Metalux

DESCRIPTION

The HBLED SE is an outstanding value for a wide variety of applications and mounting heights. Precision designed optics, multiple distributions, lumen outputs and color temperatures make the HBLED SE ideal for industrial, commercial, manufacturing, gymnasium and other applications that utilize traditional HID and linear fluorescent high bays. The proprietary low-power, low-brightness LED module assembly offers exceptional optical performance with the enhanced benefits of LED lighting, including energy savings, extended system life, a reduced carbon footprint.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Full body construction is achieved with channel and end plates, along w/stiffening brackets and side rails to help create a strong, clean finished frame for this luminaire. Side rails are standard on all HBLED products.

Electrical
Long-life LED system coupled with electrical driver to deliver optimal performance. cULus listed. Electronic drivers are available for 120-277V, 347V and 480V applications. An optional 0-10V dimming driver is available.

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. Emergency/generator transfer options available – see ordering information for details.

Finish
White enamel finish preceded by a multistage cleaning cycle, iron phosphate coating with rust inhibitor to protect against contaminants and oxidation.

Optics
Precision designed optics deliver even illumination. General and aisle distribution ensures superior performance to key areas within an application.

Shielding
Door frame and lens assembly is optional for more demanding environments.

Options
Integral Occupancy Sensor available and provides from 600 sq. ft. up to 1250 sq. ft. of coverage in a maximum mounting height of 30'. Optional integral sensor system provides occupancy and daylight harvesting.

Mounting
The HBLED series is ideally suited for suspension mounting with optional wire hook and chain set, or cable mounting. Single monopoint mounting is also available with SPM tong hanger.

Compliance
Luminaires are cULus listed for damp locations -40°C - 55°C ambient environments in open configurations. Refer to ambient chart for complete list. RoHS compliant, and LED modules comply with IESNA LM-79 and LM-80 standards. DesignLights Consortium™ Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.

HB LED STANDARD EFFICACY

20" X 48"

LED High Bay Efficiency Luminaire

Connected Systems
CLICK HERE

2-3/8" [63mm]

20-3/16" [512mm]

(NARROW DISTRIBUTION)

DIMENSION TOP VIEW

4' HOUSING

48-1/2" [1232mm]

20-3/16" [512mm]
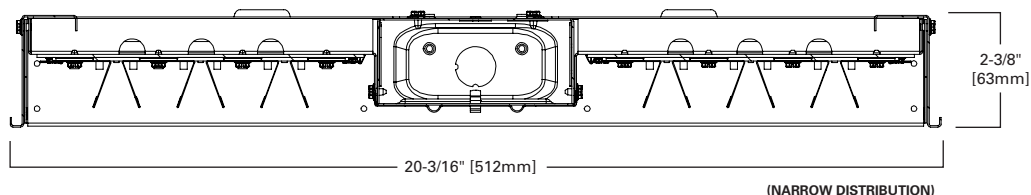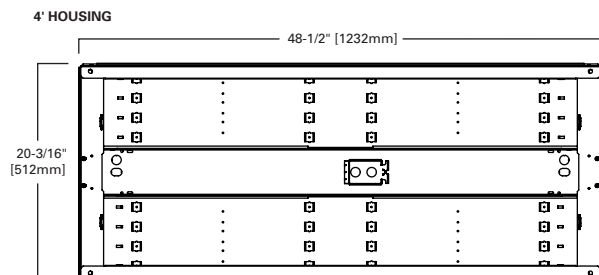
ENERGY DATA

Input Watts:
12SE (12,000 lumens)=77W
15SE (15,000 lumens)=95W
18SE (18,000 lumens)=122W
24SE (24,000 lumens)=154W
30SE (30,000 lumens)=193W
36SE (36,000 lumens)=232W
48SE (48,000 lumens)=299W
60SE (60,000 lumens)=386W

LINEAR DISCONNECT

Safe and convenient means of disconnecting power

FAT•N

Powering Business Worldwide

SYSTEMS CERTIFIED

PS519137EN
August 27, 2018 11:10 AM

PHOTOMETRICS

HBLED-LD5-24SE-N-UNV-L850-ED2-U

Electronic Driver

Linear LED 5000K

Spacing criterion: (II) 1.27 x mounting height, (⊥) 0.62 x mounting height

Lumens: 23224

Input Watts: 154W

Efficacy: 150.8 lm/W

Test Report: HBLED-LD5-24SE-N-UNV-L850-ED2-U.IES

Candlepower

Angle	Along ‖	45°	Across ⊥
0	21850	21850	21850
5	21651	21459	21450
10	21390	20534	19814
15	20950	18816	14790
20	20334	14922	10357
25	19561	11128	4921
30	18609	7728	1525
35	17560	3243	371
40	16336	1232	234
45	15012	319	230
50	13540	206	232
55	11908	218	88
60	10124	212	47
65	8205	114	47
70	6169	82	47
75	4084	47	49
80	2049	39	47
85	509	25	31
90	0	0	0

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73
4	92	82	76	70	90	81	75	70	79	73	69	77	72	68	75	71	67	66
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60
6	81	70	63	58	79	70	63	58	68	62	58	66	61	57	65	60	57	55
7	76	66	58	54	75	65	58	53	63	57	53	62	57	53	61	56	52	51
8	72	61	54	49	71	61	54	49	59	53	49	58	53	49	57	52	49	47
9	68	57	51	46	67	57	50	46	56	50	46	55	49	46	54	49	45	44
10	65	54	47	43	64	53	47	43	53	47	43	52	46	43	51	46	42	41

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	12590	54.2
0-40	16657	71.7
0-60	21400	92.1
0-90	23224	100.0
0-180	23224	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	28564	607	437
55	27933	512	207
65	26124	364	149
75	21231	243	254
85	7862	384	482

HBLED-LD5-24SE-W-UNV-L850-ED2-U

Electronic Driver

Linear LED 5000K

Spacing criterion: (II) 1.28 x mounting height, (⊥) 1.29 x mounting height

Lumens: 24116

Input Watts: 154W

Efficacy: 156.6 lm/W

Test Report: HBLED-LD5-24SE-W-UNV-L850-ED2-U.IES

Candlepower

Angle	Along ‖	45°	Across ⊥
0	8354	8354	8354
5	8288	8311	8358
10	8197	8226	8289
15	8038	8081	8137
20	7816	7866	7921
25	7535	7589	7632
30	7188	7258	7285
35	6790	6868	6877
40	6339	6423	6433
45	5829	5926	5933
50	5267	5364	5663
55	4645	4761	4643
60	3974	4089	3167
65	3247	3111	2412
70	2462	1937	1799
75	1650	1278	848
80	911	505	254
85	302	155	167
90	0	0	0

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	102	99	95	98	95	92	94	92	89	91	89	87	85
2	99	91	85	79	97	90	83	78	86	81	76	83	78	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	70	66	62	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	57	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	40	38
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	46	40	36	34
8	61	47	39	33	59	46	38	33	45	38	32	44	37	32	43	37	32	30
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	26	37	31	26	36	30	26	24

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	6586	27.3
0-40	10886	45.1
0-60	19623	81.4
0-90	24116	100.0
0-180	24116	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	11091	11276	11289
55	10896	11169	10891
65	10377	9904	7678
75	8575	6643	4410
85	4654	2396	2583

Modular F-Bay Power Supply Option

Cooper Lighting's F-Bay Modular Power Supply option is available for use with all F-Bay products. The modular power supply allows external fixture access for safe and easy servicing. There is no need to remove lamps or reflectors to disconnect fixture power with F-Bay Modular Power Supply. Access to the individual fixture's power supply allows servicing without turning off all the fixtures, disrupting occupants. F-Bay Modular Power Supply is a time saver in installation – *simply plug & power.*

1. Modular Power Supply Receptacle supplied mounted into fixture Access Plate

2. Modular Power Cord & Plugs in 120, 277, 347, & 480V configurations for easy plug & power into existing supply

No internal fixture access required for installation or disconnecting power

Modular Motion Sensor Option supplied with Mounting Box and Modular Power Supply Receptacle

Code Compliance

- UL/cUL Certified for Make/Break under load (UL2549)
- Meets NEC requirements for ballast disconnect (NEC 410.73G)
- Allows for addition of Occupancy Sensor without hard connections
- Receptacles complete with insulating/dust cap

ENERGY AND PERFORMANCE DATA BY CATALOG NUMBER

| Catalog Number | 5000K, 70CRI | | |
	Delivered Lumens	Watts	Efficacy (lm/W)
HBLED-LD5-12SE-W-UNV-L750	12,629	77	165
HBLED-LD5-15SE-W-UNV-L750	16,342	95	172
HBLED-LD5-18SE-W-UNV-L750	19,587	122	161
HBLED-LD5-24SE-W-UNV-L750	24,953	154	162
HBLED-LD5-30SE-W-UNV-L750	32,291	193	167
HBLED-LD5-36SE-W-UNV-L750	37,307	232	161
HBLED-LD5-48SE-W-UNV-L750	51,058	299	171
HBLED-LD5-60SE-W-UNV-L750	62,380	386	162

| Catalog Number | 5000K, 80CRI | | |
	Delivered Lumens	Watts	Efficacy (lm/W)
HBLED-LD5-12SE-W-UNV-L850	12,206	77	159
HBLED-LD5-15SE-W-UNV-L850	15,794	95	166
HBLED-LD5-18SE-W-UNV-L850	18,930	122	155
HBLED-LD5-24SE-W-UNV-L850	24,116	154	157
HBLED-LD5-30SE-W-UNV-L850	31,209	193	162
HBLED-LD5-36SE-W-UNV-L850	36,057	232	155
HBLED-LD5-48SE-W-UNV-L850	49,346	299	165
HBLED-LD5-60SE-W-UNV-L850	60,289	386	156

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours)	Theoretical L70 (Hours)
55°C	> 84%	> 142,000

AMBIENT RATINGS

| Lumen Package | Ambient Rated | Drivers | | | Lensed | | EM |
		ED	CD	5LTD	Inserts	Doorframe	
HBLED-LD5-12SE	55°C	55°C	50°C	40°C	50°C	40°C	40°C
HBLED-LD5-15SE	55°C	55°C	50°C	40°C	50°C	40°C	40°C
HBLED-LD5-18SE	55°C	55°C	50°C	40°C	50°C	40°C	40°C
HBLED-LD5-24SE	55°C	55°C	50°C	40°C	50°C	40°C	40°C
HBLED-LD5-30SE	55°C	55°C	40°C	40°C	50°C	40°C	40°C
HBLED-LD5-36SE	55°C	55°C	40°C	40°C	40°C	40°C	40°C
HBLED-LD5-48SE	40°C	40°C	40°C	40°C	40°C	N/A	35°C
HBLED-LD5-60SE	40°C	40°C	35°C	40°C	35°C	N/A	35°C

ORDERING INFORMATION

SAMPLE NUMBER: HBLED-LD5-18SE-W-UNV-L850-ED2-U   Includes V Hangers for rapid installation

Series [18]
HBLED=LED
High Bay Linear

Lamp Type
LD5=LED 5.0

LED Lumen Output
12SE=12,000 Lumens
15SE=15,000 Lumens
18SE=18,000 Lumens
24SE=24,000 Lumens
30SE=30,000 Lumens
36SE=36,000 Lumens
48SE=48,000 Lumens [19]
60SE=60,000 Lumens

Distribution
N=Narrow (Aisle)
W=Wide (General)

Shielding
[Blank]=None
A=Prismatic Acrylic Lens and
     Doorframe [8], [9], [11], [16]
CL=Clear Acrylic Lens and
     Doorframe [8], [11], [16]
A/WG=Acrylic Lens, Wireguard and
     Doorframe [8], [9], [11], [16]
CL/WG=Clear Lens, Wireguard and
     Doorframe [8], [11], [16]
AI=Prismatic Acrylic Lens Insert [8], [9]
CLI=Clear Acrylic Lens Insert [8]
FLI=Frosted Lens Insert [8], [9]
POLY125/WG=Polycarbonate Lens, Wireguard
     and Doorframe [8], [11], [16]
POLY125=Polycarbonate Lens and
     Doorframe [8], [11], [16]

Voltage [1]
120V=120 Volt
277V=277 Volt
347V=347 Volt [6], [10]
480V=480 Volt [6], [10]
UNV=Universal Voltage 120-277
UNC=Universal Voltage 347/480 [6]

CCT

70 CRI	80 CRI
L735=3500K	**L835**=3500K
L740=4000K	**L840**=4000K
L750=5000K	**L850**=5000K

Options [5]
Emergency
EL7W=7-watt, 120V-277V emergency
     battery pack installed [4]
EL14W=14-watt 120V-277V emergency
     battery pack installed [4]
GTR=Bodine Generator Transfer Device [15]
ETRD=Iota Emergency Transfer Relay with
     dimming control [15]

Number of Relays
1=1 relay per driver non-dimming only
2=2 relays per driver for dimming applications

Driver Type
CD=0-10V Dimming
     Driver [7], [8]
ED=Electronic Fixed
     Output Driver [7]
5LTD=Fifth Light
     DALI [7], [8], [13]

Number of Drivers
1=1 Driver (12,000 and
     15,000 lumen versions)
2=2 Drivers (18,000,
     24,000 and 30,000
     lumen versions)
3=3 Drivers (36,000 and
     48,000 lumen CD option) [19]
4=4 Drivers (48,000 and
     60,000 lumen versions) [19]

Options
MP=Modular Power
Receptacle (used for all
Cord or Cord and Plug
options) [3]

Motion Sensors
MS=360° or 180° Motion Sensor
Installed, (specify voltage) [2]
SVPD3=Integrated occupancy and daylight
dimming sensor, 1200 sq. ft. coverage [14], [16], [17]
LWR=LumaWatt Wireless Sensor system

Accessories (order separately)
HBL-SPM=Single Monopoint Hanger w/Hub
HBL-SPM-S=Surface Mount Bracket
FH-1=Fixture Hook
FL-1=Fixture Loop
Y-TOGGLE=Y Mounting Toggle, #2 Cable (8)
     (Specify 10' or 30', requires 2 per fixture)
HBAYC-CHAIN/SET/U=(2) V-Hook Hangers, 36" Chain Sets
     w/S-Hooks
MPC3=3' Modular Power Cord & Plug (Specify Voltage)
MC6=6' Modular Power Cord
MPC6=6' Modular Power Cord & Plug (Specify Voltage)
MMS=360° or 180° Aisle Motion Sensor with Modular
     Power Receptacle (120-277V)
WG/HBL6-4FT-B=Field Installable, Wireguard for HBLED [12]
ISHH-01=Programming Remote for Integrated Sensor
ISHH-02=Personal Control Remote for Integrated Sensor

Packaging
U=Unit Pack
PALC=Job Pack
     In Carton

Connected Systems
CLICK HERE

NOTES: [1] Voltage must be specified when ordered with plugs or emergency drivers . [2] When ordering MS option, specify as UNV (for 120 or 277V), 347 or 480V. [3] Requires use of MC or MPC cord accessories, specify voltage for plugs (MP). [4] 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. [5] EM options available in 0°C - 40°C ambient. [6] Not available with dual switching. [7] Lumen output will vary depending on dimming or fixed output drivers. Refer to IES files for deliveried lumens. [8] Refer to ambient ratings chart for temperature requirements. [9] Not available with narrow distribution. [10] EM not available with 36SE, 44SE or 54SE configurations at 347V or 480V). [11] Not available with 48SE or 60SE configurations. [12] Not available with lens insert options AI, CLI and FLI or doorframe options A, CL and POLY125. [13] 5LTD available with 12, 18, 24, 36 lumen packages only. [14] Integrated sensor limited to 36,000 lumens. [15] Used to transfer fixture to secondary power during outage. Must be used in conjunction with UL 1008 device (provided by others). These options require 2 relays on fixtures with dimming drivers. ETRD option only requires one relay when used on a dimming fixture. A maximum of two devices can be used on one product. 3 or 4 driver products cannot use GTR. [16] Integrated sensor not compatible with door frame. [17] Integral sensor works only with "CD" driver and is factory prewired to the driver for stand-alone control. [18] DesignLights Consortium™ Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details. [19] For 48,000 lumen package, CD option requires three drivers, ED option requires four.

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

SHIPPING DATA

| Catalog No.	Wt.
HBLED-LD5-12SE	19 lbs.
HBLED-LD5-15SE	19 lbs.
HBLED-LD5-18SE	22 lbs.
HBLED-LD5-24SE	22 lbs.
HBLED-LD5-30SE	22 lbs.
HBLED-LD5-36SE	24 lbs.
HBLED-LD5-48SE	24 lbs.
HBLED-LD5-60SE	26 lbs.

INTEGRATED SENSOR

The HBLED with Integrated Sensor technology provides automatic energy savings without sacrificing performance. Traditionally, these types of energy savings required coordination between the luminaire and a lighting control system. The HBLED delivers superior lighting with integrated occupancy and daylighting controls.

Capture the benefits of traditional lighting controls, without complicated coverage planning or special wiring. Ideal for new construction or retrofit, the HBLED delivers automatic ON to an energy saving light level, while ensuring lighting is turned OFF when the space is unoccupied.

The integral daylight sensor reduces the need for special daylight zone planning. Each luminaire will automatically adjust the light level based on reflected light beneath the sensor in a closed loop method.

Occupied daylight light levels and unoccupied light levels can be adjusted using the integrated sensor programming remote (Catalog Number: ISHH-01). The integrated sensor personal remote (Catalog Number: ISHH-02) provides code compliant manual raise, lower, ON, OFF control.

The HBLED with Integrated Sensor is easy to install with no special wiring and ensures energy savings out-of-the-box with default control settings.
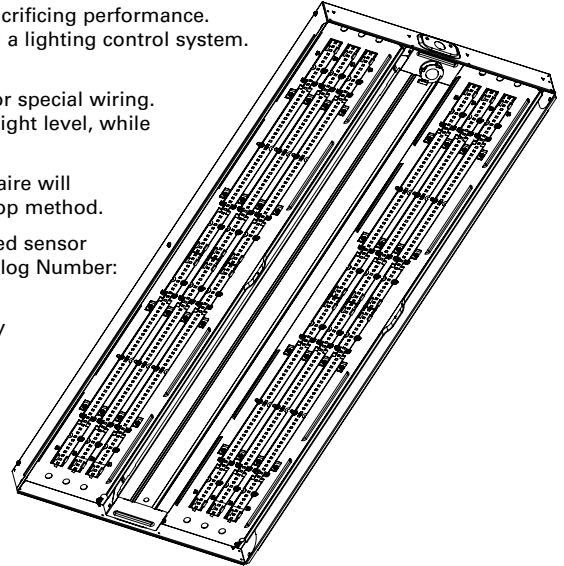
How it works:

- As the user enters the space controlled by the integral sensor, the lighting turns ON to the default daylight level.

- Lighting will remain at that the daylight level until the space is unoccupied. This will start the occupancy timeout period (default 20 minutes).

- If the space remains unoccupied for half of the timeout period, the lighting will automatically reduce to the Energy Saver light level. This adjustable light level is typically half of the occupied daylight level.

- At the end of the timeout period the lighting will go to the unoccupied light level. This adjustable light level uses the OFF default setting.
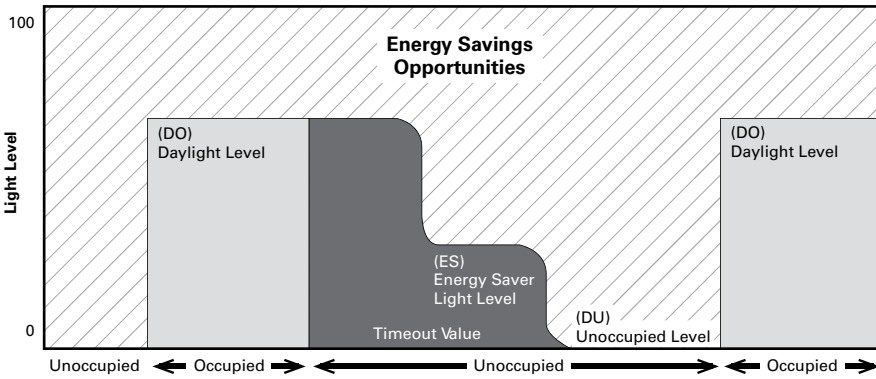
Default daylight harvesting set using 36,000 lumen unit at 30 ft. mounting height, 20 ft. spacing for 50 footcandles.

SVPD3 Coverage Pattern

Side View
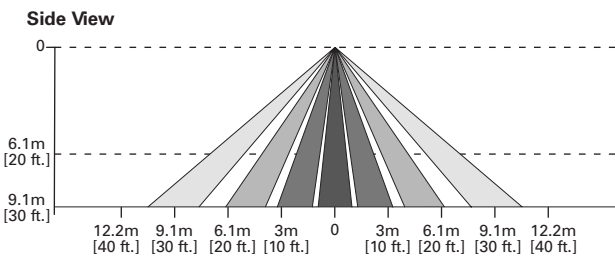
Optional Remote Controls

ISHH-01 Remote   **ISHH-02 Remote**