



Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Cat. #: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Quantity: \_\_\_\_\_

LED

## PBL V2 HD-2 | LED Heavy Duty High Bay

### Features:

- High performance LED technology
- 0-10V dimming drivers standard on all models - dimmable to 5% on all models, with most dimmable to 1%
- DALI drivers available based on configuration
- Field replaceable LED boards and drivers through Re-boardABILITY (more info on Page 3)
- Frosted diffusers available to help minimize glare and improve aesthetics
- A wide variety of lumen packages allows for flexibility in design and helps maximize energy savings
- Multiple controls options available
- The PBL V2 HD's unibody design is surface mountable with easy access to the driver compartment from below

### Applications:

Suitable for most commercial, industrial and institutional applications

- Gymnasiums
- Recreation Centers
- Manufacturing
- Warehouse
- **Not** recommended for cold/frozen storage applications

### Ambient Operating Temp.:

- -30°C to 40°C\*

\* for suspended mount applications. Contact factory for ambient temperature ratings for surface mount applications.

### Construction:

- Housing is precision brake formed from heavy duty 0.063" aluminum
- Pre-painted with a highly durable, highly reflective white finish

### Certifications:

- UL 1598 listed for US and Canada, suitable for damp locations
- DesignLights Consortium qualified on specific configurations (refer to DLC qualified products list for exact model numbers) <http://designlights.org/>



### Predicted Lifetime:

- L70: 172,000 hrs (calculated)
- L80: 108,000 hrs (calculated)
- L90: 52,000 hrs (reported)
- 88% lumen maintenance @ 60,000 hrs (based on LM80 and insitu laboratory testing)

### Warranty:

- 5 year limited system warranty - see [www.LumenFocus.com](http://www.LumenFocus.com) for complete warranty terms and conditions



## Ordering Guide:

example: PBL V2 2 MD UV 850 HDW PM ZOSD C6

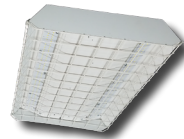
Series	Length	Output	Voltage	Shielding	CRI/CCT	Gauge	Hanging	Controls	Options	Finish
PBL V2	2					HDW				
PBL V2 PBL Version 2	2 2'	LW Low	UV 120-277	Blank No Lenses	835 80 CRI/3500K	HDW Heavy Duty 0.063" Aluminum Wide-Body Housing	Blank None	Blank No Controls	Blank No Options	Blank White
		MD Medium	34 347V	FR Frosted Acrylic Diffusers	840 80 CRI/4000K			ZOS Occupancy Sensor (On/Off)	C6 6' Single Circuit Cord	BK Matte Black
		HI High	48 480V		850 80 CRI/5000K			ZOSD Occupancy Sensor (On/Off/Dim)	C65W 6' Single Circuit Cord with Low Voltage Connections	SL Metallic Silver
		VH Very High						ZOFD1 Leviton Bluetooth-enabled Programmable Dimming/ Occupancy/Daylight Harvesting Sensor with Grouping (120-277V) <sup>(1)</sup>	C10 10' Single Circuit Cord	
							PM Pendant Mount	ZOFD1 Leviton Bluetooth-enabled Programmable Dimming/ Occupancy/Daylight Harvesting Sensor with Grouping (120-277V) <sup>(1)</sup>	C105W 10' Single Circuit Cord with Low Voltage Connections	
							ST(x) 3/4" Stem (Specify Length)	ZOFDU Leviton Bluetooth-enabled Programmable Dimming/ Occupancy/Daylight Harvesting Sensor with Grouping, Scheduling (120-480V) <sup>(1)</sup>	D6 6' Dual Circuit Cord	
								Z221BL_ Wattstopper Programmable Photo/Motion Multi-Voltage Sensor (high/low/off) <sup>(2)</sup>	D10 10' Dual Circuit Cord	
								Z321BL_ Wattstopper Bluetooth-enabled Programmable Photo/Motion Multi-Voltage Sensor (high/low/off) <sup>(2)</sup>	P(NEMA) Plug (Specify NEMA configuration)	
								ZOSMHB Leviton High Bay Microwave 0-10V Multi-Level Occupancy Sensor with Photocell <sup>(3)</sup>	SC Safety Cable	
								ZPC Photocell	F Fuse	
								ZENLO Enlighted Ruggedized Sensor with Dimming/Occupancy/ Daylight Harvesting and Enlighted One System <sup>(4)</sup>	EM6 6.5W Emergency Pack <sup>(5)</sup>	
								ZENLC Enlighted Ruggedized Sensor with Dimming/Occupancy/ Daylight Harvesting and Enlighted Connected System <sup>(4)</sup>	EM10 10W Emergency Pack <sup>(5)</sup>	
								ZENLI Enlighted Ruggedized Sensor with Dimming/Occupancy/ Daylight Harvesting and Enlighted IoT System <sup>(4)</sup>	EM14 14W Emergency Pack <sup>(5)</sup>	
									EM20 20W Emergency Pack <sup>(5)</sup>	
									SDT(480V) 480V to 277V Step Down Transformer	
									CC Conformal Coating	
									LVL 0-10V Dimming Leads for Easy Field Access	
									BAA Buy American Act Compliant	

## Notes

- <sup>(1)</sup> For 8' to 40' mounting heights. See Page 5 for more details.  
<sup>(2)</sup> " " = lens type. See Page 5 for lens descriptions.  
<sup>(3)</sup> 120-277V only. Max ceiling height is 50 feet. See page 5 for more details.  
<sup>(4)</sup> Max ceiling height for Enlighted Ruggedized sensor 50 feet. See Page 6 for more details on advanced controls.  
<sup>(5)</sup> 120-277V / 0°C-55°C ambient. To estimate lumen output in emergency mode, multiply EM wattage by the Lumens per Watt of the luminaire it is installed in.  
 ex. PBL V2 2 MD UV 850 HDW EM14 → 158.8 LPW x 14W = 2,223 lm

## Accessories (order separately)

- WG(PBL2W) Wire Guard  
 WGE(PBL2W) Extended Wire Guard for use with end-mounted sensor



## Controls Accessories (order separately)



- For Enlighted Controls**  
 WS-2-00 Enlighted Remote Control Wall Switch  
 (for Enlighted Connected & IoT)  
 WS-2-00-IL Enlighted Remote Control Wall Switch  
 (for Enlighted One)



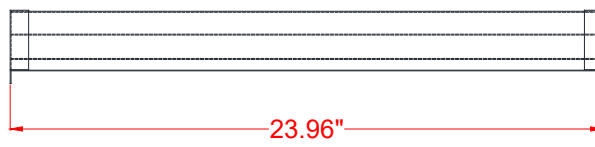
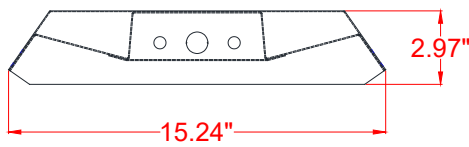
- For Z221BL\_ Sensor**  
 FSIR-100 Wireless Configuration Tool



- For ZOSMHB Sensor**  
 ZLSOR Wireless Configuration Tool



## Schematic:



## Performance Chart:

Catalog #	Lumens	Watts	LPW	Catalog #	Lumens	Watts	LPW	Catalog #	Lumens	Watts	LPW
PBL V2 2 LW UV 835	8586.3	54.7	156.9	PBL V2 2 LW UV 840	8824.5	54.7	161.3	PBL V2 2 LW UV 850	8824.5	54.7	161.3
PBL V2 2 MD UV 835	11440.2	74.0	154.5	PBL V2 2 MD UV 840	11757.6	74.0	158.8	PBL V2 2 MD UV 850	11757.6	74.0	158.8
PBL V2 2 HI UV 835	13330.6	88.0	151.5	PBL V2 2 HI UV 840	13700.5	88.0	155.7	PBL V2 2 HI UV 850	13700.5	88.0	155.7
PBL V2 2 VH UV 835	16264.3	104.0	156.4	PBL V2 2 VH UV 840	16715.6	104.0	160.7	PBL V2 2 VH UV 850	16715.6	104.0	160.7
PBL V2 2 LW UV FR 835	8088.2	54.7	147.8	PBL V2 2 LW UV FR 840	8312.7	54.7	151.9	PBL V2 2 LW UV FR 850	8312.7	54.7	151.9
PBL V2 2 MD UV FR 835	10776.6	74.0	145.0	PBL V2 2 MD UV FR 840	11075.7	74.0	149.0	PBL V2 2 MD UV FR 850	11075.7	74.0	149.0
PBL V2 2 HI UV FR 835	12449.1	88.0	141.5	PBL V2 2 HI UV FR 840	12794.5	88.0	145.4	PBL V2 2 HI UV FR 850	12794.5	88.0	145.4
PBL V2 2 VH UV FR 835	15288.4	104.0	147.0	PBL V2 2 VH UV FR 840	15712.7	104.0	151.1	PBL V2 2 VH UV FR 850	15712.7	104.0	151.1

Lumen Adjustment Factors: WG: 0.947

## LUMENFOCUS Re-boardABILITY

The PBL V2 HD features field replaceable boards and drivers. This allows you to upgrade to more efficient technology in the future. Or, in the rare event of a failure, you can rapidly replace defective components. Re-boardABILITY helps to ensure you won't get stuck with an obsolete light fixture. [Learn more about Re-boardABILITY here.](#)



[Click here for a video demonstration of the re-boarding process on a PBL.](#)

Note: Exact time varies depending on the model.



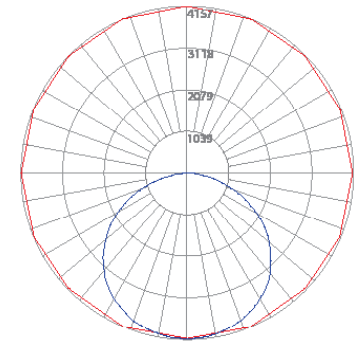
## Photometric Data:

### PBL V2 2 MD UV 850

Test No.: LLIA001687-005A  
 Luminaire Lumens: 11,758 lm  
 Luminaire Watts: 74.0W  
 Efficacy: 158.8 LPW  
 Spacing Criterion (0-180): 1.32  
 Spacing Criterion (90-270): 1.26

#### Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	24587	23467	23385
55	24034	22879	23277
65	22310	21908	23281
75	17920	20503	3172
85	6526	4709	5382



— Vert. Plane  
 — Horiz. Cone

#### Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20	1499.6	12.8
0-30	3198.6	27.2
0-40	5277.2	44.9
0-60	9484.5	80.7
0-80	11652.4	99.1
0-90	11756.2	100.0
90-120	1.5	0.0
90-130	1.5	0.0
90-150	1.5	0.0
90-180	1.5	0.0
0-180	11757.7	100.0

#### Coefficients Of Utilization - Zonal Cavity Method Effective Floor Cavity Reflectance 0.20

RC	80	70	50	30
RW	70	50	30	10
0	119	119	119	119
1	109	105	101	97
2	99	91	85	79
3	91	80	72	66
4	83	71	62	56
5	76	63	54	48
6	70	57	48	42
7	65	51	43	37
8	60	47	38	33
9	56	43	35	29
10	53	40	32	26

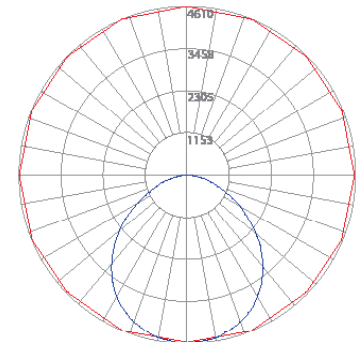
Tested in accordance with IES standards utilizing absolute photometry per LM-79-08

### PBL V2 2 HI UV FR 850

Test No.: LLIA001687-002  
 Luminaire Lumens: 12,795 lm  
 Luminaire Watts: 88.0W  
 Efficacy: 145.4 LPW  
 Spacing Criterion (0-180): 1.24  
 Spacing Criterion (90-270): 1.26

#### Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	23567	25184	26204
55	20538	24310	26058
65	16788	23309	25335
75	12710	20435	13956
85	7871	13523	11774



— Vert. Plane  
 — Horiz. Cone

#### Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20	1679.2	13.1
0-30	3560.1	27.8
0-40	5819.4	45.5
0-60	10221.8	79.9
0-80	12588.1	98.4
0-90	12792.8	100.0
90-120	1.8	0.0
90-130	1.8	0.0
90-150	1.8	0.0
90-180	1.8	0.0
0-180	12794.6	100.0

#### Coefficients Of Utilization - Zonal Cavity Method Effective Floor Cavity Reflectance 0.20

RC	80	70	50	30
RW	70	50	30	10
0	119	119	119	119
1	109	104	100	96
2	99	91	84	79
3	90	80	72	65
4	83	71	62	55
5	76	63	54	48
6	70	57	48	42
7	65	52	43	37
8	61	47	39	33
9	57	43	35	29
10	53	40	32	27

Tested in accordance with IES standards utilizing absolute photometry per LM-79-08



## Controls Summary:

Control Code	Type	Capabilities	Communication
ZOS	Motion (PIR)	On/Off	Wired
ZOSD	Motion (PIR), Photosensor	On/Low/Off	Wired 1-10V
ZOFD1	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping	Wired 0-10V, Programmable via Bluetooth App (iOS, Android)
ZOFDU	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Scheduling	Wired 0-10V, Programmable via Bluetooth App (iOS, Android)
Z221BLx	Motion (PIR), Photosensor	High/Low/Off, High-End Trim	Wired 0-10V, Programmable via IR remote (sold separately)
Z321BLx	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim	Wired 0-10V, Programmable via Bluetooth App (iOS, Android)
ZOSMHB	Motion (Microwave), Photosensor	On/Low/Off	Wired 0-10V, Programmable via ZLS0R IR remote (sold separately)
ZPC	Photosensor	On/Off	Wired
ZENLO	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Upgradable to Connected (ZENLC) or IoT (ZENLI)	Wireless Bluetooth Low Energy Mesh, Programmable via Enlighted Room Controller WS-2-00-IL (sold separately)
ZENLC	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Scheduling*, Energy Monitoring*, BMS Integration*, Upgradable to IoT (ZENLI), LLLC (Enlighted IoT)*	Wireless Bluetooth Low Energy Mesh, Programmable via Enlighted IoT Software
ZENLI	MoMotion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Scheduling*, Energy Monitoring*, BMS Integration*, LLLC (Enlighted IoT)*, Space - Building Utilization*, Where - Real Time Location Services*	Wireless Bluetooth Low Energy Mesh, Programmable via Enlighted IoT Software

LLLC = Luminaire Level Lighting Control

\* Additional equipment required. Contact LumenFocus representative for details

## Programmable Dimming Sensors:

### ZOFDx Sensor Option

- Leviton Smart IP66 passive infrared (PIR) sensors
- Features mesh grouping (16 devices per group), occupancy sensing, daylight harvesting, scheduling (for ZOSFDU only), single-level switching
- Comes pre-installed on the end cap
- Rated for cold locations
- Configurable through the Leviton Smart Sensor App using a smartphone or other Bluetooth-enabled iOS or Android device



The ZOFD option includes four sensor lenses that can easily be installed or swapped out in the field. From left: the high bay lens (20'-40' mounting), the high bay lens with aisleway mask, the low bay lens (8'-20' mounting), and the low bay lens with aisleway mask.



FSP with L7 lens

FSIR-100

### Z221B, Z321B Sensor Options

- The Wattstopper FSP sensor provides multi-level control based on motion and/or daylight contribution
- Comes pre-installed on the end cap
- Rated for cold locations
- Parameters for Bluetooth-enabled Z321B adjustable via phone app - iOS or Android
- Parameters for Z221B adjustable via wireless configuration tool (FSIR-100 - sold separately)
- Three lenses available, tailored for the ideal detection area and mounting height:
  - **L2:** 360° lens, maximum coverage 48'; diameter from 8' height
  - **L3:** 360° lens, maximum coverage 40'; diameter from 20' height
  - **L7:** 360° lens, maximum coverage 100'; diameter from 40' height

### ZOSMHB Sensor Option

- Provides occupancy detection and multi-level control with adjustable time-outs
- Tri-level dimming control
- Comes pre-installed on the end cap
- Suitable for cold storage locations
- Built-in photocell reads brightness values. Sensor does not switch luminaire on if there is sufficient ambient light
- Control parameters selected manually via DIP switches, or using the optional ZLS0R remote (sold separately) - adjustable parameters include sensitivity, hold time, lux level, stand-by light level, stand-by hold time
- Maximum mounting height of 50 feet, with adjustable coverage radius up to 30 feet



ZLS0R



## Enlighted: All-in-one sensors, upgradeable systems

Enlighted's IP65-rated Ruggedized Sensor is an all-in-one unit: task tuning, high-end trimming, daylight harvesting, and occupancy detection. Max installation height is 50 feet.

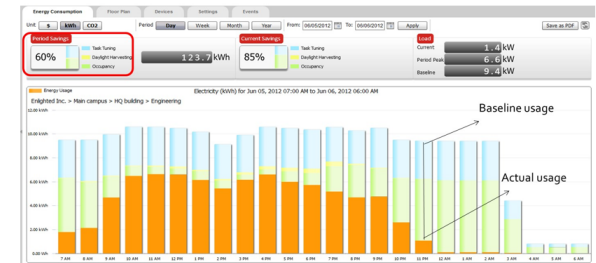
Enlighted sensors come standard with the Enlighted One system (the "ZENLO" option). Enlighted Connected ("ZENLC") offers even more options. The Enlighted IoT ("ZENLI") option allows the full implementation of Enlighted's services. Each system can be fully upgraded to the next tier in the future. So if you start with Enlighted One but want to add energy reporting or building management systems integration in the future, you can.



## Real-time data analytics

Enlighted's control units compile data in real-time, which can be viewed via the Energy Manager. The Energy Manager is part of the Enlighted Connected and Enlighted IoT configurations.

- Real-time measurements and verification of energy savings
- Space analytics - data can be compiled into motion trails and heat maps
- Analyze traffic density and congestion in a space



Enlighted Capabilities*	Enlighted One (ZENLO)	Enlighted Connected (ZENLC)	Enlighted IoT (ZENLI)
Motion and Switch Groups	✓	✓	✓
Daylight Harvesting	✓	✓	✓
Schedule Lighting		✓	✓
Energy Reporting & Optimization		✓	✓
Environment Data & Lighting Controls API		✓	✓
Building Management System Integration		✓	✓
Where & Space Applications			✓
Location & Occupancy APIs & Beacons			✓
Future App & API Ready			✓

**Note:** Additional equipment required for ZENLC and ZENLI

Learn more about our available advanced controls options here:

[www.lumenfocus.com/controls-overview](http://www.lumenfocus.com/controls-overview)

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## Hanging Options Available:



### Pendant Mount (PM)

The PBL V2 HD can be pendant mounted.

## Surface Mount

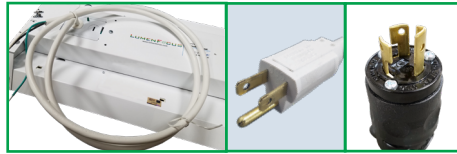
The PBL V2 HD is designed to be easily mounted to any sturdy surface. Simply remove the hex head screws holding the driver cover (top picture, in green) to access the bottom of the housing below. The housing can be mounted to the surface from the four holes in each corner of the channel (bottom picture, circled).



## Cable Mount (QC, QC20)

The QC hanging kit from ALP comes in 10' or 20'. Cables are pre-looped for easy installation and designed for easy fixture height adjustment. QCs come boxed with each fixture. A mechanically fastened safety cable (SC) is also optional.

## Other Options:



**Cords** are available in single circuit or dual circuit, 6' or 10'. Standard plug is optional, as are other NEMA configurations if specified.

**Conformal coating** Grants LED boards added protection from moisture and corrosion in more hazardous environments.



**Finish** In addition to the standard white finish, the PBL V2 HD is also available in matte black (BK) and metallic silver (SL).



## Wireguard and shielding

Add an optional wireguard for added stability and protection - ideal for gymnasiums or other areas where the luminaire may be struck. Optional frosted acrylic diffuser lenses minimize glare and improve aesthetics.

