# LumenFécus



Project:	
Location:	
Cat. #:	
Туре:	
Quantity:	

# LED

# PBL G2 HD-4 | Premium LED Heavy Duty High Bay

#### Features:

- High performance LED technology
- 0-10V dimming drivers standard on all models - dimmable to <10% 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 G2's unibody design is surface mountable with easy access to the driver compartment from below

• Buy American Act compliant (All base luminaires are BAA compliant. Addition of options may change eligibility. Contact factory for details)

# **Applications:**

Suitable for most commercial, industrial and institutional applications

- Gymnasiums
- Recreation Centers
- Manufacturing
- Warehouse

• Cold/Frozen Storage (cold temperature rules apply. Refer to warranty document at <u>www.lumenfocus.com/support</u> for details)

# Ambient Operating Temp.:

• -30°C to 50°C

## 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: 171,000 hrs (calculated)
- L80: 105,000 hrs (calculated)
- L90: 48,000 hrs (reported)

• 86% lumen maintenance @ 72,000 hrs (based on LM-80, TM-21 and in-situ laboratory testing)

## Warranty:

- 5 year limited system warranty -see <u>www.LumenFocus.com</u> for complete warranty terms and conditions
- 10 year warranty option available on specific models (Not available on all models. Certain conditions apply. Consult factory or sales representative for details)









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#### Ordering Guide:

Series Length Output Performance Voltage Shielding CRI/CCT Gauge Hanging Controls Options Finish PBL G2 4 HDW UV Blank PBL G2 4 MD Blank Blank 835 HDW Blank Blank Blank Gen 2 Medium Standard 120-277 No Lenses 80 CRI/3500K Heavy Duty None No Controls No Options White Δ Premium 0.063″ High Bay FR HI HE 34 840 QC ZOS EXT10 BK Aluminum High Efficiency Frosted Acrylic 80 CRI/4000K Wide-Body 10' Quick Hang Occupancy Sensor 10-Year Extended Matte Black High 347V Diffusers Housing Cable Kit (On/Off) Warranty<sup>(5)</sup> 48 850 VH SL Very High 480V 80 CRI/5000K QC20 ZOSD C6 Metallic Silver 20' Quick Hang Occupancy Sensor 6' Single Circuit Cord Cable Kit (On/Off/Dim) C65W PMS ZOFD1 6' Single Circuit Cord Pendant Mount Leviton Bluetooth-enabled with Low Voltage with Stabilizer Programmable Dimming/ Connections Occupancy/Daylight C10 ST(x) Harvesting Sensor with 3/4" Stem Grouping (120-277V)<sup>(1)</sup> 10' Sinale Circuit Cord (Specify Length) Notes ZOFDU C105W Leviton Bluetooth-enabled 10' Single Circuit Cord  $^{\scriptscriptstyle (1)}$  For 8' to 40' mounting heights. See Page 5 for more details. with Low Voltage Programmable Dimming/ <sup>(2)</sup> "\_" = lens type. See Page 5 for lens descriptions. Occupancy/Daylight Connections <sup>(3)</sup> 120-277V Ónly. Max ceiling height is 50 feet. See page 5 for Harvesting Sensor with D6 more details. Grouping, Scheduling (120-480V)<sup>(1</sup> <sup>(4)</sup> Max ceiling height for Enlighted Ruggedized sensor 50 feet. 6' Dual Circuit Cord See Page 6 for more details on advanced controls. Z221BL\_ D10 <sup>(5)</sup> Not available on all models. Certain conditions apply. Wattstopper Programmable 10' Dual Circuit Cord Consult factory or sales representative for details. <sup>(6)</sup> 120-277V / 0°C-55°C ambient. To estimate lumen output in Photo/Motion Multi-Voltage P(NEMA) Sensor (high/low/off)<sup>(2)</sup> emergency mode, multiply EM wattage by the Lumens per Watt Plug (Specify NEMA Z321BL\_ of the luminaire it is installed in. configuration) ex. PBL G2 4 HI UV 850 HDW EM14 → 170.3 LPW x 14W = 2,384 lm Wattstopper Bluetooth-SC enabled Programmable Dimming/Occupancy/ Safety Cable Daylight Harvesting Multi-Voltage Sensor <sup>(2)</sup> F

#### Accessories (order separately)

Wire Guard WG(PBL4W) WGE(PBL4W) Extended Wire Guard for use with end-mounted sensor

Enlighted Remote Control Wall Switch

(for Enlighted Connected & IoT)



#### Controls Accessories (order separately)

#### For Enlighted Controls WS-2-00

For Z221BL\_Sensor FSIR-100 Wireless Configuration Tool

For ZOSMHB Sensor Wireless Configuration Tool ZLSOR

example: PBL G2 4 HI UV 850 HDW PMS SL

Fuse ZOSMHB EM6 Leviton High Bay Microwave 0-10V Multi-Level Occupancy 6.5W Emergency Pack<sup>(6)</sup> Sensor with Photocell (3) ZPC EM10 Photocell 10W Emergency Pack<sup>(6)</sup> ZENLC Enlighted Ruggedized Sensor EM14 with Dimming/Occupancy/ Daylight Harvesting and 14W Emergency Pack<sup>(6)</sup> Enlighted Connected System<sup>(4)</sup> EM20 20W Emergency Pack<sup>(6)</sup> ZENLI Enlighted Ruggedized Sensor with Dimming/Occupancy/ SDT(480V) Daylight Harvesting and 480V to 277V Step Enlighted IoT System<sup>(4)</sup> Down Transformer CC Conformal Coating LVL 0-10V Dimming Leads for Easy Field Access

> BAA Buy American Act Compliant

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#### Performance Chart:

Catalog #	Lumens	Watts	LPW	Catalog #	Lumens	Watts	LPW	Catalog #	Lumens	Watts	LPW
PBL G2 4 MD HE UV 835	19777	115	172.2	PBL G2 4 MD HE UV 840	20486	115	178.4	PBL G2 4 MD HE UV 850	20486	115	178.4
PBL G2 4 HI HE UV 835	23965	140	170.8	PBL G2 4 HI HE UV 840	24824	140	176.9	PBL G2 4 HI HE UV 850	24824	140	176.9
PBL G2 4 VH HE UV 835	27123	161	168.7	PBL G2 4 VH HE UV 840	28095	161	174.7	PBL G2 4 VH HE UV 850	28095	161	174.7
PBL G2 4 MD UV 835	19461	117	166.0	PBL G2 4 MD UV 840	20159	117	171.9	PBL G2 4 MD UV 850	20159	117	171.9
PBL G2 4 HI UV 835	23413	142	164.4	PBL G2 4 HI UV 840	24252	142	170.3	PBL G2 4 HI UV 850	24252	142	170.3
PBL G2 4 VH UV 835	27049	167	162.1	PBL G2 4 VH UV 840	28018	167	167.9	PBL G2 4 VH UV 850	28018	167	167.9
PBL G2 4 MD HE UV FR 835	18593	115	161.9	PBL G2 4 MD HE UV FR 840	19259	115	167.7	PBL G2 4 MD HE UV FR 850	19259	115	167.7
PBL G2 4 HI HE UV FR 835	22529	140	160.5	PBL G2 4 HI HE UV FR 840	23337	140	166.3	PBL G2 4 HI HE UV FR 850	23337	140	166.3
PBL G2 4 VH HE UV FR 835	25498	161	158.6	PBL G2 4 VH HE UV FR 840	26412	161	164.3	PBL G2 4 VH HE UV FR 850	26412	161	164.3
PBL G2 4 MD UV FR 835	18295	117	156.0	PBL G2 4 MD UV FR 840	18951	117	161.6	PBL G2 4 MD UV FR 850	18951	117	161.6
PBL G2 4 HI UV FR 835	22010	142	154.6	PBL G2 4 HI UV FR 840	22799	142	160.1	PBL G2 4 HI UV FR 850	22799	142	160.1
PBL G2 4 VH UV FR 835	25485	167	152.9	PBL G2 4 VH UV FR 840	26399	167	158.4	PBL G2 4 VH UV FR 850	26399	167	158.4

Lumen Adjustment Factors: WG: 0.95

## Schematic:





# Re-board ABILITY

The PBL G2 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.





<u>Click here for a video demonstration of the</u> <u>re-boarding process on a PBL.</u> Note: Exact time varies depending on the model.



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#### Photometric Data:

PBL (	G2 4 VI	4 UV 8	335
Test Ne		10 011	

Test No.: LLIA001249-011	Angle In	Average	Average	Average
	Degrees	0-Deg	45-Deg	90-Deg
Luminaire Lumens: 27,049 lm	45	28870	28262	28354
Luminaire Watts: 166.9W	55	28145	27644	28070
Efficacy: 162.1 LPW	65	26651	26549	27749
Spacing Criterion (0-180): 1.30	75	22345	15223	16059
Spacing Criterion (90-270): 1.28	85	10539	5606	7239

Luminance Data (cd/sq.m)

Luminance Data (cd/sq.m)

Average

0-Deg

24916

21869

17892

13502

8729

Average

45-Deg

26347 25401

24419

21329 15719

Average

90-Deg

27366 27142

26461

16848

12171

Angle In

Degrees

45

55

#### 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
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106
1	109	105	100	97	106	102	98	95	98	95	92	94	92	89
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62
4	83	71	62	55	80	69	61	55	67	60	54	64	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



Zonal Lumen	Summary	
Zone	Lumens	%Fixt
0-20	3422.5	12.7
0-30	7301.8	27.0
0-40	12043.5	44.5
0-60	21642.9	80.0
0-80	26793.2	99.1
0-90	27044.8	100.0
90-120	3.8	0.0
90-130	3.8	0.0
90-150	3.8	0.0
90-180	3.8	0.0
0-180	27048.6	100.0

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

#### PBL G2 4 VH UV FR 835

Test No.: LLIA001249-010A Luminaire Lumens: 25,485 lm Luminaire Watts: 166.7W Efficacy: 152.9 LPW Spacing Criterion (0-180): 1.26 Spacing Criterion (90-270): 1.28

#### 65 75 85 **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
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	65	58	53
5	76	63	54	48	74	62	54	47	60	52	47	58	51	46
6	70	57	48	41	68	56	47	41	54	47	41	52	46	41
7	65	52	43	37	63	51	42	36	49	42	36	48	41	36
8	61	47	39	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



Zonal Lumen	Summary	
Zone	Lumens	%Fixt
0-20	3325.8	13.0
0-30	7059.4	27.7
0-40	11549.9	45.3
0-60	20303.7	79.7
0-80	25052.6	98.3
0-90	25481.7	100.0
90-120	3.7	0.0
90-130	3.7	0.0
90-150	3.7	0.0
90-180	3.7	0.0
0-180	25485.4	100.0

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



## Controls Summary:

Control Code	Туре	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 ZLSOR IR remote (sold separately)
ZPC	Photosensor	On/Off	Wired
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.



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 suffcient ambient light



 Control parameters selected manually via DIP switches, or using the optional ZLSOR 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





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

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

Enlighted Connected ("ZENLC") offers many features, including motion and switch groups, daylight harvesting, energy reporting, and more. The Enlighted IoT ("ZENLI") option allows the full implementation of Enlighted's services. Enlighted Connected can be fully upgraded to the next tier in the future. So if you start with ZENLC but want to add the functionality of the ZENLI option, you can.

Enlighted Capabilities*	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 & Beaconing		✓
Future App & API Ready		✓

#### 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



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# Mounting:



#### Surface Mount

The PBL G2 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.



Pendant Mount The PBL G2 HD can be pendant mounted with optional 3/4" hub with stabilizer. Stem also available as an option.

# Other Options:



Shielding Frosted acrylic diffuser lenses minimize glare and improve aesthetics.



Conformal coating

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

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

#### Finish

In addition to the standard white finish, the PBL G2 is also available in matte black (BK) and metallic silver (SL).







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