

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. LED's available in 4000k and 5000k with a CRI ≥ 80. 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. 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

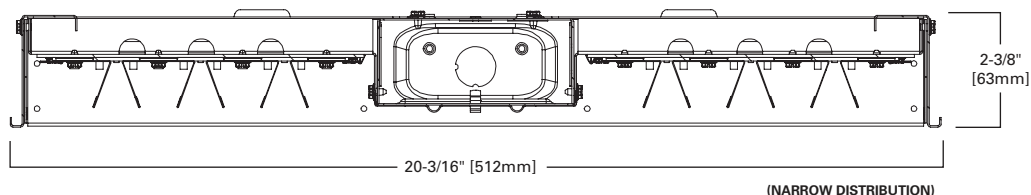
Luminaires are cULus listed for damp locations -40°C - 55°C ambient environments in open configurations with fixed output (ED option) drivers and 40°C with dimming drivers. Refer to ambient chart for complete list. RoHS compliant, and LED modules comply with IESNA LM-79 and LM-80 standards. DesignLights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



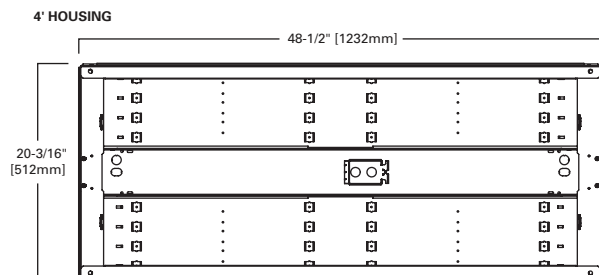
HB LED STANDARD EFFICACY

20" X 48"

LED High Bay Efficiency Luminaire



DIMENSION TOP VIEW



ENERGY DATA

Input Watts:

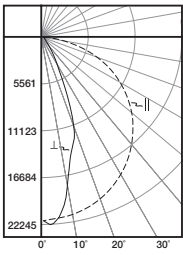
12SE (12,000 lumens)=	75W
15SE (15,000 lumens)=	99W
18SE (18,000 lumens)=	131W
24SE (24,000 lumens)=	150W
30SE (30,000 lumens)=	199W
36SE (36,000 lumens)=	225W
44SE (44,000 lumens)=	299W
54SE (54,000 lumens)=	406W

LINEAR DISCONNECT

Safe and convenient means of disconnecting power



PHOTOMETRICS



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

Electronic Driver
 Linear LED 5000K
 Spacing criterion:
 (H) 1.27 x mounting
 height, (L) 0.62 x
 mounting height
 Lumens: 21512
 Input Watts: 149.5W
 Efficacy: 143.9 lm/W
 Test Report:
 HBLED-LD5-24SE-
 N-UNV-L850-ED2-U.
 IES

Angle	Along H	45°	Across L
0	21788	21788	21788
5	21529	21799	21422
10	21269	19695	16860
15	20835	15546	13351
20	20231	13010	9948
25	19464	11063	4401
30	18563	6969	2062
35	17510	3265	299
40	16305	1458	165
45	14991	242	138
50	13590	172	55
55	12018	153	40
60	10342	114	40
65	8537	95	36
70	6543	78	45
75	4359	42	64
80	2178	38	61
85	583	23	28
90	0	0	0

Coefficients of Utilization

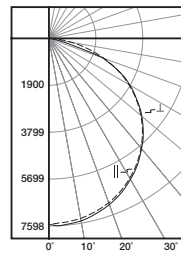
rc rw RCR	Effective floor cavity reflectance																						
	80%				70%				50%				30%				10%				0%		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	
1	112	109	106	103	110	107	104	101	102	100	98	99	97	95	95	94	92	91	91	91	91	91	
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	83	81	81	81	81	81	
3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	82	78	75	74	74	74	74	74	
4	92	83	77	72	90	82	76	71	80	74	70	78	73	69	76	72	68	67	67	67	67	67	
5	87	77	70	65	85	76	69	64	74	68	64	72	67	63	70	66	63	61	61	61	61	61	
6	82	71	64	59	80	70	64	59	69	63	58	67	62	58	66	61	58	56	56	56	56	56	
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52	52	52	52	52	
8	73	62	55	50	71	61	55	50	60	54	50	59	54	50	58	53	49	48	48	48	48	48	
9	69	58	51	47	68	57	51	47	56	51	47	56	50	46	55	50	46	45	45	45	45	45	
10	65	55	48	44	64	54	48	44	53	47	44	52	47	43	52	47	43	42	42	42	42	42	

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	11798	54.8
0-40	15705	73.0
0-60	20174	93.8
0-90	21512	100.0
0-180	21512	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	34229	529	297
55	33830	405	104
65	32614	334	122
75	27189	228	324
85	10794	291	302



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

Electronic Driver
 Linear LED 5000K
 Spacing criterion:
 (H) 1.28 x mounting
 height, (L) 1.29 x
 mounting height
 Lumens: 22339
 Input Watts: 149.5W
 Efficacy: 149.4 lm/W
 Test Report:
 HBLED-LD5-24SE-
 W-UNV-L850-ED2-U.
 IES

Angle	Along H	45°	Across L
0	7539	7539	7539
5	7471	7484	7568
10	7389	7410	7498
15	7244	7279	7332
20	7055	7090	7137
25	6805	6844	6883
30	6504	6543	6557
35	6151	6190	6207
40	5754	5797	5784
45	5305	5344	5348
50	4803	4858	4854
55	4251	4311	4284
60	3661	3722	3710
65	3019	3075	3017
70	2294	2406	2238
75	1556	1595	547
80	855	152	133
85	273	94	105
90	0	0	0

Coefficients of Utilization

rc rw RCR	Effective floor cavity reflectance																						
	80%				70%				50%				30%				10%				0%		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	
1	109	104	100	97	106	102	98	95	98	95	92	94	92	89	90	88	87	84	84	84	84	84	
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70	70	70	70	70	
3	90	80	72	65	88	78	71	64	75	69	63	72	67	62	70	65	61	59	59	59	59	59	
4	82	70	62	55	80	69	61	54	67	59	54	64	58	53	62	57	52	50	50	50	50	50	
5	76	63	54	47	74	62	53	47	59	52	46	58	51	46	56	50	45	43	43	43	43	43	
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38	38	38	38	38	
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33	33	33	33	33	
8	60	46	38	32	59	46	38	32	44	37	32	43	36	31	42	36	31	29	29	29	29	29	
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26	26	26	26	26	
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24	24	24	24	24	

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	5940	26.6
0-40	9821	44.0
0-60	17795	79.7
0-90	22339	100.0
0-180	22339	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	12112	11705	11519
55	11966	11441	11107
65	11535	10767	10213
75	9705	8588	2790
85	5050	1176	1148

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

LUMEN MAINTENANCE

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

ENERGY AND PERFORMANCE DATA BY CATALOG NUMBER

Catalog Number	Delivered Lumens	Watts	Efficacy (lm/W)
HBLED-LD5-12SE-W-UNV-L850-ED1-U	11456	75	153
HBLED-LD5-15SE-W-UNV-L850-ED1-U	14245	99.2	144
HBLED-LD5-18SE-W-UNV-L850-ED2-U	20003	131	153
HBLED-LD5-24SE-W-UNV-L850-ED2-U	22339	149.5	149
HBLED-LD5-30SE-W-UNV-L850-ED2-U	27832	199.4	140
HBLED-LD5-36SE-W-UNV-L850-ED3-U	33704	224.5	150
HBLED-LD5-44SE-W-UNV-L850-ED3-U	41732	299.2	139
HBLED-LD5-54SE-W-UNV-L850-ED4-U	50809	406	125

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-LD5-44SE	40°C	40°C	40°C	40°C	40°C	N/A	35°C
HBLED-LD5-54SE	40°C	40°C	35°C	40°C	35°C	N/A	35°C
HBLED-LD5-54SEHT	50°C	50°C	50°C	N/A	N/A	N/A	N/A

ORDERING INFORMATION

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

<p>Series ⁽²⁰⁾ HBLED=LED High Bay Linear</p>	<p>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⁾</p>	<p>Driver Type CD=0-10V Dimming Driver ^{(7), (8)} ED=Electronic Fixed Output Driver ⁽⁷⁾ 5LTD=Fiht Light DALI ^{(7), (8), (13)}</p>	<p>Options MP=Modular Power Receptacle (used for all Cord or Cord and Plug options) ⁽⁹⁾</p>	<p>Packaging U=Unit Pack PALC=Job Pack In Carton</p>
<p>Lamp Type LD5=LED 5.0</p>	<p>CCT L835=3500K L840=4000K L850=5000K</p>	<p>Number of Drivers 1=1 Driver (12,000 and 15,000 lumen version) 2=2 Drivers (18,000, 24,000 and 30,000 lumen version) 3=3 Drivers (36,000 and 44,000 lumen versions) 4=4 Drivers (54,000 lumen version)</p>	<p>Motion Sensors MS=360° or 180° Motion Sensor Installed, (specify voltage) ⁽²⁾</p>	<p>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)</p>
<p>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 44SE=44,000 Lumens 54SE=54,000 Lumens ⁽¹⁴⁾ 54SEHT=54,000 Lumens ⁽¹⁶⁾</p>	<p>Options ⁽⁵⁾ Emergency EL7W=7-watt, 120V-277V emergency battery pack installed ⁽⁴⁾ EL14W=14-watt 120V-277V emergency battery pack installed ⁽⁴⁾ GTD2=Bodine Generator Transfer Device ⁽¹⁷⁾ ETS2=IOTA Emergency Transfer Switch ⁽¹⁷⁾</p>	<p>SVPD3=Integrated occupancy and daylight dimming sensor, 1200 sq. ft. coverage ^{(15), (18), (19)} LWR=LumaWatt Wireless Sensor system</p>	<p>HBAYC-CHAIN/SET/U=(2) V-Hook Hangers, 36" Chain Sets w/S-Hooks</p>	
<p>Distribution N=Narrow (Aisle) W=Wide (General)</p>	<p>Shielding [Blank]=None A=Prismatic Acrylic Lens & Doorframe ^{(8), (9), (11), (18)} CL=Clear Acrylic Lens & Doorframe ^{(8), (11), (18)} A/WG=Acrylic Lens, Wireguard & Doorframe ^{(8), (9), (11), (18)} CL/WG=Clear Lens, Wireguard & Doorframe ^{(8), (11), (18)} AI=Prismatic Acrylic Lens Insert ^{(9), (9)} CLI=Clear Acrylic Lens Insert ⁽⁸⁾ FLI=Frosted Lens Insert ^{(8), (9)} POLY125/WG=Polycarbonate Lens, Wireguard and Doorframe ^{(8), (11), (18)} POLY125=Polycarbonate Lens and Doorframe ^{(8), (11), (18)}</p>	<p>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)</p>	<p>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</p>	

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 delivered lumens. ⁽⁸⁾ Rated for 40°C ambient. ⁽⁹⁾ Not available with narrow distribution. ⁽¹⁰⁾ EM not available with 36SE, 44SE or 54SE configurations at 347V or 480V. ⁽¹¹⁾ Not available with 44SE or 54SE 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⁾ 40°C max. ambient rating. ⁽¹⁵⁾ Integrated sensor limited to 36,000 lumens. ⁽¹⁶⁾ HT lumen package not available with 347 or 480V, emergency, dimming, or lensed options. ⁽¹⁷⁾ 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. ⁽¹⁸⁾ Integrated sensor not compatible with door frame. ⁽¹⁹⁾ Integral sensor works only with "CD" driver and is factory prewired to the driver for stand-alone control. ⁽²⁰⁾ DesignLights Consortium™ Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.

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-LD5-44SE	24 lbs.
HBLED-LD5-54SE	26 lbs.

INTEGRATED SENSOR

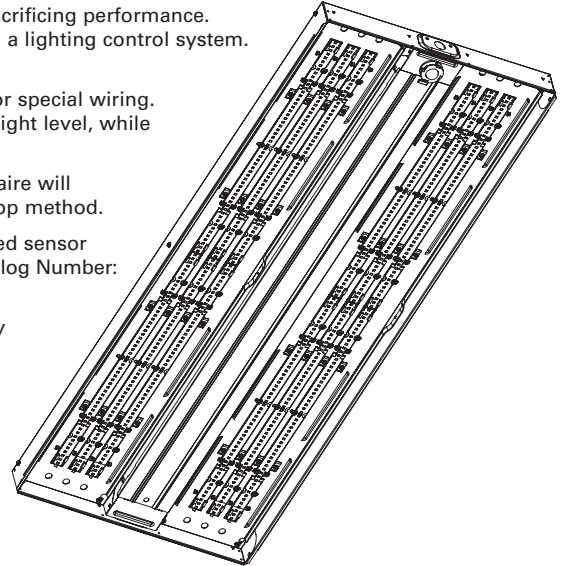
The HBLED with Integrated Sensor technology provides automatic energy savings without sacrificing performance. Traditionally, these types of energy savings required coordination between the luminaire and a lighting control system. The HBLED delivers superior lighting with integrated occupancy and daylighting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

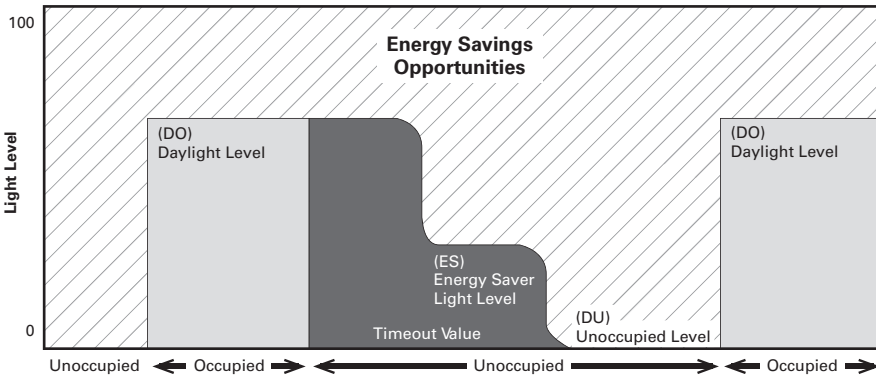
Occupied daylight light levels and unoccupied light levels can be adjusted using the integrated sensor programming remote (Catalog Number: ISHH-01). The integrated sensor personal remote (Catalog Number: ISHH-02) provides code compliant manual raise, lower, ON, OFF control.

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.



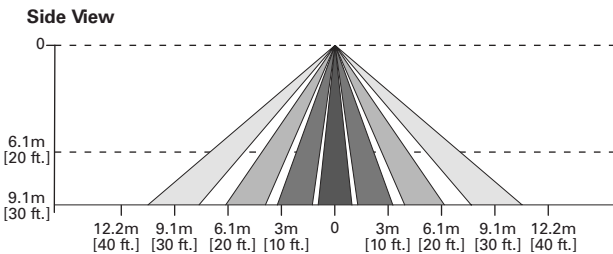
How it works:

- 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



Optional Remote Controls



ISHH-01 Remote



ISHH-02 Remote