#### UNDERCABINET LIGHTING







chopping toasting cleaning



cooking measuring blending



typing thinking reading

## Form and Function



Lighting where you need it; highlighting where you want it. Juno's undercabinet and shelf lighting products offer the perfect balance of form and function. Slim, small, sleek. Easy, efficient, economical. Optimal illumination for labors of life and works of art.

Juno undercabinet and shelf lighting provide versatile solutions for any budget and application.

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# JUNO® Pro-Halogen Series



The Pro-Halogen modular series with integral electronic transformer operates 12-volt halogen lamps to deliver the best color rendering with maximum light output and lamp life. The efficient operation of low-voltage lamps, in combination with a unique housing/reflector system, reduces mounting surface temperatures to well below what is typical for halogen undercabinet fixtures. Pro-Halogen fixtures are optimized for fast, permanent installation, mounting either flush to the rear backsplash or to the front lip of cabinetry to suit project conditions and homeowner preference.

#### **Cabinet Bottom Contact Temperatures**

#### Typical Halogen Fixture

Between 70 - 90°C

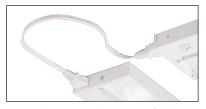
Causes cabinetry discoloration/ delaminating and drying out of perishables stored on shelf above

#### **Pro-Halogen Fixture**

#### Under 60°C

Safe for most cabinet laminates and minimizes thermal transfer to shelf above





Optional jumper cord accessory for turning corners or spanning cabinet frames.



Straight-joiner-supplied for plug-together row mounting of multiple fixtures.



Hinged lens for simplified relamping without tools; Spring-loaded retention bar prevents lens from accidentally being bumped loose.

#### Pro-Halogen 5-minute Direct-Wire Installation



Step 1 Attach supply wires to rear access cover.



Step 2 Connect supply wires to fixture leads using push-in connectors.



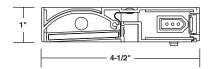
Step 3 Mount fixture to cabinet bottom using captive mounting screws.





#### **Features**

- 12-volt halogen lamps for maximum efficiency, best color rendition, and long 6,000+ hour lamp life\*
- Modular system for installation flexibility
- Integral reflector increases light output and helps reduce fixture housing temperature
- Slim 1" profile
- Premium prismatic clear glass lens for uniform light distribution, maximum light transmission, and wipe-down cleaning
- Lens is reverse-angled to minimize perceived brightness from normal viewing angles
- Dimmable using fixture-mounted high/low/off rocker switch or wall-mounted dimmers
- Rear-access cover and push-in electrical connectors for quick installation using non-metallic cable or 3/8" flexible metal conduit
- Extra off-center knockouts and feed thru wiring capability
- Captive external screws for quick mounting
- Designer finishes include black, brushed bronze, brushed silver and white to match interior decor





#### **Fixtures**

#### **ULH109**

#### 9" 1-Lamp

#### Pro-Halogen

Supplied with joiner connector, mounting hardware and (1) T3 12V 20W bi-pin halogen lamp. 9-1/2"L x 4-1/2"D x 1"H

Finish: BL-Black, BZ-Brushed Bronze, SL-Brushed Silver, WH-Designer White

#### **ULH214**

#### 14" 2-Lamp

#### Pro-Halogen

Supplied with joiner connector, mounting hardware and (2) T3 12V 20W bi-pin halogen lamps. 14"L x 4-1/2"D x 1"H

Finish: BL-Black, BZ-Brushed Bronze, SL-Brushed Silver, WH-Designer White

#### **ULH322**

#### 22" 3-Lamp

#### Pro-Halogen

Supplied with joiner connector, mounting hardware and (3) T3 12V 20W bi-pin halogen lamps. 22"L x 4-1/2"D x 1"H

Finish: BL-Black, BZ-Brushed Bronze, SL-Brushed Silver, WH-Designer White

#### **ULH430**

#### 30" 4-Lamp Pro-Halogen

Supplied with joiner

connector, mounting hardware and (4) T3 12V 20W bi-pin halogen lamps. 30"L x 4-1/2"D x 1"H

Finish: BL-Black, BZ-Brushed Bronze, SL-Brushed Silver, WH-Designer White

#### **Accessories**

### JC3-8

JC3-17

#### JC3-26

8", 17" & 26"

#### Jumper Cords

3-wire Jumper Cord to electrically join fixtures when spaced apart, turning corners, or spanning cabinet frames. Finish: BL-Black, WH-Designer White

#### ULH-CP

#### 6' Cord and Plug

3-wire grounded cord and plug accessory for portable plug-in installation.

Finish: BL-Black, WH-Designer White

#### **ULH-DWM**

#### **Direct Wire Module**

Facilitates codecomplaint installation of fixture at front edge of cabinet. Includes wiring enclosure and

36" field-shortenable jumper cord that plugs into the right or left side of the fixture.

3"L x 3"D x 1"H

Finish: BL-Black, WH-Designer White

#### **ULH-CONN**

#### 3/8" Miniature Die-Cast **Electrical Connector**

Accessory for use when loop wiring with Romex or BX.



#### **Finishes**

Black





**Brushed Bronze** 







Designer White Brushed Silver



<sup>\*</sup>projected life based on actual fixture operating voltage



## JUNO Line Voltage Halogen



#### **Fixtures**

UH106-WH 6" 1-Lamp Line Voltage Halogen Supplied with fieldshortenable 6' cord and plug, joiner connector, (1) G8 120V 25W bi-pin halogen lamp, and mounting hardware. 6-1/8"L x 3"D x 1-5/16"H (Add 2" to length for side entry of power cord.) Finish: Designer White

UH212-WH 12" 2-Lamp Line Voltage Halogen Supplied with fieldshortenable 6' cord and plug, joiner connector, (2) G8 120V 25W bi-pin halogen lamps, and mounting hardware. 12-1/8"L x 3"D x 1-5/16"H (Add 2" to length for side entry of power cord.) Finish: Designer White

UH318-WH 18" 3-Lamp Line Voltage Halogen Supplied with fieldshortenable 6' cord and plug, joiner connector, (3) G8 120V 25W bi-pin halogen lamps, and mounting hardware. 17-3/4"L x 3"D x 1-5/16"H (Add 2" to length for side entry of power cord.) Finish: Designer White

#### Accessories

DWM1-WH **Direct Wire Module** Required for permanent wiring of Line Voltage Halogen fixtures. Includes wiring enclosure and 36" field-shortenable jumper cord to bring power to right or left side of the fixture 3"L x 3"D x 1"H Finish: Designer White

JC2-8-WH JC2-17-WH JC2-26-WH 8", 17" & 26" Jumper Cords 2-wire Jumper Cord to electrically join fixtures when spaced apart, turning corners, or spanning cabinet frames.

T925 Replacement Lamp G8 120V 25W Bi-pin halogen lamp

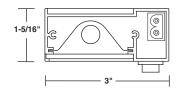
Finish: Designer White



Line-Voltage Halogen luminaires provide economical halogen lighting by utilizing 120-volt halogen lamps which do not require a transformer.

#### **Features**

- Economical design using 120-volt 25-watt halogen lamps with a somewhat warmer tone than low voltage halogen
- Modular design for simple plug-in portable installation and plugtogether connection of multiple fixtures
- May be permanently wired using optional Direct Wire Module
- Narrow profile 3"D x 1-5/16"H
- Dimmable using fixture mounted high/low/off switch or wallmounted dimmers
- 2,000 hour rated lamp life
- Designer White finish



#### Line Voltage Halogen Installation Options



Portable Installation



Direct Wire Installation





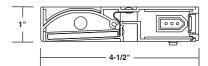
Joining Multiple Fixtures





#### **Features**

- 12-volt 20W bi-pin high-output xenon lamp with 10,000 hours life
- Modular system for installation flexibility
- Integral reflector increases light output and helps reduce fixture housing temperature
- Slim 1" profile
- Integral 12-volt electronic transformer
- Premium prismatic clear glass lens for uniform light distribution, maximum light transmission, and wipe-down cleaning
- Lens is reverse-angled to minimize perceived brightness from normal viewing angles
- Dimmable using fixture-mounted high/low/off rocker switch or wallmounted dimmers
- Rear-access cover and push-in electrical connectors for quick installation using non-metallic cable or 3/8" flexible metal conduit
- Extra off-center knockouts and feed thru wiring capability
- · Captive external screws for quick mounting
- Designer finishes include, brushed bronze, brushed silver and white to match





#### **Fixtures**

#### **UPX109**

9" 1-Lamp

Pro-Xenon

Supplied with joiner connector, mounting hardware and (1) 12V 20W bi-pin high output xenon lamp. 9-1/2"L x 4-1/2"D x 1"H

Finish: BZ-Brushed Bronze, SL-Brushed Silver, WH-Designer White

#### **UPX214**

14" 2-Lamp

Pro-Xenon

Supplied with joiner connector, mounting hardware and (2) 12V 20W bi-pin high output xenon lamps. 14"L x 4-1/2"D x 1"H

Finish: BZ-Brushed Bronze, SL-Brushed Silver, WH-Designer White

#### **UPX322**

22" 3-Lamp

Pro-Xenon

Supplied with joiner connector, mounting hardware and (3) 12V 20W bi-pin high output xenon lamps. 22"L x 4-1/2"D x 1"H

Finish: BZ-Brushed Bronze, SL-Brushed Silver, WH-Designer White

#### UPX430

30" 4-Lamp

#### Pro-Xenon

Supplied with joiner connector, mounting hardware and (4) 12V 20W bi-pin high output xenon lamps. 30"L x 4-1/2"D x 1"H

Finish: BZ-Brushed Bronze,

SL-Brushed Silver, WH-Designer White

#### **Accessories**

JC3-8 JC3-17

JC3-26

8", 17" & 26"

Jumper Cords

3-wire Jumper Cord

to electrically join fixtures when spaced apart, turning corners, or spanning cabinet frames. Finish: BL-Black, WH-Designer White

#### ULH-CP

#### 6' Cord and Plug

3-wire grounded cord and plug accessory for portable plug-in installation.

Finish: BL-Black, WH-Designer White

#### UI H-DWM

#### **Direct Wire Module**

Facilitates code complaint installation of fixture at front edge of cabinet. Includes wiring enclosure and

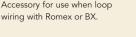
36" field-shortenable jumper cord that plugs into the right or left side of the fixture.

3"L x 3"D x 1"H

Finish: BL-Black, WH-Designer White

#### ULH-CONN 3/8" Miniature Die-Cast **Electrical Connector**

Accessory for use when loop



UPX-LAMP 12V 20W bi-pin,

high-output xenon Replacement lamp.



#### **Finishes**



**Brushed Bronze** 



Brushed Silver



Designer White





#### **Fixtures**

ULX109-WH 9" Direct Wire 1-Lamp Xenon

Supplied with 1-18W T5 wedge base xenon lamp, mounting hardware and 3/8" miniature die-cast electrical connector. 9-1/2"L x 3-1/2"D x 1 3/16"H **Finish:** Appliance White

ULX212-WH 12" Direct Wire 2-Lamp Xenon

Supplied with 2-18W T5 wedge base xenon lamps, mounting hardware and 3/8" miniature die-cast electrical connector. 12"L x 3-1/2"D x 1 3/16"H

ULX318-WH 18" Direct Wire 3-Lamp Xenon

Finish: Appliance White

Supplied with 3-18W T5 wedge base xenon lamps, mounting hardware and 3/8" miniature die-cast electrical connector. 18"L x 3-1/2"D x 1 3/16"H **Finish:** Appliance White

ULX424-WH 24" Direct Wire 4-Lamp Xenon

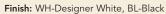
Supplied with 4-18W T5 wedge base xenon lamps, mounting hardware and 3/8" miniature die-cast electrical connector. 24"L x 3-1/2"D x 1 3/16"H

Finish: Appliance White

#### **Accessories**

ULH-CP

**6' Cord and Plug** 3-wire grounded cord and plug accessory for portable plug-in installation.



ULH-CONN 3/8" Miniature Die-Cast Electrical Connector

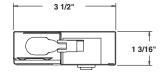
Accessory for use when loop wiring with Romex or BX.



Xenon luminaries with integral electronic 12-volt transformer offer an economical direct-wire sheet metal undercabinet alternative using long-life 12-volt xenon lamps.

#### **Features**

- Economical sheet metal design using 12-volt 18W xenon lamps
- Direct wire installation with multiple electrical knockouts in back and sides
- Compact profile 3-1/2"D x 1-3/16"H
- Dimmable using fixture-mounted high/low/off rocker switch or wallmounted dimmers
- 10,000 hour rated lamp life
- Appliance White finish





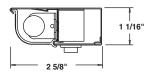
#### **Fluorescent**



Direct Wire Fluorescent luminaires offer highly efficient illumination in a shallow, easy-to-conceal profile. Ideal for undercabinet, undershelf, and task lighting, where maximum energy efficiency, long lamp life, and cool operation are desired.

#### **Features**

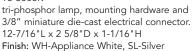
- Energy Star qualified, cool operating fluorescent lighting
- State-of-the-art electronic ballast operates without flicker or hum and instantly starts lamps
- Latest generation of high-efficiency, high color rendering 3000K
   T5 tri-phosphor fluorescent lamps
- 10,000-hour rated lamp life
- Cool-to-touch operation
- Shallow profile 2 5/8"D x 1-1/16"H
- High-quality acrylic diffuser stays pliable and clear
- Direct wire installation with multiple electrical knockouts in back and sides
- Maximum energy efficiency:
   8 watts = 40 watts halogen
   14 watts = 75 watts halogen
   21 watts = 100 watts halogen
   28 watts = 150 watts halogen





#### **Fixtures**

UFL12 12" 8W T5 Direct Wire Fluorescent Supplied with 8W T5 3000K



UFL22
22" 14W T5 Direct
Wire Fluorescent
Supplied with 14W
T5 HE 3000K
tri-phosphor lamp,
mounting hardware and 3/8" miniature diecast electrical connector.
22-3/4"L x 2 5/8"D x 1-1/16"H
Finish: WH-Appliance White, SL-Silver

UFL34
34" 21W T5 Direct
Wire Fluorescent
Supplied with 21W
T5 HE 3000K
tri-phosphor lamp,
mounting hardware and 3/8" miniature diecast electrical connector.
34-1/2"L x 2 5/8"D x 1-1/16"H
Finish: WH-Appliance White, SL-Silver

UFL46
46" 28W T5 Direct
Wire Fluorescent
Supplied with 28W
T5 HE 3000K
tri-phosphor lamp,
mounting hardware and 3/8" miniature diecast electrical connector.
46-5/16"L x 2 5/8"D x 1-1/16"H
Finish: WH-Appliance White, SL-Silver

#### Accessories

ULH-CP 6' Cord and Plug 3-wire grounded cord and plug accessory

for portable plug-in installation.

Finish: WH-Designer White, BL-Black

ULH-CONN 3/8" Miniature Die-Cast Electrical Connector Accessory for use when loop wiring with Romex or BX.



#### **Finishes**







Appliance White



## JUNO Trac 12





#### **Trac Section**

#### Trac

Each trac section contains two solid copper 12 AWG conductors and is supplied with an endfeed connector, Height: 3/8" dead end, and mounting hardware.



#### TL2

2' Trac Section, 20-5/8". WH-White, BL-Black TL4

4' Trac Section, 44-5/8". WH-White, BL-Black TL6

6' Trac Section, 68-5/8". WH-White, BL-Black TL8

8' Trac Section, 92-5/8". WH-White, BL-Black

#### **Lamp Holders**

TL201 (Single Lamp) TL202 (Double Lamp) Xenon Lampholder With polished aluminum

reflector WH-White, BL-Black



Height: 5/8"

Lamps T3-1/4" (Wedge Base) TL900 3W 12V TL901 5W 12V TL903 10W 12V TL905-24V 5W 24V\* TL910-24V 10W 24V\*





#### **Electrical Feeds & Joiners**

#### **Conduit Feed**

For surface wiring or top feed using 1/2" electrical connectors. WH-White, BL-Black



#### Lamps

\*Frosted

TL211

Rigid Loop

(Xenon T3 Rigid Loop)

Xenon Lampholder WH-White, BL-Black

TL951CL 10W 12V TL952CL 5W 24V TL953CL 10W 24V (CL-Clear, FR-Frosted)

TL950FR 5W 12V TL951FR 10W 12V TL952FR-24V 5W 24V TL953FR-24V 10W 24V

Height: 1"



#### TL24

#### Right Angle Joiner

Joins two trac sections to form a 90° corner. WH-White, BL-Black



#### TL103 Halogen Flood WH-White, BL-Black

#### Lamp

(T3 Halogen Bi-Pin Capsule) Height: 1-1/4" TL922 10W 12V

TL923 20W 12V TL924-24V 20W 24V



## TL547

**Transformers** 

Remote Magnetic

Resettable circuit breaker

and dual tap primary to

adjust for voltage drop.

Vertical mount only.

12-Volt Transformers

24-Volt Transformers

TL554 (1) 150VA circuit for 50 to 150 watts.

TL549 (1) 240VA circuit for 120 to 240 watts.

TL550 (2) 240VA circuits, each for 120 to 240 watts. Dimensions: 11-13/8"H x 5"W x 4-3/4"D.

TL553-24V (1) 250VA circuit for 100 to 250

TL551-24V (1) 480VA circuit for 240 to 480

TL552-24V (2) 480VA circuits, each for 240 to

Dimensions: 12-1/2"H x 6-1/8"W x 5-7/8"D.

Dimensions: 11-3/8"H x 5"W x 4-7/8"D.

Dimensions: 8"H x 4-1/4"W x 4"D.

Dimensions: 8"H x 3-5/8"W x 3-1/2"D.

Dimensions: 7-7/8"H x 4-3/8"W x 4"D.

Transformers

**BL-Black** 

**BL-Black** 

BL-Black

watts.

BL-Black

480 watts.

**BL-Black** 

#### 150VA Surface Transformer

Low-profile electronic 12-volt transformer with on/off switch for trac runs

between 50 and 150 watts.

Can be installed in-line with trac or remote up to 5' from trac. 120V supply can be fed into

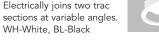
Economy plug-in 12-volt

transformer for trac runs up to 60 watts. Supplied with

10' of 2-wire cord and on/off line cord switch. Dimensions: 3-1/8"H x 1-1/2"W x 1-3/8"L. WH-White, BL-Black







#### TL38 **Endfeed Connector/** Dead End

For use with field cut-off trac sections. WH-White, BL-Black



#### end or top using standard 1/2" electrical connectors. Dimensions: 1-5/8"H x 2-1/2W x 7"L. WH-White, BL-Black TL548 60VA Plug-In Transformer





# JUNO Undercabinet Lighting Application Guide

#### Task Lighting

Juno undercabinet luminaires place bright lighting onto the work surface from a source that is located in close proximity to the task being performed. This placement is optimal, as general lighting is often blocked by a body shadow or a shadow from upper cabinets. In addition, undercabinet lighting provides the increased light levels required to accurately, quickly, and safely perform tasks.

Recommended Illuminance Levels 20–50 footcandles is generally perceived as adequate to perform kitchen undercabinet tasks such as food preparation or paying bills. More detailed tasks such as sewing or craftwork require 50-100 footcandles. Tasks that are very small, have intricate detail, or involve very dark surfaces may require even higher illumination levels.

#### **Accent Lighting**

Cabinets and shelves create dark cavities that can detract from the aesthetics of a room. Juno undercabinet fixtures illuminate these cavities, to create visual interest and a sense of spaciousness, and/or to highlight objects of interest.

Recommended Illuminance Levels Accent lighting usually requires 20 footcandles or less.

#### **Cove Lighting**

Indirectly lighting over cabinets or in architectural coves can increase the sense of spaciousness and add drama and pleasing warmth to an interior.

Recommended Illuminance Levels Cove lighting usually requires 20 footcandles or less.

# Correct



#### **Special Design Considerations**

Dark Interior Finishes The amount of perceived light from undercabinet, accent, and cove lighting will vary greatly depending on the reflectance value of surrounding surfaces. A dark countertop and backsplash will absorb light from undercabinet fixtures and diminish the appearance of the counter being illuminated. Likewise, indirectly illuminating a dark wood paneled ceiling from an architectural cove will be much less dramatic than illuminating a white ceiling. Allowing for increased levels of illumination can partially offset light absorption of dark surfaces.

High Ambient Light Levels The apparent brightness of a lighted countertop, cabinet interior, or cove will also vary depending on the amount of general room illumination. If the general ambient lighting is 30 footcandles, than a cabinet interior illuminated to only 20 footcandles will not appear illuminated. Conversely, in a darkened room, 20 footcandles will appear brilliant. A minimum 3:1 ratio between the focus area and background is recommended to have visual impact.

Age As age increases, so does our need for light. A typical 65-year-old needs 10 to 15 times more light than a teenager to experience equal visual acuity.

Shiny Work Surfaces For high-gloss countertops and backsplashes, place the fixture at the front edge of the cabinet to minimize glare reflecting back into the eyes of someone working at the counter. Keep in mind that shiny dark surfaces act like a mirror, and will reflect any source of light that is placed above them. How the reflected image of one fixture appears vs. another is subjective.

#### Selecting the Best Type of Lamp for Your Application

Fluorescent The diffuse quality of fluorescent lamps, as used in the Fluorescent series, make them ideal for providing shadow-free task illumination in kitchens, home offices, and other work areas. Long life, very low energy consumption, and cool operating temperatures are important considerations for applications with long burning hours. The Fluorescent series uses the latest generation of high efficiency, high color rendering T5 lamps which approximates the color of halogen and has a 10,000 hour rated life. These fixtures have earned the Energy Star certification.

Halogen and Xenon The specular "pointsource" nature of both halogen and xenon lamps creates sparkle and highlights texture, color, and 3-dimensional definition of displayed objects. These lamps are excellent choices for task and accent lighting. In addition, they may be dimmed to create a warmer appearance and/or lower-level mood or night lighting.

■ 12-volt halogen lamps, as used in the Pro-Halogen series, produce the whitest and brightest illumination with best color rendering using less energy and producing less heat.

- 120-volt halogen lamps, as used in the Line Voltage Halogen series, produce a warmer tone than low voltage halogen, and offer lower initial fixtures cost, as they do not require a step-down transformer to operate.
- 12-volt xenon lamps, as used in both Xenon series, produce a slightly warmer light than low voltage halogen. They also have a long 10,000-hour lamp life.
- 12- or 24-volt xenon lamps, as used in Trac 12, have a slightly warmer color temperature than halogen, and offer the most flexibility to achieve custom lighting effects such as undershelf, internal cabinet, and indirect cove lighting. Like fluorescents, they also have a long 10,000-hour life when operated at the recommended 11.5 volts.

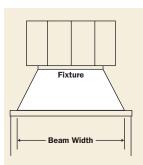


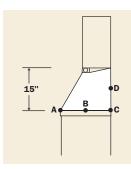




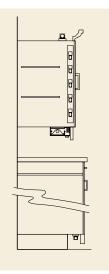
#### Footcandles on Horizontal Work Surface

|                   |        |   | Beam   |    | Footcandles*** |     |     |
|-------------------|--------|---|--------|----|----------------|-----|-----|
| Fixture           | Cat #  | Lamp                                    | Width* | Α  | В              | C   | D   |
| Pro-Halogen       | ULH109 | (1) 20-watt Halogen                     | 19"    | 10 | 30             | 31  | 36  |
|                   | ULH214 | (2) 20-watt Halogen                     | 24"    | 19 | 63             | 62  | 60  |
|                   | ULH322 | (3) 20-watt Halogen                     | 32"    | 31 | 84             | 79  | 69  |
|                   | ULH430 | (4) 20-watt Halogen                     | 36"    | 23 | 74             | 69  | 67  |
| Line Volt Haloger | UH106  | (1) 25-watt Halogen                     | 12"    | 8  | 33             | 19  | 18  |
|                   | UH212  | (2) 25-watt Halogen                     | 22"    | 12 | 60             | 35  | 35  |
|                   | UH318  | (3) 25-watt Halogen                     | 28"    | 19 | 93             | 51  | 48  |
| Pro-Xenon         | UPX109 | (1) 20-watt High-Output Xenon           | 21"    | 9  | 31             | 28  | 35  |
|                   | UPX214 | (2) 20-watt High-Output Xenon           | 23"    | 15 | 53             | 48  | 54  |
|                   | UPX322 | (3) 20-watt High-Output Xenon           | 31"    | 24 | 72             | 65  | 62  |
|                   | UPX430 | (4) 20-watt High-Output Xenon           | 36"    | 23 | 75             | 69  | 64  |
| Economy Xenon     | ULX109 | (1) 18-watt Xenon                       | 21"    | 14 | 25             | 20  | 25  |
|                   | ULX212 | (2) 18-watt Xenon                       | 24"    | 30 | 52             | 42  | 49  |
|                   | ULX318 | (3) 18-watt Xenon                       | 28"    | 40 | 72             | 55  | 59  |
|                   | ULX424 | (4) 18-watt Xenon                       | 32"    | 44 | 75             | 64  | 61  |
| Fluorescent       | UFL12  | 8-watt Fluorescent                      | 24"    | 32 | 77             | 68  | 93  |
|                   | UFL22  | 14-watt Fluorescent                     | 31"    | 64 | 135            | 130 | 157 |
|                   | UFL34  | 21-watt Fluorescent                     | 41"    | 66 | 140            | 131 | 140 |
|                   | UFL46  | 28-watt Fluorescent                     | 50"    | 83 | 171            | 166 | 170 |
| Trac 12           | TL201  | 5-watt Xenon, 3" On Center              | **     | 10 | 31             | 20  | 22  |
|                   | TL202  | 10-watt Xenon, 12" On Center            | **     | 12 | 36             | 23  | 25  |
|                   | TL211  | 10-watt Xenon, Rigid Loop, 6" On Center | **     | 14 | 43             | 28  | 30  |
|                   | TL103  | 20-watt Halogen, 12" On Center          | **     | 16 | 66             | 56  | 60  |





#### **Cabinetry Lighting Guidelines**



**Over Cabinets** Trac 12, using 10-watt lamps spaced 6" on center, generally provides excellent indirect lighting. For lower-level mood lighting, use 3- or 5-watt lamps with slightly closer spacing. Juno Fluorescent fixtures may also be used where energy efficiency is a primary consideration, or higher light levels are required. Placing the fixture at the front edge of the cabinet top will project light into the space and illuminate any displayed objects.

**Inside Cabinets** Running Trac 12 vertical on the front inside of cabinets avoids the need to put trac on each shelf. 3-watt xenon lamps 3" on center will generally provide adequate lighting inside a cabinet.

**Under Cabinets** Placing Juno undercabinet fixtures at the front lip of the cabinet conceals the fixture from view, minimizes veiling reflections, and provides maximum light on the working area of the countertop.

**Kick Spaces** 3-watt xenon lamps spaced on 4" centers provide adequate kick-space lighting. Wider spacings can be used when the distance from trac to floor is greater than 4" or when even illumination is not required.

Note: Shiny flooring may cause objectionable lamp image reflections.



<sup>\*</sup> Beam width defined as 50% of maximum footcandles.

<sup>\*\*</sup> Assumes continuous lighting, so beam width is same as counter width. Rear wall reflectance 50%. Counter surface reflectance 20%.

<sup>\*\*\*</sup> Except for Trac 12, all data is for a single fixture.



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