

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.

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.

| | | |
|--------------------|--|-------------|
| Catalog # | | Type |
| Project | | |
| Comments | | Date |
| Prepared by | | |

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).



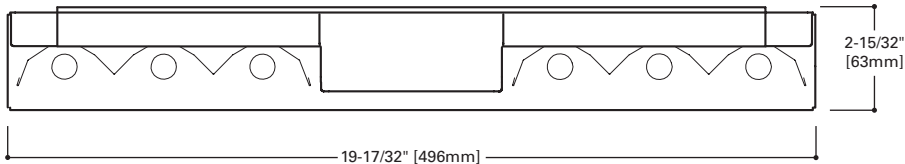
HBL SERIES

ULTRA 47
4, 6, 8, OR 10 T5 LAMPS

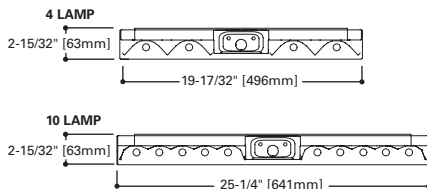
High-Bay Industrial Open Luminaire



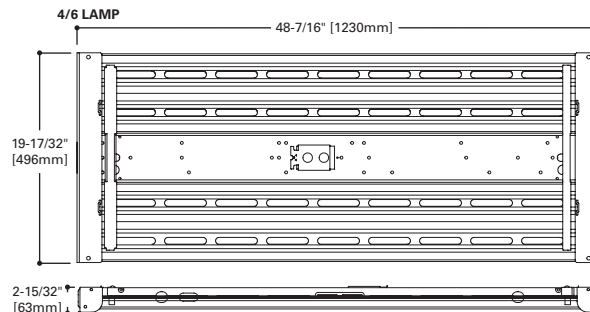
F-BAY^{ULTRA}47



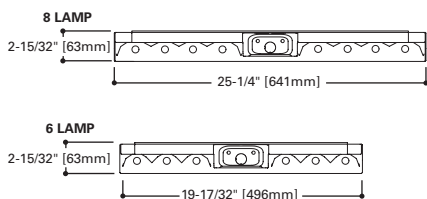
LAMP CONFIGURATIONS



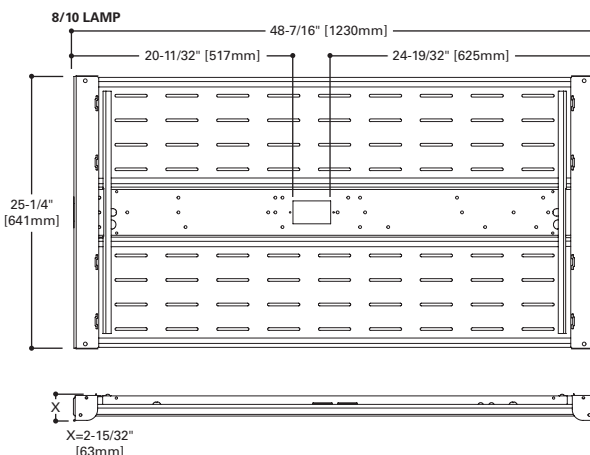
DIMENSION TOP VIEW



LAMP CONFIGURATIONS



DIMENSION TOP VIEW



ENERGY DATA

Input Watts:
EHT Ballast
647=311

Luminaire Efficacy Rating
LER = 83
Catalog Number: HBL-647T5-UPL

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$2.89

*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

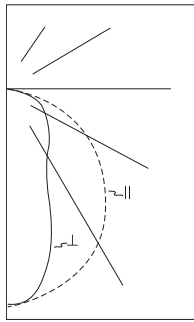
LINEAR DISCONNECT

Safe and convenient means of disconnecting power.

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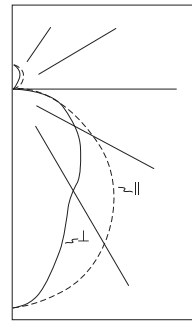


PHOTOMETRICS



HBL-447T5-UNV-UPL
 (1) Electronic Ballast
 (4) F54T5-47W lamps
 4285 lumens
 Spacing criterion:
 (II) 1.2 x mounting
 height, (⊥) 0.7 x
 mounting height
 Efficiency 99.3%
 Test Report:
 HBL447.IES
 LER=83
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$2.89

| Angle | Along II | 45° | Across ⊥ |
|-------|----------|-------|----------|
| 0 | 10037 | 10037 | 10037 |
| 5 | 9943 | 9932 | 9918 |
| 10 | 9777 | 9528 | 9166 |
| 15 | 9525 | 8737 | 7664 |
| 20 | 9182 | 7506 | 5887 |
| 25 | 8765 | 6096 | 4392 |
| 30 | 8274 | 4733 | 3681 |
| 35 | 7713 | 3690 | 3333 |
| 40 | 7074 | 3149 | 2993 |
| 45 | 6389 | 2771 | 2738 |
| 50 | 5633 | 2401 | 2485 |
| 55 | 4852 | 2105 | 2226 |
| 60 | 4038 | 1820 | 2144 |
| 65 | 3183 | 1544 | 1882 |
| 70 | 2312 | 1389 | 1286 |
| 75 | 1471 | 901 | 645 |
| 80 | 734 | 347 | 106 |
| 85 | 169 | 2 | 0 |
| 90 | 4 | 2 | 5 |



HBL-647T5-UNV-UPL
 (2) Electronic Ballasts
 (6) F54T5-47W lamps
 4285 lumens
 Spacing criterion:
 (II) 1.2 x mounting
 height, (⊥) 0.8 x
 mounting height
 Efficiency 99.5%
 Test Report: HBL647-
 UPL.IES
 LER=83
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$2.89

| Angle | Along II | 45° | Across ⊥ |
|-------|----------|-------|----------|
| 0 | 10884 | 10884 | 10884 |
| 5 | 10787 | 10710 | 10658 |
| 10 | 10619 | 10181 | 9795 |
| 15 | 10352 | 9367 | 8645 |
| 20 | 9987 | 8378 | 7522 |
| 25 | 9548 | 7412 | 6483 |
| 30 | 9020 | 6452 | 5883 |
| 35 | 8422 | 5591 | 5653 |
| 40 | 7746 | 5046 | 5208 |
| 45 | 7008 | 4716 | 4666 |
| 50 | 6218 | 4186 | 4322 |
| 55 | 5369 | 3594 | 3911 |
| 60 | 4493 | 3175 | 3492 |
| 65 | 3565 | 2683 | 3023 |
| 70 | 2615 | 2204 | 2632 |
| 75 | 1693 | 1788 | 2037 |
| 80 | 854 | 1224 | 1431 |
| 85 | 235 | 596 | 599 |
| 90 | 3 | 37 | 39 |

Coefficients of Utilization

| rc | Effective floor cavity reflectance | | | | | | | | | | | | | | | | | |
|----|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| | 80% | | | | 70% | | | | 20% | | | | | | | | | |
| | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | | | | |
| 0 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 106 | 106 | 106 | 101 | 101 | 101 | 99 |
| 1 | 109 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 |
| 2 | 100 | 93 | 87 | 82 | 98 | 91 | 85 | 81 | 88 | 83 | 79 | 84 | 81 | 77 | 82 | 78 | 75 | 73 |
| 3 | 92 | 83 | 75 | 69 | 90 | 81 | 74 | 69 | 78 | 72 | 68 | 76 | 71 | 66 | 73 | 69 | 65 | 63 |
| 4 | 85 | 74 | 66 | 60 | 83 | 73 | 65 | 60 | 71 | 64 | 59 | 68 | 63 | 58 | 66 | 61 | 57 | 55 |
| 5 | 79 | 67 | 59 | 53 | 77 | 66 | 58 | 52 | 64 | 57 | 52 | 62 | 56 | 51 | 60 | 55 | 51 | 49 |
| 6 | 73 | 61 | 53 | 47 | 72 | 60 | 52 | 47 | 58 | 52 | 46 | 57 | 51 | 46 | 55 | 50 | 46 | 44 |
| 7 | 69 | 56 | 48 | 42 | 67 | 55 | 48 | 42 | 54 | 47 | 42 | 52 | 46 | 41 | 51 | 45 | 41 | 39 |
| 8 | 64 | 52 | 44 | 38 | 63 | 51 | 43 | 38 | 50 | 43 | 38 | 49 | 42 | 38 | 47 | 42 | 38 | 36 |
| 9 | 60 | 48 | 40 | 35 | 59 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 35 | 44 | 39 | 34 | 33 |
| 10 | 57 | 45 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 41 | 36 | 32 | 30 |

Coefficients of Utilization

| rc | Effective floor cavity reflectance | | | | | | | | | | | | | | | | | |
|----|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| | 80% | | | | 70% | | | | 20% | | | | | | | | | |
| | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | | | | |
| 0 | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 107 | 107 | 107 | 101 | 101 | 101 | 95 | 95 | 95 | 93 |
| 1 | 107 | 102 | 97 | 94 | 103 | 99 | 95 | 91 | 93 | 90 | 87 | 88 | 86 | 83 | 84 | 82 | 80 | 77 |
| 2 | 97 | 89 | 82 | 76 | 94 | 86 | 80 | 75 | 82 | 77 | 72 | 77 | 73 | 70 | 74 | 70 | 67 | 65 |
| 3 | 89 | 78 | 70 | 64 | 86 | 76 | 69 | 63 | 72 | 66 | 61 | 69 | 63 | 59 | 65 | 61 | 57 | 55 |
| 4 | 81 | 70 | 61 | 54 | 78 | 68 | 60 | 54 | 64 | 58 | 52 | 61 | 55 | 51 | 58 | 53 | 49 | 47 |
| 5 | 75 | 62 | 54 | 47 | 72 | 61 | 53 | 47 | 58 | 51 | 45 | 55 | 49 | 44 | 53 | 47 | 43 | 41 |
| 6 | 69 | 56 | 48 | 41 | 67 | 55 | 47 | 41 | 53 | 45 | 40 | 50 | 44 | 39 | 48 | 43 | 38 | 36 |
| 7 | 64 | 51 | 43 | 37 | 62 | 50 | 42 | 36 | 48 | 41 | 36 | 46 | 40 | 35 | 44 | 39 | 34 | 32 |
| 8 | 60 | 47 | 39 | 33 | 58 | 46 | 38 | 33 | 44 | 37 | 32 | 42 | 36 | 31 | 41 | 35 | 31 | 29 |
| 9 | 56 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 34 | 29 | 39 | 33 | 29 | 38 | 32 | 28 | 26 |
| 10 | 53 | 40 | 32 | 27 | 51 | 39 | 32 | 27 | 38 | 31 | 27 | 36 | 30 | 26 | 35 | 30 | 26 | 24 |

Zonal Lumen Summary

| Zone | Lumens | %Lamp | %Fixture |
|-------|--------|-------|----------|
| 0-30 | 6299 | 36.7 | 37.0 |
| 0-40 | 9233 | 53.9 | 54.2 |
| 0-60 | 14204 | 82.9 | 83.4 |
| 0-90 | 17022 | 99.3 | 100.0 |
| 0-180 | 17022 | 99.3 | 100.0 |

Luminance Data

| Angle in Deg | Average 0-Deg cd/sm | Average 45-Deg cd/sm | Average 90-Deg cd/sm |
|--------------|---------------------|----------------------|----------------------|
| 45 | 19774 | 8576 | 8474 |
| 55 | 18513 | 8032 | 8493 |
| 65 | 16483 | 7995 | 9746 |
| 75 | 12438 | 7619 | 5454 |
| 85 | 4244 | 50 | 50 |

Zonal Lumen Summary

| Zone | Lumens | %Lamp | %Fixture |
|-------|--------|-------|----------|
| 0-30 | 7212 | 28.0 | 28.2 |
| 0-40 | 11157 | 43.4 | 43.6 |
| 0-60 | 18599 | 72.3 | 72.7 |
| 0-90 | 23829 | 92.7 | 93.1 |
| 0-180 | 25586 | 99.5 | 100.0 |

Luminance Data

| Angle in Deg | Average 0-Deg cd/sm | Average 45-Deg cd/sm | Average 90-Deg cd/sm |
|--------------|---------------------|----------------------|----------------------|
| 45 | 21690 | 14596 | 14441 |
| 55 | 20485 | 13713 | 14922 |
| 65 | 18461 | 13894 | 15654 |
| 75 | 14315 | 15119 | 17224 |
| 85 | 5901 | 14966 | 15041 |

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

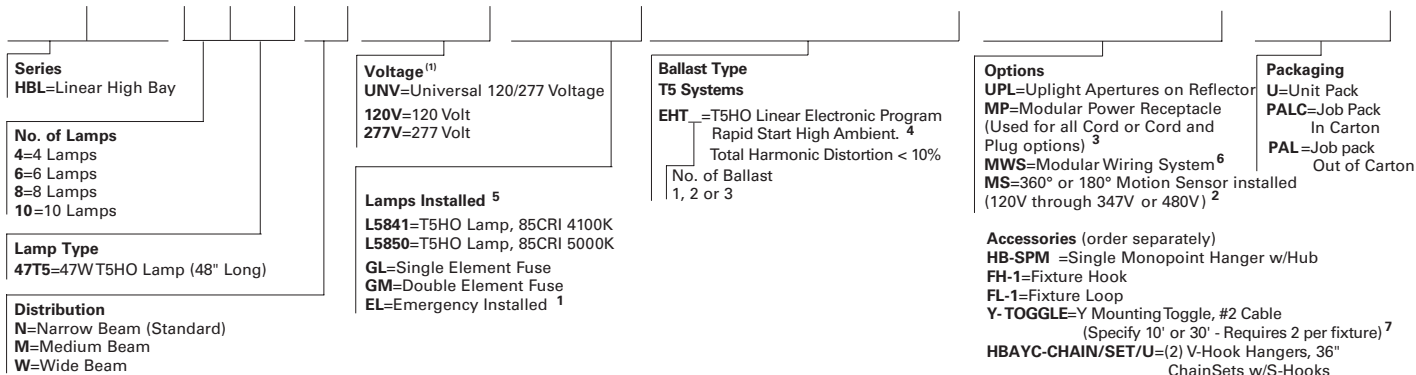
Modular Motion Sensor Option supplied with Mounting Box and Modular Power Supply Receptacle

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-647T5-N-UNV-EHT-UPL-U



- NOTES:**
- 1 Voltage must be specified when ordered with plugs or emergency ballasts.
 - 2 When ordering MS option, specify as UNV (for 120 or 277V).
 - 3 Requires use of MC or MPC cord accessories, specify voltage for plugs.
 - 4 EHT/HT5/HCT5 ballast systems suitable for ambient environments not to exceed 149°F (65°C) in open upright configurations and less lens option.
 - 5 Must specify lamps when ordering.
 - 6 Cannot be combined with Modular Power Receptacle (MP).
For MWS with MP, choose MP in fixture logic and then choose MWS.
 - 7 Two required.
 - 8 For MWS with MP, choose MP in the fixture logic and then choose MWS accessory such as MDS6.

SHIPPING DATA

| Catalog No. | Wt. |
|-------------------|---------|
| HBL-647T5-UNV-UPL | 16 lbs. |

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.

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).

| | | |
|--------------------|--|-------------|
| Catalog # | | Type |
| Project | | |
| Comments | | Date |
| Prepared by | | |



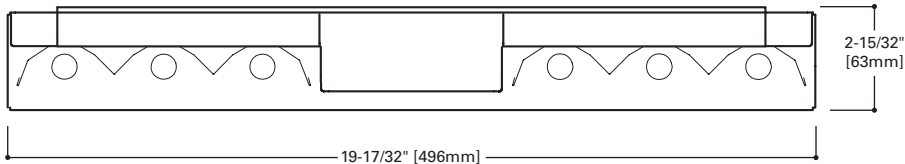
HBL SERIES

ULTRA 47
4, 6, 8, OR 10 T5 LAMPS

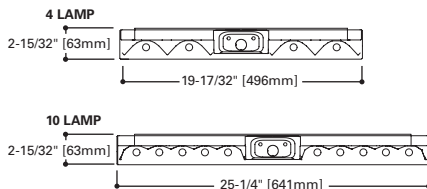
High-Bay Industrial Open Luminaire



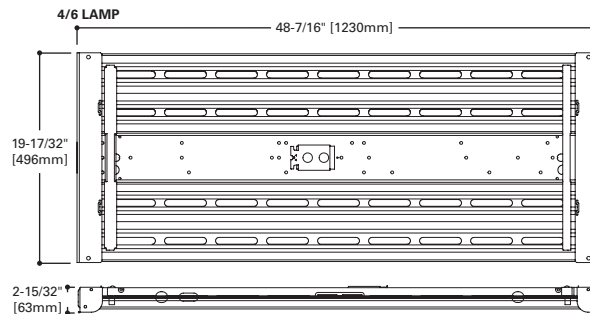
F-BAY^{ULTRA}47



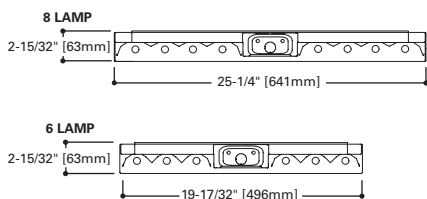
LAMP CONFIGURATIONS



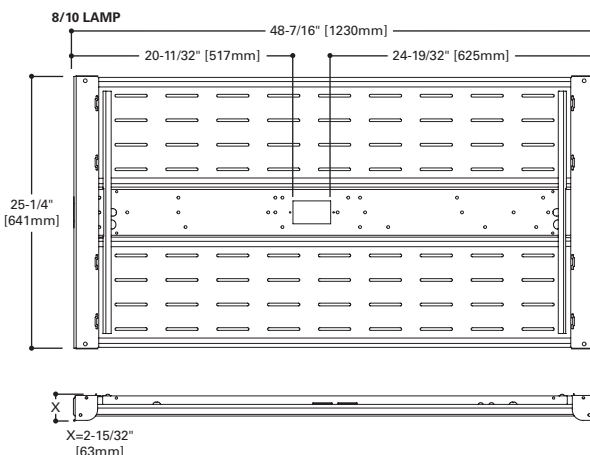
DIMENSION TOP VIEW



LAMP CONFIGURATIONS



DIMENSION TOP VIEW



ENERGY DATA

Input Watts:
EHT Ballast
647=311

Luminaire Efficacy Rating
LER = 83
Catalog Number: HBL-647T5-UPL

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$2.89

*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

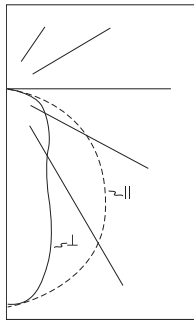
LINEAR DISCONNECT

Safe and convenient means of disconnecting power.

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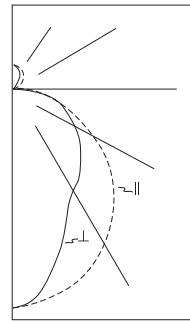


PHOTOMETRICS



HBL-447T5-UNV-UPL
 (1) Electronic Ballast
 (4) F54T5-47W lamps
 4285 lumens
 Spacing criterion:
 (II) 1.2 x mounting
 height, (⊥) 0.7 x
 mounting height
 Efficiency 99.3%
 Test Report:
 HBL447.IES
 LER=83
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$2.89

| Angle | Along II | 45° | Across ⊥ |
|-------|----------|-------|----------|
| 0 | 10037 | 10037 | 10037 |
| 5 | 9943 | 9932 | 9918 |
| 10 | 9777 | 9528 | 9166 |
| 15 | 9525 | 8737 | 7664 |
| 20 | 9182 | 7506 | 5887 |
| 25 | 8765 | 6096 | 4392 |
| 30 | 8274 | 4733 | 3681 |
| 35 | 7713 | 3690 | 3333 |
| 40 | 7074 | 3149 | 2993 |
| 45 | 6389 | 2771 | 2738 |
| 50 | 5633 | 2401 | 2485 |
| 55 | 4852 | 2105 | 2226 |
| 60 | 4038 | 1820 | 2144 |
| 65 | 3183 | 1544 | 1882 |
| 70 | 2312 | 1389 | 1286 |
| 75 | 1471 | 901 | 645 |
| 80 | 734 | 347 | 106 |
| 85 | 169 | 2 | 0 |
| 90 | 4 | 2 | 5 |



HBL-647T5-UNV-UPL
 (2) Electronic Ballasts
 (6) F54T5-47W lamps
 4285 lumens
 Spacing criterion:
 (II) 1.2 x mounting
 height, (⊥) 0.8 x
 mounting height
 Efficiency 99.5%
 Test Report: HBL647-
 UPL.IES
 LER=83
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$2.89

| Angle | Along II | 45° | Across ⊥ |
|-------|----------|-------|----------|
| 0 | 10884 | 10884 | 10884 |
| 5 | 10787 | 10710 | 10658 |
| 10 | 10619 | 10181 | 9795 |
| 15 | 10352 | 9367 | 8645 |
| 20 | 9987 | 8378 | 7522 |
| 25 | 9548 | 7412 | 6483 |
| 30 | 9020 | 6452 | 5883 |
| 35 | 8422 | 5591 | 5653 |
| 40 | 7746 | 5046 | 5208 |
| 45 | 7008 | 4716 | 4666 |
| 50 | 6218 | 4186 | 4322 |
| 55 | 5369 | 3594 | 3911 |
| 60 | 4493 | 3175 | 3492 |
| 65 | 3565 | 2683 | 3023 |
| 70 | 2615 | 2204 | 2632 |
| 75 | 1693 | 1788 | 2037 |
| 80 | 854 | 1224 | 1431 |
| 85 | 235 | 596 | 599 |
| 90 | 3 | 37 | 39 |

Coefficients of Utilization

| rc | Effective floor cavity reflectance | | | | | | | | | | | | | | | | | |
|----|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| | 80% | | | | 70% | | | | 20% | | | | | | | | | |
| | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | | | | |
| 0 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 106 | 106 | 106 | 101 | 101 | 101 | 99 |
| 1 | 109 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 |
| 2 | 100 | 93 | 87 | 82 | 98 | 91 | 85 | 81 | 88 | 83 | 79 | 84 | 81 | 77 | 82 | 78 | 75 | 73 |
| 3 | 92 | 83 | 75 | 69 | 90 | 81 | 74 | 69 | 78 | 72 | 68 | 76 | 71 | 66 | 73 | 69 | 65 | 63 |
| 4 | 85 | 74 | 66 | 60 | 83 | 73 | 65 | 60 | 71 | 64 | 59 | 68 | 63 | 58 | 66 | 61 | 57 | 55 |
| 5 | 79 | 67 | 59 | 53 | 77 | 66 | 58 | 52 | 64 | 57 | 52 | 62 | 56 | 51 | 60 | 55 | 51 | 49 |
| 6 | 73 | 61 | 53 | 47 | 72 | 60 | 52 | 47 | 58 | 52 | 46 | 57 | 51 | 46 | 55 | 50 | 46 | 44 |
| 7 | 69 | 56 | 48 | 42 | 67 | 55 | 48 | 42 | 54 | 47 | 42 | 52 | 46 | 41 | 51 | 45 | 41 | 39 |
| 8 | 64 | 52 | 44 | 38 | 63 | 51 | 43 | 38 | 50 | 43 | 38 | 49 | 42 | 38 | 47 | 42 | 38 | 36 |
| 9 | 60 | 48 | 40 | 35 | 59 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 35 | 44 | 39 | 34 | 33 |
| 10 | 57 | 45 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 41 | 36 | 32 | 30 |

Coefficients of Utilization

| rc | Effective floor cavity reflectance | | | | | | | | | | | | | | | | | |
|----|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| | 80% | | | | 70% | | | | 20% | | | | | | | | | |
| | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | | | | |
| 0 | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 107 | 107 | 107 | 101 | 101 | 101 | 95 | 95 | 95 | 93 |
| 1 | 107 | 102 | 97 | 94 | 103 | 99 | 95 | 91 | 93 | 90 | 87 | 88 | 86 | 83 | 84 | 82 | 80 | 77 |
| 2 | 97 | 89 | 82 | 76 | 94 | 86 | 80 | 75 | 82 | 77 | 72 | 77 | 73 | 70 | 74 | 70 | 67 | 65 |
| 3 | 89 | 78 | 70 | 64 | 86 | 76 | 69 | 63 | 72 | 66 | 61 | 69 | 63 | 59 | 65 | 61 | 57 | 55 |
| 4 | 81 | 70 | 61 | 54 | 78 | 68 | 60 | 54 | 64 | 58 | 52 | 61 | 55 | 51 | 58 | 53 | 49 | 47 |
| 5 | 75 | 62 | 54 | 47 | 72 | 61 | 53 | 47 | 58 | 51 | 45 | 55 | 49 | 44 | 53 | 47 | 43 | 41 |
| 6 | 69 | 56 | 48 | 41 | 67 | 55 | 47 | 41 | 53 | 45 | 40 | 50 | 44 | 39 | 48 | 43 | 38 | 36 |
| 7 | 64 | 51 | 43 | 37 | 62 | 50 | 42 | 36 | 48 | 41 | 36 | 46 | 40 | 35 | 44 | 39 | 34 | 32 |
| 8 | 60 | 47 | 39 | 33 | 58 | 46 | 38 | 33 | 44 | 37 | 32 | 42 | 36 | 31 | 41 | 35 | 31 | 29 |
| 9 | 56 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 34 | 29 | 39 | 33 | 29 | 38 | 32 | 28 | 26 |
| 10 | 53 | 40 | 32 | 27 | 51 | 39 | 32 | 27 | 38 | 31 | 27 | 36 | 30 | 26 | 35 | 30 | 26 | 24 |

Zonal Lumen Summary

| Zone | Lumens | %Lamp | %Fixture |
|-------|--------|-------|----------|
| 0-30 | 6299 | 36.7 | 37.0 |
| 0-40 | 9233 | 53.9 | 54.2 |
| 0-60 | 14204 | 82.9 | 83.4 |
| 0-90 | 17022 | 99.3 | 100.0 |
| 0-180 | 17022 | 99.3 | 100.0 |

Luminance Data

| Angle in Deg | Average 0-Deg cd/sm | Average 45-Deg cd/sm | Average 90-Deg cd/sm |
|--------------|---------------------|----------------------|----------------------|
| 45 | 19774 | 8576 | 8474 |
| 55 | 18513 | 8032 | 8493 |
| 65 | 16483 | 7995 | 9746 |
| 75 | 12438 | 7619 | 5454 |
| 85 | 4244 | 50 | 50 |

Zonal Lumen Summary

| Zone | Lumens | %Lamp | %Fixture |
|-------|--------|-------|----------|
| 0-30 | 7212 | 28.0 | 28.2 |
| 0-40 | 11157 | 43.4 | 43.6 |
| 0-60 | 18599 | 72.3 | 72.7 |
| 0-90 | 23829 | 92.7 | 93.1 |
| 0-180 | 25586 | 99.5 | 100.0 |

Luminance Data

| Angle in Deg | Average 0-Deg cd/sm | Average 45-Deg cd/sm | Average 90-Deg cd/sm |
|--------------|---------------------|----------------------|----------------------|
| 45 | 21690 | 14596 | 14441 |
| 55 | 20485 | 13713 | 14922 |
| 65 | 18461 | 13894 | 15654 |
| 75 | 14315 | 15119 | 17224 |
| 85 | 5901 | 14966 | 15041 |

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

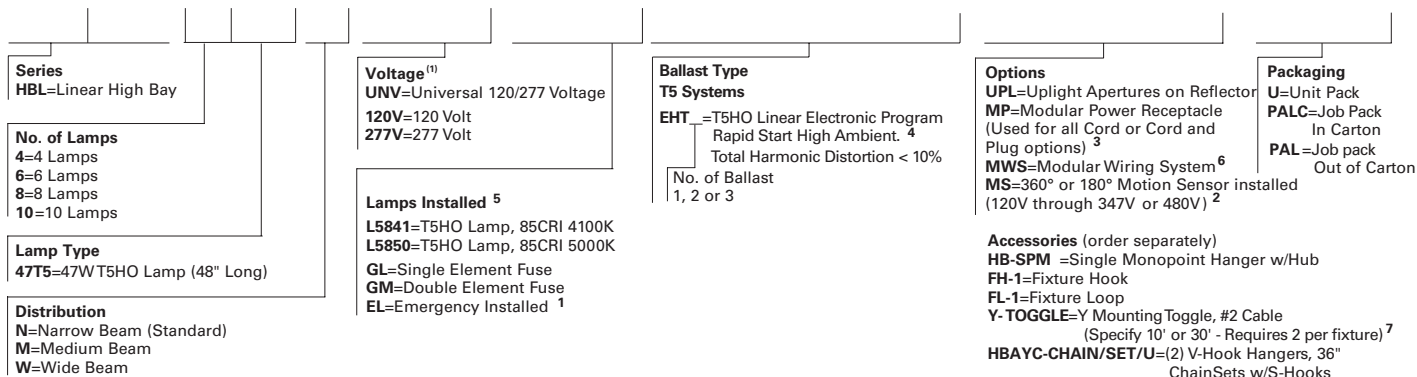
Modular Motion Sensor Option supplied with Mounting Box and Modular Power Supply Receptacle

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-647T5-N-UNV-EHT-UPL-U



NOTES:

- 1 Voltage must be specified when ordered with plugs or emergency ballasts.
- 2 When ordering MS option, specify as UNV (for 120 or 277V).
- 3 Requires use of MC or MPC cord accessories, specify voltage for plugs.
- 4 EHT/HT5/HCT5 ballast systems suitable for ambient environments not to exceed 149°F (65°C) in open upright configurations and less lens option.
- 5 Must specify lamps when ordering.
- 6 Cannot be combined with Modular Power Receptacle (MP). For MWS with MP, choose MP in fixture logic and then choose MWS.
- 7 Two required.
- 8 For MWS with MP, choose MP in the fixture logic and then choose MWS accessory such as MDS6.

Accessories (order separately)
HB-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' - Requires 2 per fixture)⁷
HBAYC-CHAIN/SET/U=(2) V-Hook Hangers, 36" ChainSets 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)¹
MDS6=6' Modular Power Cord with MWS 27DS18/2G06MP Connector⁸
WG/HBL6-4FT-B=4/6 Lamp w/Lamp Wireguard w/Clips
WG/HBL8-4FT-B=8 Lamp w/Lamp Wireguard w/Clips

SHIPPING DATA

| Catalog No. | Wt. |
|-------------------|---------|
| HBL-647T5-UNV-UPL | 16 lbs. |