

# COOPER LIGHTING - METALUX®

## DESCRIPTION

The HBE series is an outstanding value for high mounting height industrial or retail applications. The HBE optic has been optimized to provide maximum performance from T5 lamps. Optional upright component is provided to enable excellent ceiling uniformity. HBE's high lumen package allows the benefits of fluorescent to be applied at high mounting heights that were traditionally exclusive to H.I.D. The primary benefits include exceptional color rendering, high system efficacy, 95% lumen maintenance, long lamp life, instant on/instant re-strike, economical dimming, and uniform brightness control. Primary applications include "big box" retail, shopping malls, light industrial, etc.

## 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 HBE products.

### Electrical

The HBE comes with a standard Class "P" electronic ballast and twist-lock lampholders. UL/cUL listed for high ambient environments up to 55°C (131°F) for all lamp and ballast combinations when used in open upright configurations. Suitable for damp locations.

### Finish

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

### Optics

Die-formed, segmented optical design optimizes performance across three distributions. Optical choices include a narrow distribution for aisles, medium distribution for assembly and loading areas, or wide distribution for general, open area lighting. An upright option is offered to permit ceiling uniformity and allow for ample lamp and luminaire heat dissipation.

### Shielding

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

### Options

Integral Occupancy Sensor available and provides from 600 sq. ft. and up to 1250 sq. ft. of coverage in a maximum mounting height of 40' using interchangeable lens caps provided.

<b>Catalog #</b>		<b>Type</b>
<b>Project</b>		
<b>Comments</b>		<b>Date</b>
<b>Prepared by</b>		

### Mounting

The HBE 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.

### Warranty

When operated in high ambient conditions, the HBI is supported by a 5 yr/55°C and 3 yr/65°C ballast warranty when used with a high ambient ballast in open, upright configurations (T5HO lamping only).



## HBE SERIES

20" X 48"  
HIGH-BAY  
4 OR 6  
T5HO LAMPS

High-Bay Efficiency  
Fluorescent Luminaire



## ENERGY DATA

Input Watts:  
**ER Ballast**  
454 (226), 654 (351)

Luminaire Efficacy Rating  
**LER = 74** (Narrow Beam)  
**Catalog Number:** HBE-654T5-UPL

\*Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements.

\*\*Consult Pre Sales Technical Support.

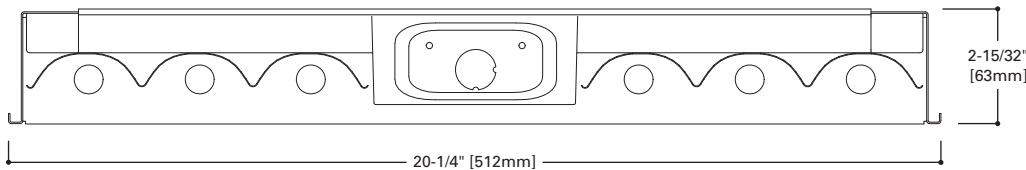
**LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO LOCAL, STATE OR FEDERAL LAWS**

**LINEAR DISCONNECT**

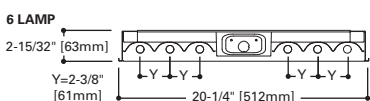
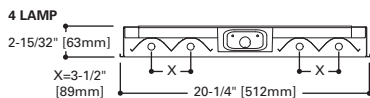
Safe and convenient means of disconnecting power.



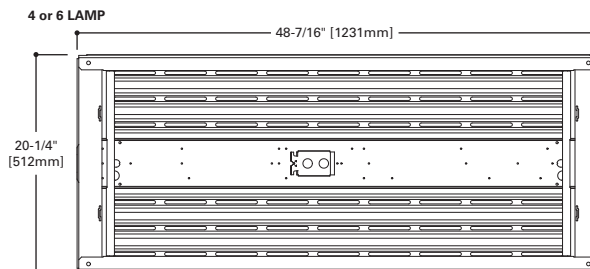
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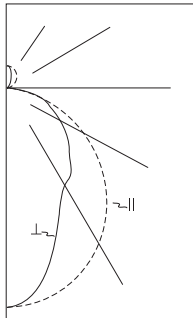
## LAMP CONFIGURATIONS



## DIMENSION TOP VIEW

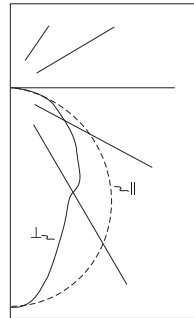


PHOTOMETRICS



**HBE-654-UPL**  
Electronic Ballasts  
(6) 54W T5 Lamps  
4400 lumens  
Spacing criterion:  
(H) 1.2 x mounting  
height, (L) 0.8 x  
mounting height  
Efficiency 94.5%  
Test Report:  
HBE654-UPL.IES  
LER =FL70  
Yearly Cost of 1000  
lumens, 3000 hrs at  
.08 KWH = \$3.43

Candela			
Angle	Along H	45°	Across L
0	11367	11367	11367
5	11286	11162	11065
10	11121	10662	10221
15	10844	9831	8961
20	10473	8753	7677
25	9990	7633	6567
30	9422	6562	5918
35	8767	5678	5655
40	8038	5092	5129
45	7230	4728	4566
50	6367	4105	4116
55	5452	3518	3592
60	4503	3001	3093
65	3540	2471	2561
70	2544	1931	2204
75	1612	1537	1725
80	793	1021	925
85	205	293	182
90	3	17	19



**HBE-654**  
Electronic Ballasts  
(6) 54W T5 Lamps  
4400 lumens  
Spacing criterion:  
(H) 1.2 x mounting  
height, (L) 0.8 x  
mounting height  
Efficiency 93.5%  
Test Report:  
HBE654.IES  
LER =FL70  
Yearly Cost of 1000  
lumens, 3000 hrs at  
.08 KWH = \$3.43

Candela			
Angle	Along H	45°	Across L
0	11640	11640	11640
5	11533	11495	11417
10	11369	10923	10400
15	11097	9989	9133
20	10714	8912	8029
25	10232	7898	7049
30	9661	6970	6467
35	9002	6109	6247
40	8261	5587	5619
45	7456	5199	4935
50	6593	4510	4402
55	5676	3796	3748
60	4724	3206	3158
65	3729	2543	2656
70	2718	1989	2292
75	1736	1594	1740
80	878	1054	1036
85	225	366	274
90	2	12	3

Coefficients of Utilization

rc	Effective floor cavity reflectance																							
	80%			70%			50%			30%			10%			0%								
rw	70	50	30	70	50	30	70	50	30	70	50	30	70	50	30	10	50	30	10	50	30	10	0	
RCR	0	111	111	111	111	108	108	108	108	102	102	102	96	96	96	91	91	91	89	89	89	89	89	89
1	102	98	94	90	99	95	91	88	90	87	84	85	83	81	81	79	77	75	75	75	75	75	75	75
2	93	86	79	74	90	83	78	73	80	74	70	75	71	68	71	68	65	63	63	63	63	63	63	63
3	85	76	68	62	82	74	67	61	70	64	60	67	62	58	64	60	56	54	54	54	54	54	54	54
4	78	67	59	53	76	66	58	53	63	56	51	60	54	50	57	53	49	47	47	47	47	47	47	47
5	72	60	52	46	70	59	51	46	56	50	45	54	48	44	52	47	43	41	41	41	41	41	41	41
6	67	55	47	41	65	54	46	40	51	45	40	49	43	39	47	42	38	36	36	36	36	36	36	36
7	62	50	42	36	60	49	41	36	47	40	35	45	39	35	43	38	34	32	32	32	32	32	32	32
8	58	46	38	33	56	45	38	32	43	37	32	42	36	31	40	35	31	29	29	29	29	29	29	29
9	54	42	35	30	53	41	34	29	40	33	30	38	33	29	37	32	28	26	26	26	26	26	26	26
10	51	39	32	27	50	38	31	27	37	31	26	36	30	27	35	29	26	24	24	24	24	24	24	24

Coefficients of Utilization

rc	Effective floor cavity reflectance																							
	80%			70%			50%			30%			10%			0%								
rw	70	50	30	70	50	30	70	50	30	70	50	30	70	50	30	10	50	30	10	50	30	10	0	
RCR	0	113	113	113	113	109	109	109	109	104	104	104	100	100	100	95	95	95	94	94	94	94	94	94
1	102	98	94	90	100	96	92	89	92	89	86	88	86	83	85	83	81	79	79	79	79	79	79	79
2	93	86	79	74	91	84	78	73	81	76	72	77	73	70	75	71	68	66	66	66	66	66	66	66
3	85	76	68	62	83	74	67	62	71	65	61	69	64	60	66	62	59	57	57	57	57	57	57	57
4	78	67	59	53	76	66	59	53	64	57	52	62	56	51	60	55	51	49	49	49	49	49	49	49
5	72	61	52	46	70	59	52	46	58	51	46	56	50	45	54	49	45	43	43	43	43	43	43	43
6	67	55	47	41	64	54	46	41	52	45	40	51	45	40	49	44	40	38	38	38	38	38	38	38
7	62	50	42	36	61	49	42	36	48	41	36	46	40	36	45	40	35	34	34	34	34	34	34	34
8	58	46	38	33	57	45	38	33	44	37	32	43	37	32	42	36	32	30	30	30	30	30	30	30
9	54	42	35	30	53	42	34	30	41	34	29	40	34	29	39	33	29	27	27	27	27	27	27	27
10	51	39	32	27	50	39	32	27	38	31	27	37	31	27	36	31	27	25	25	25	25	25	25	25

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	7486	28.4	30.0
0-40	11514	43.6	46.2
0-60	18847	71.4	75.6
0-90	23419	88.7	93.9
0-180	24939	94.5	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	17447	11409	11017
55	16218	10464	10685
65	14290	9975	10341
75	10629	10136	11370
85	4011	5737	3564

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	772	29.3	31.3
0-40	11999	45.4	48.6
0-60	19848	75.2	80.4
0-90	24683	93.5	100.0
0-180	24683	93.5	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	17991	12544	11909
55	16884	11292	11149
65	15053	10266	10723
75	11446	10506	11473
85	4396	7165	5355

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

ORDERING INFORMATION

SAMPLE NUMBER: HBE-654T5-N-A-UNV-L5850-EBT2-U Includes V Hangers for rapid installation<sup>(4)</sup>

<b>Series</b> HBE=High Bay Efficiency	<b>Voltage<sup>(1)</sup></b> UNV=Universal 120/277 Voltage UNC=Universal 347/480 Voltage 120V=120 Volt 277V=277 Volt 347V=347 Volt	<b>Ballast Type</b> EBT =T5HO Linear Electronic Program Start. Total Harmonic Distortion < 10% No. of Ballast 1, 2 or 3 EHT =T5HO Linear Electronic Program Start High Ambient. Total Harmonic Distortion < 10% No. of Ballast 1, 2 or 3	<b>Options</b> Blank=Side Rails (Standard) MP=Modular Power Receptacle (Used for all Cord or Cord and Plug options) <sup>(3), (7)</sup> UPL=Uplight Apertures on Reflector MWS=Modular Wiring System <sup>(6)</sup> MS=360° or 180° motion sensor installed, 120V through 347V, or 480V <sup>(2)</sup>	<b>Packaging</b> U=Unit Pack PALC=Job Pack In Carton PAL=Job Pack Out of Carton
<b>No. of Lamps</b> 4=4 Lamps 6=6 Lamps	<b>Options</b> Lamps Installed L5830=T5 Lamp, 80CRI 3000K L5835=T5 Lamp, 80CRI 3500K L5841=T5 Lamp, 80CRI 4100K L5850=T5 Lamp, 80CRI 5000K GL=Single Element Fuse GM=Double Element Fuse EL=Emergency Installed <sup>(1)</sup>	<b>Accessories</b> (order separately) HBL-SPM=Single Monopoint Hanger w/Hub RH-1=Retrofit Hanger FH-1=Fixture Hook FL-1=Fixture Loop Y-TOGGLE=Y Mounting Toggle, #2 Cable (Specify 10' or 30', requires 2 per fixture) HBAYC-CHAIN/SET/U=(2) V-Hook Hangers, 36" Chain Sets w/S-Hooks MC3=3' Modular Power Cord 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) <sup>(2)</sup> MDS6=6' Modular Power Cord with MWS 27DS18/2G06MP Connector <sup>(7)</sup> WG/HBL6-4FT-B=4/6 Lamp Wireguard w/Clips		
<b>Lamp Type</b> 49T5=49WT5HO Lamps (48") 51T5=51WT5HO Lamps (48") 54T5=54WT5HO Lamps (48")	<b>Distribution</b> N=Narrow Beam (Standard) M=Medium Beam W=Wide Beam	<b>Shielding</b> Blank=None A=Prismatic Acrylic Lens & Doorframe WG=Wireguard & Doorframe CL=Clear Acrylic Lens & Doorframe A/WG=Acrylic Lens, Wireguard & Doorframe CL/WG=Clear Lens, Wireguard & Doorframe		

NOTES: <sup>(1)</sup>Voltage must be specified when ordered with plugs, motion sensor or emergency ballasts. <sup>(2)</sup>When ordering MS option, specify as UNV (for 120 or 277V), 347 or 480V. <sup>(3)</sup>Requires use of MC\_ or MPC\_ cord accessories, specify voltage for plugs. <sup>(4)</sup>T8 ballast systems suitable for operation in ambient environments up to 131°F (55°C) in open upright configuration. <sup>(6)</sup>Can be used in high abuse applications such as gymnasiums. <sup>(7)</sup>Cannot be combined with Modular Power Receptacle (MP). <sup>(7)</sup> For MWS with MP, choose MP in fixture logic and then choose MWS accessory such as MDS6.

SHIPPING DATA

Catalog No.	Wt.
HBE-654T5	18 lbs.



Quick Ship Ordering Information Sample Number: HBE654T5-UPL-L5

Quick Ship orders ship in 5 days in order quantities not to exceed 200 pieces.

NOTE: Orders received after noon are entered on the following day.

Includes V Hangers for rapid installation<sup>(4)</sup>

<b>Family</b> HBE	<b>Lamp Type</b> 51=51W T5HO Lamps (48") 54=54W T5HO Lamps (48")	<b>Ballast Type</b> T5HO Systems HT5=(1) or (2) 120/277V T5HO High Ambient Electronic Program Rapid Start	<b>Power Receptacle</b> Blank=Standard Wiring to Access Plate MP=Modular Power Receptacle <sup>(6)</sup>	<b>Lamping</b> Blank=No Lamps L4=Lamps Installed 80+CRI 4100K <sup>(7)</sup> L5=Lamps Installed 80+CRI 5000K <sup>(7)</sup> L5ES=Energy Savings Lamps Installed 80+CRI 5000K
<b>Lamp Qty</b> 4=4 Lamps 6=6 Lamps	<b>Distribution</b> Blank=Narrow Beam W=Wide Beam	<b>Uplight</b> Blank=No Uplight UPL=Uplight		

NOTES: <sup>(6)</sup>Requires use of Modular cord and plug accessories. <sup>(7)</sup>For Quick Ship, lamping option only available w/54W lamp type.