

DESCRIPTION

The HBL series is ideal for high mounting height industrial or retail applications. Advanced optical designs provide maximum performance from either T5 or T8 lamps. Optional uplight component produces excellent ceiling uniformity. HBL's high lumen package allows the benefits of fluorescent to be applied at high mounting heights that were traditionally exclusive to HID. 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. Typical HBL applications include retail, shopping malls, light industrial and recreational environments.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Channel and end plates are constructed of die-formed steel. The channel provides strength, numerous KOs for easy installation, and excellent thermal dissipation without any special or proprietary components. Stiffening brackets add additional strength and rigidity to channel and reflectors.

Electrical

The HBL 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 listed. Suitable for damp locations.

Finish

Electrostatically applied baked white enamel finish is preceded by a multistage cleaning cycle, iron phosphate coating with rust inhibitor.

Optics

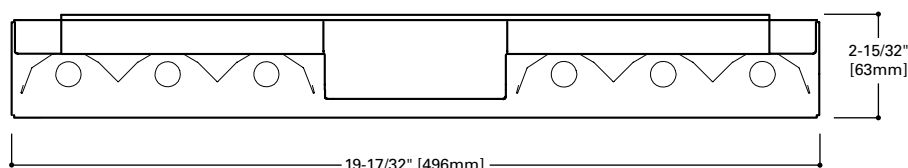
Die-formed, segmented optical design optimizes performance across three distributions. Optical choices include a narrow distribution for aisles, medium distribution for assembly and loading areas, or wide distribution for general, open area lighting. An uplight option is offered to permit ceiling uniformity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

Mounting

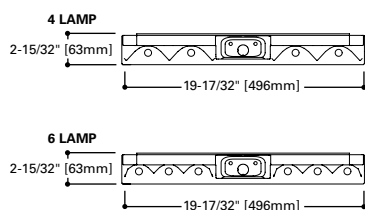
The HBL series is ideally suited for suspension mounting with optional wire hook and chain set, or cable mounting. Single monopoint mounting is also available with SPM tong hanger. Includes V Hangers for rapid installation.

Warranty

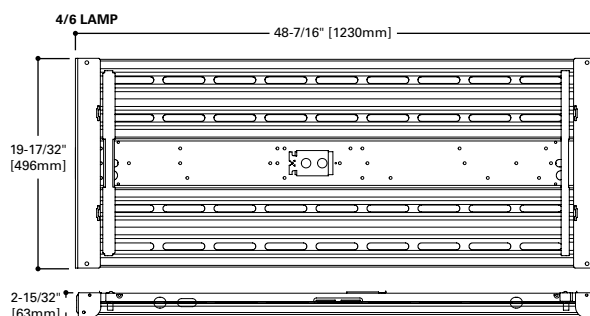
When operated in high ambient conditions, the HBL is supported by a 5 yr/55°C and 3 yr/65°C ballast warranty for T5 and T8 (277V) options when used w/ high temperature ballast in open, upright configurations. To maximize your warranty, the HBL should be ordered with a high-temperature ballast in ambient environments that typically exceed 40°C (102°F).



LAMP CONFIGURATIONS



DIMENSION TOP VIEW



HBL SERIES

4 OR 6 T5 LAMPS

High-Bay Industrial Open Luminaire



ENERGY DATA

Input Watts:

ER Ballast

454 = 229

654 = 346

Luminaire Efficacy Rating

LER = 71 (White)

LER = 74 (Specular Inserts)

Catalog Number: HBL-654T5-UPL

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$3.24

*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

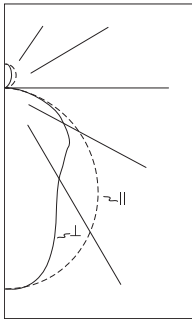
LINEAR DISCONNECT

Safe and convenient means of disconnecting power.



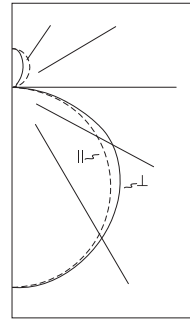
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PHOTOMETRICS



HBL-654-N-UPL
Narrow Distribution
 (2) Electronic Ballasts
 (6) F54T5/841HO
 54WT5 lamps
 4400 lumens
 Spacing criterion:
 (II) 1.2 x mounting
 height, ($\perp$) 0.9 x
 mounting height
 Efficiency 97%
 Test Report:
 HBL654NUPL.IES
 LER =74
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.24

Candela				
Angle	Along II	45°	Across $\perp$	
0	10583	10583	10583	
5	10534	10535	10550	
10	10391	10306	10134	
15	10154	9792	9169	
20	9809	8931	7763	
25	9377	7773	6433	
30	8862	6554	5637	
35	8262	5518	5199	
40	7587	4829	4855	
45	6853	4346	4597	
50	6074	3919	4425	
55	5252	3566	3973	
60	4399	3265	3473	
65	3522	2754	2994	
70	2632	2260	2270	
75	1755	1626	1571	
80	934	974	1066	
85	265	466	420	
90	4	11	14	



HBL-654-W-UPL
Wide Distribution
 (2) Electronic Ballasts
 (6) F54T5/841HO
 54WT5 lamps
 4400 lumens
 Spacing criterion:
 (II) 1.3 x mounting
 height, ($\perp$) 1.3 x
 mounting height
 Efficiency 93.3%
 Test Report:
 HBL654WUPL.IES
 LER =71
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.38

Candela				
Angle	Along II	45°	Across $\perp$	
0	6850	6850	6850	
5	6814	6836	6863	
10	6739	6770	6796	
15	6607	6648	6668	
20	6418	6461	6487	
25	6179	6222	6278	
30	5891	5945	6049	
35	5558	5637	5792	
40	5183	5301	5498	
45	4773	4929	5187	
50	4335	4526	4827	
55	3866	4100	4434	
60	3370	3638	3997	
65	2843	3159	3437	
70	2283	2630	2685	
75	1672	1932	1941	
80	1012	1216	1267	
85	348	548	548	
90	4	37	50	

Coefficients of Utilization

Effective floor cavity reflectance																20%				
rc	80%				70%				50%				30%				10%			0%
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																				
0	114	114	114	114	110	110	110	110	103	103	103	97	97	97	92	92	92	89		
1	104	99	95	92	100	96	93	89	91	88	85	86	83	81	81	79	77	75		
2	95	87	80	75	91	84	78	73	80	75	71	75	71	68	71	68	65	63		
3	86	77	69	63	83	74	67	62	70	64	60	67	62	58	63	59	56	53		
4	79	68	60	54	77	66	59	53	63	56	51	60	54	50	57	52	48	46		
5	73	61	53	46	71	60	52	46	57	50	45	54	48	43	51	46	42	40		
6	68	55	47	41	65	54	46	40	51	44	39	49	43	38	47	42	37	35		
7	63	50	42	36	61	49	41	36	47	40	35	45	39	34	43	38	34	32		
8	59	46	38	33	57	45	37	32	43	36	32	41	35	31	40	34	30	28		
9	55	42	35	29	53	42	34	29	40	33	29	38	32	28	37	31	28	26		
10	52	39	32	27	50	38	31	27	37	31	26	36	30	26	34	29	25	24		

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	7354	27.9	28.7
0-40	11251	42.6	43.9
0-60	18573	70.4	72.5
0-90	23479	88.9	91.6
0-180	25621	97.0	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	16466	10442	11045
55	15557	10563	11768
65	14159	11071	12036
75	11520	10673	10312
85	5166	9084	8187

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	109	109	109	109	105	105	105	105	98	98	98	92	92	92	86	86	86	84			
1	99	94	90	86	95	91	87	84	85	82	79	80	77	75	75	73	71	68			
2	89	81	74	69	86	78	72	67	74	69	64	69	65	61	65	62	59	56			
3	81	71	63	57	78	68	61	55	64	58	53	60	55	51	57	53	49	46			
4	74	62	54	47	71	60	53	47	57	50	45	53	48	43	50	46	42	39			
5	68	55	47	40	65	54	46	40	51	44	38	48	42	37	45	40	36	34			
6	62	50	41	35	60	48	40	34	46	39	33	43	37	32	41	35	31	29			
7	58	45	37	31	55	44	36	30	41	34	29	39	33	29	37	32	28	26			
8	54	41	33	27	52	40	32	27	38	31	26	36	30	25	34	29	25	23			
9	50	37	30	24	48	36	29	24	35	28	23	33	27	23	31	26	22	20			
10	47	34	27	22	45	34	26	22	32	26	21	30	25	21	29	24	20	18			

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	5401	20.5	21.9
0-40	8947	33.9	36.3
0-60	16453	62.3	66.8
0-90	22065	83.6	89.6
0-180	24626	93.3	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	11468	11843	12463
55	11451	12144	13134
65	11429	12699	13817
75	10975	12682	12741
85	6784	10682	10682

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: HBL-654T5-N-UNV-EBT2-UPL-U Includes V Hangers for rapid installation⁽⁷⁾

Width Blank =20" wide 4 & 6 Lamp (nominal)	Series HBL =Linear High Bay	No. of Lamps 4=4 Lamps 6=6 Lamps	Lamp Type 49T5 =49W T5HO (4') Lamps 51T5 =51W T5HO (4') Lamps 54T5 =54W T5HO Lamp (48" Long)	Distribution N =Narrow Beam (Standard) M =Medium Beam W =Wide Beam	Voltage ⁽¹⁾ UNV =Universal 120/277 Voltage UNC =Universal 347/480 Voltage 120V =120 Volt 277V =277 Volt 347V =347 Volt	Options Lamps Installed L5835 =T5HO Lamp, 85CRI 3500K L5841 =T5HO Lamp, 85CRI 4100K L5850 =T5HO Lamp, 85CRI 5000K GL =Single Element Fuse GM =Double Element Fuse EL =Emergency Installed	Ballast Type ^{(3), (6)} T5 Systems EBT =T5 Linear Electronic Program Rapid Start. ⁽²⁾ Total Harmonic Distortion < 10% No. of Ballast 1, 2 or 3 EHT =T5 Linear Electronic Program Start High Ambient. ^{(2), (3)} Total Harmonic Distortion < 10% No. of Ballast 1, 2 or 3	Options UPL =Uplight Apertures on Reflector MP =Modular Power Receptacle (Used for all Cord or Cord and Plug options) ^{(4), (8)} MWS =Modular Wiring System ⁽⁵⁾ MS =360° or 180° Motion Sensor installed (120V through 347V or 480V) ⁽¹⁾	Packaging U =Unit Pack PALC =Palletized In Carton
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NOTES: ⁽¹⁾Voltage must be specified when ordered with plugs or emergency ballasts. For MS option, indicate UNV (for 120V or 277V), 347V or 480V.
⁽²⁾EBT ballast systems suitable for operation in ambient environments up to 104°F (40°C) in upright configuration. ⁽³⁾EHT/HT5/HCT5 ballast systems are suitable for ambient environments not to exceed 149°F (65°C) in upright configurations. ⁽⁴⁾Requires use of MC_ or MPC_ cord accessories, specify voltage for plugs. ⁽⁵⁾Cannot be combined with Modular Power Receptacle (MP). ⁽⁶⁾Recommended when using motion sensor options or accessories. ⁽⁷⁾Can be used in high abuse applications such as gymnasiums. ⁽⁸⁾For MWS with MP, choose MP in fixture logic and then choose MWS accessory such as MDS6.
Specifications & dimensions subject to change without notice. Consult your Eaton Representative for availability and ordering information.

Accessories (order separately)
HBL-SPM=Single Monopoint Hanger w/Hub
FH-1=Fixture Hook
FL-1=Fixture Loop
Y-TOGGLE=Y Mounting Toggle, #2 Cable (Specify 10' or 30')
HBAYC-CHAIN/SET/U=(2) V-Hook Hanger, 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)⁽⁴⁾
MDS6=6' Modular Power Cord with MWS 27DS18/2G06MP Connector⁽⁸⁾
WG/HBL6-4FT-B=4/6 Lamp Wireguard w/Clips

Quick Ship Ordering Information Sample Number: HBL454T5-MP-UPL-L5 Includes V Hangers for rapid installation⁽⁷⁾

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.

Family HBL	Lamp Type 51 =51W T5HO Lamps (48") 54 =54W T5HO Lamps (48")	Ballast Type T5HO Systems T5 =(2) 120/277V 4/2 Lamp T5 Electronic Program Rapid Start ⁽⁸⁾ HT5 =(2) 120/277V 4/2 Lamp T5 High Ambient Electronic Program Rapid Start ⁽⁸⁾	Power Receptacle MP =Modular Power Receptacle ⁽¹⁰⁾	Uplight Blank =No Uplight UPL =Uplight	Lamping Blank =No Lamps L4 =Lamps Installed 85+CRI 4100K ⁽¹¹⁾ L5 =Lamps Installed 85+CRI 5000K ⁽¹¹⁾ L5ES =Energy Savings Lamps Installed 85+CRI 5000K
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NOTES: ⁽⁸⁾T5 ballast systems suitable for operation in ambient environments up to 104°F (40°C) in upright configuration. ⁽⁹⁾EHT/HT5/HCT5 ballast systems are suitable for ambient environments not to exceed 149°F (65°C) in upright configurations. ⁽¹⁰⁾Requires use of MC_ or MPC_ cord accessories, specify voltage for plugs. ⁽¹¹⁾For Quick Ship, lamping option only available w/54W lamp type.

SHIPPING DATA

Catalog No.	Wt.
HBL-454T5-UNV-UPL	13.5 lbs.
HBL-654T5-UNV-UPL	15 lbs.