PRECISION PARAGON
EFFICIENCY, ECONOMY, SUSTAINABILITY.

www.P-2.com

(714) 386-5550 CA
(715) 381-2971 WI
(352) 692-5900 FL

HBL–Economy 14" Full Cutoff Hi-Bay

Economy

- The HBL delivers the punch of a full cutoff Hi-Bay in an economical package that creates compelling return on investment scenarios.

Controls Options

- Accepts end mount occupancy sensor direct to endplate, with the knockout positioned so there are no sensor line of sight cutoff issues. This means you do not need costly sensor leveling brackets.

Low Cost Lens

- Our frame-less, tool-less clear acrylic lens is the quickest, easiest, lowest cost way to lens a fluorescent Hi-bay.

The Usual

- Fast, custom configured, expert application support.

Our Experience

- We've been focused on nothing but supporting energy efficient re-lighting projects since 1992. Hit a dead end? Give our application support team a try.

HBL Full Cutoff Hi-Bay

Application

- A versatile Hi-bay or Lo-bay for general commercial, industrial, and distribution applications.
- Can be factory equipped with lens and occupancy sensor.
- 4-Lamp T5HO with EA reflector ideal for Hi-bays.
- 3-Lamp T5HO or 4-Lamp T8+ with WA reflector ideal for Lo-bays.

HBL–2x4–4L–T5HO–UL1–MN–PSH–ST–EA–C8–SH4

HBL	2x4	4L	T5HO	UL1	MN	PSH	ST	EA	C8	SH4		
Model	Fixt Size	Lamp Qty	Lamp Type	Voltage	Ballast Factor	Ballast Starting	Ballast Grade	Reflector Material	Cord Plug	Occ Sensor	Other	Other

Fixture Model
HBL

Fixture Size
2x4 = 2x4 Nominal
2x8 = 2x8 Nominal

Lamp Qty
xL = x Indicates quantity of lamps

Lamp Type
T5HO = Linear T5HO Lamps
T8 = Linear T8 Lamps

Voltage (1)
UHx = Universal 347-480
ULx = Universal 120-277

Ballast Factor (2)
MN = Neutral Power (.97–1.04)
HP = High Power (1.15–1.20)

Ballast Starting
IS = Instant Start
ISD = Instant Start Step Dimming
PS = Programmed Start
PSD = Program Start Step Dimming
PSH = Program Start Hi-Lo

Ballast Grade
ST = Standard Grade
UE = Ultra Efficient T8

Reflector Material
EA = Enhanced Aluminum 93-94%
MM = Micro Matte 91-93%
WA = White Aluminum Reflector 90-91%

Cord & Plug
C8 = 8' Cord, No Plug
C8/L715 = 8' Cord & Plug (L7-15P)
PQC15 = 15' Cord/Quick Connect

Occupancy Sensor(3)
SHx = Standard 360 View Hi-Bay
RHx = Rectangular Aisle View Hi-Bay
SLx = Standard 360 View Lo-Bay
RLx = Rectangular Aisle View Lo-Bay

Other (Sensor)
DR = Dual Relay, Dual Delay Sensor
DO = Daylight Over Occupancy Sensor
XT = Lo Temp / Wet Location Sensor
LB = Sensor Leveling Box
(Not Required HBL)
PF = Partial/Full Switch

Other (Lens)
CA = Clear Acrylic
CP = Clear Polycarbonate

Other
LF = Factory Lamps (Lamp spec elsewhere)
NVA = No Ventilation, All
NVE = No Ventilation, End
NVT = No Ventilation, Top
HB = 2 Point Mount Dedicated Hanging Brackets

Numeric Footnotes
(1) Numeral indicates number of ballasts per fixture.
(2) Ballast factors outside ranges shown to be called out numerically.
(3) Numeral indicates number of lamps controlled.

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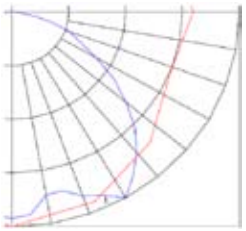
Fixture Construction

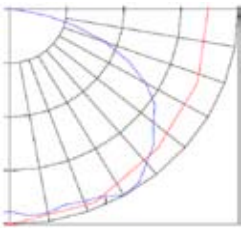
- Heavy duty white aluminum body dissipates heat at 4x the rate of steel.
- Fully ventilated body and endplates help reduce heat in ballast compartment for longer life.
- Environmentally friendly and labor saving bulk project packaging.
- Dottie slot mounting points and V-hangers included.
- Frame-less, tool-less lens option.
- Made in the USA: Hudson WI, Gainesville FL, Orange County CA.

Optical Shape

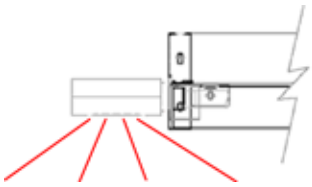
3L-T5HO EA
Specular Reflector

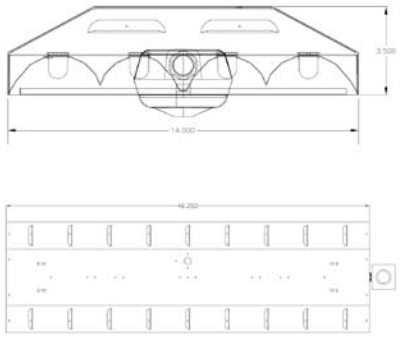


3L-T5HO White
Aluminum



End Mount Sensor





Existing Systems

Existing Hi-Bay System	Lamp Qty & Type		Initial Lamp Lumens	Lumen Maintenance	EOL(1) Lumens All Lamps	Total Fixture Lumens	Ballast Factor	Fixture Efficiency	EOL(1) Lumens Per Fixt	S/P (2) Ratio	Net (3) EOL Lumens	Fixt Input Watts
MH250	1	Std MH250	20,500	58%	11,890	11,890	1.00	0.75	8,918	1.49	12,171	295
MH320PS	1	PS MH320	31,700	62%	19,654	19,654	1.00	0.75	14,741	1.49	20,119	368
MH400	1	Std MH400	38,000	58%	22,040	22,040	1.00	0.75	16,530	1.49	22,561	458
HPS400	1	Std HPS400	50,000	70%	35,000	35,000	1.00	0.75	26,250	0.62	18,080	464

Re-Lighting Options

Proposed Hi-Bay System	Lamp Qty & Type		Initial Lamp Lumens	Lumen Maintenance	EOL(1) Lumens All Lamps	Total Fixture Lumens	Ballast Factor	Fixture Efficiency	EOL(1) Lumens Per Fixt	S/P (2) Ratio	Net (3) EOL Lumens	Fixt Input Watts
2L-T5HO	2	FP54T5HO	5,000	93%	4,650	9,300	1.00	0.92	8,556	1.62	12,465	117
3L-T5HO	3	FP54T5HO	5,000	93%	4,650	13,950	1.00	0.92	12,834	1.62	18,698	176
4L-T5HO	4	FP54T5HO	5,000	93%	4,650	18,600	1.00	0.92	17,112	1.62	24,930	234
4L-T8 Plus	4	F32T8/841	2,950	90%	2,655	10,620	1.14	0.90	10,896	1.62	15,874	147

(1) EOL = End of Life (2) S/P Ratio = Scotopic to Photopic Lumens (3) Net EOL Lumens = EOL Lumens Per Fixture x (S/P).78 [.78 exponent]

General Notes

- Lamp/ballast system values shown are a general reference intended to supply a quick comparison of several common lamp/ballast systems, the associated energy consumption, and net lumen output.
- Values shown are based on normal operating temperatures (25c T8 and 35c T5) and at 277 volts.
- Fixture efficiency percentages are generally representative of each system type, actual values will vary.
- There are many operating variables that affect system output, in addition to rating variances from brand to brand.
- All T8 electronic ballast values shown are based on Ultra Efficient (aka 3rd Generation) T8 ballasts.
- All T5 and T8 lamp values shown are for basic grade lamps. Extended life and higher lumen lamps types are available.
- In addition to those shown there are a wide variety of systems to choose from, each with distinct features and cost points.
- Please consult the lamp/ballast manufacturer's catalogs for the detailed information required to model your system.