start lamps at low ambient temperatures. In this catalog, the low starting point for each lamp/ballast combination appears in the column marked "Minimum Starting Temperature."
- **Light Output**
  Optimum light output from fluorescent lamps is achieved when the lamp wall is at 100-110°F. Any substantial excursion (either colder or warmer) will result in a reduction in light output.
- **Ballast Life**
  A fluorescent lamp ballast, like any other electrical device, generates heat during its normal operation. Ballast temperatures should be kept as low as possible. Maximum dissipation of heat through fixture design and proper ballast installation will help. Although excessive temperature may not cause the ballast to fail immediately, it can shorten ballast life. To assure maximum life, the ballast case temperature should not exceed 90°C.

ELECROMAGNETIC
FLUORESCENT BALLASTS

APPLICATION AND OPERATING INFORMATION

Operating Temperature, continued

Causes of ballast overheating:
- Incorrect primary voltage or frequency
- Incorrect size, type or number of lamps
- Failed lamp starter
- Incorrect wiring
- Poor heat dissipation due to surrounding insulation
- Sealed (Vapor Tight) Fixtures - Unusual heat build-up due to lack of ventilation in fixtures may cause thermal (on/off) cycling of certain ballasts. Consult GE for specific recommendations.

Recommendations:
- Selection of a proper ballast to match the requirements of the lamp, fixture, voltage and installation
- Mounting of ballast within the fixture with as much surface contact as possible between the ballast and metal portions of the fixture.
- The use of heat-conducting dissipators (radiators), if necessary, which increases surface contact between the ballast and fixture.
- If necessary, locate the ballast in a remote, cooler area outside the fixture.
- Planned lamp maintenance – the organized replacement of failed and failing lamps, particularly with preheat or slimline systems.
- Use of special LOW HEAT (-LH) rise, VERY LOW HEAT (-VLH) rise, and SUPER LOW HEAT (-SLH) rise ballasts where available and necessary.

LOW-LEAKAGE CURRENT TO GROUND BALLASTS

Many one- and two-lamp, 30- and 40-watt high power rapid start ballasts, and two- and three-lamp 20-watt trigger start ballasts, meet requirements for "low-leakage-current-to-ground." Those most frequently used in low-leakage applications are listed in the next column.

Lamps	Line Voltage @60Hz	Maximum Leakage To Ground	GE Product Code	Catalog Number
(2)F30T12/RS	120	20uA	86251	573-L-TC-P-IP
(1)F40T12/RS	120	30uA	86101	412-L-SLH-TC-P-IP
(2)F40T12/RS	120	30uA	86137	446-L-SLH-TC-P
(1)F40T12/RS	277	50uA	96158	458-L-SLH-TC-P-IP
(2)F40T12/RS	277	50uA	86123	443-L-SLH-TC-P

Other ballasts can also be manufactured to meet low-leakage requirements. Consult GE for complete information regarding low-leakage ballasts.

TYPE 1 BALLASTS

All GE outdoor non-weatherproof magnetic ballasts (except those for sign applications) are designed to meet UL requirements for Type 1 use (metal enclosure required for wet or damp locations).

BALLASTS FOR GERMICIDAL LAMPS

GE manufactures ballasts to operate germicidal lamps. When ordering, make sure the ANSI designation of the germicidal lamp matches exactly with the ballast's recommended application. Several typically encountered germicidal lamps are listed below along with the proper GE ballast for their operation.

Contact GE Lighting for additional information or applications not listed.

Germicidal Lamp	GE Ballast	See Page Number
(1)G15T8	200-H2	2-19 - 2-20

All high power factor ballasts are equipped with capacitators. Oil-filled capacitators contain non-resetting internal protection and are manufactured without PCBs.

SPECIFICATIONS

TYPICAL SPECIFICATIONS FOR ELECTROMAGNETIC BALLASTS

1. Ballasts shall be certified energy saving magnetic type and operate lamps at a frequency of 60 Hz.
2. Ballasts shall be specifically designed to operate (Quantity & Type) lamps.
3. Ballasts shall operate from 60 Hz input source of _____ Volts*, and tolerate sustained variations of +5%-10% with no damage to the ballasts.
4. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991, Location Category A1.
5. Ballasts shall provide starting sequence consistent with ANSI standard C82.1.
6. Ballasts shall tolerate sustained open circuit and short circuit output conditions with no damage to the ballasts.
7. Ballasts shall be:
   - UL LISTED as Class P and for use in indoor or Type 1 outdoor applications.
   - CSA CERTIFIED where applicable (120 and 347 Volt models).
8. Ballasts shall tolerate operation, in most fixtures, at ambient temperatures up to 105°F (40°C). Ballast enclosure is limited to 90°C maximum temperature.
9. Ballasts shall have a Power Factor greater than .90.
10. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturers recommendation and ANSI C82.11-1993.
    - 1.85 or less for instant start Slimline (also per ANSI C82.1).
11. Ballasts shall have a Ballast Factor greater than .925 per ANSI C82.11-1993.
    - .95 or greater for HO and VHO applications.
12. Input current Total Harmonic Distortion shall not exceed .32 per ANSI C82.1.
13. Ballasts shall be fully encapsulated (potted) to ensure maximum thermal and structural integrity.
14. Manufacturer shall provide written warranty against defects in material or workmanship.
15. Manufacturer shall have been manufacturing electromagnetic ballasts for at least twenty years.
16. Ballast shall be manufactured in North America
17. GE model*_____(or approved equal).

LEAD LENGTHS

GE Product Code	Catalog Number	Black			Black/White			White			Red			Blue			Yellow			Blue/White			Brown		
		Quantity	Exit	Length	Quantity	Exit	Length	Quantity	Exit	Length	Quantity	Exit	Length	Quantity	Exit	Length	Quantity	Exit	Length	Quantity	Exit	Length	Quantity	Exit	Length
86071	200-C-S-P-IP	1	R	13				2	R	13	1	R	27	1	R	27	1	R	27						
86073	200-H2-IP	2		8-15																					
86078	202-B-TC-P-IP	1	L	8				1	L	27				1	R	26									
86080	202-SB-TC-IP	1		12				2		32-12	1		26	1		26	1		32						
86085	213-TC-P-IP	1	L	41				1	L	41	1	R	23	1	R	23									
86105	413-C-TC-P-IP	1	L	9				1	L	29	2	R	30	1	L	29									
86110	420-L-TC-P-IP	1	L	20				1	L	20	2	R	24	2	R	24	2	L	36						
86123	443-L-SLH-TC-P	1	L	22				1	L	22	2	R	26	2	R	26	2	L	36						
86132	445-RS-WS-TC-P-IP	1	L	10				2	L/R	10	2	R	9	1	R	9									
86137	446-L-SLH-TC-P	1	L	22				1	L	22	2	R	26	2	R	26	2	L	36						
86144	447-LR-TC-P-IP	1	L	10				1	L	10	2	R	13	2	R	13	2	L	18						
86158	458-L-SLH-TC-P-IP				1	L	25	1	L	25	2	L	37	2	R	27				2	R	27			
86164	480-SLH-TC-P-IP	1	L	18				1	L	18	2	R	46	2	R	46	2	L	65						
86167	480-XLH-TC-P-IP	1	L	18				1	L	18	2	R	46	2	R	46	2	L	65						
86171	487-SLH-TC-P-IP	1	L	18				1	L	18	2	R	46	2	R	46	2	L	65						
86173	487-XLH-TC-P-IP	1	L	18				1	L	18	2	R	46	2	R	46	2	L	65						
86176	490-XLH-TC-P-IP	1	L	18				1	L	18	2	R	33	2	R	33	2	L	51						
86185	502-A-TC-P-IP	1	L	20				1	L	38	2	R	26	1	L	38	2	R	26	1	L	38	1	R	20
86206	532-BR-TC-P-IP	1	L	10				1	L	42	1	R	27	1	R	27							2	L	42
86208	537-L-TC-P-IP	1	L	20				1	L	20	2	R	24	2	R	24	2	L	36						
86222	546-B-TC-P-IP	1	L	10				1	L	17	2	R	12	1	L	17									
86227	547-RS-WS-TC-P-IP	1	L	10				2	L/R	10	2	R	9	1	R	9									
86231	548-H2-IP										2		9												
86240	554-L-TC-P-IP	1	L	10				1	L	10	2	R	13	2	R	13	2	L	16						
86243	562-L-TC-P-IP	1	L	10				1	L	10	2	L	10	2	R	10									
86245	564-L-TC-P-IP	1	L	10				1	L	10	2	R	13	2	R	13	2	L	16						
86251	573-L-TC-P-IP	1	L	22				1	L	22	2	R	25	2	R	25	2	L	26						
86253	588-L-TC-P-IP	1	L	22				1	L	22	2	R	25	2	R	25	2	L	26						
86264	627-LH-TC-P-IP	1	L	18				1	L	18	2	R	20	2	R	20	2	L	32						
86287	697-L-TC-P-IP	1	L	20				1	L	20	2	L	26	2	R	26				2	R	23			
86341	754-L-TC-P-IP	1	L	22				1	L	22	2	R	26	2	R	26	2	L	36						
86351	798-XLH-TC-P-IP	1	L	18				1		18	2		33	2		33	2		51						
86359	806-SLH-TC-P	1	L	68				1	L	68	1	R	44	1	R	44									
86372	822-BR-TC-P-IP				1	L	8	1	L	68	1	R	44												
86378	827-SLH-TC-P	1	L	68				1	L	68	1	R	44	1	R	45							2	L	61.5
86381	828-BR-TC-P-IP				1		8	1	L	68	1	R	44												
86396	881-BR-TC-P-IP	1	L	68				1	L	68	1	R	44	1	R	44									
86402	930-K-TC-P-IP	1	L	18				1	L	18	2	R	46	2	R	46	2	L	65						
86411	937-K-TC-P-IP	1	L	18				1	L	18	2	R	46	2	R	46	2	L	65						
86430	957-S-TC-P-IP	1	L	10				1	L	10	2	R	49	2	L	52									
86432	960-VLH-TC-P-IP	1	L	20				1	L	20	2	R	38	2	R	38	2	L	47						

Lead Quantities (per color)
Exits (L=Left, R=Right, B=Bottom)
Lengths (in inches, +/- 1")

F30T12 AND F30T12/WM LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F30T12 - High Power Factor															
86287	1	Rapid	277	697-L-TC-P-IP	• •	.16	44	.98	2.23	< 1.7	< 20	50/10	A	42	D2
86251	2	Rapid	120	573-L-TC-P-IP	• •	.66	79	.95	1.21	< 1.7	< 20	50/10	A	1	D2
86253	2	Rapid	277	588-L-TC-P-IP	• •	.29	79	.96	1.21	< 1.7	< 20	50/10	A	1	D2
F30T12 - Normal Power Factor															
86105	1	Rapid	120	413-C-TC-P-IP	• • •	.63	37	.72	1.95	< 1.7	< 10	50/10	A	8	D1
F30T12/WM - High Power Factor															
86251	2	Rapid	120	573-L-TC-P-IP	• •	.57	67	.89	1.33	< 1.9	< 20	60/15	A	1	D2
86253	2	Rapid	277	588-L-TC-P-IP	• •	.26	70	.92	1.31	< 1.9	< 20	60/15	A	1	D2

F40T12 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T12 - High Power Factor															
86101	1	Rapid	120	412-L-SLH-TC-P-IP★	• • • • •	.45	52	.95	1.83	< 1.7	< 20	50/10	A	42	D2
86158	1	Rapid	277	458-L-SLH-TC-P-IP★	• • • • •	.19	51	.95	1.86	< 1.7	< 20	50/10	A	42	D2
86110	2	Hybrid	120	420-L-TC-P-IP♦	• • • •	.62	72	.85	1.18	< 1.7	< 20	50/10	A	1	D2
86137	2	Rapid	120	446-L-SLH-TC-P	• • • • •	.75	89	.94	1.06	< 1.7	< 20	50/10	A	1	D2
86208	2	Hybrid	277	537-L-TC-P-IP♦	• • • •	.31	82	.94	1.15	< 1.7	< 20	50/10	A	1	D2
86123	2	Rapid	277	443-L-SLH-TC-P	• • • • •	.34	90	.95	1.06	< 1.7	< 20	50/10	A	1	D2
F40T12- Normal Power Factor															
86105	1	Rapid	120	413-C-TC-P-IP❊	• • •	.53	36	.61	1.69	< 1.7	< 20	50/10	A	8	D1

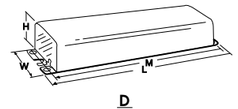
★ Not for use with "U" lamps
♦ Not for use with Energy Saver "U" lamps
❊ For Residential Use Only

F40T12/WM LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T12/WM - High Power Factor															
86101	1	Rapid	120	412-L-SLH-TC-P-IP★	• • • • •	.38	44	.88	2.00	< 1.9	< 20	60/15	A	42	D2
86158	1	Rapid	277	458-L-SLH-TC-P-IP★	• • • • •	.17	44	.88	2.00	< 1.85	< 20	60/15	A	42	D2
86110	2	Hybrid	120	420-L-TC-P-IP♦	• • • •	.50	59	.80	1.36	< 1.9	< 20	60/15	A	1	D2
86137	2	Rapid	120	446-L-SLH-TC-P	• • • • •	.65	74	.90	1.22	< 1.9	< 20	60/15	A	1	D2
86123	2	Rapid	277	443-L-SLH-TC-P	• • • • •	.28	74	.90	1.22	< 1.9	< 20	60/15	A	1	D2
86208	2	Hybrid	277	537-L-TC-P-IP♦	• • • •	.26	70	.91	1.30	< 1.9	< 20	60/15	A	1	D2
F40T12/WM - Normal Power Factor															
86105	1	Rapid	120	413-C-TC-P-IP❊	• • •	.61	33	.68	2.06	< 1.9	< 20	60/15	A	8	D1

★ Not for use with "U" lamps
♦ Not for use with Energy Saver "U" lamps
❊ For Residential Use Only

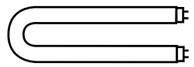
DIMENSIONS



D

Overall Dimensions		Mounting Dimensions			
Draw #	L	W	H	M	X
D1	6 7/16	1 7/8	1 1/2	6	-
D2	9 1/2	2 3/8	1 1/2	8 57/64	1 11/16

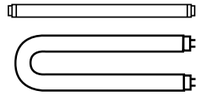
F40T12/U LAMPS



GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T12/U - High Power Factor															
86110	2	Hybrid	120	420-L-TC-P-IP♦	• • • •	.64	74	.83	1.12	< 1.7	< 32	50/10	A	1	D2
86137	2	Rapid	120	446-L-SLH-TC-P	• • • • •	.76	90	.93	1.03	< 1.7	< 20	50/10	A	1	D2
86208	2	Hybrid	277	537-L-TC-P-IP♦	• • • •	.32	87	.94	1.08	< 1.7	< 20	50/10	A	1	D2
86123	2	Rapid	277	443-L-SLH-TC-P	• • • • •	.34	92	.95	1.03	< 1.7	< 20	50/10	A	1	D2

♦ Not for use with Energy Saver "U" lamps

FOR F40T12/WM/U, F48" 25W/UTLS AND WORKLITE 25 LAMPS

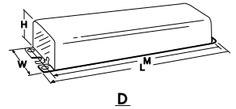


GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T12/WM/U - High Power Factor															
86137	2	Rapid	120	446-L-SLH-TC-P	• • • • •	.65	74	.90	1.22	< 1.9	< 20	60/15	A	1	D2
86123	2	Rapid	277	443-L-SLH-TC-P	• • • • •	.28	74	.90	1.22	< 1.9	< 20	60/15	A	1	D2
F48"25W/UTLS & WORKLITE - Normal Power Factor															
86105	1	Rapid	120	413-C-TC-P-IP❊	• • •	.51	32	.90	2.79	< 1.7	< 20	50/10	A	8	D1

❊ For Residential Use Only

SEE WIRING DIAGRAMS Pages 2-23 and 2-24

DIMENSIONS



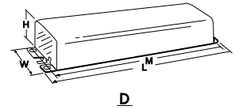
D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D1	6 7/16	1 7/8	1 1/2	6	-
D2	9 1/2	2 3/8	1 1/2	8 57/64	1 11/16

FOR F40T10 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T10 - High Power Factor															
86101	1	Rapid	120	412-L-SLH-TC-P-IP	• • • • •	.45	52	.90	1.73	< 1.7	< 20	50/10	A	42	D2
86158	1	Rapid	277	458-L-SLH-TC-P-IP	• • • • •	.19	51	.90	1.76	< 1.7	< 20	50/10	A	42	D2
86110	2	Hybrid	120	420-L-TC-P-IP	• • • •	.65	74	.85	1.15	< 1.7	< 32	50/10	A	1	D2
86137	2	Rapid	120	446-L-SLH-TC-P	• • • • •	.76	90	.95	1.06	< 1.7	< 20	50/10	A	1	D2
86123	2	Rapid	277	443-L-SLH-TC-P	• • • • •	.33	90	.95	1.06	< 1.7	< 20	50/10	A	1	D2
86208	2	Hybrid	277	537-L-TC-P-IP	• • • •	.32	85	.95	1.12	< 1.7	< 20	50/10	A	1	D2

DIMENSIONS



D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D2	9 1/2	2 3/8	1 1/2	8 57/64	1 11/16

FOR F24, F30, F36 AND F42T12HO LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	Certification UL	Certification CSA	Certification NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F24T12HO - High Power Factor																		
86174	2	Rapid	120	490-XLH-TC-P	•	•			.95	103	.81	0.79	< 2.0	> 32	-20/-29	B	1	D7
86264	2	Rapid	277	627-LH-TC-P-IP	•	•			.40	103	.94	0.91	< 1.9	< 32	50/10	B	1	D6
F36T12HO - High Power Factor																		
86174	2	Rapid	120	490-XLH-TC-P	•	•			1.06	121	.84	0.69	< 2.0	< 32	50/10	B	1	D7
86264	2	Rapid	277	627-LH-TC-P-IP	•	•			.48	128	.98	0.77	< 1.7	< 20	50/10	B	1	D6
F42T12HO - High Power Factor																		
86174	2	Rapid	120	490-XLH-TC-P	•	•			1.12	130	.86	0.66	< 2.0	< 32	50/10	B	1	D7
86264	2	Rapid	120	627-LH-TC-P-IP	•	•			.51	139	.98	0.71	< 1.7	< 20	50/10	B	1	D6

FOR F48T12HO LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	Certification UL	Certification CSA	Certification NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F48T12HO - High Power Factor																		
86174	1	Rapid	120	490-XLH-TC-P▼	•	•			.82	82	.81	0.99	< 2.0	> 32	-20/-29	B	15	D7
86174	2	Rapid	120	490-XLH-TC-P	•	•			1.18	139	.87	0.63	< 2.0	< 20	-20/-29	B	1	D7
86264	2	Rapid	277	627-LH-TC-P-IP	•	•			.55	150	.99	0.66	< 1.7	< 20	50/10	B	1	D6

▼ Power Factor Corrected to >70%

FOR F48T12HO/WM AND F60T12HO LAMPS

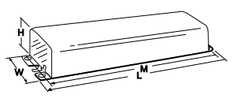
GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	Certification UL	Certification CSA	Certification NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F48T12HO/WM - High Power Factor																		
86174	1	Rapid	120	490-XLH-TC-P▼	•	•			.80	76	.78	1.03	< 2.0	> 32	60/15	B	15	D7
86174	2	Rapid	120	490-XLH-TC-P	•	•			1.07	124	.83	0.67	< 2.0	< 32	60/15	B	1	D7
86264	2	Rapid	277	627-LH-TC-P-IP	•	•			.49	131	.92	0.70	< 1.9	< 20	60/15	B	1	D6
F60T12HO - High Power Factor																		
86174	1	Rapid	120	490-XLH-TC-P	•	•			.92	99	.83	0.84	< 2.0	> 32	-20/-29	B	15	D7
86174	2	Rapid	120	490-XLH-TC-P	•	•			1.42	169	.89	0.53	< 2.0	< 20	-20/-29	B	1	D7

▼ Power Factor Corrected to >70%

FOR F60 AND F64T12HO LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	Certification UL	Certification CSA	Certification NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F64T12HO - High Power Factor																		
86174	1	Rapid	120	490-XLH-TC-P	•	•			.93	101	.84	0.83	< 1.9	> 32	-20/-29	B	15	D7
86174	2	Rapid	120	490-XLH-TC-P	•	•			1.50	178	.89	0.50	< 1.9	< 20	-20/-29	B	1	D7

DIMENSIONS



D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D6	11 3/4	3 1/8	1 25/32	11 9/64	2
D7	11 3/4	3 3/16	2 5/8	11 9/64	2

FOR F72T12HO LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	Certification UL	Certification CSA	Certification NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F72T12HO - High Power Factor																		
86174	1	Rapid	120	490-XLH-TC-P		•	•		.95	107	.86	0.80	< 2.0	> 32	-20/-29	B	15	D7
86164	2	Rapid	120	480-SLH-TC-P-IP	•	•	•	•	1.69	196	.97	0.49	< 1.9	< 20	-20/-29	B	1	D7
86167	2	Rapid	120	480-XLH-TC-P-IP		•	•		1.69	196	.97	0.49	< 1.9	< 20	-20/-29	B	1	D7
86174	2	Rapid	120	490-XLH-TC-P		•	•		1.50	177	.92	0.52	< 1.7	< 10	-20/-29	B	1	D7
86171	2	Rapid	277	487-SLH-TC-P-IP	•	•	•	•	.74	197	.96	0.48	< 1.7	< 20	-20/-29	B	1	D7
86173	2	Rapid	277	487-XLH-TC-P-IP		•	•		.78	208	.95	0.46	< 1.7	< 20	-20/-29	B	1	D7

❖ Power Factor Corrected to >85%

FOR F72T12HO LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	Certification UL	Certification CSA	Certification NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F72T12HO - High Power Factor - Tanning																		
86351	2	Rapid	120	798-XLH-TC-P-IP		•	•		1.89	224	1.06	0.47	< 1.7	< 20	50/10	B	1	D7

FOR F84T12HO LAMPS

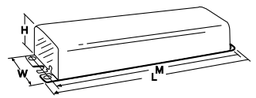
GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	Certification UL	Certification CSA	Certification NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F84T12HO - High Power Factor																		
86164	2	Rapid	120	480-SLH-TC-P-IP	•	•	•	•	1.87	220	.93	0.42	< 1.9	< 20	-20/-29	B	1	D7
86167	2	Rapid	120	480-XLH-TC-P-IP		•	•		1.98	235	.93	0.40	< 1.9	< 20	-20/-29	B	1	D7
86171	2	Rapid	277	487-SLH-TC-P-IP	•	•	•	•	.87	235	.97	0.41	< 1.9	< 20	-20/-29	B	1	D7
86173	2	Rapid	277	487-XLH-TC-P-IP		•	•		.89	244	.95	0.39	< 1.9	< 20	-20/-29	B	1	D7

FOR F96T12HO AND F96T12HO/WM LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	Certification UL	Certification CSA	Certification NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F96T12HO - High Power Factor																		
86174	1	Rapid	120	490-XLH-TC-P		•	•		1.10	124	.85	0.65	< 2.0	< 20	-20/-29	B	15	D7
86164	2	Rapid	120	480-SLH-TC-P-IP	•	•	•	•	1.99	237	.96	0.41	< 1.7	< 10	-20/-29	B	1	D7
86167	2	Rapid	120	480-XLH-TC-P-IP		•	•		2.15	250	.96	0.39	< 1.7	< 10	-20/-29	B	1	D7
86171	2	Rapid	277	487-SLH-TC-P-IP	•	•	•	•	.87	237	.95	0.40	< 1.7	< 10	-20/-29	B	1	D7
86173	2	Rapid	277	487-XLH-TC-P-IP		•	•		.95	261	.97	0.37	< 1.7	< 10	-20/-29	B	1	D7
F96T12HO/WM - High Power Factor																		
86174	1	Rapid	120	490-XLH-TC-P		•	•		.94	106	.81	0.76	< 2.0	< 32	60/15	B	15	D7
86164	2	Rapid	120	480-SLH-TC-P-IP	•	•	•	•	1.72	202	.89	0.44	< 1.9	< 20	60/15	B	1	D7
86167	2	Rapid	120	480-XLH-TC-P-IP		•	•		1.80	209	.89	0.43	< 1.9	< 20	60/15	B	1	D7
86171	2	Rapid	277	487-SLH-TC-P-IP	•	•	•	•	.75	205	.91	0.44	< 1.9	< 20	60/15	B	1	D7
86173	2	Rapid	277	487-XLH-TC-P-IP		•	•		.83	223	.92	0.41	< 1.9	< 20	60/15	B	1	D7

See product overview pages for electromagnetic fluorescent ballasts for additional information on weatherproof applications.

DIMENSIONS



D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D7	11 3/4	3 3/16	2 5/8	11 9/64	2

FOR F48PG17 AND F48T12VHO LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F48PG17 - High Power Factor															
86432	2	Rapid	120	960-VLH-TC-P-IP①	• •	1.60	175	.70	0.40	< 2.0	< 32	-20/-29	C	1	D8
F48T12VHO - High Power Factor															
86432	2	Rapid	120	960-VLH-TC-P-IP①	• •	1.62	185	.72	0.39	< 2.0	< 32	-20/-29	C	1	D8

① May be used with equivalent T10 or T10J lamps.

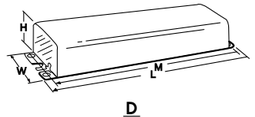
FOR F72PG17 AND F72T12VHO LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F72PG17 - High Power Factor															
86430	1	Rapid	277	957-S-TC-P-IP▼	• •	.76	157	.77	0.49	< 1.9	> 32	-20/-29	C	12	D8
86402	2	Rapid	120	930-K-TC-P-IP❷	• •	3.05	360	.95	0.26	< 1.7	< 20	-20/-29	D	1	D8
86432	2	Rapid	120	960-VLH-TC-P-IP①	• •	2.01	239	.72	0.30	< 1.9	< 20	-20/-29	C	1	D8
86411	2	Rapid	277	937-K-TC-P-IP❷	• •	1.26	341	.92	0.27	< 1.7	< 20	-20/-29	D	1	D8
F72T12VHO - High Power Factor															
86430	1	Rapid	277	957-S-TC-P-IP▼	• •	.75	161	.79	0.49	< 1.9	> 32	-20/-29	C	12	D8
86402	2	Rapid	120	930-K-TC-P-IP❷	• •	3.05	360	.95	0.26	< 1.7	< 20	-20/-29	D	1	D8
86432	2	Rapid	120	960-VLH-TC-P-IP①	• •	2.08	248	.79	0.32	< 1.9	< 20	-20/-29	C	1	D8
86411	2	Rapid	277	937-K-TC-P-IP❷	• •	1.26	341	.91	0.27	< 1.7	< 20	-20/-29	D	1	D8

▼ Power Factor Corrected to >70%
❷ Cannot be used with T10 or T10J lamps
① May be used with equivalent T10 or T10J lamps

See product overview pages for electromagnetic fluorescent ballasts for additional information on weatherproof applications.

DIMENSIONS



D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D8	14 5/16	3 3/16	2 5/8	13 3/4	2

FOR F96PG17 AND F96PG17/WM LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F96PG17 - High Power Factor															
86430	1	Rapid	277	957-S-TC-P-IP	• •	.83	192	.79	0.41	< 1.9	< 32	-20/-29	C	12	D8
86402	2	Rapid	120	930-K-TC-P-IP❷	• •	3.83	446	.98	0.22	< 1.7	< 20	-20/-29	D	1	D8
86411	2	Rapid	277	937-K-TC-P-IP❷	• •	1.61	429	.95	0.22	< 1.7	< 20	-20/-29	D	1	D8
F96PG17/WM - High Power Factor															
86430	1	Rapid	277	957-S-TC-P-IP	• •	.79	175	.76	0.43	< 1.9	< 32	60/15	C	12	D8

❷ Cannot be used with T10 or T10J lamps

FOR F96T12VHO AND F96T12VHO/WM LAMPS

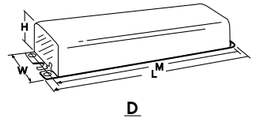
GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F96T12VHO - High Power Factor															
86430	1	Rapid	277	957-S-TC-P-IP▼	• •	.81	197	.78	0.40	< 1.9	< 32	-20/-29	C	12	D8
86402	2	Rapid	120	930-K-TC-P-IP❷	• •	4.10	482	.99	0.21	< 1.7	< 20	-20/-29	D	1	D8
86411	2	Rapid	277	937-K-TC-P-IP❷	• •	1.64	450	.95	0.21	< 1.7	< 20	-20/-29	D	1	D8
F96T12VHO/WM - High Power Factor															
86430	1	Rapid	277	957-S-TC-P-IP▼	• •	.79	183	.77	0.42	< 1.9	< 32	60/15	C	12	D8

▼ Power Factor Corrected to >70%
❷ Cannot be used with T10 or T10J lamps

SEE WIRING DIAGRAMS Pages 2-23 and 2-24

See product overview pages for electromagnetic fluorescent ballasts for additional information on weatherproof applications.

DIMENSIONS



D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D8	14 5/16	3 3/16	2 5/8	13 3/4	2

FOR F24 - F48T12 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification					Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F24T12 - High Power Factor																			
86206	2	Instant	277	532-BR-TC-P-IP◗	•	•				.29	60	.96	1.60	< 1.85	< 32	32 / 0	B	40	D6
F36T12 - High Power Factor																			
86085	2	Instant	120	213-TC-P-IP	•	•			•	.70	77	.95	1.24	< 1.85	> 32	50/10	B	39	D10
86206	2	Instant	277	532-BR-TC-P-IP◗	•	•				.34	75	.93	1.24	< 1.85	< 32	32 / 0	B	40	D12
F40T12 /IS - Bi Pin - High Power Factor																			
86085	2	Instant	120	213-TC-P-IP	•	•			•	.80	94	.92	0.98	< 1.85	< 20	50/10	B	39	D10
86206	2	Instant	277	532-BR-TC-P-IP	•	•				.37	94	.92	0.98	< 1.85	< 32	32 / 0	B	40	D12
F42T12 - High Power Factor																			
86085	2	Instant	120	213-TC-P-IP	•	•			•	.74	86	.93	1.09	< 2.0	< 32	50/10	B	39	D10
86206	2	Instant	277	532-BR-TC-P-IP	•	•				.34	84	.94	1.11	< 1.85	< 32	32 / 0	B	40	D12
F48T12 - High Power Factor																			
86085	2	Instant	120	213-TC-P-IP	•	•			•	.79	95	.92	0.89	< 1.85	< 20	50/10	B	39	D10
86206	2	Instant	277	532-BR-TC-P-IP	•	•				.35	95	.96	1.01	< 1.85	< 32	32 / 0	B	40	D12
F48T12/WM - High Power Factor																			
86085	2	Instant	120	213-TC-P-IP	•	•			•	.72	80	.91	1.14	< 2.0	< 32	60/15	B	39	D10
86206	2	Instant	277	532-BR-TC-P-IP	•	•				.32	82	.94	1.15	< 2.0	< 32	60/15	B	40	D12

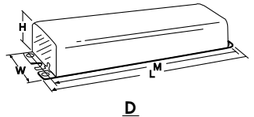
◗ Power Factor Corrected to >75%

FOR F60 - F84T12 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification					Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F60T12 - High Power Factor																			
86396	2	Instant	120	881-BR-TC-P-IP❑	•	•				.96	109	.84	0.77	< 1.85	< 32	0/-18	C	39	D6
F64T12 - High Power Factor																			
86396	2	Instant	120	881-BR-TC-P-IP❑	•	•				1.05	119	.84	0.71	< 1.85	< 32	0/-18	C	39	D6
F72T12 - High Power Factor																			
86372	1	Instant	120	822-BR-TC-P-IP		•	•		•	.72	81	.95	1.17	< 1.85	< 32	0/-18	C	34	D6
86381	1	Instant	277	828-BR-TC-P-IP		•	•			.30	78	.92	1.18	< 1.85	< 32	0/-18	C	34	D6
86359	2	Instant	120	806-SLH-TC-P	•	•	•	•	•	1.13	133	1.01	0.76	< 1.85	< 20	50/10	C	39	D6
86396	2	Instant	120	881-BR-TC-P-IP		•	•			1.03	120	.82	0.69	< 1.85	< 32	0/-18	C	39	D6
86378	2	Instant	277	827-SLH-TC-P-IP	•	•	•	•	•	.49	135	.93	0.69	< 1.85	< 20	50/10	C	40	D12
F84T12 - High Power Factor																			
86372	1	Instant	120	822-BR-TC-P-IP		•	•		•	.77	89	.96	1.09	< 1.85	< 32	0/-18	C	34	D6
86381	1	Instant	277	828-BR-TC-P-IP		•	•			.33	86	.94	1.09	< 1.85	< 32	0/-18	C	34	D6
86359	2	Instant	120	806-SLH-TC-P	•	•	•	•	•	1.26	143	.95	0.67	< 1.85	< 20	50/10	C	39	D6
86378	2	Instant	277	827-SLH-TC-P-IP	•	•	•	•	•	.55	150	.95	0.63	< 1.85	< 10	50/10	C	40	D12

❑ Use with any combination of F60T12 & F64T12

DIMENSIONS



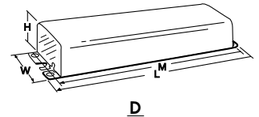
D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D6	11 3/4	3 1/8	1 25/32	11 9/64	2
D10	9 29/64	3 3/32	1 25/32	8 57/64	1 11/16
D12	11 3/4	3 3/16	1 25/32	11 9/64	2

FOR F96T12 AND F96T12/WM LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification					Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F96T12 - High Power Factor																			
86372	1	Instant	120	822-BR-TC-P-IP		•	•		•	.84	96	.95	0.98	< 1.85	< 32	0/-18	C	34	D6
86381	1	Instant	277	828-BR-TC-P-IP		•	•			.35	93	.93	1.00	< 1.85	< 32	0/-18	C	34	D6
86378	2	Instant	277	827-SLH-TC-P-IP	•	•	•	•	•	.58	158	.93	0.59	< 1.85	< 10	50/10	C	40	D12
F96T12/WM - High Power Factor																			
86372	1	Instant	120	822-BR-TC-P-IP		•	•		•	.70	79	.90	1.14	< 2.0	< 32	60/15	C	34	D6
86381	1	Instant	277	828-BR-TC-P-IP		•	•			.30	79	.96	1.22	< 2.0	< 32	60/15	C	34	D6
86378	2	Instant	277	827-SLH-TC-P-IP	•	•	•	•	•	.48	132	.89	0.67	< 2.0	< 20	60/15	C	40	D12

DIMENSIONS



D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D6	11 3/4	3 1/8	1 25/32	11 9/64	2
D12	11 3/4	3 3/16	1 25/32	11 9/64	2

FOR 20, 22 AND 32 WATT LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
FC6T9 (20 Watt) - Normal Power Factor																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.40	29	1.01	3.47	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2P-IP❶	•	•			.34	20	.94	4.66	< 1.7	<10	50/10	A	21	E1
86227	1	Rapid	120	547-RS-WS-TC-P-IP	•	•			.64	27	.90	3.30	< 1.7	< 10	50/10	A	29	D1
FC8T9 (22 Watt) - Normal Power Factor																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.24	22	.93	4.19	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2P-IP❶	•	•			.30	20	.83	4.08	< 1.7	<10	50/10	A	21	E1
86227	1	Rapid	120	547-RS-WS-TC-P-IP☆	•	•			.60	30	.85	2.83	< 1.7	< 10	50/10	A	29	D1

☆ Also available in White Cans
♣ Starter is built in as an integral component
❶ Requires Starter

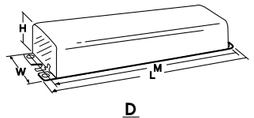
FOR 32 AND 40 WATT LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
FC12T9 (32 Watt) - Normal Power Factor																		
86078	1	Preheat	120	202-B-TC-P-IP❶	•	•			.67	37	.91	2.44	< 1.7	<10	50/10	A	22	D11
86080	1	Preheat	120	202-SB-TC-P-IP♣	•	•			.67	37	.91	2.44	< 1.7	<10	50/10	A	28	D11
86132	1	Rapid	120	445-RS-WS-TC-P-IP☆	•	•			.60	35	.68	1.97	< 1.7	< 20	50/10	A	29	D1
FC16T9 (40 Watt) - Normal Power Factor																		
86132	1	Rapid	120	445-RS-WS-TC-P-IP☆	•	•			.55	33	.60	1.83	< 1.7	< 20	50/10	A	29	D1

☆ Also available in White Cans
♣ Starter is built in as an integral component
❶ Requires Starter

SEE WIRING DIAGRAMS Pages 2-23 and 2-24

DIMENSIONS



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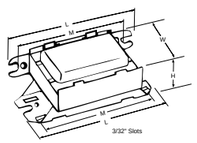


E

Overall Dimensions Draw #	L	W	Mounting Dimensions H	M	X
D1	6 7/16	1 7/8	1 1/2	6	-
D11	6 7/16	1 7/8	1 5/16	6	-
E1	3 1/16	1 25/32	1 5/16	2 3/4	-

FOR F4 AND F6T5 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F4T5 - Normal Power Factor																		
86231	1	Preheat	120	548-H2-IP❶	•	•			.17	8	1.00	12.5	< 1.7	<10	50/10	A	21	E1

❶ Requires Starter

FOR F14T8 AND F14T12 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F14T8 - Normal Power Factor																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.42	22	1.07	4.89	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2-IP❶	•	•		•	.36	19	.99	5.15	< 1.7	<10	50/10	A	21	E1
F14T12 - Normal Power Factor																		
86243	1	Preheat	277	562-L-TC-P-IP	•	•			.11	28	.75	2.68	< 2.0	<32	50/10	A	12	D2
86245	2	Preheat	120	564-L-TC-P-IP	•	•		•	.39	45	.79	1.75	< 1.7	<20	50/10	A	1	D2
86240	2	Preheat	277	554-L-TC-P-IP	•	•			.17	45	.79	1.76	< 1.9	<20	50/10	A	1	D2
F14T12 - Normal Power Factor																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.43	22	1.11	4.96	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2-IP❶	•	•		•	.37	20	.98	4.85	< 1.7	<10	50/10	A	21	E1
86222	1	Preheat	120	546-B-TC-P-IP♠	•	•		•	.66	30	.86	2.87	< 1.7	<10	50/10	A	8	D1

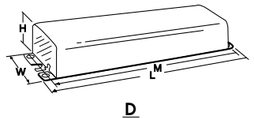
♣ Starter is built in as an integral component
♠ Requires one circuit interrupting lamp holder
❶ Requires Starter

FOR F15T8 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F15T8 - High Power Factor																		
86243	1	Preheat	277	562-L-TC-P-IP	•	•			.12	28	.88	3.16	< 2.0	<32	50/10	A	12	D2
86245	2	Preheat	120	564-L-TC-P-IP	•	•		•	.47	51	.91	1.78	< 1.7	<32	50/10	A	1	D2
86240	2	Preheat	277	554-L-TC-P-IP	•	•			.20	51	.89	1.76	< 1.9	<20	50/10	A	1	D2
F15T8 - Normal Power Factor																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.36	22	1.05	4.86	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2-IP❶	•	•		•	.32	20	1.05	5.13	< 1.7	<10	50/10	A	21	E1
86222	1	Preheat	120	546-B-TC-P-IP♠	•	•		•	.55	25	.89	3.50	< 1.7	<10	50/10	A	8	D1
86144	2	Preheat	120	447-LR-TC-P-IP	•	•			.50	39	.75	1.92	< 1.7	<20	50/10	A	1	D3

♣ Starter is built in as an integral component
♠ Requires one circuit interrupting lamp holder
❶ Requires Starter

DIMENSIONS



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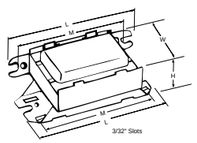


E

Overall Dimensions Draw #	L	W	Mounting Dimensions H	M	X
D1	6 7/16	1 7/8	1 1/2	6	-
D2	9 1/2	2 3/8	1 1/2	8 57/64	1 11/16
D3	6 19/32	2 3/8	1 1/2	6	-
D11	6 7/16	1 7/8	1 5/16	6	-
E1	3 1/16	1 25/32	1 5/16	2 3/4	-

FOR F15T12, F18T8 AND F19T8 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F15T12 - High Power																		
86243	1	Preheat	277	562-L-TC-P-IP	•	•			.11	28	.85	3.04	< 2.0	<32	50/10	A	12	D2
86245	2	Preheat	120	564-L-TC-P-IP	•	•		•	.43	44	.85	1.91	< 1.7	<20	50/10	A	1	D2
86240	2	Preheat	277	554-L-TC-P-IP	•	•			.20	49	.87	1.78	< 1.9	<20	50/10	A	1	D2
F15T12 - Normal Power																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.41	23	1.20	5.26	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2-IP❶	•	•		•	.44	21	1.08	5.19	< 1.7	<10	50/10	A	21	E1
86222	1	Preheaat	120	546-B-TC-P-IP♠	•	•		•	.61	30	.96	3.23	< 1.7	<10	50/10	A	8	D1
86144	2	Preheat	120	447-LR-TC-P-IP	•	•			.56	42	.80	1.90	< 1.7	<20	50/10	A	1	D3
F18T8 - Normal Power																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.33	21	.91	4.31	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2-IP❶	•	•		•	.28	19	.80	4.29	< 1.7	<10	50/10	A	21	E1
F19T8 - Normal Power																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.31	21	.91	4.28	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2-IP❶	•	•		•	.26	18	.80	4.33	< 1.7	<10	50/10	A	21	E1

♣ Starter is built in as an integral component
❶ Requires Starter
♠ Requires one circuit interrupting lamp holder

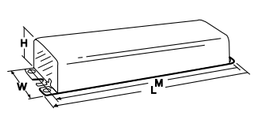
60HZ

FOR F20, F25, F30T12 AND F30T8 LAMPS

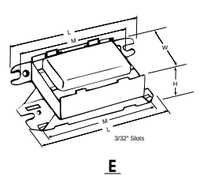
GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F20T12 - High Power Factor																		
86243	1	Preheat	277	562-L-TC-P-IP	•	•			.12	30	.81	2.73	< 1.9	<32	50/10	A	12	D2
86245	2	Preheat	120	564-L-TC-P-IP	•	•		•	.51	55	.85	1.55	< 1.7	<20	50/10	A	1	D2
86240	2	Preheat	277	554-L-TC-P-IP	•	•			.22	55	.86	1.55	< 1.7	<20	50/10	A	1	D2
F20T12 - Normal Power Factor																		
86071	1	Preheat	120	200-C-S-P-IP♣	•	•			.35	23	.95	4.15	< 1.7	<10	50/10	A	28	D11
86073	1	Preheat	120	200-H2-IP❶	•	•		•	.30	20	.83	4.15	< 1.7	<10	50/10	A	21	E1
86222	1	Preheat	120	546-B-TC-P-IP♠	•	•		•	.58	29	.82	2.83	< 1.7	<10	50/10	A	8	D1
86144	2	Preheat	120	447-LR-TC-P-IP	•	•			.43	37	.56	1.51	< 1.7	<20	50/10	A	1	D3
F30T8 - Normal Power Factor																		
86078	1	Preheat	120	202-B-TC-P-IP❶	•	•			.62	37	.97	2.62	< 1.7	<10	50/10	A	22	D11
86080	1	Preheat	120	202-SB-TC-P-IP♣	•	•			.62	39	2.97	7.62	< 1.7	<10	50/10	A	28	D11
F30T12 - Normal Power Factor																		
86078	1	Preheat/RS	120	202-B-TC-P-IP❶	•	•			.68	37	.85	2.28	< 1.7	<10	50/10	A	22	D11
86080	1	Preheat/RS	120	202-SB-TC-P-IP♣	•	•			.68	37	.85	2.28	< 1.7	<10	50/10	A	28	D11

♣ Starter is built in as an integral component
❶ Requires Starter
♠ Requires one circuit interrupting lamp holder

DIMENSIONS



D



E

Overall Dimensions Draw #	L	W	H	Mounting Dimensions M	X
D1	6 7/16	1 7/8	1 1/2	6	-
D2	9 1/2	2 3/8	1 1/2	8 57/64	1 11/16
D3	6 19/32	2 3/8	1 1/2	6	-
D11	6 7/16	1 7/8	1 5/16	6	-
E1	3 1/16	1 25/32	1 5/16	2 3/4	-

PREHEAT/TRIGGER FOR F40T10 AND F40T12 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T10 - Normal Power Factor																		
86078	1	Preheat/RS	120	202-B-TC-P-IP❶	•	•			.56	38	.77	2.05	< 1.7	<20	50/10	A	22	D11
86080	1	Preheat/RS	120	202-SB-TC-P-IP♣	•	•			.56	38	.77	2.05	< 1.7	<20	50/10	A	28	D11
F40T12 - Normal Power Factor																		
86078	1	Preheat/RS	120	202-B-TC-P-IP❶	•	•			.60	39	.77	1.99	< 1.7	<10	50/10	A	22	D11
86080	1	Preheat/RS	120	202-SB-TC-P-IP♣	•	•			.60	39	.77	1.99	< 1.7	<10	50/10	A	28	D11
F40T12/WM - Normal Power Factor																		
86078	1	Preheat/RS	120	202-B-TC-P-IP❶	•	•			.68	37	.82	2.22	< 1.9	<10	60/15	A	22	D11
86080	1	Preheat/RS	120	202-SB-TC-P-IP♣	•	•			.68	37	.82	2.22	< 1.9	<10	60/15	A	28	D11

♣ Starter is built in as an integral component
❶ Requires Starter

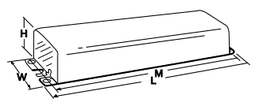
DIMMING FOR F30T12 AND F40T12 LAMPS

GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification E	UL	CSA	NOM	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T12 - High Power Factor																		
86185	2	@ 100%	120	502-A-TC-P-IP†❶	•	•			.85	94	.88	0.94	< 1.7	< 20	50/10	A	18	D5
86185	2	@ 20%	120	502-A-TC-P-IP†❶	•	•			.68	35	.20	0.57	< 1.7	< 32	50/10	A	18	D5
F30T12 - Corrected Power Factor																		
86185	2	@ 100%	120	502-A-TC-P-IP❶③	•	•			.87	83	.89	1.07	< 1.7	< 20	50/10	A	18	D5
86185	2	@ 20%	120	502-A-TC-P-IP❶②	•	•			.58	27	.21	0.77	< 1.9	< 32	50/10	A	18	D5

† Requires two circuit interrupting lamp holder
❶ UL component recognized for use with specific Dimming Controls
② Power Factor Corrected to <60%
③ Power Factor Corrected to >60%

SEE WIRING DIAGRAMS Pages 2-23 and 2-24

DIMENSIONS



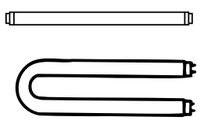
D

Overall Dimensions Draw #	L	W	H	Mounting Dimensions M	X
D11	6 7/16	1 7/8	1 5/16	6	-
D5	16 3/8	2 3/8	1 1/2	15 25/32	1 11/16

FOR F30T12 AND F40T12 LAMPS

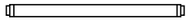
GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T12 - High Power Factor															
86341	2	Rapid	220/50Hz	754-L-TC-P-IP	•	.43	93	.94	1.01	< 1.7	< 20	50/10	A	1	D2

FOR F40T12/U, F40T12/WM AND F40T12/WM/U LAMPS



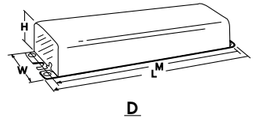
GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T12/WM - High Power Factor															
86341	2	Rapid	220/50Hz	754-L-TC-P-IP	•	.37	77	.87	1.13	< 1.9	< 32	60/15	A	1	D2

FOR F40T10 LAMPS



GE Product Code	Lamp Qty.	Lamp Descr.	Line Volts	Catalog Number	Certification	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Ballast Efficacy Factor	Crest Factor	THD %	Min. F/C Start Temp	Sound Rating	Wiring Diag.	Dim.
F40T10 - High Power Factor															
86341	2	Rapid	220/50Hz	754-L-TC-P-IP	•	.43	95	.93	0.98	< 1.7	< 20	50/10	A	1	D2

DIMENSIONS



D

Overall Dimensions			Mounting Dimensions		
Draw #	L	W	H	M	X
D2	9 1/2	2 3/8	1 1/2	8 57/64	1 11/16

WIRING DIAGRAMS

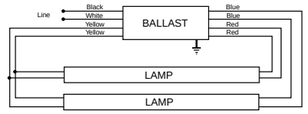


DIAGRAM 1

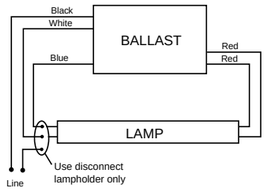


DIAGRAM 8

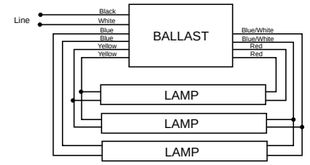


DIAGRAM 11

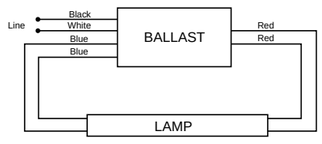


DIAGRAM 12

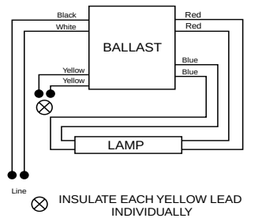


DIAGRAM 15

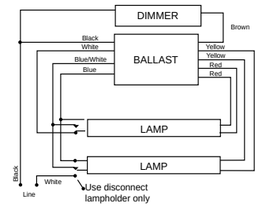


DIAGRAM 18

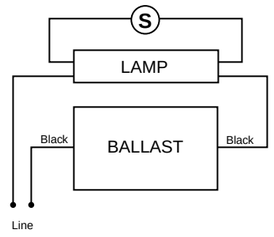


DIAGRAM 21

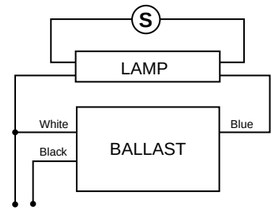


DIAGRAM 22

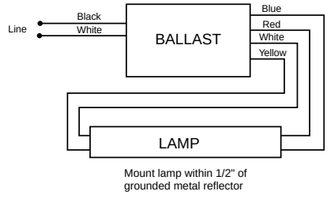


DIAGRAM 28

WIRING DIAGRAMS

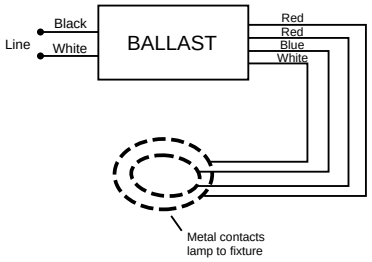


DIAGRAM 29

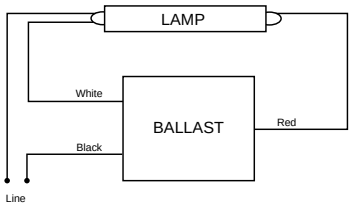


DIAGRAM 34

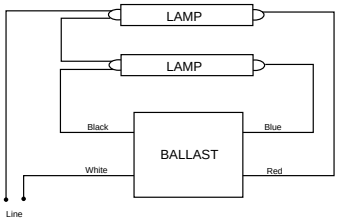
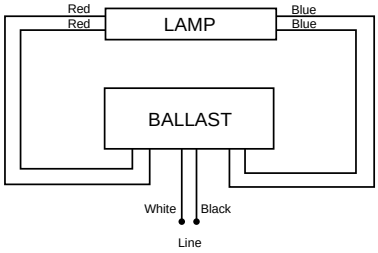
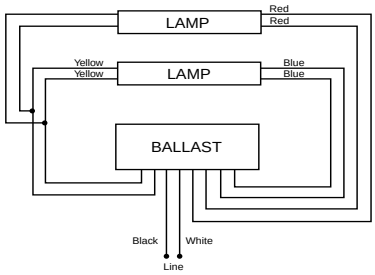


DIAGRAM 35



Lamps must be mounted within one inch of a grounded metal reflector, cover of the ballast channel or grounded metal strip at least one-inch wide over the full length of the lamp.

DIAGRAM 36



Lamps must be mounted within one inch of a grounded metal reflector, cover of the ballast channel or grounded metal strip at least one-inch wide over the full length of the lamp.

DIAGRAM 37

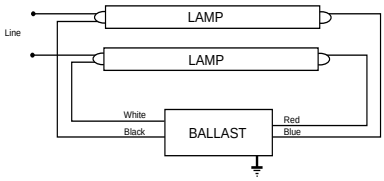


DIAGRAM 39

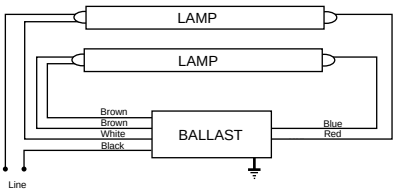


DIAGRAM 40

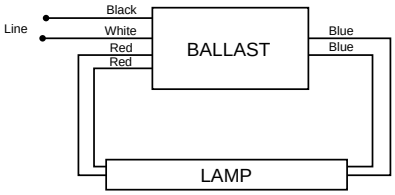


DIAGRAM 42

A COMPLETE RANGE OF SOLUTIONS... FROM THE NAME YOU TRUST

GE's high-output ballasts are great for rugged outdoor sign cabinet applications because they provide reliable low-temperature starting—as low as -20°F. And all GE sign ballasts offer Class P thermal protection.

Our range of sign ballasts:

- Offers proven reliability
- Is ideal for high-moisture environments
- Supports applications from 1-6 lamps and 2-48 ft.

GE offers the convenience of one-stop shopping not just for sign ballasts but for HID, linear fluorescent, and all your other ballast needs.

GE sign ballasts provide ultra-reliable low-temperature starting – plus Class P thermal protection.

SIGN ILLUMINATING BALLASTS

APPLICATION AND OPERATING INFORMATION

Heat

Ballasts generate heat during normal operation. By design, fluorescent ballasts should operate so that their maximum hot-spot case temperature does not exceed 90°C (194°F). Operating at higher temperatures will shorten ballast life or may cause the thermal protection circuit to trip.

The temperature the ballast reaches depends on the temperature of the area surrounding it – plus the heat-conducting surface touching the ballast. Ballasts should be installed in a manner that avoids future overheating. To maintain normal ballast temperature, you should:

1. Mount the ballast against a flat surface of heavy gauge metal such as the structural part of the sign.
2. Keep the ballast as far away as possible from other ballasts, lamps or reflective surfaces. (Lamps generate approximately three-fourths of the heat in a plastic sign). The ends of the lamps are the hottest part, so you should mount the ballast as far away from the ends as possible.
3. Paint the inside of the sign with flat white paint.

Moisture Protection

1. Vent the sign as well as possible without allowing water to enter.
2. Ballasts should be mounted horizontally (except for weatherproof types). If the ballast must be mounted vertically, allow room for sufficient air circulation. Wherever possible, mount the ballast in an enclosure outside the sign by using GE pup tents. You can get pup tents at no charge when you order the plastic sign ballast. Your wholesaler will also have a supply for your convenience.

Grounding

The white lead of a 120-volt ballast must be connected to the neutral or ground side of the power supply. All metal parts of the sign, as well as the ballast case, must be grounded either through the conduit which holds the power supply or by direct connection with a grounding wire. An underground sign is a potential hazard – and it can give misleading symptoms when looking for sign faults.

Proper Lamp Life and Starting

In rapid-start installations, proper filament heating is necessary for reliable starting and normal lamp life. To ensure that proper heating is taking place, the following steps are recommended:

1. Lamp leads should be kept as short as possible and with a minimum of splices.
2. All connections should be soldered.
3. Maintain proper alignment and spacing of lamp holders to ensure good contact in the sockets.
4. Mount lamps within one inch of grounded metal. This is one lamp manufacturer's published requirement for eliable starting.

Flashing

Rapid-start lamps may be flashed without reduction in lamp life by using ballasts which are specifically designed for this operation. These ballasts are designed with slightly higher filament voltages that the conventional ballast to ensure satisfactory lamp life. Instant-start lamps cannot be flashed.

CAUTION: Use only one flasher contact per ballast.

Light Output vs. Temperature

The light output of a fluorescent lamp varies according to the mercury vapor pressure inside the lamp. This pressure is controlled by the coldest spot on the bulb wall. The ballast may start the lamp, but the light output can be very low as the bulb wall temperature is low. Several factors influence this, including ambient temperatures, wind, type of enclosure, etc. If maximum light output is critical, consult a lamp manufacturer for advice.

Lamp Starting Problems

Occasionally a field problem will arise involving improper lamp starting. The usual complaint is that the lamps start slowly (or not at all). Here are some of the causes:

1. Low line voltage
2. Improper sign grounding
3. Insufficient or no filament voltage
4. Insufficient or no open circuit voltage
5. Dirty lamps during high-humidity operating conditions
6. Lamps improperly inserted in the sockets.

If lamp starting is a problem in your installation, check the sign grounding, filament voltage (3.4-3.9 volts), and open circuit voltage. If all are normal, the probable cause is dirty lamps. The lamps should be washed in clean water, drip-dried, and reinstalled. If this doesn't solve the problem, contact your nearest GE representative for further assistance.

Short Lamp Life

If the lamp has not given proper length of service as specified by the lamp manufacturer, the following reasons for early failure should be considered:

1. Improper starting due to insufficient filament voltage
2. Frequent starting and short operating periods
3. Improper ballast
4. Improper voltage supply
5. Faulty wiring
6. Defective lamps
7. Lamps improperly inserted in sockets

Early lamp failure will be preceded by a dense blackening on either or both ends of the lamps. This blackening will extend three or four inches from the lamp base and should not be confused with a small dense spot, which is a mercury deposit that can occur at any time during lamp life. Dense blackening due to early lamp failure should not be confused with the gray bands that sometimes appear toward the end of normal lamp life (about two inches from either end of the lamp).

STANDARD HIGH OUTPUT SIGN BALLASTS

GE Product Code	Catalog Number	Total Lamp Footage	Start Temp (°F)	Max. Line Cur.	Max. Input Watts	Open Circuit Volt.	Wiring Diagram	Dimen. Chart Ref.	Weight (lbs.)
PLASTIC SIGN BALLASTS - HIGH OUTPUT 800mA RS LAMPS - 120 Volts - 60 Hz									
TWO LAMP BALLASTS									
88921	USB-0412-12-IP	4′ min. - 12′ max.	-20	1.35	160	500	1a, 2a	1	8
FOUR LAMP BALLASTS									
88931	USB-0816-14-IP	8′ min. - 16′ max.	-20	1.90	220	590	4a, 6a, 9, 1b	2	12
88936	USB-1024-14-IP	10′ min. - 24′ max.	-20	2.70	325	720	4a, 6a, 9, 1b	3	14
88934	USB-1632-24-IP	16′ min. - 32′ max.	-20	3.50	420	950	4a, 6a, 9	4	16
SIX LAMP BALLASTS									
88939	USB-2036-46-IP	20′ min. - 36′ max.	-20	4.00	480	720	5a, 7, 7a	4	18
88940	USB-2048-46-IP	20′ min. - 48′ max.	-20	5.00	600	720	5a, 7, 7a	4	18

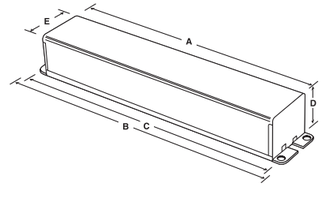
HIGH OUTPUT SIGN BALLASTS

GE Product Code	Catalog Number	Total Lamp Footage	Start Temp (°F)	Max. Line Cur.	Max. Input Watts	Open Circuit Volt.	Wiring Diagram	Dimen. Chart Ref.	Weight (lbs.)
MAX-3 HIGH OUTPUT SIGN BALLASTS 800mA RS LAMPS - 120 Volts - 60 Hz									
ONE TO SIX LAMP BALLASTS									
88918	USB-0218-16-IP	2′ min. - 18′ max.	-20°	2.00	240	625	3, 4, 5, 6, 7, 8	3	15
88920	USB-1232-16-IP	12′ min. - 32′ max.	-20°	3.50	410	970	3, 4, 5, 6, 7, 8	3	16
88919	USB-1048-16-IP	10′ min. - 48′ max.	-20°	4.80	570	800	1, 2, 3, 4, 7, 8	5	18

See page 4-4 for Lead Lengths

SEE WIRING DIAGRAMS Pages 3-5 and 3-6

DIMENSIONS



DIMENSION CHART

Ref. #	A	B	C	D	E
1	10 CM\nv″	11VB\nv″	11>\nv″	1C\v″	3C\zn″
2	10 CM\nv″	11VB\nv″	11>\nv″	2VC\nv″	3C\zn″
3	13C\zn″	14B\zn″	13C\v″	2VC\nv″	3C\zn″
4	15>\zn″	16ZZ\zn″	16Z\,″	2VC\nv″	3C\zn″
5	13>\zn″	16ZZ\zn″	16Z\,″	2 VC\nv″	3C\zn″

Diagrams Notes:

Note 1: When operating a two-lamp ballast on one lamp insulate each yellow lead.

Note 2: When operating a three-lamp ballast on two lamps insulate each yellow and blue/white lead.

Note 3: When operating a four-lamp ballast on three lamps insulate each yellow blue/white, and brown lead.

PLASTIC SIGN BALLASTS LEAD LENGTHS (INCHES)

GE Product Code	Catalog Number	White	Black	Blues	Reds	Yellows	Browns	Oranges	Orange Blacks	Blue Whites	Red Whites
PLASTIC SIGN BALLASTS - HIGH OUTPUT 800mA RS LAMPS - 120 Volts - 60 Hz											
TWO LAMP BALLASTS											
88921	USB-0412-12-IP	24	24	38	38	48					
FOUR LAMP BALLASTS											
88931	USB-0816-14-IP	36	24	65	40	39	56			48	
88936	USB-1024-14-IP	24	24	79	48	75	83			57	
88934	USB-1632-24-IP	24	24	80	54	60	80			72	
SIX LAMP BALLASTS											
88939	USB-2036-46-IP	24	24	50	80	70	38	50	50	38	
88940	USB-2048-46-IP	24	24	80	80	70	50	50	50	50	
MAX-3 HIGH OUTPUT SIGN BALLASTS 800mA RS LAMPS - 120 Volts - 60 Hz											
ONE TO SIX LAMP BALLASTS											
88918	USB-0218-16-IP	24	24	60	60	60	60	60	60	60	
88920	USB-1232-16-IP	24	24	80	60	60	80	60	60	72	
88919	USB-1048-16-IP	24	24	80	80	70	50	60	60	50	

Note: Maximum volts above ground, any lead 590 volts.

LEAD LENGTH & BALLAST FOOTAGE

SIGN BALLAST FOOTAGE

Fluorescent Sign Ballast Matrix

No. of Lamps Per Ballast	TOTAL LAMP FOOTAGE REQUIRED																							
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
1-2		88921, USB-0412-12-IP																						
1-4				88931, USB-0816-14-IP																				
					88936, USB-1024-14-IP																			
2-4								88934, USB-1632-24-IP																
4-6										88939, USB-2036-46-IP														
										88940, USB-2048-46-IP														
1-6		88918, USB-0218-16-IP																						
						88920, USB-1232-16-IP																		
					88919, USB-1048-16-IP																			

WIRING DIAGRAMS

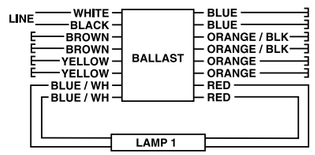


DIAGRAM 1

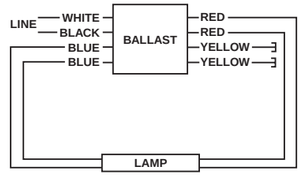


DIAGRAM 1A

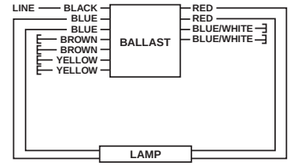


DIAGRAM 1B

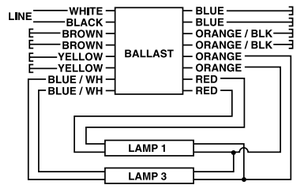


DIAGRAM 2

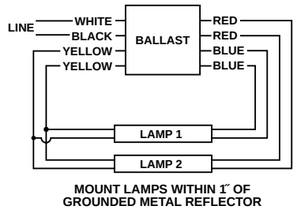


DIAGRAM 2A

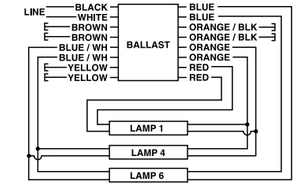


DIAGRAM 3

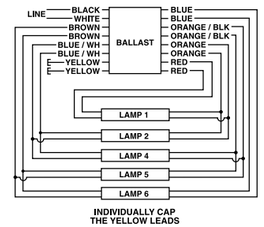


DIAGRAM 4

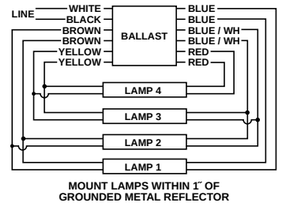


DIAGRAM 4A

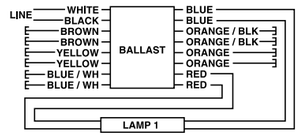


DIAGRAM 5

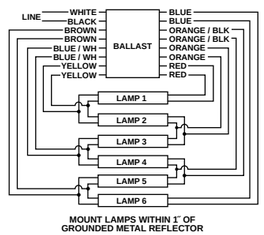


DIAGRAM 5A

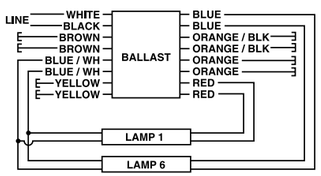


DIAGRAM 6

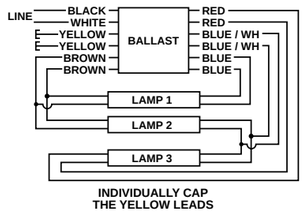


DIAGRAM 6A

WIRING DIAGRAMS

WIRING DIAGRAMS

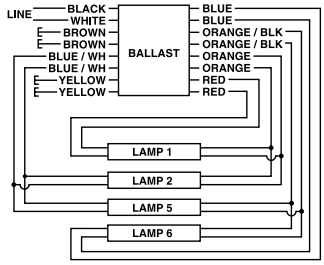


DIAGRAM 7

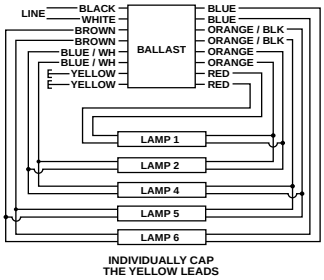


DIAGRAM 7A

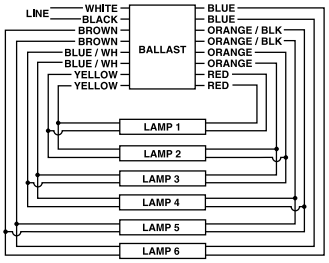


DIAGRAM 8

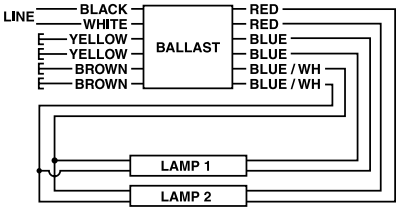


DIAGRAM 9

A COMPLETE RANGE OF SOLUTIONS FROM THE NAME YOU TRUST

GE offers a full range of magnetic and electronic compact fluorescent ballasts. Our magnetic models come in a variety of shapes and sizes, from core and coils to High Power Factor potted ballasts with bottom exit leads and mounting studs for all downlighting applications.

Our newest electronic models offer installer-friendly universal input voltage, which reduces your inventory and ensures that you have the right voltage ballast every time. These models feature a low profile case that fits in any fixture. And their metal housing construction meets all plenum codes and delivers maximum heat transfer to extend ballast life.

Our newest compact fluorescent models offer installer-friendly universal input voltage.

PRODUCT OVERVIEW

Electronic Compact Fluorescent Ballasts

Electronic compact fluorescent ballasts from GE feature installer-friendly universal input voltage (108 to 305 Volts) and metal case designs for compliance with all plenum and construction code requirements. They also offer an end-of-life shutdown circuit with auto-reset that meets ANSI/NEMA requirements – a feature that eliminates lamp/socket damage while allowing you to replace failed lamps after shutdown without turning off the power.

Our universal voltage compact fluorescent ballasts offer both one- and two-lamp operation–and they're ideal for a wide variety of downlight and surface mount applications for atriums, hotel corridors, offices, and outdoors. All models operate multiple lamp types for added versatility in many different applications.

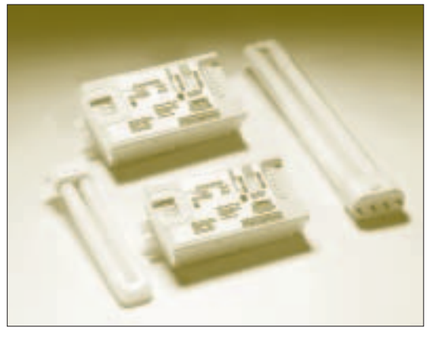
These ballasts are designed and manufactured for long life. Lamps can be mounted in close proximity to these ballasts because they have no temperature-critical components near the can sides. And their circuit board potting enhances reliability by lowering case temperatures.

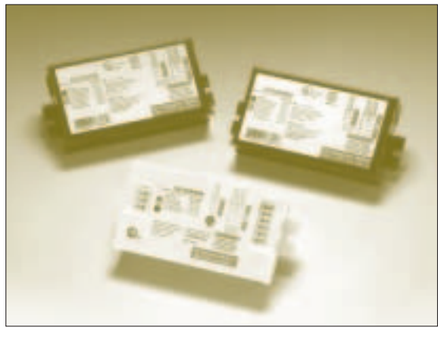
All universal voltage compact fluorescent ballasts incorporate programmed rapid start (PRS) technology that increases lamp life for those frequently switched applications where occupancy sensors are used. PRS is recommended by all lamp manufacturers.

For the Canadian market, we have new 347 Volt compact fluorescent models. These also offer outstanding reliability and lamp performance. These 347 Volt models are available for one- and two-lamp operation for lamps ranging from 13 to 70 watts.

Magnetic Compact Fluorescent Ballasts

GE offers a complete line of magnetic compact fluorescent ballasts, ranging from 5-40 watts (10-38 watts for 2D lamps). Both core & coil and F-Can models are available in a variety of configurations that include side exit (SE), bottom exit (BE) and bottom exit studs (BES).





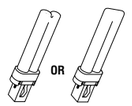
Installer-friendly options for compact fluorescent lamps.

UNDERSTANDING CFL TECHNOLOGY

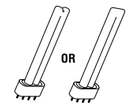
Compact fluorescent (CFL) lamps are single-ended and plug into sockets. They're sometimes referred to as "single-based" or "single-ended" fluorescent lamps.

Lamp Shapes

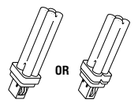
Today's CFL lamps come in these basic shapes: twin tube, quad, triple, multi and circular. Each of these shapes has its own subset of sizes. For example, the twin tube may range from 4" long (5 watt) to 22" long (40 watt).



Twin, 2-Pin
5w – 13w



Long Twin T5, 4-Pin
5w – 80w



2-Pin 4-Pin
Quad 9w – 27w

Square (2D)
10w – 55w

Multiple, 4-Pin
(GE & OSI)
18w – 70w

Multiple, 4-Pin
(Philips)
18w – 42w

T5 Circular
22w - 55w

Pins and Starters

CFL lamps feature either two pins or four pins. Those with two pins have starters built into their bases, and they require a magnetic preheat ballast. The two-pin CFL lamps are available in wattages from 5-28.

Four-pin lamps are traditionally powered by electronic ballasts. These lamps do not have an internal starter, so the other filament terminals (pins) are made accessible for external connection to the ballasts. Note: GE offers both magnetic and electronic ballasts for the four-pin 32 and 26 watt lamps and all four-pin Long Twin T5 lamps.

Lamp Bases

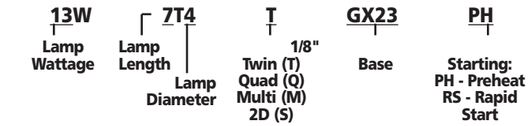
There are a variety of lamp bases used with today's CFL lamps. This provides a safeguard to make sure that the proper lamp/ballast combination is installed. The lamp base style is part of the ANSI/NEMA designation.

In this catalog, GE CFL ballasts are classified according to lamp type. Icons representing each lamp type provide a quick visual reference. Within each classification, the lamps and their appropriate ballasts can be found by referring to the generic NEMA lamp descriptions.

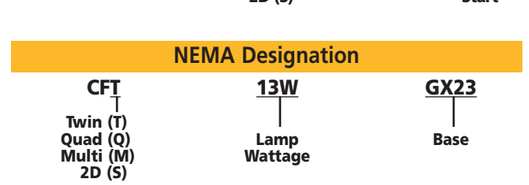
Lamp Designation

There are two different industry-recognized nomenclatures for identifying CFL lamps: ANSI Lamp Designations and NEMA Lamp Designations.
Here are examples of each:

ANSI Designation



NEMA Designation



Both lamp designations refer to lamp wattage, shape, and base type. Since the NEMA designation is shorter, it will probably be the nomenclature of choice in the future. All of the major lamp companies have trade names for various CFL lamp types, such as GE's "Biax" and "2D" lamps, OSI's "Dulux," and Philips' "PL." These names have become more widely used than either of the industry designations.

Industry	Watts	GE	OSI	Philips
Single or Twin	5, 7, 9, 13	Low watt Biax	Dulux S, S/E	PL-S
Double or Quad	9, 13, 18, 20, 26, 27	Double Biax	Dulux D, D/E	PL-C
Multiple	13,18, 26, 32, 42	Biax T/E	Dulux T T/E, T/E/IN	PL-T
Multiple	42,57,70	Biax Q/E	Dulux T/E/IN	PL-T
Long Twin T5	18, 24/27, 36/39, 40 50,80	High Lumen Biax	Dulux L, F	PL-L
Square	10, 16, 21, 28, 38,55	2D	—	—
Circline	22, 40, 55	—	Pentron	Silhouette

TYPICAL SPECIFICATIONS FOR ELECTRONIC COMPACT FLUORESCENT BALLASTS

1. Ballast shall be Programmed Rapid Start.
2. Ballast shall incorporate lamp shutdown circuitry for end of lamp life protection.
3. Ballast shall allow for re-lamping without the need to cycle power.
4. Ballasts shall operate from 50/60 Hz input source of 120, 277, or 347 Volts with no damage to the ballasts.

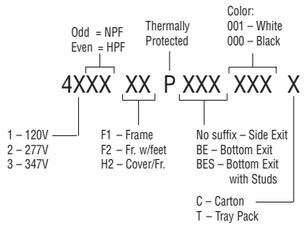
4a. Ballasts shall operate from 50/60 Hz input source of 108-305 Volts with no damage to the ballasts for High Performance (HP) models.

5. Ballast shall be of metal can construction to meet all plenum requirements and to eliminate the need for extra grounding wires.
6. Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 50 kHz to minimize interference with infrared control systems.
7. Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-1993.
8. Ballasts shall tolerate operation in ambient temperatures up to 140°F (55°C) without damage.
9. Ballasts shall have a maximum case temperature test point of 75°C printed on the label for easy fixture testing and troubleshooting.
10. Ballast shall have a maximum case temperature rise of 15°C.
11. Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (Radiated).
12. Ballasts shall provide transient immunity as recommended by ANSI C62.41-1991.
13. Ballasts shall operate lamps with no visible flicker (< 3% flicker index).
14. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage.
15. Ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type 1 Outdoor, and CSA certified where applicable.
16. Input current Total Harmonic Distortion shall not exceed 10% for the primary lamp.
17. Ballasts shall have a Power Factor greater than .98 for the primary lamp.
18. The ballasts shall not have any PCBs.
19. The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
20. Manufacturer shall have been manufacturing electronic ballasts for at least fifteen years.
21. Ballast shall be manufactured in an ISO 9001 Certified Facility.
22. GE model_____ (or approved equal).

UNDERSTANDING PART NUMBERS

Magnetic

Our part number nomenclature for magnetic ballasts is shown below:

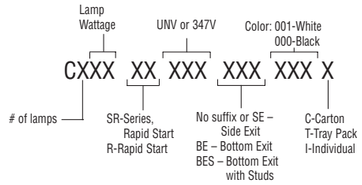


Example: 4123PBES000T
Ballast for CFL Lamps: Indicated by "4" prefix
Voltage: 120V
Lamp Type: 26W Quad Lamp (refer to catalog for wattage)
Power Factor: Normal
Encased and Potted: Indicated by absence of F1, F2, or H2
P: Thermally protected
BES: Bottom exit leads with studs
000: Color—Black
T: Packaging container style—Tray Pack

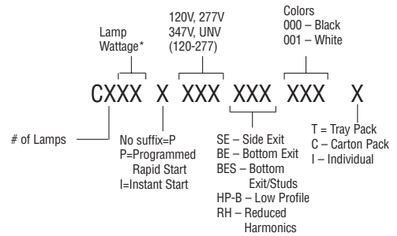
These ballasts are available for a wide variety of applications with lamps, voltages, mounting configurations, and performance characteristics. For more detailed information, just identify the lamps to be ballasted and work forward to determine the ballast part number.

Electronic

Our nomenclature for electronic CFL ballasts follows the system already in place for other electronic ballasts. The exceptions are that the model number prefix for compact fluorescent is a C rather than a B—and the suffixes for the mounting configuration will be the same as those used for magnetic products (BE and BES). If you don't see these suffixes, the ballast has traditional side exit leads.



Example: Electronic C240PUNVHP-B
Ballast Type: C — CFL Electronic Ballast
Lamp Qty: 2
Lamp Type: 40W TT5, 4 Pin (FT40W/2611)
P: Programmed Rapid Start
Voltage: UNV 120 to 277 Volts
HP-B: High Performance <10%; low profile can
000: Color—Black
C: Packaging container style—Carton Pack



Example: C213UNVBES000C*
Ballast Type: C
Lamp Quantity: 2
Lamp Type: 13W Quad, 4 Pin (CFQ13W/G24q)
Voltage: UNV 120 to 277 Volts
BES: Bottom exit connection, studs
000C: Color—Black
C: Packaging container style—Carton Pack

*Exception is C2642, which does not distinguish number of lamps. See catalog.

TWIN LAMPS–5 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87634	—	—	❍M	1	277	4205F2P■*	11	0.08	0.19	1.00	0°F	Normal	<10%	PH	B2	1

TWIN LAMPS–7 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87634	—	—	❍M	1	277	4205F2P■*	12	0.08	0.19	0.95	0°F	Normal	<10%	PH	B2	1

TWIN & QUAD LAMPS–9 & 10 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87634	—	—	❍M	1	277	4205F2P■*	14	0.11	0.18	0.95	0°F	Normal	<10%	PH	B2	1

TWIN & QUAD LAMPS–13 WATTS - U.S. LAMPS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87655	87655	87655	❍M	2	277	4214PBES▲	26	0.09	0.09	0.85	32°F	High	<20%	PH	C4	9

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
- **5 Watts** CFT5W/G23
- **7 Watts** CFT7W/G23

Twin, 2-Pin

Lamp Type
- **9 Watts** CFT9W/G23 OR CFQ9W/G23
- **10 Watts** CFQ10W/G24d

OR

Twin or Quad, 2-Pin

Lamp Type
13 Watts CFT13W/GX2 OR CFQ13W/GX23

OR

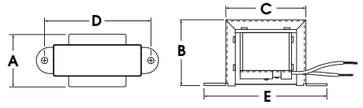
Twin or Quad, 2-Pin U.S. type lamp

* Non-thermally protected models available.
❁ PH = Preheat
F1 indicates an open core & coil unit with no mounting feet.
F2 indicates an open core & coil unit with mounting feet.
H2 indicates clamped & covered core & coil with mounting feet.
F1R - Coil enclosed with plastic covers/no mounting feet.
F2R - Coil enclosed with plastic covers/with mounting feet.
▲ Standard cases offer side lead configuration.Add "BE" suffix for Bottom Exit design or "BES" for Bottom Exit Studs design.
❍ Not approved for use in hazardous locations.

All ballasts are UL listed, CSA approved and designated Class P (thermally protected).

DIMENSIONS

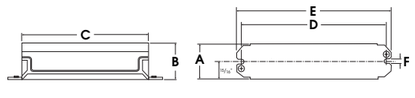
REFERENCE DRAWING FOR A1, A2, B1, B2



Dwg.	A	B	C	D	E
B2	1.94"	1.64"	1.97"	2.38"	2.81"

Lead Lengths: 10"

REFERENCE DRAWING FOR C3, C4, C5



Dwg.	A	B	C	D	E	F
C4	2.34"	1.53"	5.20"	6.00"	6.59"	0.31"

Lead Lengths: Side–12"
BE/BES–8"

TWIN, QUAD AND MULTIPLE LAMPS–13 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
80673	80669	80671	E	1	120	C213UNV◆	18	0.15	——	1.00	0°F	High	<10%	PRS	C10	18
80673	80669	80671	E	2	120	C213UNV◆	32	0.27	——	0.98	0°F	High	<10%	PRS	C10	19

TWIN, QUAD AND MULTIPLE LAMPS–18 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
80679	80675	80677	E	1	120	C218UNV♦	22	0.19	——	1.00	0°F	High	<10%	PRS	C10	18
80679	80675	80677	E	2	120	C218UNV♦	40	0.34	——	0.98	0°F	High	<10%	PRS	C10	19

QUAD AND TRIPLE LAMPS–26 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87700	87700	87700	M	2	277	4226P▲	62	0.22	0.34	0.90	32°F	High	<20%	PH	C4	8

QUAD AND MULTIPLE LAMPS–26 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
80689	80685	80687	E	1	120	C2642UNV♦	28	0.25	——	1.02	0°F	High	<10%	PRS	C10	18
80689	80685	80687	E	2	120	C2642UNV♦	56	0.49	——	0.98	0°F	High	<10%	PRS	C10	19
47509	47503	47506	E	2	120	C242UNV♦	56	0.46	——	1.02	0°F	High	<10%	PRS	C11	19

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
13 Watts CFQ13W/G24q OR CFM13W/GX24q

OR

Quad or Multiple, 4-Pin

Lamp Type
- **13 Watts** CFT13W/2GX7
- **18 Watts** FT18W/2G11RS

13W: Twin T4, 4-Pin
18W: Twin T5, 4-Pin

Lamp Type
18 Watts CFQ18W/G24q OR CFM18W/GX24q

OR

Quad or Multiple, 4-Pin

Lamp Type
- **26 Watts** CFQ26W/G24d
- **26 Watts** CFQ26W/G24q OR CFM26W/GX24q

OR

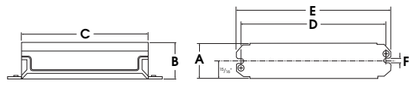
Quad or Multiple, 4-Pin

❁ PRS = Programmed Rapid Start; RS = Rapid Start
F1 indicates an open core & coil unit with no mounting feet.
F2 indicates an open core & coil unit with mounting feet.
◆ Add following suffix for complete catalog # "SE" for Side Exit connectors or "BE" suffix for Bottom Exit connectors or "BES" for Bottom Exit connectors with 2" O.C. screw studs.
▲ Standard cases offer side lead configuration. Add "BE" suffix for Bottom Exit design or "BES" for Bottom Exit Studs design.

All ballasts are UL listed, CSA approved and designated Class P (thermally protected).

DIMENSIONS

REFERENCE DRAWING FOR C3, C4, C5

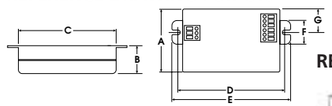


Dwg.	A	B	C	D	E	F
C4	2.34"	1.53"	5.20"	6.00"	6.59"	0.31"

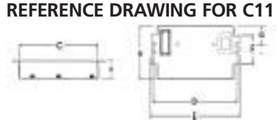
Lead Lengths: Side
- Black/White–11"
- Red/Blue–12"

BE/BES–8"

REFERENCE DRAWING FOR C10



REFERENCE DRAWING FOR C11



Dwg.	A	B	C	D	E	F	G
C10	2.31"	1.00"	4.25"	4.61"	4.94"	0.98"	1.00"
C11	2.98"	1.00"	4.25"	4.61"	4.94"	1.55"	1.00"

Leadless-Poke-in wire connection

MULTIPLE LAMPS–32, 42, 57 & 70 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method✿	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
80689	80685	80687	E	1	120	C642UNV◆	36	0.32	—	1.00	0°F	High	<10%	PRS	C10	18
80689	80685	80687	E	1	120	C642UNV◆	48	0.42	—	0.98	0°F	High	<10%	PRS	C10	18
47509	47503	47506	E	1	120	C42UNV◆	45	0.38	—	1.00	0°F	High	<10%	PRS	C11	19
47509	47503	47506	E	2	120	C42UNV◆	91	0.76	—	0.98	0°F	High	<10%	PRS	C11	19
47509	47503	47506	E	1	120	C42UNV◆	58	0.48	—	1.00	0°F	High	<10%	PRS	C11	19
47509	47503	47506	E	1	120	C42UNV◆	73	0.61	—	1.00	0°F	High	<10%	PRS	C11	19

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
• **32 WATTS**
CFM32W/GX24q

Multiple, 4-Pin

Lamp Type
42 Watts
CFM42W/GX24q

Multiple, 4-Pin

Lamp Type
57 Watts
CFM57W/GX24q

Multiple, 4-Pin

Lamp Type
70 Watts
CFM70W/GX24q

Multiple, 4-Pin

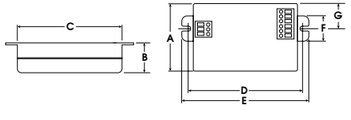
SEE WIRING DIAGRAMS Pages 4-15 and 4-16

✿ RS = Rapid Start; PRS = Programmed Rapid Start
▲ Standard cases offer side lead configuration. Add "BE" suffix for Bottom Exit design or "BES" for Bottom Exit Studs design.
◆ Add following suffix for complete catalog # "SE" for Side Exit connectors or "BE" suffix for Bottom Exit connectors or "BES" for Bottom Exit connectors with 2˝ O.C. screw studs.

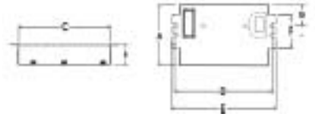
All ballasts are UL listed, CSA approved and designated Class P (thermally protected), Type HL.

DIMENSIONS

REFERENCE DRAWING FOR C10



REFERENCE DRAWING FOR C11



Dwg.	A	B	C	D	E	F	G
C10	2.31″	1.00″	4.25″	4.61″	4.94″	0.98″	1.00″
C11	2.98″	1.00″	4.25″	4.61″	4.94″	1.55″	1.00″

Leadless-Poke-in wire connection

2D LAMPS–10 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method✿	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
80673	80669	80671	E	1	120	C213UNV◆	15	0.12	—	1.02	0°F	High	<12%	PRS	C10	18a
80673	80669	80671	E	2	120	C213UNV◆	26	0.22	—	1.02	0°F	High	<12%	PRS	C10	19a

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
10 Watts
CFS10W/GR10q

2D, 4-Pin

2D LAMPS–16 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method✿	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
80673	80669	80671	E	1	120	C213UNV◆	19	0.15	—	0.95	0°F	High	<10%	PRS	C10	18a
80673	80669	80671	E	2	120	C213UNV◆	33	0.28	—	0.95	0°F	High	<10%	PRS	C10	19a

Lamp Type
• **16 Watts**
CFS16W/GR8
• **16 Watts**
CFS16W/GR10q

2D, 2-Pin or 2D, 4-Pin

2D LAMPS–21 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method✿	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
80679	80675	80677	E	1	120	C218UNV◆	24	0.18	—	0.98	0°F	High	<10%	PRS	C10	18a
80679	80675	80677	E	2	120	C218UNV◆	43	0.37	—	0.95	0°F	High	<10%	PRS	C10	19a

Lamp Type
21 Watts
CFS21W/GR10q

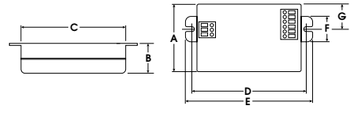
2D, 4-Pin

● Starter required: use COP-40 or FS-4 type fluorescent starter.
✿ RS = Rapid Start; PRS = Programmed Rapid Start
▲ Standard cases offer side lead configuration. Add "BE" suffix for Bottom Exit design or "BES" for Bottom Exit Studs design.
◆ Add following suffix for complete catalog # "SE" for Side Exit connectors or "BE" suffix for Bottom Exit connectors or "BES" for Bottom Exit connectors with 2˝ O.C. screw studs.

All ballasts are UL listed, CSA approved and designated Class P (thermally protected), Type HL.

DIMENSIONS

REFERENCE DRAWING FOR C10



Dwg.	A	B	C	D	E	F	G
C10	2.31″	1.00″	4.25″	4.61″	4.94″	0.98″	1.00″
C11	2.98″	1.00″	4.25″	4.61″	4.94″	1.55″	1.00″

Leadless-Poke-in wire connection

2D LAMPS–28 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87700	87700	87700	M	2	277	4226PBES▲	66	0.23	0.34	0.93	25°F	High	<20%	PH	C4	7a

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
• 28 Watts
CFS28W/GR8
• 28 Watts
CFS28W/GR10q

2D, 2-Pin or 2D, 4-Pin

2D LAMPS–38 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87623	—	87623	M	2	120	4150P▲	84	0.72	—	0.80	0°F	High	<10%	PRS	C10	18a
80689	80685	80687	E	1	120 or 277 or	C2642UNV◆	33	0.13	—	0.80	0°F	High	<10%	PRS	C10	18a

Lamp Type
38 Watts
CFS38W/GR10q

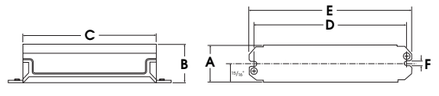
2D, 4-Pin

❁ RS = Rapid Start; PRS = Programmed Rapid Start
▲ Standard cases offer side lead configuration. Add "BE" suffix for Bottom Exit design or "BES" for Bottom Exit Studs design.
◆ Add following suffix for complete catalog # "SE" for Side Exit connectors or "BE" suffix for Bottom Exit connectors or "BES" for Bottom Exit connectors with 2˝ O.C. screw studs.

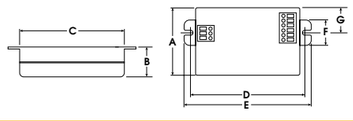
All ballasts are UL listed, CSA approved and designated Class P (thermally protected), Type HL.

DIMENSIONS

REFERENCE DRAWING FOR C3, C4, C5



REFERENCE DRAWING FOR C10



Dwg.	A	B	C	D	E	F	G
C3	2.14″	1.56″	3.50″	4.31″	4.75″	0.22″	–
C4	2.34″	1.53″	5.20″	6.00″	6.59″	0.31″	–
C5	1.88″	1.47″	5.13″	6.00″	6.44″	0.25″	–
C10	2.31″	1.00″	4.25″	4.61″	4.94″	0.98″	1.00″

Lead Lengths: Side–12˝
BE/BES–8˝

Leadless-Poke-in wire connection

T5 CIRCULAR LAMPS–22 & 40 WATTS

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method❁	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
80689	80685	80687	E	1	120 277	C2642UNV◆	25	0.22 0.10	—	1.00	0°F	High	<10%	PRS	C10	28
47509	47503	47506	E	2	120 277	C242UNV◆	50	0.42 0.19	—	1.05	0°F	High	<10%	PRS	C11	23
80689	80685	80687	E	1	120 277	C2642UNV◆	42	0.37 0.16	—	0.98	0°F	High	<10%	PRS	C10	28
47509	47503	47506	E	2	120 277	C242UNV◆	80 79	0.65 0.29	—	0.98	0°F	High	<10%	PRS	C11	23
47509	47503	47506	E	2	120 277	C242UNV◆	66 64	0.54 0.24	—	0.98	0°F	High	<10%	PRS	C11	23

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
22 Watts
FC9T5-22W

T5 CIRCULAR

Lamp Type
40 Watts
FC12T5-40W

T5 CIRCULAR

Lamp Type
22 & 40 Watts
FC9T5-22W & FC12T5-40W

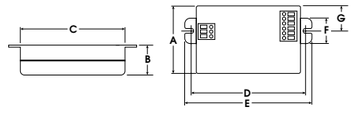
T5 CIRCULAR

● Starter required: use COP-40 or FS-4 type fluorescent starter.
◆ Add following suffix for complete catalog # "SE" for Side Exit connectors or "BE" suffix for Bottom Exit connectors or "BES" for Bottom Exit connectors with 2˝ O.C. screw studs.

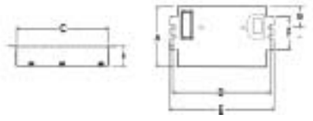
All ballasts are UL listed, CSA approved and designated Class P (thermally protected), Type HL.

DIMENSIONS

REFERENCE DRAWING FOR C10



REFERENCE DRAWING FOR C11



Dwg.	A	B	C	D	E	F	G
C10	2.31″	1.00″	4.25″	4.61″	4.94″	0.98″	1.00″
C11	2.98″	1.00″	4.25″	4.61″	4.94″	1.55″	1.00″

Leadless-Poke-in wire connection

LONG TWIN T5 BALLASTS–24/27 WATTS (BIAX, DULUX L AND PLL)

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method✲	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
47535	—	—	❍E	1	120 277	B224PUNV-C	27	0.23 0.10	——	1.05	0°F	High	<10% <15%	PRS	-C	27
47535	—	—	❍E	2	120 277	B224PUNV-C	52 51	0.43 0.18	——	1.00	0°F	High	<10%	PRS	-C	27
80689	80685	80687	E	1	120 277	C2642UNV◆	30	0.26 0.11	——	0.90	0°F	High	<10%	PRS	C10	21
80689	80685	80687	E	2	120 277	C2642UNV◆	52	0.45 0.20	——	0.85	0°F	High	<10%	PRS	C10	20
47509	47503	47506	E	2	120 277	C242UNV◆	51 50	0.43 0.19	——	1.02	0°F	High	<10%	PRS	C11	20
47535	—	—	❍E	1	120 277	B224PUNV-C	24	0.20 0.09	——	1.05	0°F	High	<10% <15%	PRS	-C	27

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
- **24/27 Watts**
  FT24W/2G11/RS
- **24/27 Watts**
  FT24W/2G10

- Long Twin T5, 4-Pin or
- Long Twin T5, 4-Pin

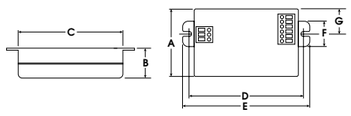
SEE WIRING DIAGRAMS Pages 4-15 and 4-16

✲ RS = Rapid Start; PRS = Programmed Rapid Start
▲ Standard cases offer side lead configuration.
◆ Add following suffix for complete catalog # "SE" for Side Exit connectors or "BE" suffix for Bottom Exit connectors or "BES" for Bottom Exit connectors with 2˝ O.C. screw studs.
❍ Not approved for use in hazardous locations.

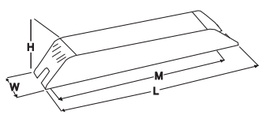
All ballasts are UL listed, CSA approved and designated Class P (thermally protected).

DIMENSIONS

REFERENCE DRAWING FOR C10

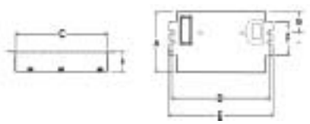


REFERENCE DRAWING FOR -C



Dwg.	L	W	H	M	X
-C	14.25″	1.18″	1.00″	13.75″	---

REFERENCE DRAWING FOR C11



Dwg.	A	B	C	D	E	F	G
C10	2.31″	1.00″	4.25″	4.61″	4.94″	0.98″	1.00″
C11	2.98″	1.00″	4.25″	4.61″	4.94″	1.55″	1.00″

Leadless-Poke-in wire connection

LONG TWIN T5 BALLASTS–36/39 WATTS (BIAX, DULUX L AND PLL)

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method✲	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87623	—	—	M	2	120	4150P▲	88	0.76	——	0.90	50°F	High	<20%	RS	C6	5
80152	—	—	❍E	1	120	B140R120HP	38	0.32	——	0.90	50°F	High	<10%	RS	C6	11
80153	—	—	❍E	1	277	B140R277HP	38	0.13	——	0.94	50°F	High	<10%	RS	C6	11
80154	—	—	❍E	1	120	B240R120HP	46	0.40	——	1.00	50°F	High	<10%	RS	C6	13✣
80155	—	—	❍E	1	277	B240R277HP	46	0.17	——	1.00	50°F	High	<10%	RS	C6	13✣
80154	—	—	❍E	2	120	B240R120HP	75	0.62	——	0.89	50°F	High	<10%	RS	C6	13
80155	—	—	❍E	2	277	B240R277HP	75	0.27	——	0.89	50°F	High	<10%	RS	C6	13
47535	—	—	❍E	1	120 277	B224PUNV-C●	36	0.30 0.13	——	0.95	0°F	High	<10%	PRS	-C	27
47540	—	—	❍E	1	120 277	B239PUNV-D●	38	0.32 0.15	——	1.02	0°F	High	<10%	PRS	-D	27
47540	—	—	❍E	2	120 277	B239PUNV-D●	71 70	0.59 0.26	——	0.97	0°F	High	<10%	PRS	-D	27
80156	—	—	❍E	3	120	B340R120HP	106	0.89	——	0.90	50°F	High	<10%	RS	C6	15
89219	—	—	❍E	2	120	B240R120RH	69	0.58	——	0.90	50°F	High	<20%	RS	C6	13
80157	—	—	❍E	3	277	B340R277HP	106	0.39	——	0.90	50°F	High	<10%	RS	C6	15
47509	47503	47506	E	2	120 277	C242UNV●◆	68 67	0.57 0.25	——	0.90	0°F	High	<10%	PRS	C11	20
47509	47503	47506	E	2	120 277	C242UNV●◆	68 67	0.57 0.25	——	0.90	0°F	High	<10%	PRS	C11	20

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
- **36/39 Watts**
  FT36W/2G11/RS
- **36/39 Watts**
  FT36W/2G10

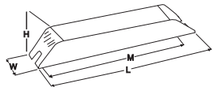
Long Twin T5, 4-Pin

✲ RS = Rapid Start; PRS = Programmed Rapid Start
▲ Standard cases offer side lead configuration.
● New auto reset shutdown circuit
◆ Add following suffix for complete catalog # "SE" for Side Exit connectors or "BE" suffix for Bottom Exit connectors or "BES" for Bottom Exit connectors with 2˝ O.C. screw studs.
❍ Not approved for use in hazardous locations.

All ballasts are UL listed, CSA approved and designated Class P (thermally protected).

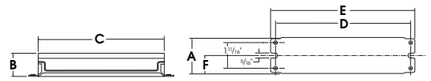
DIMENSIONS

REFERENCE DRAWING FOR -D



Dwg.	L	W	H	M	X
-D	16.88″	1.16″	1.00″	16.28″	---

REFERENCE DRAWING FOR C6

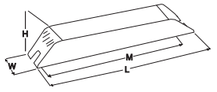


Dwg.	A	B	C	D	E	F
C6	2.40″	1.55″	8.31″	8.89″	9.50″	1.19″

Lead Lengths:

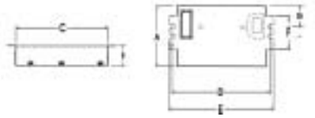
Electronic	Magnetic	Magnetic
Black/White-24˝	Models 4145P, 4245P,	(All other)
Red/Blue-30˝	4146P, 4246P	Black/White-20˝
Yellow-48˝	Black/White-11˝	Red/Blue/Yellow-30˝
	Red/Blue/Yellow-16˝	

REFERENCE DRAWING FOR -C



Dwg.	L	W	H	M	X
-C	14.25″	1.18″	1.00″	13.75″	---

REFERENCE DRAWING FOR C11



Dwg.	A	B	C	D	E	F	G
C11	2.98″	1.00″	4.25″	4.61″	4.94″	1.56″	1.00″

Leadless-Poke-in wire connection

LONG TWIN T5 BALLASTS– 40, 50, 55 & 96 WATTS (BIAX, DULUX L AND PLL)

GE Product Code			Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp	Power Factor	THD	Starting Method✿	Dim	Wir Diag
Side Exit	Bottom Exit	Bottom Exit Studs														
Electrical Characteristics - 60 Hz																
87625	—	—	M	2	120	4152P▲	85	0.68	——	0.90	50°F	High	<20%	RS	C6	5
80680	—	—	❍E	1	120	C240SI120RH▼	40	0.40	——	1.02	50°F	High	<20%	IS	C6	12✣
80681	—	—	❍E	1	277	C240SI277RH▼	40	0.17	——	1.02	50°F	High	<20%	IS	C6	12✣
80683	—	—	E	1	120 277	C240PUNVHP-B●	41 40	0.34 0.15	——	1.00	0°F	High	<10%	PRS	-B	20
80690	—	—	E	2	120	C340SI120RH▼	75	0.68	——	0.99	50°F	High	<20%	IS	C6	14✣
80691	—	—	E	2	277	C340SI277RH▼	75	0.28	——	0.99	50°F	High	<20%	IS	C6	14✣
80680	—	—	E	2	120	C240SI120RH▼	69	0.61	——	0.88	50°F	High	<20%	IS	C6	12
80681	—	—	E	2	277	C240SI277RH▼	69	0.27	——	0.88	50°F	High	<20%	IS	C6	12
80683	—	—	E	2	120 277	C240PUNVHP-B●	76 73	0.63 0.27	——	0.90	0°F	High	<10%	PRS	-B	20
80690	—	—	E	3	120	C340SI120RH▼	98	0.88	——	0.88	50°F	High	<20%	IS	C6	14
80691	—	—	E	3	277	C340SI277RH▼	98	0.39	——	0.88	50°F	High	<20%	IS	C6	14
80136	—	—	E	3	347	B332I347HP	97	0.28	——	0.85	50°F	High	<10%	IS	C6	14
47542	—	—	❍E	1	120 277	B254PUNV-D●	60	0.50 0.23	——	1.29	0°F	High	<10%	PRS	-D	27
47542	—	—	❍E	2	120 277	B254PUNV-D●	111 108	0.93 0.40	——	1.18	0°F	High	<10%	PRS	-D	27
47542	—	—	❍E	1	120 277	B254PUNV-D●	58	0.49 0.22	——	0.90	0°F	High	<10%	PRS	-D	27
47542	—	—	❍E	2	120 277	B254PUNV-D●	106 104	0.89 0.38	——	0.82	0°F	High	<10%	PRS	-D	27
80162	—	—	E	2	120	B295SR120HP	172	1.44	——	0.93	-20°F	High	<10%	SER-RS	SL	4
80163	—	—	E	2	277	B295SR277HP	172	0.63	——	0.93	-20°F	High	<10%	SER-RS	SL	4

QUICK REFERENCE
Nominal lamp watts and configuration

Lamp Type
40 Watts
FT40W/2G11

Long Twin T5, 4-Pin

Lamp Type
50 Watts
FT50W/2G11

Long Twin T5, 4-Pin

Lamp Type
55 Watts
FT55W/2G11

Long Twin T5, 4-Pin

Lamp Type
96 Watts
FT96W/GY10q

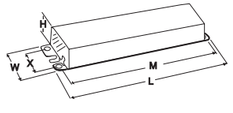
Long Twin T5, 4-Pin

✿ RS = Rapid Start; IS = Instant Start; PRS = Programmed Rapid Start
▲ Standard cases offer side lead configuration.
● New auto reset shutdown circuit
▼ Incorporates shutdown circuit
❍ Not approved for use in hazardous locations.

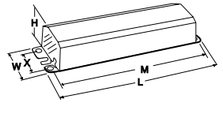
All ballasts are UL listed, CSA approved and designated Class P (thermally protected).

DIMENSIONS

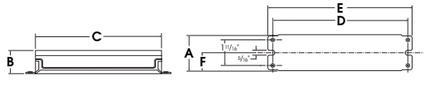
REFERENCE DRAWING FOR -B



REFERENCE DRAWING FOR -SL



REFERENCE DRAWING FOR C6

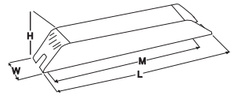


Dwg.	A	B	C	D	E	F
C6	2.40″	1.55″	8.31″	8.89″	9.50″	1.19″

Lead Lengths:

Electronic	Magnetic
Black/White-24″	Black/White-20″
Red/Blue-30″	Red/Blue/Yellow-30″
Yellow-48″	

REFERENCE DRAWING FOR -D



Dwg.	L	W	H	M	X
-B	9.50″	1.50″	1.00″	8.89″	0.88″
-D	16.88″	1.18″	1.00″	16.20″	---
-SL	11.75″	3.13″	1.78″	11.41″	2.00″

WIRING DIAGRAMS

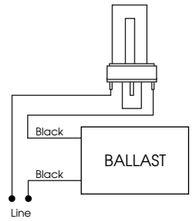


DIAGRAM 1

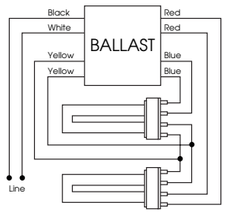


DIAGRAM 5

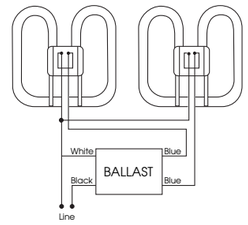


DIAGRAM 7A

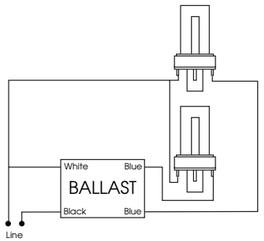


DIAGRAM 8

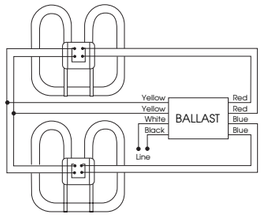


DIAGRAM 8A

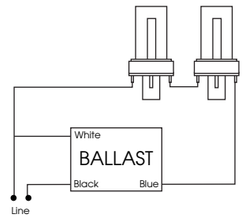


DIAGRAM 9

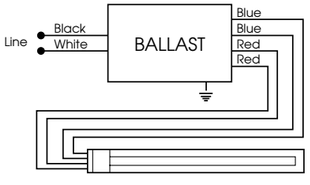


DIAGRAM 11

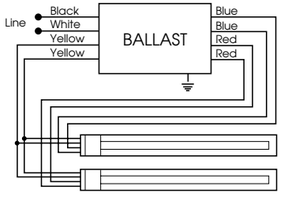


DIAGRAM 13

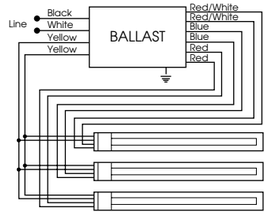


DIAGRAM 15

WIRING DIAGRAMS

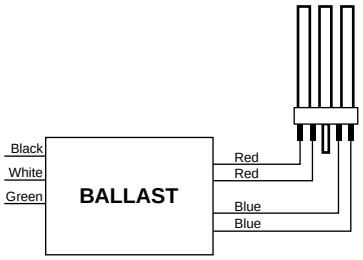


DIAGRAM 18

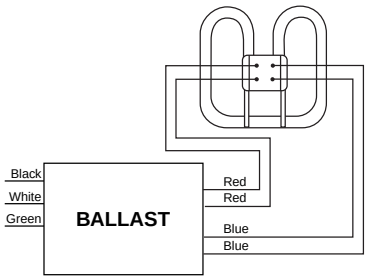


DIAGRAM 18A

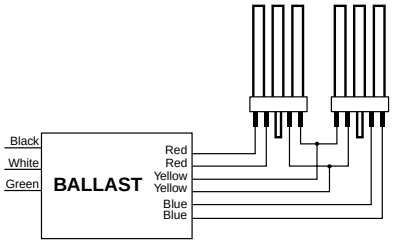


DIAGRAM 19

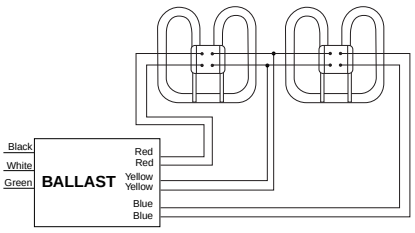


DIAGRAM 19A

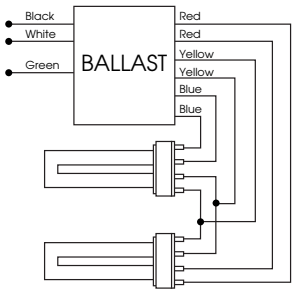
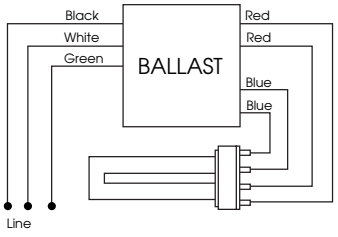


DIAGRAM 20



Mount lamp within 1" of grounded metal reflector.

DIAGRAM 21

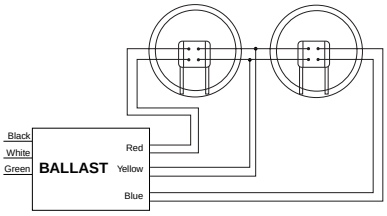


DIAGRAM 23

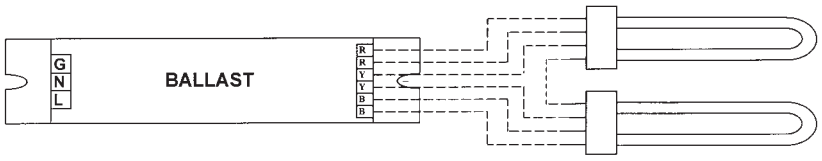


DIAGRAM 27

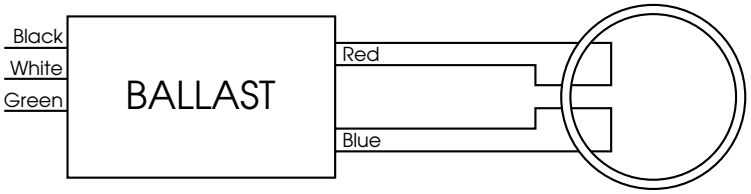


DIAGRAM 28

GE MEANS HIGHER EXPECTATIONS IN HIGH INTENSITY DISCHARGE.

GE offers a wide line of ballasts for all High Intensity Discharge (HID) lamp types (mercury, vapor, metal halide and high-pressure sodium) for applications ranging from 35-2000 watts, including core & coil, electronic, F-Can, potted core & coil, weatherproof, postline, and indoor encased ballasts. Our line includes the latest innovation in magnetic core & coil technology in years.

GE offers a wide line of HID ballasts for applications ranging from 35-2000 watts.

PRODUCT OVERVIEW

Core & Coil

Core & coil ballasts are used in over 90% of all HID fixtures. GE's core & coil models are available for all HID lamp types, including single-, dual-, tri-, and multi-voltage designs. For added versatility and reduced inventory costs, GE has also introduced the industry's first Multi-5™ ballast (120, 208, 240, 277, or 480 Volt), featuring a 480-Volt tap on a conventional quad tap ballast.

Our core & coil models are ideal for a wide variety of lighting applications, including factories, warehouses, gymnasiums and retail stores. All these ballasts feature precision-wound coils, ensuring even heat dissipation and the highest electrical integrity.

GE's Precise™ is the next generation in core & coil technology, featuring a smaller, lightweight design and improved temperature performance. Precise™ fits virtually all applications, and has no exposed live metal parts. There are no plastic extrusions, which prevents breakage during shipping. Color-coded leads make installation easy.

F-Can

These ballasts are used primarily for indoor downlighting applications where quiet operation is essential. All the components of these ballasts are enclosed in a fluorescent-style ballast can and are thermally protected.

Potted Core & Coil

Our potted core & coil ballasts are designed for applications requiring quieter or cooler operation than provided by standard coil & coil ballasts. The potting material is a sand-filled polyester which provides excellent sound-deadening and heat transfer qualities.

HID Multi-5™ Ballasts

Core & Coil Ballasts

HID Ballast Kits

PRODUCT OVERVIEW

Weatherproof

GE's weatherproof ballasts are designed to stand up to the toughest outdoor conditions. They can be mounted remotely in the pole base or pole top. Since they're not hermetically sealed, they should not be mounted in areas prone to water accumulation.

Indoor Encased

Our HID indoor encased ballasts can be mounted remotely, which lets you use a smaller HID fixture while ensuring quiet operation. If necessary, these ballasts can be specified with an integral capacitor and starter.

Ignitors

GE offers the industry's most complete line of ignitors, including standard, automatic shutoff, instant restrike, and long distance ignitors.

HID Capacitors

Multi-5™ Uni-Pak™

F-Can Ballasts

REMOTE MOUNTING DISTANCE
Maximum Length in Feet for Remote Mounting of HID Ballasts to Lamp

ANSI	Lamp Type	Watts	12 GA	14 GA	16 GA	18 GA
H45	Mercury	40	534	336	211	132
H46	Mercury	50	498	313	197	123
H43	Mercury	75	620	390	245	154
H38	Mercury	100	620	390	245	154
H39	Mercury	175	272	171	107	67
H37	Mercury	250	194	122	77	48
H33	Mercury	400	132	83	52	33
H35	Mercury	700	297	187	117	74
H36	Mercury	1000	208	131	82	51
M57	Metal Halide	175	272	171	107	67
M58	Metal Halide	250	194	122	77	48
M59	Metal Halide	400	132	83	52	33
M47	Metal Halide	1000	196	123	77	48
M48	Metal Halide	1500	146	92	58	36

For proper installation, ensure that remote ballasts are properly vented and mounted to a heat-dissipating surface.

PRODUCT OVERVIEW

For maximum safety and reliability, all GE capacitors come with built-in bleed resistors. All GE capacitors are recognized by UL (UL file #E68320 for metal cases and #E182721 for plastic cases) and approved by CSA (CSA file #LR51331, metal cases only). Environmental safety is assured by use of biodegradable, nontoxic (no PCBs) dielectric fluid (soybean oil), patented for use in capacitors. Dry-film capacitors do not include protective devices. Since they can fail in a hazardous manner, it is the responsibility of the purchaser to take appropriate precautions.

Capacitors

GE has a comprehensive line of capacitors in metal cases (up to 520V ratings) and plastic cases (up to 400V ratings) – plus metal cases for dual-level operation. All GE capacitors are designed for 60,000 hours of continuous life. They're exceptionally reliable because we put them through accelerated life testing at 125% rated voltage and 110% of rated temperature +10°C.

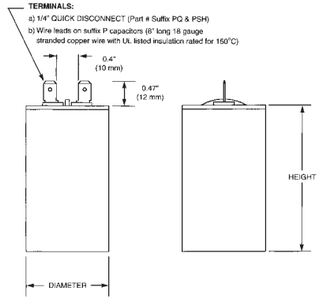
GE capacitors are normally packaged with ballasts. They may also be ordered separately, bulk packaged, or individually boxed with the suffix "BH" (metal cases only). Capacitor weights vary from 1/4 lb. to 1 lb. each.

Dry Capacitors

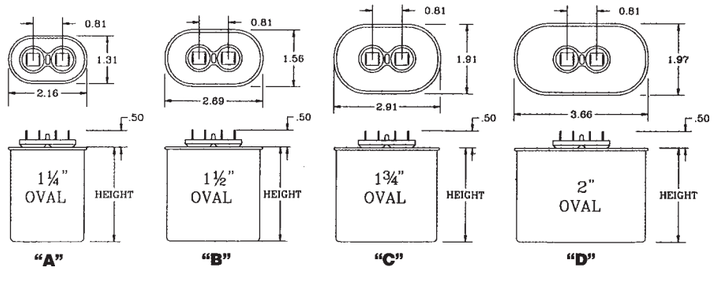
Type "P" plastic case capacitors described in this section are dry and do NOT contain safety interrupters (or oil). Plastic cases are UL rated "94V-O" (for use up to 100°C maximum). Type "P" capacitors are supplied with stranded copper wire leads 8 inches long (18 AWG, with 150°C rated insulation). Capacitor rolls are sealed inside plastic cases using epoxy. Design and testing of GE capacitors follow specifications in Electronic Industries Association (EIA) Standard 456-A, titled "Metalized Film Dielectric Capacitors for Alternating Current Application."

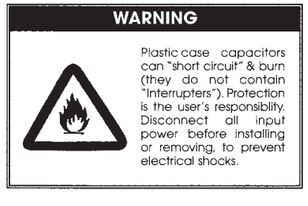
"P" capacitors are designed and rated for continuous duty AC voltages below 400VAC @ 50 or 60 Hz. Capacitors used with HID ballasts at voltages above 400VAC should contain interrupters (available from GE in oval "MF" and round "RMF" oil-filled metal cases).

Plastic Dry Type Capacitors



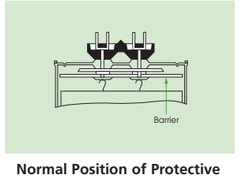
Metal and Oil Filled Capacitors



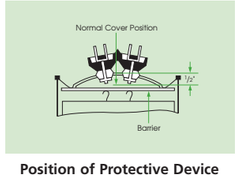


Protective Device (Only in metal cases)

Protective device to prevent case rupture



Normal Position of Protective Device



Position of Protective Device After Activation

APPLICATION AND OPERATING INFORMATION

OIL-FILLED CAPACITORS

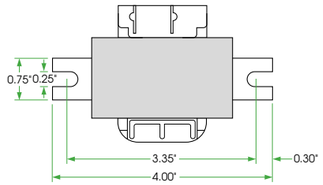
GE Product Code	uF	VACr	Part #	Case	Ht (")
89078	12.0	400	005-2799-MF	1.50 oval	2.7
88982	15.0	400	005-1185-MF	1.75 oval	2.7
89083	24.0	360	005-3160-MF	1.75 oval	3.1
89071	24.0	400	005-2664-MF	1.75 oval	3.1
89077	24.0	480	005-2779-MF	1.75 oval	3.9
89007	48.0	330	005-1422-MF	1.75 oval	3.9

BRACKET REFERENCE CHART

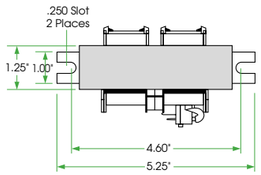
CORE & COIL WELDED BRACKETS

All welded brackets are .093" thick.

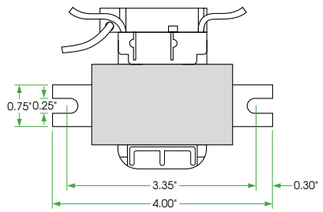
Ref. Drawing B1



Ref. Drawing B2

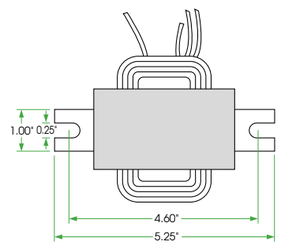


Ref. Drawing B1-A

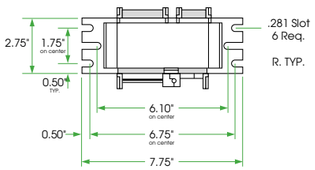


Ref. Drawing B3

Ref. Drawing B1-B



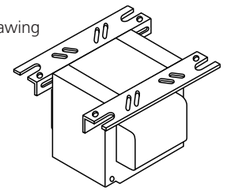
Ref. Drawing B4



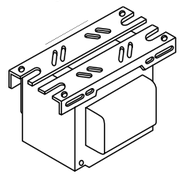
CORE & COIL ADJUSTABLE MOUNTING BRACKETS

Routinely supplied with replacement kits.
All welded brackets are .093" thick.

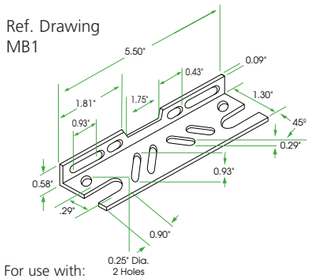
Ref. Drawing ADJ1



Ref. Drawing ADJ2



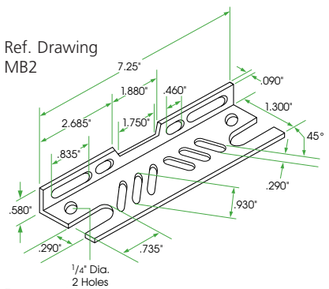
Ref. Drawing MB1



For use with:

- 50 to 175 watt Mercury, High Pressure Sodium and Metal Halide and some 250 watt Metal Halide

Ref. Drawing MB2



For use with:

- 250 to 1500 watt Metal Halide
- 250 to 1000 watt High Pressure Sodium and Mercury Vapor

APPLICATION AND OPERATING INFORMATION

Underwriters Laboratories, Inc. Acceptance

All F-Can and weatherproof ballasts listed in this catalog are Underwriters Laboratories, Inc. white card listed, except those for 347 Volt operation. All core & coil, potted core & coil and postline ballasts listed in this catalog are Underwriters Laboratories, Inc. yellow card listed (component recognized).

Ballast Replacement

Ballast replacement presents the possibility of exposure to potentially hazardous voltages and should be performed only by qualified personnel. All installation, inspection and maintenance should be performed only with the entire circuit power to fixture or equipment turned off. Installation shall be in accordance with National Electric Code.

Heat

A ballast, like any other electrical device, generates heat during normal operation. Planning for maximum heat dissipation with proper fixture design, installation planning and ballast selection will minimize the possibility of a heat-related problem arising. Excessive temperature will have an adverse effect on ballast life.

Normal Temperature Limits:

- ***F-Can Ballasts***
  Maximum case temperature: 90°C

- ***Weatherproof Ballasts***
  Maximum case temperature: 90°C

- ***Core & Coil Ballasts and Potted Core and Coil Ballasts***
  Insulation: Class 180°C
  Maximum coil temperature: 165°C
  (measured by change of resistance method)

All F-Can ballasts listed in this catalog are equipped with built-in automatic resetting internal thermal protection as a standard feature.

Other ballast types may be available with thermal protection as an option. If required, consult your GE representative for availability and ordering information.

Whenever a ballast with thermal protection is used, it is imperative that the fixture/ballast/lamp combination be heat tested under actual or simulated installation conditions to assure that the ballast will not cycle.

The resetting thermal protector functions as a thermostat which will open and temporarily deactivate the ballast when it exceeds the permissible temperature. The ballast will continue to cycle until the cause of overheating is eliminated. If the ballast is defective, it must be replaced. If the cause is external, the ballast will resume normal operation after abnormal conditions are eliminated.

To attain normal ballast life, the maximum coil temperature of the ballast should not exceed the rating of the insulation system. A temperature increase of 10°C results in a 50% reduction of ballast life.

Low Ambient Temperature (Cold)

As temperatures drop, less and less vaporized gas is available within the arc tube of a high intensity discharge lamp, thereby causing an increase in the open circuit voltage required to initiate an arc in the lamp, until a point is reached where the lamp cannot be started. The minimum temperature at which any ballast listed in this catalog will provide reliable starting is listed with the electrical characteristics.

Low ambient temperatures will also result in a slight increase in the warm-up period of any type of high intensity discharge lamp.

Ballasts should be protected from weather, moisture, or other abnormal atmospheric conditions, unless specifically designed for use under adverse conditions.

Fusing

The purpose of fusing an HID ballast is to remove the ballast from the power line in the event of a ballast system failure. A fuse does not protect the ballast from failing.

Because the temperature in the ballast compartment is high, typically 90°C, fuse ratings are specified at 25°C, and that this rating declines as the temperature increases, HID fuse recommendations are made between 2 and 3 times the maximum current the ballast will draw during all normal conditions.

Fast-blow fuses should not be used due to the possibility of high inrush currents. These currents are due to the fact that the power can be applied at any point in the AC voltage waveform. Standard and slow-blow are acceptable.

When using the 120V tap for auxiliary lighting, a slow-blow fuse should be used to protect the ballast from damage from a fault in the auxiliary lighting circuit.

APPLICATION AND OPERATING INFORMATION

Sound

High intensity discharge lamp ballasts, like all electromagnetic devices, produce noise, or "hum." It is the degree of noise which determines the existence of a problem. Ballast noise will only be noticeable when it exceeds the ambient sound level of the installation. It is obvious that a ballast designed primarily for outdoor or factory use would not be suitable in an office environment.

The vast improvements in all high intensity discharge lamps and ballasts, and their excellent energy efficiency, have made them viable options for many indoor applications. The ballasts being considered should be carefully analyzed to ensure that there will not be an objectionable level of ballast noise.

All F-Can ballasts listed in this catalog are "Sound Rated" to aid in the selection of a ballast that is proper for the environment in which it will operate.

Potted core & coil ballasts are also designed to operate at reduced sound levels, generally several decibels lower than a standard core & coil ballast. Core & coil ballasts are not sound rated.

In situations where light output necessitates using a ballast with a sound rating or noise level not normally acceptable, the ballast should be remotely mounted. Note, however, that not all ballasts listed in this catalog are designed or recommended for remote mounting.

Polarity

Polarity refers to the proper connection of ballast lead wires to line wires. To aid you in making a correct installation, GE ballast leads are color-coded for easy identification. The white or yellow ballast lead is to be connected to the neutral or common. Choose the appropriate ballast voltage lead to connect to the line.

Grounding

Ballast and capacitors or starters in metallic casings must always be grounded. Ballasts and components may be grounded to the fixture or otherwise grounded. It would be hazardous to make contact with an ungrounded fixture, ballast or other electrical component while in operation.

Operating Line Voltage Limits

To receive the full benefits of rated lamp output and to prolong ballast life, it is essential that voltage supplied to an installation be maintained within the prescribed limits.

In general, the line voltage supplied to a lag type ballast (reactor or high reactance autotransformer) should be maintained within 5% of the voltage for which the ballast is rated. The line voltage to lead type ballasts (constant wattage autotransformer or constant wattage isolated) should be maintained within 10%.

Subjecting a ballast to excessive voltage for an extended period of time results in the deterioration of the coil insulation. This insulation breakdown will cause early ballast failure.

Low voltage has no damaging effect on the ballast. It could, however, have an adverse effect on lamp performance and starting dependability.

Maintenance

Selecting and installing an adequate and efficient lighting system means nothing if it is not properly maintained. Maintenance must always be considered as part of the life cycle cost of any high intensity discharge lighting installation in order to assure the continued performance of the system as originally specified.

First and foremost in importance is proper lamp maintenance. High intensity discharge lamps do not "burn out" like an incandescent bulb, but rather, undergo changes with the arc tube which prevent the lamp from starting properly, warming up and producing full light output. The beginning of difficulties such as these generally indicates the end of a lamp's useful life. Also, a dead lamp left in a fixture can be very damaging to the ignitor in systems which utilize them. To overcome this problem, GE offers automatic shutoff ignitors, which are described in the ignitor section of this catalog.

In difficult locations, group replacement of all the lamps, working or not, is often more economical and convenient than spot replacement. The same, of course, applies to ballasts which might be approaching the end of their life. Only you can decide what is right for your lighting system, but what is important is that you have a maintenance program.

HIGH INTENSITY DISCHARGE
(HID) BALLASTS

APPLICATION AND OPERATING INFORMATION

Periodic cleaning of the fixtures' lenses and reflectors is also important in maintaining proper light output. For indoor systems, maintenance of reflective surfaces, such as walls and ceilings, will also help assure proper levels of illumination.

Standby Lighting and Packaging

Standby Lighting

To provide light during a high intensity discharge lamp's warm-up period, or the cool-down period following a power interruption which has extinguished it, incandescent standby lighting can be incorporated. This is accomplished by use of a standby lighting device, or remote, that switches off an incandescent lamp incorporated into the fixture once an arc has been established, or reestablished, in the HID lamp. Generally, standby lighting devices operate on 120 Volts, so a tap must be provided on ballasts designed to operate at higher line voltages.

The 120 Volt terminal or lead on all GE dual-, tri- and multi-voltage ballasts can be used as a tap for standby lighting when the ballast is utilized for any of the higher voltages. Many single voltage ballasts are available with a 120 Volt tap and are listed throughout the core & coil data section. Other single voltage ballasts may be available in this version. Consult your GE representative for availability and price information.

Any connection to the 120 Volt tap must be accomplished by means of a slow-blow fuse. This fuse will protect the ballast from abnormal conditions in the standby lamp circuit or its control device. The fuse should be located in the coolest place in the fixture (below 80°C). The recommended fuse amperage and maximum auxiliary lamp wattage are listed in this catalog for each ballast suitable for standby lighting applications.

Be sure to follow the wiring instructions of the standby lighting device manufacturer. All applicable requirements of the National Electrical Code must be met.

Packaging

Standard Pack

GE high intensity discharge lamp ballasts are routinely packed in easy-to-handle cartons containing from 1 to 20 units per carton, depending on the size and weight of the ballasts. Consult your GE representative regarding the number of "units per carton" for shipment with attached mounting brackets, capacitors (for high power factor units), and ignitors (if required). Other ordering criteria may cause packaging to vary.

Individual Cartons

All distributor replacement kits, weatherproof, postline, potted core & coil, and many larger ballasts are packaged in individual cartons.

Individual cartons serve a threefold purpose: as a display carton, a stock package, and a shipping container for the retail market. Individual cartons may be packed in master cartons, depending on weight and size.

Individual carton packaging may be available for other ballasts. Contact your GE representative regarding availability and cost.

APPLICATION &
OPERATING INFO.

NOMENCLATURE

ABBREVIATIONS

CWA Constant Wattage Autotransformer

CWI Constant Wattage Isolated

ISO Regulated Lag

R-HPF Reactor—High Power Factor

R-NPF Reactor—Normal Power Factor

HX-HPF Lag Type — High Reactance Autotransformer—High Power Factor

HX-NPF Lag Type — High Reactance Autotransformer—Normal Power Factor

UL Bench Top Rise Temperature Code

To facilitate UL inspection, the UL Bench Top Rise Temperature Code is shown on the core & coil ballast label as 1029X. 1029 is the UL Standard for HID Ballasts, and the X is the temperature code. If a fixture is UL listed for 1029D, then automatically all ballasts with an A, B, C or D temperature classification are acceptable for use within that same fixture.

UL Bench Top Rise Letter Code Temperature Range for Class H (180°C) Ballasts

A <75°C
B 75°C<80°C
C 80°C<85°C
D 85°C<90°C
E 90°C<95°C
F 95°C<100°C

Field →

1	2	3	4	5	6	7	8	9

← **Number of Digits**

1	2 to 4	3	1	1	1	1	3	1
M	2 0 0 0	M L T	A	C	5	M	0 0 0	C
Lamp Type (M/P/S/H)	← Wattage →	Primary Voltage (MLT/ML5/TRI/48T/ 120/277/ 230)	Circuit Type (R/A/I/O/L/M)	Style (C/F/W/E/I/P)	Frame Size (E/3/4/5/X)	Socket Type & Other Oddities (M/D/X/L)	← Pack Code (000 TO 999) →	Container Type (C/T/I/K)

Field	Description
1	(M) Metal Halide, (P) Pulse Start Metal Halide, (S) High Pressure Sodium, (H) Mercury
2	35 to 2000 Watts (Varies from two to four digits)
3	(MLT) Quad, (ML5) Multi-5, (TRI) TriVolt, (48T) 480/120, (120) 120, (277) 277, (230) 230V/50Hz
4	(R) Reactor, (A) CWA, (I) CWI, (O) IsoReg, (L) High Reactance/Lag, (M) MagLag
5	(C), C&C, (F) F-Can, (W) Weatherproof, (E) Encased/Potted C&C (I) Indoor Encased
6	(E) E&I, (3) 3x4, (4) 4-3/4, (5) 5-3/4, (X) Non Core and Coil
7	(M) Mogul or Medium, (D) Double Ended, (X) Multiple Lamps, (L) Low Loss
8	Pack Code (000 to 999, per pack code listing)
9	(C) Carton, (T) Tray, (I) Individual, (K) Kit

HIGH INTENSITY DISCHARGE
(HID) BALLASTS

TYPICAL SPECIFICATIONS FOR HID BALLASTS

1. Ballasts shall be designed in accordance with all applicable ANSI specifications including ANSI C82.4
2. The Core & Coil ballast shall be designed with class "H" (180°C) or higher insulation system and vacuum impregnated with a 100% solids based resin.
3. All coils shall be precision wound.
4. Core & Coil ballasts shall be designed to operate at least 180 cycles of 12 hours on and 12 hours off, with the lamp circuit in an open or short-circuited condition and without undue reduction in ballast life.
5. Core & Coil ballast and starter combinations shall be designed to provide a reliable lamp starting down to ¯40°C for High Pressure Sodium and ¯30°C for Metal Halide at minimum rated line voltage.
6. Manufacturer shall provide written warranty against defects in workmanship, including replacement, for two years from date of manufacture.

Capacitors
1. All capacitors will be provided with a self-contained internal bleeder resistor.
2. All oil-filled capacitors will be housed in corrosion-resistant steel cans and contain .25" quick disconnect terminals.
3. All capacitors will be manufactured by ballast manufacturer.

Ignitors
1. All ignitors will be epoxy-filled with either a plastic or aluminum external housing.
2. The ignitor shall be so designed to provide six months of lamp open circuit operation without failure.

Kits
1. All HID kits shall be precision wound to ensure proper installation.
2. All HID kits shall be pre-wired.
3. All HID kits shall be built with color-coded leads.
4. All HID kits are to be UL and CSA recognized following the guidelines found in UL 1029 and CAN/CSA-22.2 No.74-92 (part 2 and 3).
5. GE Model_____(or approved equal).

DISTRIBUTOR REPLACEMENT KITS

GE's HID distributor replacement kits contain the appropriate core & coil, a properly rated capacitor, and all other components required for ballast replacement. Our kits are the quickest and easiest to install of any on the market, thanks to unique design features like:

- Prewired capacitor and ignitor (if required) to save time and reduce wiring errors
- Color coded leads to reduce risk of incorrect wiring inside the fixture
- Features that exceed UL standards, including capacitors that offer trip fault protection
- Simple installation instructions and troubleshooting tips
- UPS shippable box

Our kit offerings include many quad-voltage (120, 208, 240, or 277 volt) and 480 Volt core & coil ballasts, as well as the new Multi-5 five-voltage ballast. 480 Volt ballasts are equipped with a 120 Volt tap to accommodate standby lighting.

GE's Multi-5™ Ballast Lamp Replacement kit is available for metal halide and high pressure sodium applications. This easy to carry, convenient, all-in-one kit ensures ballast lamp compatibility.

Distributor replacement kit cartons are packaged in master cartons in quantities from 1 to 6 units.

Master carton quantities can be found on GE's list and distributor price sheets.

Quad, 480 Volt, Multi-5™ and Multi-5™ Uni-Pak™ Distributor Replacement Kits

Lamp Type	Wattage	Voltage	Frame Size	GE Product Code	Part Number
Metal	150	480-120	3 x 4	86711	M15048TLC3M500K
Halide	175	Multi-5	3 x 4	87210	M175ML5AC3M500K
	175	120/208/240/277	3 x 4	86741	M175MLTAC3M500K
	250	Multi-5	3 x 4	87211	M250ML5AC3M500K
	250	120/208/240/277	3 x 4	86765	M250MLTAC3M500K
	250	Multi-5	4.25 x 4.75	87212	M250ML5AC4M500K
	250	Multi-5™ Uni-Pak™	3 x 4	49763	M250ML5AC3M555K
	250	Multi-5™ Uni-Pak™	4.25 x 4.75	49742	M250ML5AC4M555K
	400	Multi-5	4.25 x 4.75	86808	M400ML5AC4M500K
	400	120/208/240/277	4.25 x 4.75	86814	M400MLTAC4M500K
	400	480-120	4.25 x 4.75	86803	M40048TAC4M500K
	400	Multi-5™ Uni-Pak™	4.25 x 4.75	49745	M400ML5AC4M555K
	1000	Multi-5	4.25 x 5.75	87213	M1000ML5AC5M500K
	1000	120/208/240/277	4.25 x 5.75	86655	M1000MLTAC5M500K
	1000	480-120	4.25 x 5.75	86650	M100048TAC5M500K
	1500	120/208/240/277	4.25 x 5.75	86698	M1500MLTAC5M500K
	1500	480-120	4.25 x 5.75	86693	M150048TAC5M500K
Pulse	175	120/208/240/277	3 x 4	86885	P175MLTAC3M500K
Start	175	480-120	3 x 4	86876	P17548TAC3M500K
Metal	250	120/208/240/277	4.25 x 4.75	86935	P250MLTAC4M500K
Halide	250	480-120	4.25 x 4.75	86926	P25048TAC4M500K
	320	120/208/240/277	4.25 x 4.75	86959	P320MLTAC4M500K
	320	480-120	4.25 x 4.75	86952	P32048TAC4M500K
	350	120/208/240/277	4.25 x 4.75	86984	P350MLTAC4M500K

HIGH INTENSITY DISCHARGE
(HID) BALLASTS

Quad, 480 Volt, Multi-5™ and Multi-5™ Uni-Pak™ Distributor Replacement Kits

Lamp Type	Wattage	Voltage	Frame Size	GE Product Code	Part Number
	400	120/208/240/277	4.25 x 4.75	87008	P400MLTAC4M500K
	400	480-120	4.25 x 4.75	86999	P40048TAC4M500K
	750	480-120	4.25 x 5.75	46936	P75048TAC5M500K
HPS	50	120/208/240/277	3 x 4	87152	S50MLTLC3M500K
	70	120/208/240/277	3 x 4	86587	S70MLTLC3M500K
	70	480-120	3 x 4	86456	S7048TLC3M500K
	100	120/208/240/277	3 x 4	87074	S100MLTLC3M500K
	100	480-120	3 x 4	87068	S10048TLC3M500K
	150	120/208/240/277	3 x 4	87094	S150MLTLC3M500K
	150	480-120	3 x 4	87087	S15048TLC3M500K
	250	Multi-5	4.25 x 4.75	87214	S250ML5AC4M500K
	250	120/208/240/277	4.25 x 4.75	87121	S250MLTAC4M500K
	250	Multi-5™ Uni-Pak™	4.25 x 4.75	49757	S250ML5AC4M555K
	400	Multi-5	4.25 x 4.75	8725	S400ML5AC4M500K
	400	120/208/240/277	4.25 x 4.75	87164	S400MLTAC4M500K
	400	480-120	4.25 x 4.75	87198	S40048TAC4M500K
	400	Multi-5	4.25 x 5.75	87217	S400ML5AC5M500K
	400	120/208/240/277	4.25 x 5.75	87175	S400MLTAC5M500K
	400	480-120	4.25 x 5.75	87206	S40048TAC5M500K
	400	Multi-5™ Uni-Pak™	4.25 x 4.75	49758	S400ML5AC4M555K
	1000	Multi-5	4.25 x 5.75	87218	S1000ML5AC5M500K
	1000	120/208/240/277	4.25 x 5.75	87056	S1000MLTAC5M500K
	1000	480-120	4.25 x 5.75	87048	S100048TAC5M500K
Mercury	100	120/208/240/277	3 x 4	86519	H100MLTAC3M500K
	175	120/208/240/277	3 x 4	86527	H175MLTAC3M500K
	400	120/208/240/277	4.25 x 4.75	86542	H400MLTAC4M500K

DISTRIBUTOR
REPLACEMENT KITS

CORE & COIL ELECTRONIC BALLASTS
METAL HALIDE LAMPS

MH 35/39 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 35/39 WATT M130 METAL HALIDE LAMP																					
86824	120 or 208 or 240 or 277	M50MLTLC3M500K	HX-HPF	67	1.16 0.67 0.57 0.50		3 3 2 2	4	PC1	1.0	2.6	6	280	1.2	2.2	1.31x2.16	2.2	4.3	MH100-3A	10	A

MH 70 WATTS

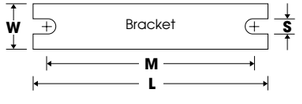
GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 70 WATT M98 METAL HALIDE LAMP – Medium Base																					
86847	120 or 208 or 240 or 277	M70MLTLC3M500K	HX-HPF	95	1.70 1.04 0.87 0.78	245	4 3 3 2	4	PC1	1.3	2.9	8	280	1.2	2.7	1.31x2.16	2.2	4.3	MH100-3A	10	A B B B
86839	480-120	M7048TLC3M	HX-HPF	95	0.50	245	1	6	PC1	1.3	2.9	8	300	1.2	2.7	1.31x2.16	2.2	4.3	MH100-3A	10	E

MH 100 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtg	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 100 WATT M90 OR M92 METAL HALIDE LAMP - Medium Base																					
86675	120 or 208 or 240 or 277	M100MLTLC3M500K	HX-HPF	130	2.30 1.30 1.10 0.95	250	5 4 3 3	4	PC1	1.7	3.2	10	280	1.2	2.7	1.31x2.16	2.2	6.3	MH100-3A	10	A
86667	480-120	M10048TLC3M500K	HX-HPF	140	0.62	250	2	6	PC1	1.7	3.2	10	280	1.2	2.7	1.31x2.16	2.2	5.0	MH100-3A	10	C

DIMENSIONS

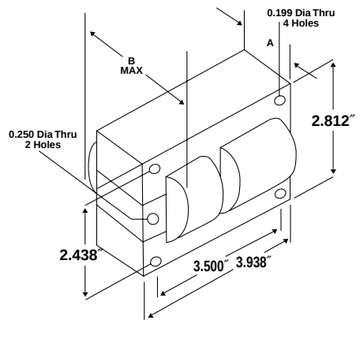
DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K



Ref. Dwg.	L	W	M	S
1	4.00"	0.75"	3.35"	0.25"
PC1	5.25"	1.25"	4.60"	0.25"

See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

REFERENCE DRAWING PC1



CORE & COIL ELECTRONIC BALLASTS
METAL HALIDE LAMPS

MH 150 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtg	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 150 WATT M102 METAL HALIDE LAMP - Medium Base																					
86718	120 or 208 or 240 or 277	M150MLTLC3M500K	HX-HPF	185	3.32 1.93 1.66 1.48	245	10 5 5 4	4	PC1	2.3	3.9	16	300	1.6	2.7	1.56x2.69	2.7	7.3	MH100-3A	10	D
86711	480-120	M15048TLC3M500K	HX-HPF	180	1.00	245	2	6	PC1	2.3	3.9	16	280	1.6	2.7	1.56x2.69	2.7	7.3	MH100-3A	10	F

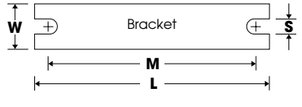
MH 175 WATTS featuring Multi-5™

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 175 WATT M57, M107 METAL HALIDE OR H39 MERCURY LAMPS																					
86741	120 or 208 or 240 or 277	M175MLTAC3M500K	CWA	213	1.80 1.10 0.90 0.78	310	5 3 3 2	21	PC1	2.2	3.6	10	400	1.6	2.7	1.56x2.69	2.7	6.8	n/a	n/a	A B A A
87210	120 or 208 or 240 or 277 or 480	M175ML5AC3M500K	CWA	208 208 208 208 210	1.90 1.10 0.95 0.85 0.50	300	5 3 3 2 1.5	44	PC1	2.3	3.6	10	400	1.6	2.7	1.56x2.69	2.7	6.8	n/a	n/a	B

SEE WIRING DIAGRAMS Page 5-32

DIMENSIONS

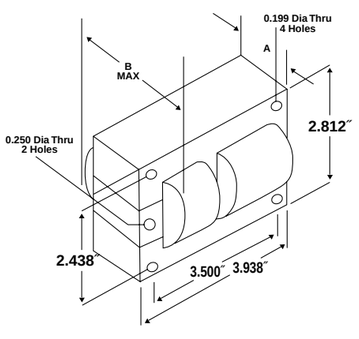
DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K



Ref. Dwg.	L	W	M	S
1	4.00"	0.75"	3.35"	0.25"
PC1	5.25"	1.25"	4.60"	0.25"

See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

REFERENCE DRAWING PC1



CORE & COIL ELECTRONIC BALLASTS
METAL HALIDE LAMPS

MH 250 WATTS featuring Multi-5™

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 250 WATT M58 METAL HALIDE OR H37 MERCURY LAMP - 4" Frame																					
86765	120 or 208 or 240 or 277	M250MLTAC3M500K	CWA	294	2.60 1.58 1.30 1.12	280	8 5 4 3	21	PC1	3.0	4.3	15	400	1.6	3.6	1.91x2.91	2.7	9.0	n/a	n/a	C D C C
87211	120 or 208 or 240 or 277 or 480	M250ML5AC3M500K	CWA	280	2.60 1.60 1.30 1.20 0.70	290	8 5 4 3 2	44	PC1	3.0	4.3	15	400	1.6	3.6	1.91x2.91	2.7	9.0	n/a	n/a	B B B C C

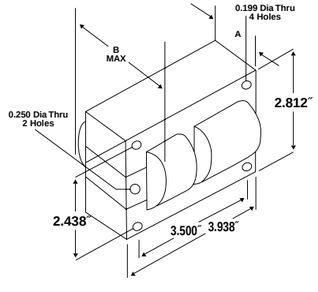
MH 250 WATTS featuring Multi-5™

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 250 WATT M58 METAL HALIDE OR H37 MERCURY LAMPS - 4.75" Frame																					
87212	120 or 208 or 240 or 277 or 480	M250ML5AC4M500K	CWA	293	2.50 1.40 1.30 1.10 0.65	305	8 5 4 3 2	44	PC2	1.8	3.6	15	400	1.6	3.6	1.91x2.91	2.7	10.8	n/a	n/a	A

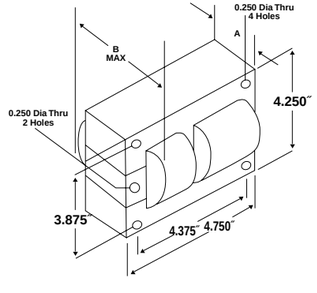
DIMENSIONS

DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K

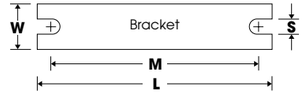
REFERENCE DRAWING PC1



REFERENCE DRAWING PC2



Ref. Dwg.	L	W	M	S
1	4.00″	0.75″	3.35″	0.25″
PC1	5.25″	1.25″	4.60″	0.25″
PC 2	5.25″	1.25″	4.60″	0.25″



See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

MH 250 WATTS

CORE & COIL ELECTRONIC BALLASTS
METAL HALIDE LAMPS

MH 400 WATTS featuring Multi-5™

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 400 WATT M59 METAL HALIDE OR H33 MERCURY LAMP																					
86803	480-120	M40048TAC4M500K	CWA	458	1.00	300	5	19	PC2	2.0	3.9	24	400	1.8	3.6	1.91x2.91	3.1	11.2	n/a	n/a	E
86814	120 or 208 or 240 or 277	M400MLTAC4M500K	CWA	458	4.00 2.30 2.00 1.70	300	10 8 5 5	21	PC2	2.0	3.9	24	360	1.8	3.6	1.91x2.91	3.1	11.2	n/a	n/a	C D D E
87212	120 or 208 or 240 or 277 or 480	M400ML5AC4M500K	CWA	458	4.00 2.30 2.00 1.70 1.00	300	10 8 5 5 5	44	PC2	2.0	3.9	24	400	1.8	3.6	1.91x2.91	3.1	11.2	n/a	n/a	E D E D E

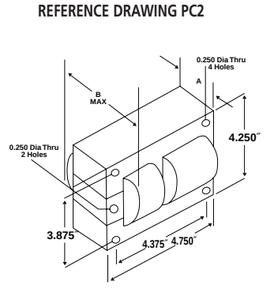
MH 1000 WATTS featuring Multi-5™

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 1000 WATT M47 METAL HALIDE OR H36 MERCURY LAMP																					
86650	480-120	M100048TAC5M500K	CWA	1080	2.30	420	10	19	PC3	2.8	4.6	24	480	n/a	n/a	1.91x2.91	3.9	22.0	n/a	n/a	C
86655	120 or 208 or 240 or 277	M1000MLTAC5M500K	CWA	1080	9.20 5.30 4.60 4.00	420	20 15 10 10	21	PC3	2.8	4.7	24	480	n/a	n/a	1.91x2.91	3.9	22.0	n/a	n/a	F D B B
87213	120 or 208 or 240 or 277 or 480	M1000ML5AC5M500K	CWA	1080	9.00 5.20 4.40 3.90 2.30	425	20 15 10 10 10	44	PC3	2.8	4.6	24	480	n/a	n/a	1.91x2.91	3.9	22.0	n/a	n/a	F B B B B

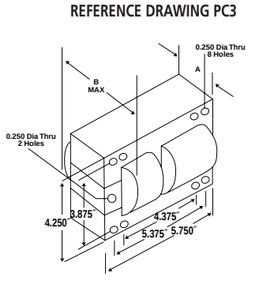
DIMENSIONS

DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K

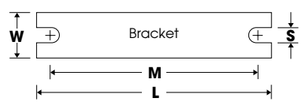
REFERENCE DRAWING PC2



REFERENCE DRAWING PC3



Ref. Dwg.	L	W	M	S
PC 2	5.25″	1.25″	4.60″	0.25″
PC3	7.75″	2.75″	6.10″	0.25″



See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

MH 400-1000 WATTS

CORE & COIL ELECTRONIC BALLASTS
METAL HALIDE LAMPS

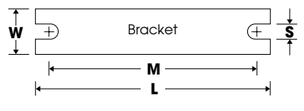
MH 1500 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 1500 WATT M48 METAL HALIDE LAMP																					
86693	480-120	M150048TAC5M500K	CWA	1610	3.50	450	10	19	PC3	4.3	6.4	32	525	n/a	n/a	1.97x3.66	3.9	29.5	n/a	n/a	E
	120 or				14.00		40														F
86698	208 or	M1500MLTAC5M500K	CWA	1610	8.00	450	25	21	PC3	4.3	6.4	32	525	n/a	n/a	1.97x3.66	3.9	30.0	n/a	n/a	E
	277				7.00		20														F

SEE WIRING DIAGRAMS page 5-32

DIMENSIONS

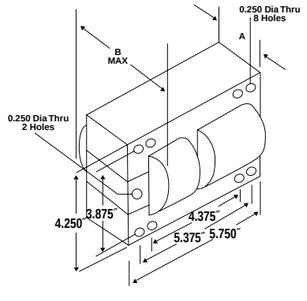
DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K



Ref. Dwg.	L	W	M	S
PC3	7.75″	2.75″	6.10″	0.25″

See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

REFERENCE DRAWING PC3



CORE & COIL ELECTRONIC BALLASTS
METAL HALIDE LAMPS

PULSE START MH 175 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtg	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 175 WATT M137 METAL HALIDE PULSE START LAMP																					
	120 or				1.80		5														A
86885	208 or	P175MLTAC3M500K	CWA	208	1.10	255	3	11	PC1	2.1	3.6	10	400	1.6	2.7	1.31x2.16	3.9	6.8	MH350-1	10	B
	240 or				0.90		3														B
	277				0.78		2														B
86876	480-120	P17548TAC3M500K	CWA	210	0.45	255	2	13	PC1	2.6	4.1	10	400	1.6	2.7	1.31x2.16	3.9	7.0	MH350-1	10	C

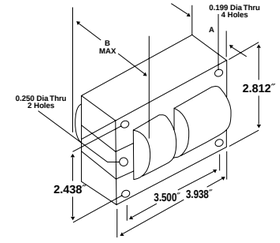
PULSE START MH 250-320 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 250/320 WATT M138 OR M132METAL HALIDE PULSE START LAMP																					
	120 or				2.40		8														
86935	208 or	P250MLTAC4M500K	CWA	285	1.45	296	5	11	PC2	1.3	3.2	14	400	1.6	3.6	1.91x2.91	2.7	9.3	MH350-1	10	A
	240 or				1.20		5														
	277				1.06		3														
86926	480-120	P25048TAC4M500K	CWA	285	0.62	290	2	13	PC2	2.0	3.8	14.0	400	1.6	3.6	1.91x2.91	2.7	11.3	MH350-1	10	A
	120 or				4.10		8														
86959	208 or	P320MLTAC4M500K	CWA	365	2.50	292	7	11	PC2	2.0	3.8	20.5	400	1.8	3.6	1.91x2.91	3.1	11.2	MH350-1	10	A
	240 or				2.00		5														
	277				1.85		5														
	120 or				3.25		8														
86968	277 or	P320TRIAC4M500K	CWA	365	1.40	265	4	15	PC2	1.7	3.7	24.5	300	1.6	3.6	1.91x2.91	2.7	11.0	MH350-1	10	A
	340				1.15		3														
86952	480-120	P32048TAC4M500K	CWA	405	1.06	292	3	13	PC2	2.0	3.8	20.5	400	1.8	3.6	1.91x2.91	3.1	11.3	MH350-1	10	A

DIMENSIONS

DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K

REFERENCE DRAWING PC1



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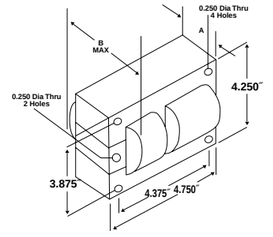
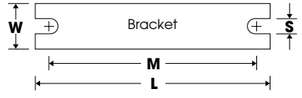


Ref. Dwg.	L	W	M	S
PC1	5.25″	1.25″	4.60″	0.25″
PC 2	5.25″	1.25″	4.60″	0.25″



CORE & COIL ELECTRONIC BALLASTS
METAL HALIDE LAMPS

PULSE START MH 350-400 WATTS

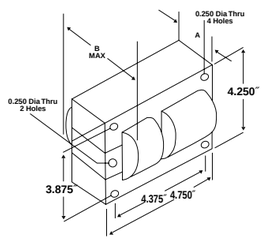
GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 350 WATT M131 METAL HALIDE PULSE START LAMP																					
86984	120 or 208 or 240 or 277	P350MLTAC4M500K	CWA	400	4.10 2.50 2.00 1.85	292	10 7 5 5	11	PC2	2.0	3.8	22	400	1.8	3.6	1.91x2.91	3.1	11.2	MH350-1	10	A
42692	277	P350277RCEM500K	RX-NPF RX-HPF	377	3.80 2.34	277	8	1	RX1	1.5	3.2	22.5	280 1.6	— 3.6	— 1.56x2.69	—	— 3.5	6.8	MH350-1	10	A
(1) 400 WATT M135 METAL HALIDE PULSE START LAMP																					
87008	120 or 208 or 240 or 277	P400MLTAC4M500K	CWA	458	4.10 2.50 2.00 1.85	292	10 7 5 5	11	PC2	2.0	3.8	24	400	1.8	3.6	1.91x2.91	3.1	11.2	MH350-1	10	D
86999	480-120	P40048TAC4M500K	CWA	458	1.06	292	3	13	PC2	2.0	3.8	24	400	1.8	3.6	1.19x2.91	3.1	11.3	MH350-1	10	D

SEE WIRING DIAGRAMS Page 5-32

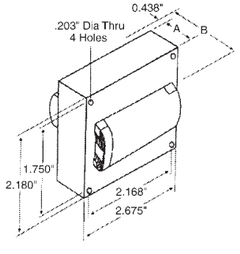
DIMENSIONS

DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K

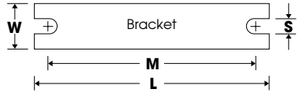
REFERENCE DRAWING PC2



REFERENCE DRAWING RX1



Ref. Dwg.	L	W	M	S
PC 2	5.25″	1.25″	4.60″	0.25″
RX1	4.00″	0.75″	3.35″	0.25″



PULSE START
MH 350-400 WATTS

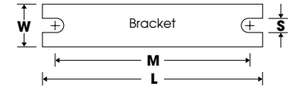
CORE & COIL ELECTRONIC BALLASTS
METAL HALIDE LAMPS

PULSE START MH 750 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor						Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 750 WATT M149 METAL HALIDE PULSE START LAMP																					
46934	120 or 208 or 240 or 277	P750MLTAC5M500K	CWA	810	6.90 4.00 3.50 3.00	400	15 8 8 8	11	PC3	2.8	4.6	24	480	n/a	n/a	1.91x2.91	3.9	22.0	HPS750-1B	10	D
46936	480-120	P75048TAC5M500K	CWA	810	2.00	400	6	13	PC3	2.8	4.6	24	480	n/a	n/a	1.91x2.91	3.9	22.0	HPS750-1B	10	E

DIMENSIONS

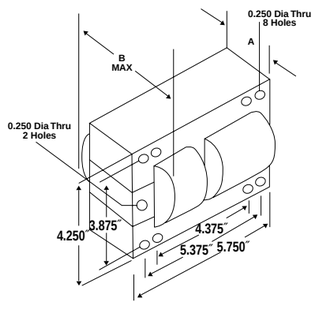
DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K



Ref. Dwg.	L	W	M	S
PC3	7.75″	2.75″	6.10″	0.25″

See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

REFERENCE DRAWING PC3



PULSE START
MH 750 WATTS

CORE & COIL ELECTRONIC BALLASTS
HIGH PRESSURE SODIUM LAMPS

HPS 50 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor							Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht			Catalog Number	Max Distance to lamp (ft)	
(1) 50 WATT S68 HIGH PRESSURE SODIUM LAMP																						
87152	120 or 208 or 240 or 277	S50MLTLC3M500K	HX-PPF	64	1.24 0.59 0.50 0.44	120	5 3 3 2	4	PC1	1.4	2.6	5	280	1.2	2.2	1.31x2.16	2.2		4.1	HPS150-3A	10	A

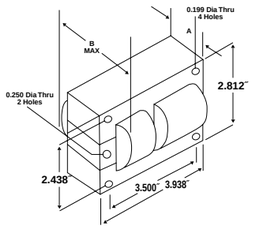
HPS 70 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor							Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht			Catalog Number	Max Distance to lamp (ft)	
(1) 70 WATT S62 HIGH PRESSURE SODIUM lamp																						
86605	120	1233-142U0001	R-NPF	83	2.10	120	8	1	1	1.3	2.6	—	—	—	—	—	—		2.3	HPS150-3A	3	A
		1233-142W u	R-HPF		1.30		5	1A	1a	1.3	2.7	28	120	1.6	2.7	n/a	n/a		2.5	Permanently Attached		
86456	480-120	S7048TLC3M500K	HX-PPF	94	0.34	120	2	6	PC1	1.4	2.8	7	280	1.2	2.2	1.31x2.16	2.2		6.0	HPS150-3A	10	A
86587	120 or 208 or 240 or 277	S70MLTLC3M500K	HX-PPF	94	1.40 0.72 0.62	120	5 3 2	4	PC1	1.4	2.7	7	280	1.2	2.2	1.31x2.16	2.2		4.1	HPS150-3A	10	A B B

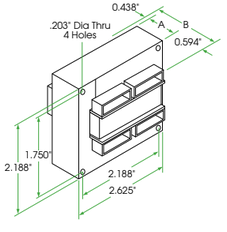
DIMENSIONS

DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K

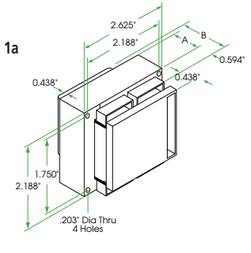
REFERENCE DRAWING PC1



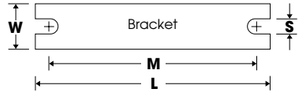
REFERENCE DRAWING 1



REFERENCE DRAWING 1a



Ref. Dwg.	L	W	M	S
PC1	5.25"	1.25"	4.60"	0.25"
1, 1a	4.00"	0.75"	3.35"	0.25"



See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

CORE & COIL ELECTRONIC BALLASTS
HIGH PRESSURE SODIUM LAMPS

HPS 100 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor							Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht			Catalog Number	Max Distance to lamp (ft)	
(1) 100 WATT S54 HIGH PRESSURE SODIUM LAMP																						
87068	480-120	S10048TLC3M500K	HX-HPF	135	0.57	122	2	6	PC1	2.0	3.3	10	280	1.2	2.7	1.31x2.16	2.7		6.5	HPS150-3A	10	B
87074	120 or 208 or 240 or 277	S100MLTLC3M500K	HX-HPF	122	2.20 1.40 1.10 0.95	120	8 5 5 3	4	PC1	2.0	3.3	10	280	1.2	2.7	1.31x2.16	2.7		5.9	HPS150-3A	10	B A A A

HPS 150 WATTS

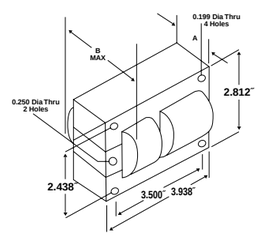
GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor							Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht			Catalog Number	Max Distance to lamp (ft)	
(1) 150 WATT S55 HIGH PRESSURE SODIUM LAMP																						
86606	120[1]	1233-154U001	R-NPF	171	4.40	120	15	1	1	2.0	3.0	—	—	—	—	—	—		3.2	HPS150-3	3	A
		1233-154W u	R-HPF 3		2.40		8	1A	1a	2.0	3.4	52	240	1.8	3.6	2.12	2.9		3.5	Permanently Attached		
87087	480-120	S15048TLC3M500K	HX-HPF	189	0.72	120	3	4A	PC1	3.0	4.5	14	280	1.6	2.7	1.56x2.69	2.7		8.7	HPS150-3A	10	D
87094	120 or 208 or 240 or 277	S150MLTLC3M500K	HX-HPF	189	3.00 1.65 1.45 1.25	120	10 5 5 5	4	PC1	2.4	3.7	14	280	1.6	2.7	1.56x2.69	2.7		7.0	HPS150-3A	10	C C B C

[1] Also can be used on a 277 Volt line in conjunction with step-down transformers.

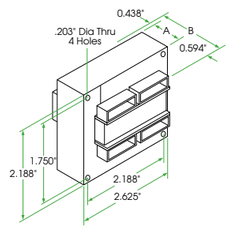
DIMENSIONS

DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K

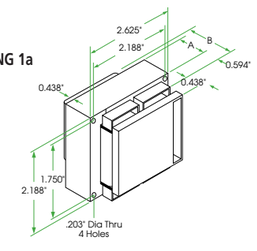
REFERENCE DRAWING PC1



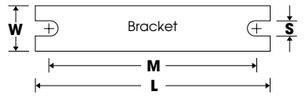
REFERENCE DRAWING 1



REFERENCE DRAWING 1a



Ref. Dwg.	L	W	M	S
PC1	5.25"	1.25"	4.60"	0.25"
1, 1a	4.00"	0.75"	3.35"	0.25"



See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

CORE & COIL ELECTRONIC BALLASTS
HIGH PRESSURE SODIUM LAMPS

HPS 250 WATTS featuring Multi-5™

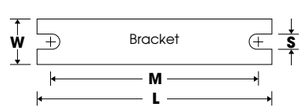
GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions Ref Dwg	A	B	Capacitor Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht	Total Wt (lbs.)	Ignitor Catalog Number	Ignitor Max Distance to lamp (ft)	UL Bench Top Rise
(1) 250 WATT S50 HIGH PRESSURE SODIUM LAMP																					
	120 or				2.50		8														
87121	208 or 240 or	S250MLTAC4M500K	CWA	300	1.50 1.30	185	5 4	11	PC2	1.7	3.7	35	280	1.8	3.6	1.91x2.91	3.1	10.3	HPS400-3A	10	A
	277				1.10		4														
	120 or				2.50		8														
	208 or				1.43		5														
87214	240 or	S250ML5AC4M500K	CWA	300	1.25	200	4	46	PC2	2.0	3.8	35	280	1.8	3.6	1.91x2.91	3.1	10.3	HPS400-3	10	A
	277 or				1.10		4														
	480				0.65		4														

HPS 400 WATTS featuring Multi-5™

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rtng	Wir Dia	Dimensions Ref Dwg	A	B	Capacitor Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht	Total Wt (lbs.)	Ignitor Catalog Number	Ignitor Max Distance to lamp (ft)	UL Bench Top Rise
(1) 400 WATT S51 HIGH PRESSURE SODIUM LAMP - 4 3/4" FRAME																					
87198	480-120	S40048TAC4M500K	CWA	465	1.00	190	5	13	PC2	2.3	4.1	55	240	1.8	3.6	1.91x2.91	3.5	14.5	HPS400-3A	10	D
	120 or				3.90		15														D
87164	208 or 240 or	S400MLTAC4M500K	CWA	465	2.25 1.95	190	8 8	11	PC2	2.3	4.1	55	240	1.8	3.6	1.91x2.91	3.5	14.5	HPS400-3A	10	D C
	277				1.70		5														D
	120 or				3.90		15														B
	208 or				2.25		8														D
87215	240 or	S400ML5AC4M500K	CWA	465	1.95	190	8	46	PC2	2.3	4.1	55	240	1.8	3.6	1.91x2.91	3.5	15.5	HPS400-3	10	C
	277 or				1.70		5														C
	480				1.00		5														B

DIMENSIONS

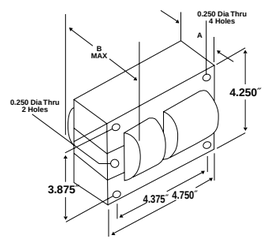
DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K



Ref. Dwg.	L	W	M	S
PC 2	5.25"	1.25"	4.60"	0.25"

See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

REFERENCE DRAWING PC2



CORE & COIL ELECTRONIC BALLASTS
HIGH PRESSURE SODIUM LAMPS

HPS 400 WATTS featuring Multi-5™

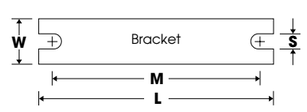
GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions Ref Dwg	A	B	Capacitor Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht	Total Wt (lbs.)	Ignitor Catalog Number	Ignitor Max Distance to lamp (ft)	UL Bench Top Rise
(1) 400 WATT S51 HIGH PRESSURE SODIUM LAMP - 5 3/4" Frame																					
87206	480-120	S40048TAC5M500K	CWA	465	1.00	190	5	13	PC3	2.3	4.2	48	280	1.8	4.6	1.91x2.91	3.9	15.5	HPS400-3A	10	D
	120 or				3.90		15														
87175	208 or 240 or	S400MLTAC5M500K	CWA	467	2.25 1.95	195	8 8	11	PC3	2.3	4.1	48	280	1.8	4.6	1.91x2.91	3.9	15.5	HPS400-3A	10	D
	277				1.70		5														
	120 or				3.90		15														
	208 or				2.25		8														
87217	240 or	S400ML5AC5M500K	CWA	468	1.95	1.95	8	46	PC3	2.5	4.3	48	280	1.8	4.6	1.91x2.91	3.9	15.5	HPS400-3	10	C
	277 or				1.70		5														
	480				1.00		5														

HPS 1000 WATTS featuring Multi-5™

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions Ref Dwg	A	B	Capacitor Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht	Total Wt (lbs.)	Ignitor Catalog Number	Ignitor Max Distance to lamp (ft)	UL Bench Top Rise
(1) 1000 WATT S52 HIGH PRESSURE SODIUM lamp																					
87048	480-120	S100048TAC5M500K	CWA	1100	2.40	440	8	13	PC3	3.8	6.0	26	525	n/a	n/a	1.91x2.91	4.3	25.0	HPS1000-4B	15	D
	120 or				9.50		20														
87056	208 or 240 or	S1000MLTAC5M500K	CWA	1100	5.50 4.80	440	15 10	11	PC3	3.8	5.6	26	525	n/a	n/a	1.91x2.91	4.25	26.0	HPS1000-4B	15	C
	277				4.10		10														
	120 or				9.10		20														
	208 or				5.40		15														
87218	240 or	S1000ML5AC5M500K	CWA	1.48	4.60	435	10	46	PC3	3.8	5.5	26	525	n/a	n/a	1.91x2.91	4.25	26.0	HPS1000-4	15	D
	277 or				4.10		10														
	480				2.40		8														

DIMENSIONS

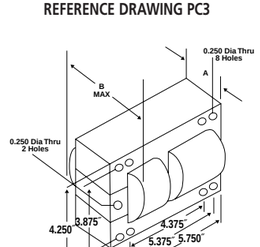
DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K



Ref. Dwg.	L	W	M	S
PC3	7.75"	2.75"	6.10"	0.25"

See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

REFERENCE DRAWING PC3



CORE & COIL ELECTRONIC BALLASTS
MERCURY LAMPS

MERCURY 100 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor							Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 100 WATT H38 or H44 MERCURY LAMP																						
86519	120 or 208 or 240 or 277	H100MLTAC3M500K	CWA	125	1.05 0.60 0.52 0.45	250	3 2 2 2	21	PC1	1.3	2.5	10	280	1.4	2.7	1.31x2.16	2.7	4.0	n/a	n/a	A

MERCURY 175 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor							Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 175 WATT H39 MERCURY LAMP																						
86527	120 or 208 or 240 or 277	H175MLTAC3M500K	CWA	202	1.75 1.00 0.86 0.75	235	5 3 3 2	21	PC1	1.6	2.9	17.5	300	1.6	3.6	1.56x2.69	3.1	5.2	n/a	n/a	A

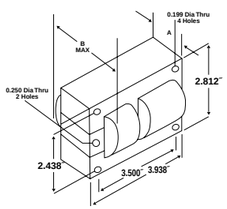
MERCURY 400 WATTS

GE Product Code	Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Vltg	Fuse Rtng	Wir Dia	Dimensions			Capacitor							Total Wt (lbs.)	Ignitor		UL Bench Top Rise
									Ref Dwg	A	B	Mfd	Min Volt	Dry Film Dia	Dry Film Ht	Oil Filled Oval	Oil Filled Ht		Catalog Number	Max Distance to lamp (ft)	
(1) 400 WATT H33 MERCURY LAMP																						
86542	120 or 208 or 240 or 277	H400MLTAC4M500K	CWA	440	3.90 2.22 1.92 1.68	245	10 8 5 5	21	PC2	1.6	3.4	35	240	1.6	3.6	1.91x2.91	3.1	9.5	n/a	n/a	C

DIMENSIONS

DESCRIPTION	SUFFIX *
For **Ballast Only**	000
For **Bracket Only** (see pg. 5-6)	200
For **Capacitor Only** (see pg. 5-6)	500
For **Distributor Replacement Kit** (see pg. 5-12 thru 5-13)	500K

REFERENCE DRAWING PC1



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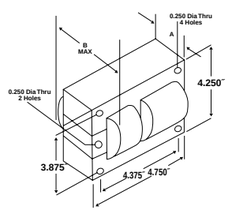
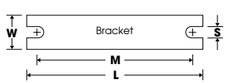


Ref. Dwg.	L	W	M	S
PC1	5.25"	1.25"	4.60"	0.25"
PC 2	5.25"	1.25"	4.60"	0.25"



See pg. 5-6 for adjustable mounting brackets and detailed bracket drawings.

F-CAN BALLASTS
METAL HALIDE LAMPS

MH 70-100 WATTS

GE Product Code	Input Volts	Catalog Number	Circuit Type	Max Input Watts	Nom Open Input Current	Circuit Vltg	Fuse Rtng	Dimensions			Mtg Dim	Total Weight	Max Dist To Lamp (ft)	Sound Rating	Certifications	
								Wir Dia	Overall Length	Case Length					UL	CSA
(1) 70 WATT M85 METAL HALIDE (with built-in ignitor)																
86575	120 or 277	11210-277C-TC[7]	HX-HPF	98	2.00 0.90	250	6 3	34	11.75	10.55	11.10	11.0	20	B	Yes	Yes
(1) 70 WATT M98 METAL HALIDE (with built-in ignitor)																
86578	120 or 277	11210-506C-TC[22]	HX-HPF	90	2.00 0.90	250	6 3	34	11.75	10.55	11.10	11.0	20	B	Yes	Yes
(1) 100 WATT M90 METAL HALIDE (with built-in ignitor)																
86574	120 or 277	11210-239C-TC	HX-HPF	125	2.20 1.00	250	8 4	34	11.75	10.55	11.10	11.0	20	B	Yes	Yes

[7] This ballast may also be used with (1) 70 watt S88 High Pressure Sodium lamp.
[22] M98 Designates Venture Lighting catalog numbers MH70/4/MED, C/4/MED or MS70/C/84/MED/W

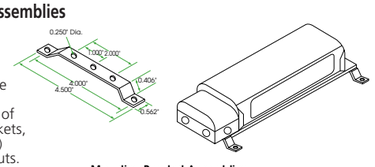
SEE WIRING DIAGRAMS Page 5-32

F-CAN BALLASTS OPTIONAL ACCESSORIES

Mounting Bracket Assemblies

Catalog Number
2-BMB-1.

Available for the remote installation of ballasts. Each assembly consists of two (2) mounting brackets, four (4) screws, four (4) washers and four (4) nuts.

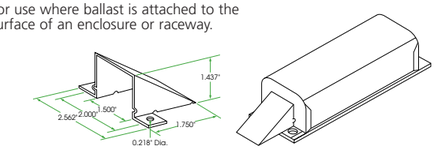


Mounting Bracket Assemblies

Tee-Pee Lead Wire Covers

Catalog Number TP5. Ref. part #001-2013.

For use where ballast is attached to the surface of an enclosure or raceway.

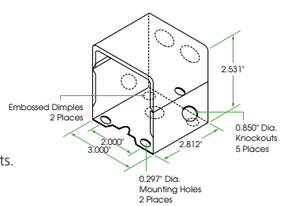


Tee-Pee Lead Wire Covers

Splice Box

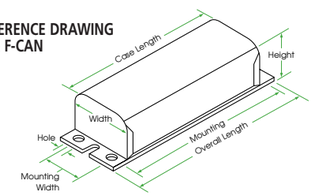
Catalog Number SB-4.
Ref. part #001-2009

For use with all F-Can Ballasts. It is easily installed on the anchor bracket provided on each F-Can ballast. It contains five (5) 7/8" diameter knockouts.



Splice Box

REFERENCE DRAWING
FOR F-CAN



F-CAN BALLASTS
METAL HALIDE & PULSE START METAL HALIDE LAMPS
MH AND PSMH 175-400 WATTS

GE Product Code	Input Volts	Catalog Number	Circuit Type	Max Input Watts	Nom Open Input Current	Circuit Vltg	Fuse Rtng	Dimensions			Mtg Dim	Total Weight	Max Dist To Lamp (ft)	Sound Rating	Certifications	
								Wir Dia	Overall Length	Case Length					UL	CSA
(1) 175 WATT M57 METAL HALIDE OR H39 MERCURY LAMP																
86563	120 or 277	1110-245SC-TC000I	CWA	205	1.75 0.75	300	5 3	34	14.30	13.15	13.75	14.0	*	B	Yes	Yes
(1) 250 WATT M58 METAL HALIDE OR H37 MERCURY LAMP																
86564	120 or 277	1110-246C-TC [8c]	CWA	295	2.50 1.10	280	8 4	34	16.65	15.55	16.10	17.5	*	C	Yes	Yes
(1) 400 WATT M59 METAL HALIDE OR H33 MERCURY LAMP																
42670	120 or 277	1110-247SC-TC	CWA	460	3.90 1.70	300	10 5	34	19.25	18.05	18.60	23.0	*	C	Yes	Yes
80728	120 or 277	1111-247SC-TC [23]	CWA	460	3.90 1.70	300	10 5	36	14.30	13.15	13.75	14.0	*	B	Yes	Yes

[8c] This ballast can be used with a MH200 ignitor to operate (1) 250 watt M103 lamp. Consult Universal for instructions.
[23] Two of these ballasts are required to operate the lamp. Electrical data is for two ballasts, except for "Sound Rating," which is for each ballast.
* Refer to Page 5-4.

F-CAN BALLASTS
METAL HALIDE LAMPS
HPS 70 WATTS

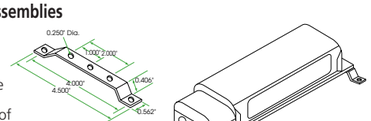
GE Product Code	Input Volts	Catalog Number	Circuit Type	Max Input Watts	Nom Open Input Current	Circuit Vltg	Fuse Rtng	Dimensions			Mtg Dim	Total Weight	Max Dist To Lamp (ft)	Sound Rating	Certifications	
								Wir Dia	Overall Length	Case Length					UL	CSA
(1) 70 WATT S62 HIGH PRESSURE SODIUM (with built-in starter)																
86596	120 or 277	12210-237C-TC0001	HX-HPF	97	1.60 0.70	140	5 2	34	11.75	10.55	11.10	9.2	10	B	Yes	Yes

F-CAN BALLASTS OPTIONAL ACCESSORIES

Mounting Bracket Assemblies

Catalog Number
2-BMB-1 (PC #86624)

Available for the remote installation of ballasts. Each assembly consists of two (2) mounting brackets, four (4) screws, four (4) washers and four (4) nuts.

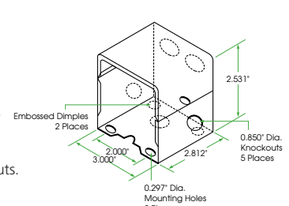


Mounting Bracket Assemblies

Splice Box

Catalog Number SB-4.
Ref. part #001-2009

For use with all F-Can Ballasts. It is easily installed on the anchor bracket provided on each F-Can ballast. It contains five (5) 7/8" diameter knockouts.

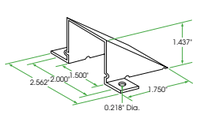


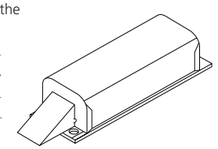
Splice Box

Tee-Pee Lead Wire Covers

Catalog Number TP5. Ref. part #001-2013.

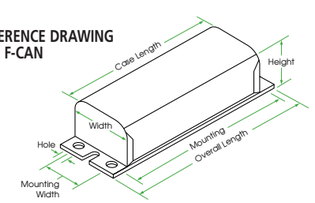
For use where ballast is attached to the surface of an enclosure or raceway.





Tee-Pee Lead Wire Covers

REFERENCE DRAWING
FOR F-CAN



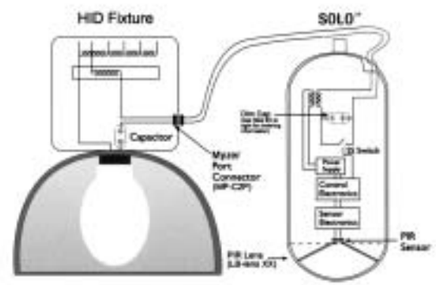
SOLO™ DUAL-LEVEL HID SWITCHING CONTROLLER

Application

The SOLO™ dual level HID controller simplifies the complex. Providing single fixture control to ensure maximum ROI. The SOLO™ is capable of interfacing with metal halide, pulse start, and high-pressure sodium fixtures ranging from 175 watts to 1,650 watts. The SOLO™ reduces fixture power up to 50% in applications such as warehouse and manufacturing facilities.

Key Features

- For use with CWA (Constant Wattage Auto-Transformer) ballasts only
- Lamp Type Controlled: (Refer to ordering information when selecting control module)
  175W to 1,650W Metal Halide
  175W to 720W Pulse Start Halide
  250W to 1,000W High Pressure Sodium
- Initial Lamp Warm Up Time: 15 minutes
- Warm Up Time If Lamp Goes Out: 15 minutes after lamp current is detected
- Lamp Switching: Solid state switching and microprocessor watch dog provides reliable zero cross voltage switching from low to high and zero cross current switching from high to low. Inrush protected.
- Continuous Dim Lamp Protection: The microprocessor monitors continuous dim time of the lamp. If lamp is dimmed continuously for 24 hours, lamp is automatically cycled to full power for 15 minutes to increase lamp life.
- Capacitor: Series dim capacitor is mounted inside the SOLO™ module. Capacitor value is selected based on ballast manufacturing specifications.
- Sensor Self-adjusting: Digital microprocessor constantly adjusts sensitivity for optimum performance.
- Sensor Optics: 9.6 square inches of optical lens @ 2.15" focal length. (For long range sensing applications, the greater optical area and longer focal length increases performance.)
- Sensor Range Pattern: (4) interchangeable lens options
- Laser alignment: Allows accurate aiming of sensor pattern to within +/- 2 degrees
- Sensor Timer Settings: 2-, 4-, 8-,16-, and 64-minute and 10-second test modes
- Force Dim Option: After lamp warm up, sensor is disabled and lamp will dim continuously. Continuous dim protection is still active.
- Self Diagnostics Test Button: Momentary push button initiates self-diagnostic to verify SOLO™ is functioning properly.
- User Interface: 4 dip switches and self diagnostic push button
- Mounting: 3/4" Threaded pipe mounting adapter with security screw. Mount such that sensor lens is even or below fixture reflector.
- Power Cord: 6' power cord with Myzer plug.
- Operating Temperature Range: (Indoor use only): -22°F to +149°F (-30°C to +65°C)
- Weight: Less than 3 lbs. (without dim capacitor installed)
- Dimensions: 13.25"H x 5.5"W x 2.6"D (33.6 x 14.0 x 6.6 cm)
- Construction: Rugged, high impact, injection-molded plastic.
- UL and CUL listed
- Warranty: Five-year limited



SOLO™ Installation
Integrated HID Dual-level Switching Controller and Sensor

Solo™ Dual Level HID Switching Controller

Part Numbers and Accessories

GE Product Code	Model	Wattage Controlled Table
41461	LB-1	175W Metal Halide
		175W, 200W Pulse Start Metal Halide
41462	LB-2	250W, 320W, 350W, 400W Metal Halide
		250W, 320W, 350W, 400W, 450W Pulse Start Metal Halide
		250 W High Pressure Sodium (HPS)
		400 W High Pressure Sodium (HPS) (Maximum operating temperature @ 55°C)
41463	LB-3	1,500W, 1,650W Metal Halide (Maximum operating temperature @ 55°C)
		1,000W Metal Halide (Maximum operating temperature @ 65°C)
		740W, 1000W Pulse Start Metal Halide (Maximum operating temperature @ 55°C)
		600W, 1,000W High Pressure Sodium (HPS) (Max. operating temperature @ 65°C)
	Models	
41461	LB-1	Solo™
TBD	LB-1-MS	Solo™ with MyzerSTART option
41462	LB-2	Solo™
TBD	LB-2-MS	Solo™ with MyzerSTART option
41463	LB-3	Solo™
TBD	LB-3-MS	Solo™ with MyzerSTART option
41304	LB-1-EXTP1	Solo™ with 4 Pin Low Voltage Interface
TBD	LB-1-MS-EXTP2	Solo™ with MyzerSTART option with 4 Pin Low Voltage Interface
41324	LB-2-EXTP1	Solo™ with 4 Pin Low Voltage Interface
TBD	LB-2-MS-EXPT2	Solo™ with MyzerSTART option with 4 Pin Low Voltage Interface
41328	LB-3-EXPT1	Solo™ with 4 Pin Low Voltage Interface
TBD	LB-3-MS-EXTP2	Solo™ with MyzerSTART option with 4 Pin Low Interface
	Lens	
41479	LB-Lens 15	Lens 15, Aisle Lens, 1.5 x .23
41481	LB-Lens 10	Lens 10, Aisle Lens, 1.0 x .23
41277	LB-Lens 07	Lens 07, Aisle Lens, .70 x .16
41413	LB-Lens 0806	Lens 0806, Area Lens, .80 x .60
	Accessories	
41502	LB-LAT-1	Laser Alignment Tool
41292	LB-CSR-10	Cable Strain Relief, 10 Pack
41500	LB-KIT-1	Conversion Hardware Kit non-Myzer Port HID Fixtures
41283	MP-C2P-10	MyzerPORT Bypass Shorting Plug, 10 pack
41290	MP-BP-10	MyzerPORT Bypass Shorting Plug, 10 pack
	Replacement Parts	
41486	DC-6	Power Cable, 6 foot
41429	LB-LAT-SW	Laser Alignment Tool on/off Switch
41476	LB-COVER-1	Capacitor and Wiring Compartment Cover
41402	LB-MOUNT-1	3/4" Threaded Mounting Adapter
41472	LB-CAP-WIRES	Two (2) Cap Connection Wires with Quick Disconnects
TBD	MPNA-C2P-100	MyzerPORT Connector Nipple adapter, 100 pack
41390	LB-FPP-10	G2, 4 pin EXTP1-Port Plug, 10 pack

* All orders require a completed HID capacitor sign-off sheet. Contact your GE representiative for more details.

IGNITORS

GE Product Code	Catalog Number	Description
STANDARD IGNITORS Metal halide		
86864	86864001I	For 35 watt M130, 50 watt M110, 70 watt M98, 100 watt M90 or M92, or 150 watt M102 lamps.
HIGH PRESSURE SODIUM		
86635	86635001I	For lamps of 150 watts or less except 150 watt S56.
86641	86641001I	For lamps from 200 to 400 watts and 150 watt S56 with CWA ballasts.

GE Product Code	Lamp Watts	ANSI Code	Circuit Type	Standard Ignitors	Auto Shutoff	Instant Restrike	Long Distance Ignitors
HIGH PRESSURE SODIUM IGNITORS							
86635	35	S76	Reactor	HPS 150-3A	HPS 150-45B	HPS 150-5B	HPS 150-4A
86635	50	S68	Reactor, HX	HPS 150-3A	HPS 150-45B	HPS 150-5B	HPS 150-4A
86635	70	S62	Reactor, HX	HPS 150-3A	HPS 150-45B	HPS 150-5B	HPS 150-4A
86635	100	S54	Reactor, HX	HPS 150-3A	HPS 150-45B	HPS 150-5B	HPS 150-4A
86635	150	S55	Reactor, HX	HPS 150-3A	HPS 150-45B	HPS 150-5B	HPS 150-4A
86641	150	S56	CWA	HPS 400-3A	HPS 400-45B	—	HPS 400-4A
86641	250	S50	CWA	HPS 400-3A	HPS 400-45B	—	HPS 400-4A
86641	400	S51	CWA	HPS 400-3A	HPS 400-45B	—	HPS 400-4A

GE Product Code	Lamp Watts	ANSI Code	Circuit Type	Standard Ignitors	Auto Shutoff	Long Distance Ignitors
METAL HALIDE IGNITORS						
86864	35	M130	Reactor	MH 100-3A	—	MH 100-5A
86864	50	M110	HX	MH 100-3A	—	MH 100-5A
86864	70	M98	HX	MH 100-3A	MH 100-35B	MH 100-5A
86864	100	M90	Reactor	MH 100-3A	MH 100-35B	MH 100-5A
86864	100	M90	CWA	MH 100-3A	MH 100-35B	MH 100-5A
86864	150	M102	HX	MH 100-3A	MH 100-35B	MH 100-5A

Standard Ignitors

Standard Ignitors are supplied with all High Pressure Sodium and Metal Halide ballasts requiring ignitors. These ballasts are supplied with an appropriate external ignitor unless the ignitor is permanently attached to or built into the ballast.

Instant Restrike Ignitors

An Instant Restrike Ignitor generates multiple pulses to restrike a lamp arc after a brief power interruption has extinguished it, without the typical 3-minute cool-down time. A Standard Ignitor cannot restrike an arc until the lamp has had time to sufficiently cool. Even though an Instant Restrike Ignitor can reinitiate the lamp arc immediately upon restoration of power, the lamp is still subject to warmup. The following chart is based on an S55 lamp.

Time Lamp Is Extinguished	Restrike Time	Light Output On Reignition	Lamp Warmup Time
1 second	2 seconds	87%	35 seconds
5 seconds	Instant	83%	70 seconds
15 seconds	Instant	76%	130 seconds
30 seconds	Instant	62%	190 seconds
1 minute	Instant	46%	255 seconds
Cold Start	Instant	36%	360 seconds

Plug Replaceable Ignitors

Incorporates terminals and a separate mounting base to simplify construction and replacement.

Long Distance Ignitors

Long Distance Ignitors are used in situations where an ignitor must be mounted further from the lamp than is recommended for a standard ignitor. The maximum lamp to ignitor distance for these ignitors is 50 feet, which may vary depending on the type of lamp, ballast, fixture, and wiring.

Automatic Shutoff Ignitors

In the event of a lamp failure, a Standard Ignitor will continue to pulse, trying to start the lamp. This may reduce the life of the ignitor. An Automatic Shutoff Ignitor will apply pulses for 10 to 12 minutes and then deactivate if a lamp arc cannot be initiated. Resetting the ignitor is accomplished by momentarily interrupting the power to the ballast. For this reason, these ignitors are not recommended for use on unswitched circuits.

Shutoff Devices

Ignitor Accessory (IA) devices can be used to convert a Standard Ignitor into an Automatic Shutoff Ignitor. Simply match the Shutoff Device catalog number on page 5-78 with the Standard Ignitor that is supplied with the ballast. Using the IA device with the Standard Ignitor eliminates the need to buy a separate Automatic Shutoff Ignitor.

WIRING DIAGRAMS

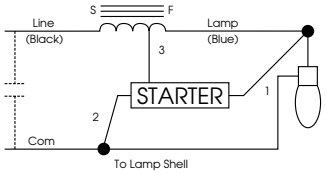


DIAGRAM 1

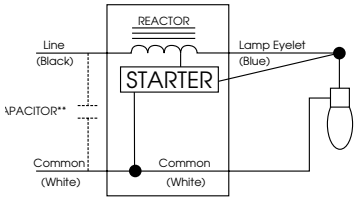


DIAGRAM 1A

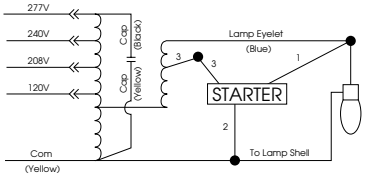


DIAGRAM 4

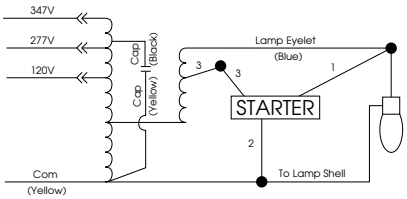


DIAGRAM 4A

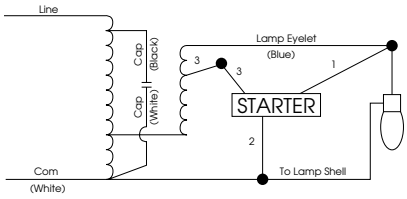


DIAGRAM 6

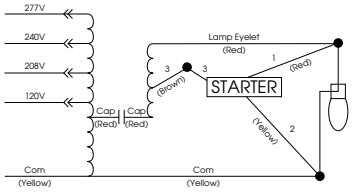


DIAGRAM 11

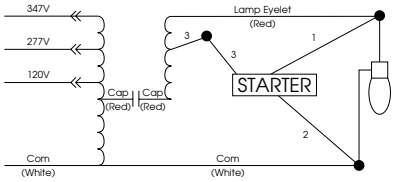


DIAGRAM 13

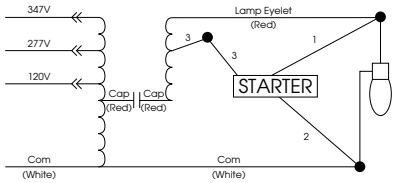


DIAGRAM 15

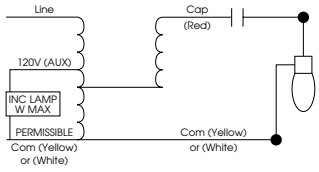
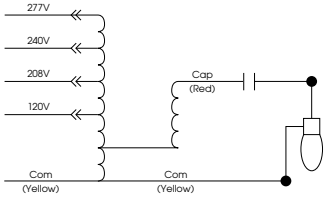


DIAGRAM 19



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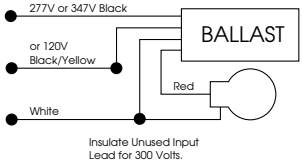

DIAGRAM 34

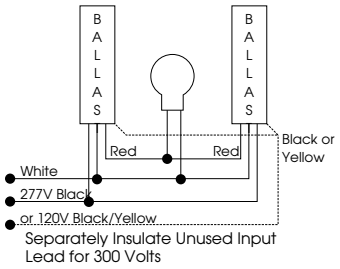

DIAGRAM 36

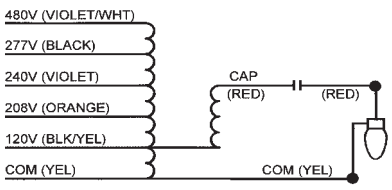

DIAGRAM 44

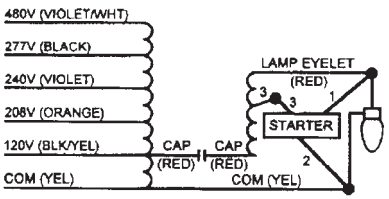

DIAGRAM 46

AC (Alternating Current) - Current which passes from the generator in one direction and then the other, alternately.

ANSI (American National Standards Institute) - Non-profit organization that generates voluntary product performance standards for many U.S. industries. ANSI Standards C82.1 applies to electromagnetic ballasts.

Arc - Intense luminous discharge formed by the passage of electric current across a space between electrodes.

Auto Rest Shutdown Circuit - Circuit senses lamp end life and will automatically shut off power to the lamp(s). When a new lamp is inserted in the socket, the ballast resets, and turns on the lamp automatically. Some shutdown circuits require the power to be interrupted before a new lamp will re-light.

Ballast - Device for starting and regulating fluorescent and high intensity discharge lamps.

Ballast Efficacy Factor (BEF) - Value used to evaluate various lighting systems based on light output and power input. The BEF can only be used to compare systems operating the same type and quantity of lamps.

Ballast Factor (BF) - Measure of light output from lamp operated by commercial ballast as compared to a laboratory standard reference ballast. Ballast Factor .94 means ballast produces 94% of light produced by ANSI C82.2 reference ballast operating same lamps.

Ballast Hum - Sound generated by the vibration of laminations in the electromagnetic field that transforms the current for discharge lamp use.

Ballast Losses - Power which is supplied to a ballast but is not converted into lamp energy. Ballast loss is dissipated as heat.

Bottom Exit (BE) - A configuration with leads or a wire-trap on the bottom or base of the ballast. This type of configuration is usually used when the ballast is mounted onto a junction box plate.

Bottom Exit Studs (BES) - A configuration with screw studs mounted on the base plate or bottom of the ballast. The screws are 3/8" inches long with a #8-32 thread size (#8-32 nut). They are mounted on a two-inch center. The studs are usually used to mount the ballast directly onto a junction box plate.

Canadian Energy Standards - Indicates ballast complies with Canadian Energy Standards and meets the requirements of CAN/CSA C654-M91.

Canadian Standards Association (CSA) - Association that generates product performance and safety standards for many Canadian industries.

Capacitor - Device in ballast that stores electrical energy. Often used for power factor correction and lamp regulation (see "Power Factor").

Cathode - See "Electrode".

Centigrade (C) - Celsius temperature scale where 0°C=32°F.

Circle E - Designates a ballast meets or exceeds the requirements of Public Law 100-357 establishing standards of efficiency.

Class P Thermal Protector - A switching device sensitive to current and heat that automatically disconnects ballast if the temperature exceeds UL temperature limitations.

Coil - Windings of copper or aluminum wire surrounding the steel core in ballast.

Core - Component of electromagnetic ballast that is surrounded by the coil. Core is comprised of steel laminations or solid ferrite material.

Core & Coil Ballast - Another term for an electromagnetic ballast.

Crest Factor (Lamp Current Crest Factor) - Ratio of peak lamp current to RMS or average lamp operating current.

Efficacy - Lumen output per unit of power supplied to ballast (lumens per watt).

Electrical Testing Laboratory (ETL) - Independent testing laboratory that performs ballast tests and certifies accuracy of performance data.

Electrode - Metal filaments that emit electrons in a fluorescent lamp. Negatively charged free electrons emitted by one electrode are attracted to the positive electrode (anode), creating an electric current and arc between electrodes.

Electromagnetic Ballast (Magnetic Ballast) - A ballast that uses a "Core & Coil" assembly to transform electrical current to start and operate fluorescent lamps.

EMI (Electromagnetic Interference) - Electrical interference (noise) generated by electrical and electronic devices. Levels generated by high frequency electronic devices are subject to regulation by Federal Communications Commission (FCC).

Filament - Metal Tungsten wire coated with Barium Oxide that emits electrons when voltage is applied.

Filament Voltage - Voltage applied to the lamp cathode.

Fluorescent Lamp - Gas filled lamp in which light is produced by the interaction of electrons with phosphors lining the lamp's glass tube.

Foot Candles - Measure of light level on a surface being illuminated. Defined as one lumen of light per one square foot of surface area.

Four-Pin Compact Fluorescent Lamps - Type of lamps that do not have any starter built into the base of the lamp. Therefore, the ballast has the starting circuit. Traditionally 4-pin lamps are designed to work with electronic ballasts; however, GE offers magnetic ballasts to operate some 4-pin lamps.

Frequency - Rate of alternation in an AC current. Expressed in cycles per second or Hertz (Hz).

Harmonic - An integral multiple of the fundamental frequency (60 Hz) that becomes a component of the current (see "Harmonic Distortion").

Harmonic Distortion - Distortion of an AC waveform caused by multiples of the fundamental frequency (harmonics). Odd triplet harmonics (thirds, ninths, etc.) may result in large currents on the neutral line in a four-wire Wye three-phase system.

Hertz (Hz) - Unit used to measure frequency of alteration of current or voltage; cycles per second.

High Efficiency (Energy Saving) Electromagnetic Ballast - Ballast with core & coils, designed to minimize ballast losses compared to the "standard" ballast.

High Intensity Discharge (HID) Lamp - A lamp containing a filled arc tube in which the active element becomes vaporized (a gaseous state) and is discharged into the arc stream to produce light.

High Power Factor - A ballast whose power factor is corrected to 90% or greater by the use of a capacitor.

Incandescent Lamp - Lamp in which light is produced by a filament heated by an electric current.

Input Voltage - Power supply voltage required for proper operation of an arc discharge lighting ballast.

Inputs Watts - The total power input to the ballast which includes lamp watts and ballast losses. The total power input to the fixture is the input watts to the ballast or ballasts and is the value to be used when calculating cost of energy and air conditioning loads.

Instant Start Lamp - A fluorescent lamp with a single pin at each end. The lamp is ignited by a high voltage without any filament heating.

Instant Start - Lamp starting method in which lamps are started by high voltage input with no preheating of lamp filaments. Some rapid start lamps are designed so that they may be instant started.

Laminations - Layers of steel, making up the "core" that is surrounded by the coils in a core & coil ballast.

Lamp Current Crest Factor - See "Crest Factor".

Lamp Filament - See "Electrode".

Lamp Watts - Input power used to operate lamps.

Lumens/Watt - A measurement of white light produced by each output watt.

Metal Cases - Case design used in both magnetic and electronic ballasts. These ballasts are grounded once they are mounted to the fixture. They meet all safety codes, some of which do not allow plastic in open plenum areas.

National Electric Code (NEC) - A nationally accepted electrical installation code to reduce the risk of fire, developed by the National Fire Protection Association.

National Energy Standards for Fluorescent Ballasts - A federal law enacted in 1988 that sets energy standards for ballasts consistent throughout the United States.

NOM - Laboratory that sets safety standards for building materials, electrical appliances and other products for Mexico.

Non-PCB Capacitor - Capacitor used in ballasts to help provide power factor correction. Contains no polychlorinated biphenyls and meets EPA requirements.

Normal Power Factor - Ballasts with power factor less than .90 and do not incorporate any means of Power Factor Correction.

Parallel Lamp Operation - Refers to ballasts that employ multiple output current paths from a single ballast to allow lamps to operate independent of one another, allowing other lamps operated by the ballast to remain lit should companion lamp(s) fail.

PCB (Polychlorinated Biphenyls) - Chemical pollutant formerly used in ballast capacitors.

Potting - Material used to completely surround and cover components of some magnetic and electronic ballasts. Potting compound fulfills functions of protecting components, dampening sound, and dissipating heat.

Power Factor - Measurement of the relationship between the AC source voltage and current. High power factor ballasts require less AC operating current at the same wattage than an equivalent low power factor ballast. Formula: Power Factor equals Input Watts divided by the product of Line Volts times Line Amps (Volt Amps or VA).

Power Factor Corrected - Ballasts that incorporate a means of Power Factor Correction but whose power factor is <90% and <50%.

Preheat Lamp - A fluorescent lamp in which the filament must be heated by use of a starter before the arc is created. These lamps are typically operated with electromagnetic ballasts.

Programmed Rapid Start - Lamp starting method which preheats the lamp filaments while not allowing the lamp to ignite and then applies the open circuit voltage (OCV) to start the lamp. The user may experience a half- to one-second delay after turning on the lamps while the pre-heating takes place. This type of starting circuit keeps lamp end blackening to a minimum and improves lamp life performance, especially in applications where the lamps are frequently switched on and off.

Rapid Start Lamp - A fluorescent lamp with two pins at each end con nected to the filament. The filaments are heated by the ballast to aid in starting. Some rapid start lamps may be instant started without filament heat, for example, the F32T8 lamp.

Rapid Start - Lamp starting method in which lamp filaments are heated while open circuit voltage (OCV) is applied to facilitate lamp ignition.

Series Lamp Operation - Refers to ballasts that employ a single current path passing through all lamps operated by the ballast. If one lamp should fail, companion lamps operated by the same ballasts will also extinguish or dim.

Standard Alternating Current Frequency in the United States - 60 Hertz (Hz) or 60 cycles per second.

Total Harmonic Distortion (THD) - The combined effect of Harmonic Distortion on the AC waveform produced by a ballast or other device. Expressed as a percentage. Excessive levels of THD can create large currents on the neutral line of a four-wire Wye three phase system. (See "Harmonic Distortion".)

Transients - High voltage surges through an electrical system caused by lightning strikes to nearby transformers, overhead lines or the ground. May also be caused by switching of motors or compressors, as well as by short circuits or utility system switching. Can lead to premature ballast failure.

Two-Pin Compact Fluorescent Lamps - Type of lamps that have the glow bottle starter built into the base of the lamp. Traditionally 2-pin lamps are designed to work with electromagnetic ballasts.

UL Underwriters' Laboratories, Inc.- Laboratory that sets safety standards for building materials, electrical appliances and other products.

Watts - Measurement of electrical ability to do work.

GE BALLAST WARRANTY

General Electric Company, (hereinafter called "GE") warrants to the purchaser that its lamp ballasts, (hereinafter called lighting products), will be free from defects in material and workmanship for the specified warranty periods beginning from the date of manufacture.

Electronic Fluorescent Ballasts . . . . . .Up to 60 Months

Standard Electromagnetic, Fluorescent HID,
SLH, Hybrid, Octek™ Fluorescent Ballasts . . . . . .24 Months

Standard Fluorescent Sign Ballasts . . . . . .24 Months

MAX-3 or MSB-3 Series Fluorescent Sign Ballasts . . . . . .36 Months

If it appears within the specified warranty period that any GE Lighting Product does not meet the warranty specified above, GE, at its option, will either repair or replace the Lighting Product at GE's expense. GE extends this limited warranty to the original or first end-user purchaser only. This warranty is conditional based upon proper storage, installation, use and maintenance.

This warranty is not applicable to, and GE makes no warranty whatsoever with respect to, any Lighting Product not installed and operated in accordance with the National Electric Code (NEC), the Standards for Safety of Underwriters Laboratories, Inc. (UL), Standards for the American National Standards Institute (ANSI) or, in Canada, the Canadian Standards Association (CSA). Nor is this warranty applicable to any Lighting Product which has not been installed and operated in accordance with GE's specifications and connection diagrams or Lighting Products which have been subjected to abnormal operating conditions. This includes, but is not limited to, excessive temperatures as specified in GE's published literature. The conditions for any tests (to be) performed on Lighting Products which are claimed to have not performed in accordance with the terms of the warranty shall be mutually agreed upon in writing and GE may be represented at any such tests.

No implied warranty of merchantability or fitness for a particular purpose shall apply beyond the aforementioned warranty period. The foregoing warranty is exclusive of all other statutory, written or oral warranties and no other warranties of any kind, statutory or otherwise are given or herein expressed. Warranty claims are to be made in accordance with GE's published Warranty Service Program which is available upon request. This warranty sets forth GE's obligations and responsibilities regarding its lighting products and is the exclusive remedy available to the claimant.

Limitations of Liability, Under no circumstances, whether as a result of breach of contract, breach of warranty, tort, strict liability or otherwise, will GE be liable for consequential, incidental, special or exemplary damages, including, but not limited to, loss of profits, loss of use or damage to any property or equipment, cost of capital, cost of substitute product, facilities or services, down time costs or claims of claimants customers. GE's liability for all claims of any kind or for any loss or damages arising out of, resulting from or concerning any aspect of this warranty or from the Lighting Products or services furnished hereunder, shall not exceed the price of the specific Lighting Product which gives right to the claim, except in accordance with GE Technical Engineering Service Program.

State Law Right, Some states do not allow the exclusion or limitation of consequential or incidental damages or the duration of time for an implied warranty. Therefore, the limitations or exclusions of consequential or incidental damage and implied warranties may not apply to certain claimants. This warranty provides the claimant with specific legal rights and claimants may have other rights that vary from state to state.

Effective: 12/1/99

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