Metalux

DESCRIPTION

The SkyBar™ series reimagines high bay and low bay lighting by delivering a unique aesthetic with industry-first uplight and leading performance. By providing multiple lumen packages and distributions, the SkyBar gives the necessary optical freedom and flexibility to meet the requirements for a wide variety of lighting applications. SkyBar utilizes the advantages of the patented WaveStream™ technology to deliver a stylish LED alternative to traditional high bay lighting for commercial and industrial applications.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Channel is die formed cold rolled steel with KOs for ease of installation. Groove for Tong Hanger. End plate quickly converts to snap-in channel connector for continuous row alignment.

Electrical
Long-Life LED system coupled with electrical driver to deliver optimal performance. LED's available in 3500K, 4000K or 5000k with a CRI <85. Electronic drivers are available for 120-277V, 347V and 480V applications.

Emergency Battery Pack Option
Optional 120v-277v integral emergency battery pack is available in 7-watts or 14-watts to meet critical life-safety lighting requirements. The 90-minute batteries provide constant power to the LED system, ensuring code-compliance. A test switch/indicator button can be tested safely from the ground using a laser pointer, while the patented EZ Key prevents accidental discharge of the battery during construction. See ordering information for details.

Controls
Equipped standard with a 0-10V continuous dimming driver that works with any standard 0-10V control/dimmer. Dimming range is 10% to 100%; varies by control device. Combine with energy-saving products like occupancy sensors, daylighting controls, and lighting relay panels to maximize energy savings.

Optics
Precision formed optical assembly with positively retained high optical grade acrylic lenses provide a directed optical distribution using WaveStream technology.

Mounting
Suspended using two V-hangers (included). Optional Y-hook, Y-Toggle or Surface/stem mount bracket is also available. Available continuous row mount. Mounting hardware must be ordered separately.

Warranty
SkyBar features a five-year limited warranty.

SKYBAR LED

2-7/8" X 48"
2-7/8" X 96"

LED Low Bay Luminaire

powered by
fifthlight technology

COMPLIANCES
Luminaires are cULus listed for damp Locations 1. 7°C-40°C (35°F-105°F) ambient environments. (EL option up to 35°C ambient)

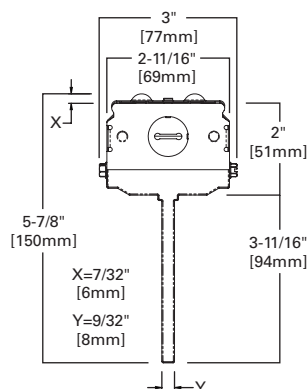ROHS Compliant, and LED modules comply with IESNA LM79/LM80 standards

3"
[77mm]
2-11/16"
[69mm]
X
2"
[51mm]
5-7/8"
[150mm]
3-11/16"
[94mm]
X=7/32"
[6mm]
Y=9/32"
[8mm]
Y

MOUNTING DATA

4'
Ceiling Stand-off Embossments
Hole for Toggle
Ø K.O (3) 7/8" [22mm]
2-7/8" [73mm]
2-1/2" [64mm]
38" [965mm]
48" [1219mm]

8'
Ceiling Stand-off Embossments
2-1/2" [64mm]
2-7/8" [73mm]
26-3/4" [680mm]
Hole for Toggle
Ø K.O (2) 7/8" [22mm]
5" [127mm]
96" [2437mm]

Metalux SkyBar-CCT Multiplier Table

CCT	Multipliers from 3500K	Multipliers from 4000K	Multipliers from 5000K
3500K	1.000	0.0977	0.0936
4000K	1.024	1.000	0.959
5000K	1.068	1.043	1.000

ENERGY DATA

Catalog No.	Input Watts
4SKBLED-LD1-3	28
4SKBLED-LD1-4	36
4SKBLED-LD1-5	46
4SKBLED-LD1-6	61
4SKBLED-LD1-7	65
8SKBLED-LD1-6	56
8SKBLED-LD1-8	65
8SKBLED-LD1-10	84
8SKBLED-LD1-12	122
8SKBLED-LD1-14	129

LINEAR DISCONNECT
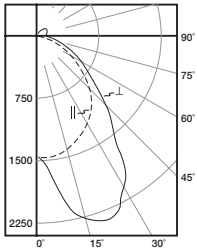**Safe and convenient means of disconnecting power**

SYSTEMS CERTIFIED ISO

F·T·N
Powering Business Worldwide

PS519034EN
7-8-2016

PHOTOMETRICS

4SKBLED-LD1-5-N-UNV-L835-CD1-U

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.6 x mounting height
Lumens: 5443
Input Watts: 45.7W
Efficacy: 119.1 lm/W
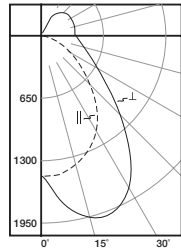Test Report: 4SKBLED-LD1-5-N-UNV-L835-CD1-U.IES

Candlepower

Angle	Along ‖	45°	Across ⊥
0	1461	1461	1461
5	1466	1553	1658
10	1442	1793	2043
15	1406	2008	2288
20	1344	2119	2345
25	1274	2099	2311
30	1189	2005	2051
35	1081	1795	1683
40	966	1545	1357
45	839	1290	1082
50	699	1053	868
55	555	843	691
60	413	662	534
65	283	511	399
70	178	384	289
75	104	280	201
80	52	199	131
85	18	135	83
90	2	97	54

Coefficients of Utilization

Effective floor cavity reflectance   20%

rc	80%				70%				50%			30%			10%			0%
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	117	117	117	117	114	114	114	114	107	107	107	100	100	100	95	95	95	92
1	107	103	99	95	104	100	96	93	94	91	89	89	87	84	84	82	81	78
2	98	91	84	79	95	88	82	77	83	78	74	79	75	71	75	72	69	66
3	90	80	73	67	87	78	71	65	74	68	63	70	65	61	67	63	59	57
4	83	72	63	57	80	70	62	56	66	60	55	63	58	53	60	55	52	49
5	77	64	56	50	74	63	55	49	60	53	48	57	51	47	55	49	45	43
6	71	58	50	44	68	57	49	43	54	47	42	52	46	41	50	44	40	38
7	66	53	45	39	64	52	44	38	50	43	37	47	41	37	45	40	36	34
8	61	48	40	35	59	47	40	34	45	39	34	44	37	33	42	36	32	30
9	57	44	37	31	56	44	36	31	42	35	30	40	34	30	39	33	29	27
10	54	41	33	28	52	40	33	28	39	32	28	37	31	27	36	31	27	25

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	1600	29.4
0-40	2610	47.9
0-60	4175	76.7
0-90	5011	92.1
0-180	5443	100.0

4SKBLED-LD1-7-W-UNV-L840-CD1-U

Electronic Driver
Linear LED 4000K
Spacing criterion: (II) 1.1 x mounting height, (⊥) 1.6 x mounting height
Lumens: 6490
Input Watts: 62.5W
Efficacy: 103.8 lm/W
Test Report: 4SKBLED-LD1-7-W-UNV-L840-CD1-U.IES

Candlepower

Angle	Along ‖	45°	Across ⊥
0	1464	1464	1464
5	1470	1588	1683
10	1440	1734	1869
15	1394	1811	1970
20	1315	1830	1997
25	1223	1779	1942
30	1111	1676	1807
35	981	1517	1609
40	835	1326	1381
45	679	1135	1149
50	535	961	944
55	409	814	782
60	307	703	657
65	225	611	567
70	165	538	502
75	115	476	451
80	72	424	405
85	33	372	366
90	4	335	332

Coefficients of Utilization

Effective floor cavity reflectance   20%

rc	80%				70%				50%			30%			10%			0%
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	114	114	114	114	109	109	109	109	99	99	99	91	91	91	82	82	82	79
1	103	97	93	88	98	93	89	85	85	81	78	77	75	72	70	68	66	63
2	93	85	78	72	89	81	75	69	74	69	64	68	63	60	62	58	55	52
3	85	74	66	60	81	71	64	58	65	59	54	60	55	51	55	51	47	44
4	78	66	57	51	74	63	55	49	58	52	46	53	48	44	49	44	41	38
5	72	59	50	44	68	57	49	43	52	45	40	48	42	38	44	39	36	33
6	66	53	45	38	63	51	43	37	47	40	35	44	38	33	40	35	31	29
7	61	48	40	34	58	47	39	33	43	36	31	40	34	30	37	32	28	26
8	57	44	36	30	54	42	35	29	39	33	28	37	31	27	34	29	25	23
9	53	40	32	27	51	39	32	26	36	30	25	34	28	24	31	26	23	21
10	50	37	30	24	48	36	29	24	34	27	23	31	26	22	29	24	21	19

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	1438	22.2
0-40	2334	36.0
0-60	3807	58.7
0-90	5108	78.7
0-180	6490	100.0

ORDERING INFORMATION

SAMPLE NUMBER: SKBLED-LD1-14-W-UNV-L850-CD2-U

Length
4=4' Length
8=8' Length

Series
SKBLED=
WaveStream

Mounting Arrangement
[Blank]=Stand Alone
R=Continuous Row Mount

Lamp Type
LD1=LED 1.0

LED Lumen Output
4 ft.
3=3,000 Lumens
4=4,000 Lumens
5=5,000 Lumens
6=6,000 Lumens
7=7,000 Lumens

8 ft.
6=6,000 Lumens
8=8,000 Lumens
10=10,000 Lumens
12=12,000 Lumens
14=14,000 Lumens

Distribution
N=Narrow
W=Wide

Voltage [1]
120V=120 Volt
277V=277 Volt
347V=347 Volt
480V=480 Volt
UNC=Universal Voltage 347-480 [2]
UNV=Universal Voltage 120-277

Options
EL7W=7-watt, 120V-277V emergency battery pack installed [2], [3], [6]
EL14W=14-watt 120V-277V emergency battery pack installed [2], [3], [6]
GTD2 =Bodine Generator Transfer Device [8]
ETS2 =IOTA Emergency Transfer Switch [8]

CCT
L835=3500K
L840=4000K
L850=5000K

Driver Type
CD=0-10V Dimming Driver
5LTD=Fifth Light (DALI) Driver

Number of Drivers
1=1 Driver
2=2 Drivers (10,000, 12,000 and 14,000 lumen)

5LTD
1=1 Driver
2=2 Drivers (10,000, 12,000 and 14,000 lumen)

Wiring
PI_NG=Plug In System (1, 2, or 3 Circuit Capability), No Ground (ground provided by fixture body)
PI_WG=Plug In System (1, 2, or 3 Circuit Capability), With Ground (separate ground wire in harness)
CPI_NG=Crossover Plug In System (2 or 3 Circuit Capability) No Ground (ground provided by fixture body)
CPI_WG=Crossover Plug In System (2 or 3 Circuit Capability) With Ground (separate ground wire in harness)

Motion Sensors
SVPD2=Integrated occupancy and daylight dimming sensor, 900 sq. ft. coverage [4], [7]
SVPD3=Integrated occupancy and daylight dimming sensor, 1200 sq. ft. coverage [5], [7]
LB-ERMS360=360° Low Bay Motion Sensor - End of Row
LB-MRMS360=360° Low Bay Motion Sensor - Middle of Row
HB-ERMS360=360° High Bay Motion Sensor - End of Row
HB-MRMS360=360° High Bay Motion Sensor - Middle of Row

Options
RS=Reflector Shield

Packaging
U=Unit Pack

Accessories (order separately)
AYC-Chain/Set=36" Chain Hanger (Use 1 set per fixture)
SCF=Fixed Stem Set (Specify Length)
SCS=Swivel Stem Set (Specify Length)
SCA=Adjustable 48" Stem Set
EYE CHAIN SET/3FT=Eye Bolt Chain (Use 1 set per fixture)
A1B/Spacer-U=Spacer 1-1/2" to 2-1/2" from ceiling (Use 2 per fixture)
TOGGLE=Single Toggle No. 2 (Specify Length)
Y-TOGGLE=Y Toggle No. 2 (Specify Length)
SKBLED-CRA=Continuous Row Aligner [9]

NOTES: [1]Voltage must be specified when ordered with plugs or emergency ballasts. [2]Not available with UNC and EL options together. [3]With integral test switch/indicator/laser test. For approximate delivered lumens multiply the lumens per watt of the desired fixture by the wattage of the emergency battery pack (100 lm/W x 7=700 lumens). IES-format photometry for luminaire under emergency operation available. [4]For mounting heights up to 10 ft. [5]For mounting heights up to 30 ft. [6]EL option illuminates one 4 ft. section in 12,000 and 14,000 lumen packages. [7]Recommended for use with stand alone fixtures only. [8]Used to transfer fixture to secondary power source for life-safety operation. When used with a dimming fixture, two devices are required to ensure control is disabled while operating under emergency power. [9]Included when ordering the "R" mounting arrangement.

Specifications and dimensions subject to change without notice. Consult your Eaton representative for availability and ordering information.

PI OPTION ORDERING INFORMATION

Catalog Number Suffix	Number of Circuits	Circuit Wired To Ballast
PI 1 BLK	1	Black
PI 2 BLU	2	Blue
PI 2 BLK	2	Black
PI 3 RED	3	Red
PI 3 BLU	3	Blue
PI 3 BLK	3	Black

Catalog Numbering System
The PI System is available in sections up to 8' in length for continuous row wiring by simply plugging the sections together. Each PI section is factory wired to the ballast leads. Color coding of wires is as follows:

PI-1 = One Circuit - 2 Wires: one black, one white
PI-2 = Two Circuits - 3 Wires: one black, one blue, one white
PI-3 = Three Circuits - 4 wires: one black, one blue, one red, one white

When ordering the PI2/PI3 System it is necessary to specify the number of fixtures required for each circuit. Each circuit in fixture must be ordered as a separate line item, with a different hot wire color specified. All wiring to external feeds, using cord or cord & plug, are responsibility of installing licensed contractor. Cord and cord & plug sets must be ordered separately if PI option is chosen.

PI1 - Single Circuit Plug-In

SAMPLE NUMBER: PI1BLK-WG

PI1= Single Circuit
BLK=Black Hot
NG= No Ground (ground provided by fixture body)
WG= With Ground (separate ground wire in harness)

Specifications & dimensions subject to change without notice. Consult your Eaton Representative for availability and ordering information.

PI2 - Two Circuit Plug-In

SAMPLE NUMBER: PI2BLK-WG

PI2= Two Circuit
BLK=Black Hot
BLU=Blue Hot
Leave Blank=Single Neutral
/WHT=White Neutral
/GRY=Gray Neutral
Leave Blank=Single Neutral
2NEU=Two Neutrals
NG= No Ground (ground provided by fixture body)
WG= With Ground (separate ground wire in harness)

PI3 - Three Circuit Plug-In

SAMPLE NUMBER: PI3BLK-WG

PI3= Three Circuit
BLK=Black Hot
BLU=Blue Hot
RED=Red Hot
Leave Blank=Single Neutral
/WHT=White Neutral
/GRY=Gray Neutral
Leave Blank=Single Neutral
2NEU=Two Neutrals
NG= No Ground (ground provided by fixture body)
WG= With Ground (separate ground wire in harness)

SHIPPING DATA

Catalog No	Wt.
4SKBLED-LD1-3	8 lbs.
4SKBLED-LD1-4	8 lbs.
4SKBLED-LD1-5	8 lbs.
4SKBLED-LD1-6	8 lbs.
4SKBLED-LD1-7	8 lbs.
8SKBLED-LD1-6	15 lbs.
8SKBLED-LD1-8	15 lbs.
8SKBLED-LD1-10	15 lbs.
8SKBLED-LD1-12	15 lbs.
8SKBLED-LD1-14	15 lbs.

INTEGRATED SENSOR

Description
This innovative luminaire-integrated sensor control system optimized for code-compliant occupancy detection and daylight harvesting – all from within the foot print of Metalux's luminaires.

No New Wires
An in-place fixture retrofit is all that's needed to meet most energy codes in commercial spaces. The sensor system is factory wired to the luminaire, switching on or off based on occupancy, and dimming the light when enough daylight is available.

Sophisticated lighting control without commissioning
The luminaire-integrated sensor system offers out-of-the-box operation using thoughtful default settings.

Flexibility and Individual Control
When the application demands more, the sensor system has the option to make changes using a remote control. The remote allows changes from the default settings for occupancy, target light level, preset lighting levels, and more.

Cost-effective, Stand-alone Operation
With a single product to mount and a single electrical connection to make, the Metalux luminaire with an integrated sensor system saves money on the total installed cost when occupancy or daylight harvesting controls are needed. The integrated sensor system works stand-alone, without the need for additional switches and dimmers. When manual-on, manual dimming or other code-required control schemes are needed, please see the comprehensive offering of Greengate and Fifth Light solutions from Cooper Controls at www.coopercontrol.com.

Metalux Integrated Sensor Sequence of Operation
The occupancy sensing portion of the sensor uses Passive Infrared (PIR) technology with Auto-on/Auto-off operation. The small lens in the center of the sensor directs the view of a passive infrared occupancy detector to sense occupants moving through the room. To trigger the light on, an occupant must cross at least two passive infrared beams. When motion in the coverage area ceases, the sensor logic concludes the room is unoccupied, and begins a count-down timer. By default, the timer is factory-set to 20 minutes, and can be adjusted to 5, 10, 15 and 20 minutes using the optional remote control, model number HHPRG-MS. Any motion detected during the count-down timer will cause the light to remain on and resets the timer. When motion is detected, a red LED will blink. In addition to the default on/off functionality, the sensor has an Energy Saver feature, where the light can be set to dim to a preset level after the sensor detects no occupancy for half of the count-down timer, when the timer is complete the lighting will change to the unoccupied setting. The Energy Saver feature works when the count-down timer is set to at least 10 minutes, and the preset level and feature are configured using the optional remote control. See the Sensor Programming Guide that comes with the HHPRG-MS remote for details on this feature. The sensitivity of the occupancy detection can be adjusted, using the HHPRG-MS remote. By default, the sensor operates at the full detection range shown on the coverage pattern diagram. Using the "LO" button on the HHPRG-MS remote, reduces the sensor detection range by 50%. Full coverage can be restored at any time by pressing the "HI" button on the remote. The red LED indicator will blink repeatedly to confirm any programming change.

The dimming daylight harvesting portion of the sensor uses a small photo sensor located next to the occupancy sensing lens. The sensor continuously measures the available light in the room, even when the fixture is turned off. This allows sensor to operate in one of three daylighting modes, where the artificial light from the paired Metalux luminaire can adjust the light based on the amount of ambient light from surrounding natural and artificial light sources. Since the sensor measures light from its luminaire along with other light sources, this sensor follows a closed-loop dimming daylight harvesting style. The first mode, Daytime, is active when the sensor detects light of at least 100 lux in the room. In Daytime mode, when the light is turned on after detecting occupancy, the sensor will begin balancing the luminaire light level relative to the total available light it measures. The default light balancing target in daytime mode is 500 lux. This level can be adjusted higher or lower using the optional HHPRG-MS remote, and pressing "SET" and then the "DO" (Daytime Occupied) button to store the new light level. Similarly, the Daytime Unoccupied, "DU" has a default of level of 0 lux, or off, but can be adjusted higher to prevent the lights from turning off completely when unoccupied. More details on this function are found in the Sensor Programming Guide for the HHPRG-MS remote.
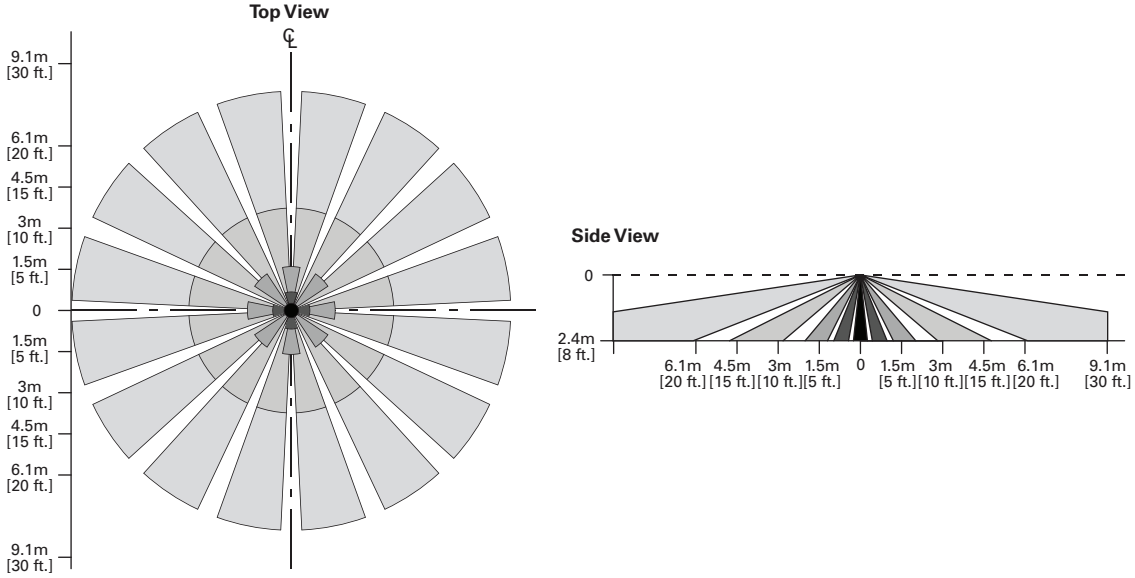
The next two modes, Twilight and Nighttime, function in a similar way, allowing the artificial light to adjust to different levels based on the surroundings. While primarily for use in outdoor luminaires, these modes are available for use in areas with a wide range of natural light, including atriums, day lit stairwells, and rooms with large or continuous windows. The Twilight mode is active when the sensor detects 50-100 lux in the off position, and has a 300 lux default light balancing target. The Nighttime mode is active when the sensor detects less than 50 lux, and has a 250 lux default light balancing target. Like the Daytime mode, there are separate settings for Twilight Occupied ("TO"), Twilight Unoccupied ("TU"), Nighttime Occupied ("NO") and Nighttime Unoccupied ("NU") which can be adjusted and set using the optional HHPRG-MS remote.

In addition to programming the sensor, the optional HHPRG-MS remote can be used for personal control to adjust the lighting temporarily override the functions of the sensor temporarily. The remote has raise/lower buttons to adjust the light level for special tasks, as well as a power button to turn the lights on or off. Unless the SET button and another function is selected, any changes made using these buttons will revert to the programmed settings after the sensor has detected no occupancy for its programmed time out, and turned off the lighting. The next time the sensor detects occupancy, it will revert to its programmed settings for count-down timer and light balancing.
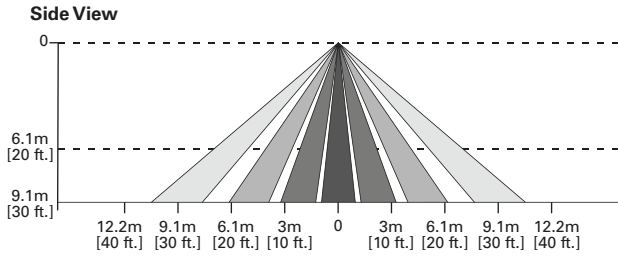
Coverage Patterns next page

SENSOR DETAILS - SKYBAR SINGLE

SVPD2 Coverage Pattern

Top View

| 9.1m [30 ft.] |
| 6.1m [20 ft.] |
| 4.5m [15 ft.] |
| 3m [10 ft.] |
| 1.5m [5 ft.] |
| 0 |
| 1.5m [5 ft.] |
| 3m [10 ft.] |
| 4.5m [15 ft.] |
| 6.1m [20 ft.] |
| 9.1m [30 ft.] |

Side View

0

2.4m [8 ft.]

6.1m [20 ft.] 4.5m [15 ft.] 3m [10 ft.] 1.5m [5 ft.] 0 1.5m [5 ft.] 3m [10 ft.] 4.5m [15 ft.] 6.1m [20 ft.] 9.1m [30 ft.]

SVPD3 Coverage Pattern

Side View

0

6.1m [20 ft.]

9.1m [30 ft.]

12.2m [40 ft.] 9.1m [30 ft.] 6.1m [20 ft.] 3m [10 ft.] 0 3m [10 ft.] 6.1m [20 ft.] 9.1m [30 ft.] 12.2m [40 ft.]

Optional Remote Control

HHPRG-MS Remote