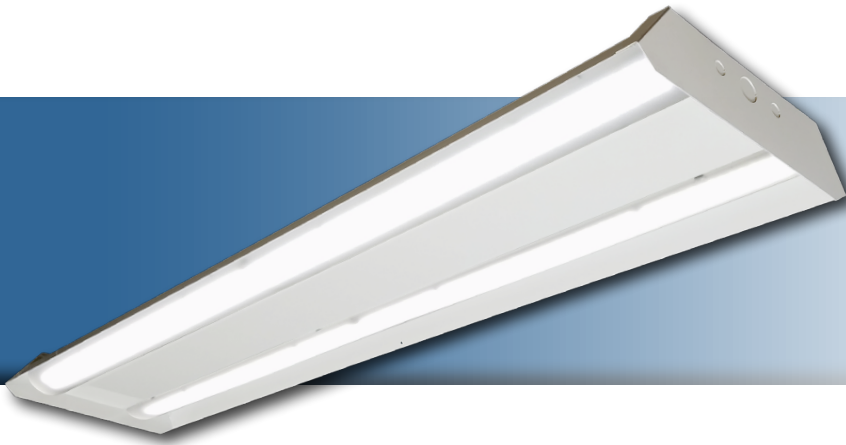


Project: _____
 Location: _____
 Cat. #: _____
 Type: _____
 Quantity: _____



LED

PBL V2 4 | LED 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's unibody design is surface mountable with easy access to the driver compartment from below

Applications:

Suitable for most commercial, industrial and institutional applications

- Retail
- Warehouse
- Manufacturing
- **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 and LED tray is precision brake formed from 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: 129,000 hrs (calculated)
- L80: 80,000 hrs (calculated)
- L90: 38,000 hrs (reported)
- 82% lumen maintenance @ 72,000 hrs
(based on LM80 and insitu laboratory testing)

Warranty:

- 5 year limited system warranty - see www.LumenFocus.com for complete warranty terms and conditions



Ordering Guide:

example: PBL V2 4 HI UV 850 QC20 C6 OSD

Series	Length	Output	Voltage	Shielding	CRI/CCT	Hanging	Controls	Options	Finish
PBL V2	4								
PBL V2 PBL Version 2	4 4'	SL Super Low VL Very Low LW Low MD Medium HI High VH Very High	UV 120-277 34 347V 48 480V	Blank No Lenses FR Frosted Acrylic Diffusers	835 80 CRI/3500K 840 80 CRI/4000K 850 80 CRI/5000K	Blank None QC 10' Quick Hang Cable Kit QC20 20' Quick Hang Cable Kit SM Surface Mount	Blank No Controls ZOS Occupancy Sensor (On/Off) ZOSD Occupancy Sensor (On/Off/Dim) ZOFD1 Leviton Bluetooth-enabled Programmable Dimming/ Occupancy/Daylight Harvesting Sensor with Grouping (120-277V) ⁽¹⁾ ZOFDU Leviton Bluetooth-enabled Programmable Dimming/ Occupancy/Daylight Harvesting Sensor with Grouping, Scheduling (120-480V) ⁽¹⁾ Z221BL_ Wattstopper Programmable Photo/Motion Multi-Voltage Sensor (high/low/off) ⁽²⁾ Z321BL_ Wattstopper Bluetooth-enabled Programmable Photo/Motion Multi-Voltage Sensor (high/low/off) ⁽²⁾ ZOSMHB Leviton High Bay Microwave 0-10V Multi-Level Occupancy Sensor with Photocell ⁽³⁾ ZPC Photocell ZFMS Douglas FMS Sensor with Dimming/Occupancy/Daylight Harvesting with Newtork Capabilities ⁽⁴⁾ ZENLO Enlighted Ruggedized Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted One System ⁽⁵⁾ ZENLC Enlighted Ruggedized Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted Connected System ⁽⁵⁾ ZENLI Enlighted Ruggedized Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted IoT System ⁽⁵⁾	Blank No Options C6 6' Single Circuit Cord C65W 6' Single Circuit Cord with Low Voltage Connections C10 10' Single Circuit Cord C105W 10' Single Circuit Cord with Low Voltage Connections D6 6' Dual Circuit Cord D10 10' Dual Circuit Cord P(NEMA) Plug (Specify NEMA configuration) SC Safety Cable F Fuse EM2 Emergency Pack ⁽⁶⁾ 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	Blank White BK Matte Black SL Metallic Silver

Notes

- ⁽¹⁾ For 8' to 40' mounting heights. See Page 5 for more details.
- ⁽²⁾ " _ " = lens type. See Page 5 for lens descriptions.
- ⁽³⁾ Max ceiling height is 50 feet. See page 5 for more details.
- ⁽⁴⁾ Max ceiling height for Douglas FMS sensor: 40 feet. See Page 6 for more details on advanced controls.
- ⁽⁵⁾ Max ceiling height for Enlighted Ruggedized sensor 50 feet. See Page 6 for more details on advanced controls.
- ⁽⁶⁾ EM2 - Up to 16W. 120-277V / 0°C-50°C ambient.

Accessories (order separately)

- WG** Wire Guard
- WGE** Extended Wire Guard for use with end-mounted sensor

Controls Accessories (order separately)

- For Douglas Controls**
 - BT-DMSW-U-A Bluetooth 1 Zone Dimmer
 - BT-4BTSW-U-A Bluetooth 4-Button Wall Station
 - BT-8BTSW-U-A Bluetooth 8-Button Wall Station

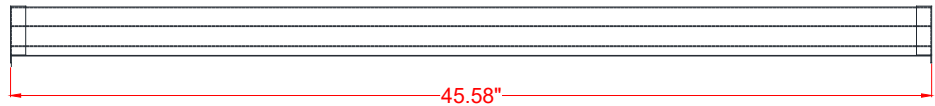
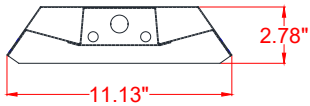
- For Enlighted Controls**
 - WS-2-00 Enlighted Remote Control Wall Switch (for Enlighted Connected & IoT)
 - WS-2-00-IL Enlighted Remote Control Wall Switch (for Enlighted One)

- 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 4 SL UV 835	11704.0	69.5	168.5	PBL V2 4 SL UV 840	12028.7	69.5	173.2	PBL V2 4 SL UV 850	12028.7	69.5	173.2
PBL V2 4 VL UV 835	13762.6	83.1	165.7	PBL V2 4 VL UV 840	14144.5	83.1	170.3	PBL V2 4 VL UV 850	14144.5	83.1	170.3
PBL V2 4 LW UV 835	17009.0	104.1	163.3	PBL V2 4 LW UV 840	17481.0	104.1	167.9	PBL V2 4 LW UV 850	17481.0	104.1	167.9
PBL V2 4 MD UV 835	19273.2	121.2	159.0	PBL V2 4 MD UV 840	19808.1	121.2	163.4	PBL V2 4 MD UV 850	19808.1	121.2	163.4
PBL V2 4 HI UV 835	23197.7	149.1	155.6	PBL V2 4 HI UV 840	23841.4	149.1	159.9	PBL V2 4 HI UV 850	23841.4	149.1	159.9
PBL V2 4 VH UV 835	27031.0	177.1	152.6	PBL V2 4 VH UV 840	27781.1	177.1	156.8	PBL V2 4 VH UV 850	27781.1	177.1	156.8
PBL V2 4 SL UV FR 835	10874.2	69.5	156.5	PBL V2 4 SL UV FR 840	11175.9	69.5	160.9	PBL V2 4 SL UV FR 850	11175.9	69.5	160.9
PBL V2 4 VL UV FR 835	12786.8	83.1	154.0	PBL V2 4 VL UV FR 840	13141.7	83.1	158.2	PBL V2 4 VL UV FR 850	13141.7	83.1	158.2
PBL V2 4 LW UV FR 835	15803.1	104.1	151.7	PBL V2 4 LW UV FR 840	16241.6	104.1	156.0	PBL V2 4 LW UV FR 850	16241.6	104.1	156.0
PBL V2 4 MD UV FR 835	17906.8	121.2	147.7	PBL V2 4 MD UV FR 840	18403.7	121.2	151.8	PBL V2 4 MD UV FR 850	18403.7	121.2	151.8
PBL V2 4 HI UV FR 835	21553.0	149.1	145.3	PBL V2 4 HI UV FR 840	22151.1	149.1	149.3	PBL V2 4 HI UV FR 850	22151.1	149.1	149.3
PBL V2 4 VH UV FR 835	25114.6	177.1	141.8	PBL V2 4 VH UV FR 840	25811.5	177.1	145.7	PBL V2 4 VH UV FR 850	25811.5	177.1	145.7

Lumen Adjustment Factors: WG: 0.947

LUMENFOCUS
Re-boardABILITY

The PBL V2 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.

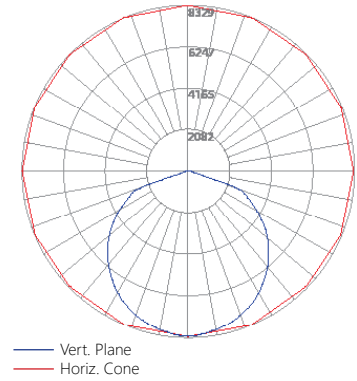


Photometric Data:

PBL V2 4 HI UV 850

Test No.: LLIA001687-017
 Luminaire Lumens: 23,842 lm
 Luminaire Watts: 149.1W
 Efficacy: 159.9 LPW
 Spacing Criterion (0-180): 1.30
 Spacing Criterion (90-270): 1.26

Luminance Data (cd/sq.m)			
Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	25741	24720	24855
55	25339	24156	24694
65	24027	23311	24559
75	20200	23561	3277
85	10228	4884	5486



— Vert. Plane
 — Horiz. Cone

Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20	3016.8	12.7
0-30	6437.4	27.0
0-40	10617.6	44.5
0-60	19078.3	80.0
0-80	23613.9	99.0
0-90	23838.5	100.0
90-120	3.4	0.0
90-130	3.4	0.0
90-150	3.4	0.0
90-180	3.4	0.0
0-180	23841.8	100.0

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

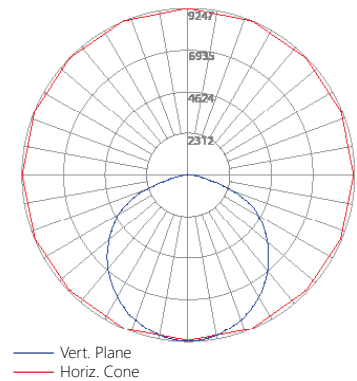
RC	80				70				50				30				
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106			
1	109	105	100	97	106	102	99	95	98	95	92	94	92	89			
2	99	91	84	79	97	89	83	78	86	81	76	82	78	74			
3	90	80	72	65	88	78	71	65	75	69	64	73	67	63			
4	83	71	62	55	80	69	61	55	67	60	54	65	58	53			
5	76	63	54	47	74	62	53	47	60	52	47	58	51	46			
6	70	57	48	41	68	56	47	41	54	46	41	52	45	40			
7	65	51	42	36	63	50	42	36	49	41	36	47	41	36			
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32			
9	56	43	35	29	55	42	34	29	41	34	29	40	33	29			
10	53	39	32	26	51	39	31	26	38	31	26	37	31	26			

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

PBL V2 4 VH UV FR 850

Test No.: LLIA001687-020
 Luminaire Lumens: 25,812 lm
 Luminaire Watts: 177.1W
 Efficacy: 145.7 LPW
 Spacing Criterion (0-180): 1.24
 Spacing Criterion (90-270): 1.28

Luminance Data (cd/sq.m)			
Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	25030	26557	27726
55	22091	25667	27517
65	18334	24786	27063
75	14134	22322	15028
85	9449	15006	11431



— Vert. Plane
 — Horiz. Cone

Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20	3364.5	13.0
0-30	7135.2	27.6
0-40	11670.5	45.2
0-60	20532.9	79.5
0-80	25382.7	98.3
0-90	25807.3	100.0
90-120	4.4	0.0
90-130	4.4	0.0
90-150	4.4	0.0
90-180	4.4	0.0
0-180	25811.7	100.0

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

RC	80				70				50				30				
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106			
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89			
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74			
3	90	80	72	65	88	78	71	65	75	69	63	72	67	62			
4	83	71	62	55	80	69	61	55	67	60	54	64	58	53			
5	76	63	54	47	74	62	54	47	60	52	47	58	51	46			
6	70	57	48	41	68	56	47	41	54	46	41	52	46	40			
7	65	51	43	37	63	51	42	36	49	42	36	48	41	36			
8	61	47	38	33	59	46	38	33	45	38	32	44	37	32			
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29			
10	53	40	32	27	52	39	32	27	38	31	26	37	31	26			

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
ZFMS	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, LLLC (Douglas Lighting Controls-Dialog)*	Wireless Bluetooth Mesh, Programmable via iOS App or Douglas Dialog Software
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



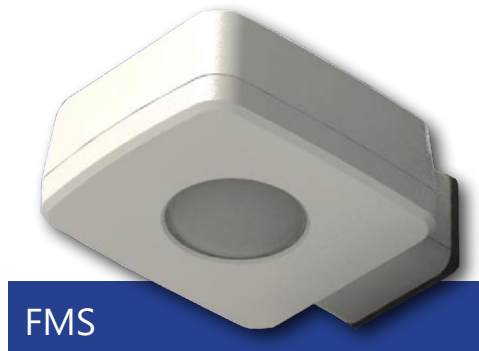
ZLS0R



Universal Douglas: Cloud-based controls

The PBL V2 can be equipped with the Douglas FMS sensor, which is designed for high bay applications.

With a max sensor height up to 40 feet, the FMS is ideal for applications like warehouses and manufacturing facilities. It can be installed for on/off control or bi-level light functionality. The daylight sensor provides additional savings by dimming the lights to work with the amount of natural available daylight.



- Configuration from the floor via smartphone app
- Bluetooth mesh network is created between devices for control over a group of Douglas sensors
- Occupancy and daylight sensing
- IP65-rated
- 0-10V dimming
- 150 feet clear line of site, 50 feet through standard walls (distances may vary based on location and environment)

CheckLight® Energy Management System

Douglas controls can be integrated with the CheckLight® Energy Management system. This system can help you uncover energy conversion opportunities, create conservation strategies, analyze lighting load inefficiencies, and make configuration changes from anywhere with Douglas' user-friendly interface. You can get measurements, reports, and control your system from a web-based application.

CheckLight® has the capability to look at different facilities within a portfolio and use data benchmarks to compare building performances.

- Find energy conservation opportunities
- Create energy saving strategies
- Analyze load inefficiencies
- Optimize energy management

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/vacancy 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.



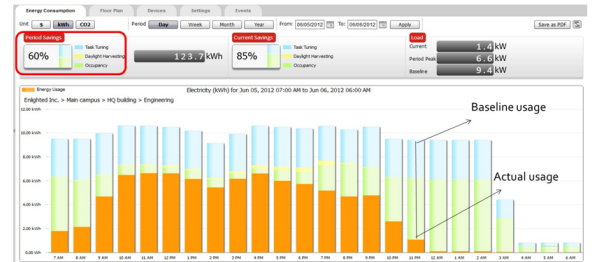
Enlighted Capabilities*	Enlighted One (ZENLO)	Enlighted Connected (ZENLC)	Enlighted IoT (ZENLI)
Motion and Switch Groups	✓	✓	✓
Daylight Harvesting	✓	✓	✓
Schedule Lighting		✓	✓
Energy Reporting & Optimization		✓	✓
Environment Data & Lighting Controls API		✓	✓
Building Management System Integration		✓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

Note: Additional equipment required for ZENLC and ZENLI

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



Learn more about our available advanced controls options here:

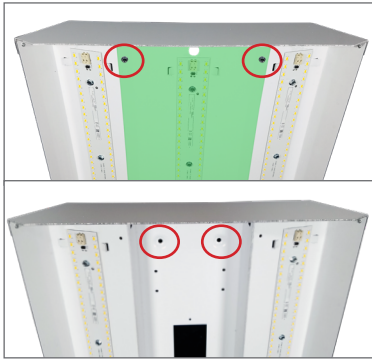
www.lumenfocus.com/controls-overview

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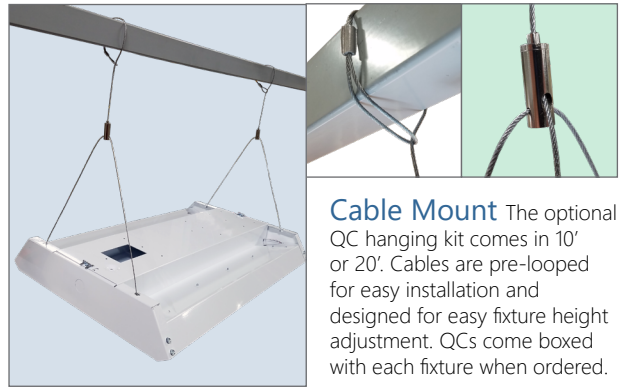


Mounting:



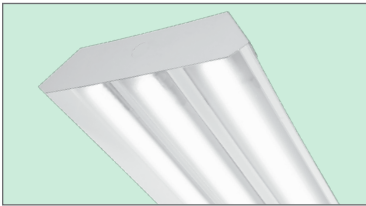
Surface Mount

The PBL V2 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 The optional QC hanging kit 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 when ordered.

Other Options:



Shielding Frosted acrylic diffuser lenses minimize glare and improve aesthetics.



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 is also available in matte black (BK) and metallic silver (SL).

