

## 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 upright 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.

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

## 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 upright 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).

### Compliance

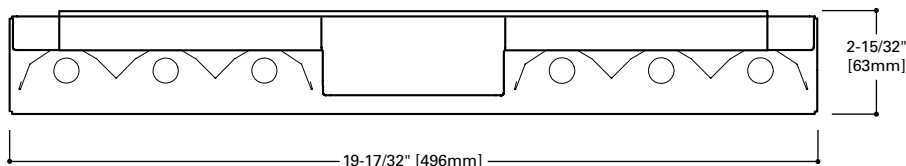
Options to meet Buy American and other domestic preference requirements.



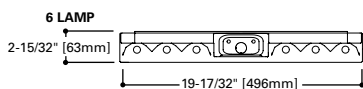
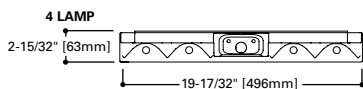
## HBL SERIES

4 OR 6 T5 LAMPS

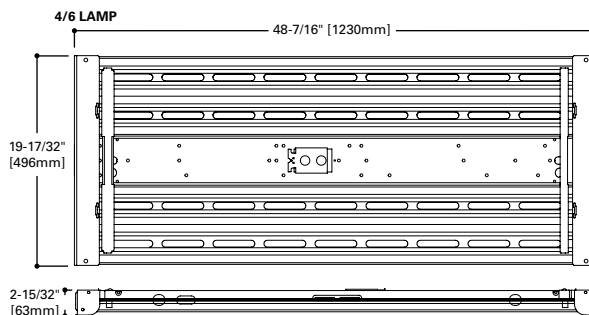
High-Bay Industrial Open Luminaire



## LAMP CONFIGURATIONS



## DIMENSION TOP VIEW



## 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**

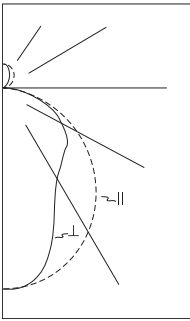
\*Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements.

\*\*Consult Pre Sales Technical Support.

**LINEAR DISCONNECT**

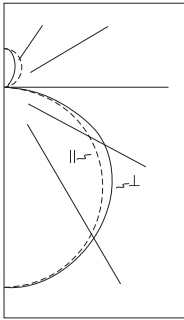
Designed to provide safe and convenient means of disconnecting power

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, (⊥) 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

Angle	Along II	45°	Across ⊥
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, (⊥) 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

Angle	Along II	45°	Across ⊥
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

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	0
RCR																
0	114	114	114	114	110	110	110	110	103	103	103	97	97	97	92	89
1	104	99	95	92	100	96	93	89	91	88	85	86	83	81	81	75
2	95	87	80	75	91	84	78	73	80	75	71	75	71	68	71	65
3	86	77	69	63	83	74	67	62	70	64	60	67	62	58	63	56
4	79	68	60	54	77	66	59	53	63	56	51	60	54	50	57	46
5	73	61	53	46	71	60	52	46	57	50	45	54	48	43	51	40
6	68	55	47	41	65	54	46	40	51	44	39	49	43	38	47	35
7	63	50	42	36	61	49	41	36	47	40	35	45	39	34	43	32
8	59	46	38	33	57	45	37	32	43	36	32	41	35	31	40	28
9	55	42	35	29	53	42	34	29	40	33	29	38	32	28	37	26
10	52	39	32	27	50	38	31	27	37	31	26	36	30	26	34	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	0
RCR																
0	109	109	109	109	105	105	105	105	98	98	98	92	92	92	86	84
1	99	94	90	86	95	91	87	84	85	82	79	80	77	75	75	68
2	89	81	74	69	86	78	72	67	74	69	64	69	65	61	65	56
3	81	71	63	57	78	68	61	55	64	58	53	60	55	51	57	46
4	74	62	54	47	71	60	53	47	57	50	45	53	48	43	50	39
5	68	55	47	40	65	54	46	40	51	44	38	48	42	37	45	34
6	62	50	41	35	60	48	40	34	46	39	33	43	37	32	41	29
7	58	45	37	31	55	44	36	30	41	34	29	39	33	29	37	26
8	54	41	33	27	52	40	32	27	38	31	26	36	30	25	34	23
9	50	37	30	24	48	36	29	24	35	28	23	33	27	23	31	20
10	47	34	27	22	45	34	26	22	32	26	21	30	25	21	29	18

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

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<sup>(7)</sup>

<p><b>Domestic Preferences</b> <sup>(9)</sup>                  [Blank]=Standard                  BAA=Buy American Act                  TAA=Trade Agreements Act</p> <p><b>Width</b>                  Blank=20" wide                  4 &amp; 6 Lamp (nominal)</p> <p><b>Series</b>                  HBL=Linear High Bay</p> <p><b>No. of Lamps</b>                  4=4 Lamps                  6=6 Lamps</p> <p><b>Lamp Type</b>                  49T5=49WT5HO (4') Lamps                  51T5=51WT5HO (4') Lamps                  54T5=54WT5HO Lamp (48" Long)</p> <p><b>Distribution</b>                  N=Narrow Beam (Standard)                  M=Medium Beam                  W=Wide Beam</p>	<p><b>Voltage</b> <sup>(1)</sup>                  UNV=Universal 120/277 Voltage                  UNC=Universal 347/480 Voltage                  120V=120 Volt                  277V=277 Volt                  347V=347 Volt</p> <p><b>Options</b>                  GL=Single Element Fuse                  GM=Double Element Fuse                  EL=Emergency Installed</p>	<p><b>Ballast Type</b> <sup>(3), (6)</sup>  <b>T5 Systems</b>                  EBT =T5 Linear Electronic Program Rapid Start.<sup>(2)</sup>                  Total Harmonic Distortion &lt; 10%                  No. of Ballast 1, 2 or 3                  EHT =T5 Linear Electronic Program Start High Ambient.<sup>(2), (3)</sup>                  Total Harmonic Distortion &lt; 10%                  No. of Ballast 1, 2 or 3</p>	<p><b>Options</b>                  UPL=Uplight Apertures on Reflector                  MP=Modular Power Receptacle (Used for all Cord or Cord and Plug options)<sup>(4), (8)</sup>                  MWS=Modular Wiring System<sup>(5)</sup>                  MS=360° or 180° Motion Sensor installed (120V through 347V or 480V)<sup>(1)</sup></p> <p><b>Accessories</b> (order separately) <sup>(10)</sup>                  HBL-SPM=Single Monopoint Hanger w/Hub                  FH-1=Fixture Hook                  FL-1=Fixture Loop                  Y-TOGGLE- _2PK=(2) Y-Toggle Cable Kits (Specify 10 or 30 for length in feet)                  HBAYC-CHAIN/SET/U=(2) V-Hook Hanger, 36" Chain Sets w/S-Hooks                  MC3=3' Modular Power Cord                  MPC3=3' Modular Power Cord &amp; Plug (Specify Voltage)                  MC6=6' Modular Power Cord                  MPC6=6' Modular Power Cord &amp; Plug (Specify Voltage)                  MMS=360° or 180° Aisle Motion Sensor with Modular Power Receptacle (120-277V)<sup>(4)</sup>                  MDS6=6' Modular Power Cord with MWS 27DS18/2G06MP Connector<sup>(8)</sup>                  WG/HBL6-4FT-B=4/6 Lamp Wireguard w/Clips</p>	<p><b>Packaging</b>                  U=Unit Pack                  PALC=Palletized In Carton</p>
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NOTES: <sup>(1)</sup>Voltage must be specified when ordered with plugs or emergency ballasts. For MS option, indicate UNV (for 120V or 277V), 347V or 480V. <sup>(2)</sup>EBT ballast systems suitable for operation in ambient environments up to 104°F (40°C) in upright configuration. <sup>(3)</sup>EHT/HT5/HCT5 ballast systems are suitable for ambient environments not to exceed 149°F (65°C) in upright configurations. <sup>(4)</sup>Requires use of MC\_ or MPC\_ cord accessories, specify voltage for plugs. <sup>(5)</sup>Cannot be combined with Modular Power Receptacle (MP). <sup>(6)</sup>Recommended when using motion sensor options or accessories. <sup>(7)</sup>Can be used in high abuse applications such as gymnasiums. <sup>(8)</sup>For MWS with MP, choose MP in fixture logic and then choose MWS accessory such as MDS6. <sup>(9)</sup>Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to [DOMESTIC PREFERENCES](#) website for more information. Components shipped separately may be separately analyzed under domestic preference requirements. <sup>(10)</sup>Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.

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



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

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.

<p><b>Family</b>                  HBL</p> <p><b>No. of Lamps</b>                  4=4 Lamps                  6=6 Lamps</p>	<p><b>Lamp Type</b>                  51=51WT5HO Lamps (48")                  54=54WT5HO Lamps (48")</p> <p><b>Distribution</b>                  Blank=Narrow Beam                  W=Wide Beam</p>	<p><b>Ballast Type</b>  <b>T5HO Systems</b>                  T5=(2) 120/277V 4/2 Lamp T5 Electronic Program Rapid Start<sup>(8)</sup>                  HT5=(2) 120/277V 4/2 Lamp T5 High Ambient Electronic Program Rapid Start<sup>(9)</sup></p>	<p><b>Power Receptacle</b>                  MP=Modular Power Receptacle<sup>(10)</sup></p>	<p><b>Uplight</b>                  Blank=No Uplight                  UPL=Uplight</p>
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NOTES: <sup>(8)</sup>T5 ballast systems suitable for operation in ambient environments up to 104°F (40°C) in upright configuration. <sup>(9)</sup>EHT/HT5/HCT5 ballast systems are suitable for ambient environments not to exceed 149°F (65°C) in upright configurations. <sup>(10)</sup>Requires use of MC\_ or MPC\_ cord accessories, specify voltage for plugs.

SHIPPING DATA

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