Project: _____

Location: _____

Cat. #: _____

Type: _____

Quantity: _____

LED

PBL U 4 | LED Lensed High Bay

Features:
• High performance LED technology
• 0-10V dimming drivers standard on all models
• Field replaceable LED boards and drivers through Re-boardABILITY (more info on Page 3)
• Multiple sheilding options 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

Applications:
Suitable for most commercial, industrial and institutional applications
• Retail
• Warehouse
• Manufacturing
• Gymnasiums

Ambient Operating Temp.:
• -30°C to 40°C

Predicted L70 Lifetime:
• Up to 189,000 hrs (calculated)
• For BAA compliant configurations - up to 189,000 hrs (calculated)
(L70 information for specific configurations available upon request)

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/

Warranty:
• 5 year limited system warranty - see www.LumenFocus.com 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.)

MADE IN USA
USING DOMESTIC AND FOREIGN COMPONENTS

10 YEAR EXTENDED WARRANTY
AVAILABLE ON CERTAIN MODELS

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PBL U_4_LED_v2.8
Page 1 of 5

Ordering Guide:

example: PBL U 4 MD UV A23F 840-QC20 C6

Series	Length	Output	Voltage	Shielding	CRI/CCT	Hanging	Controls	Options	Finish
PBL U	4								
PBL U	4 4'	**VL** Very Low **LW** Low **MD** Medium **HI** High	**UV** 120-277 **34** 347V **48** 480V	**A23** High Efficiency 23 Pattern Acrylic **A23F** High Efficiency 23 Pattern Acrylic, Frosted **L118** 0.118" Impact Resistant Lexan	**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	**Blank** No Controls **ZOS** Occupancy Sensor (On/Off) **ZOSD** Occupancy Sensor (On/Off/Dim) **Z221BL_** Wattstopper Programmable Photo/Motion Multi-Voltage Sensor (high/low/off)[1] **Z321BL_** Wattstopper Bluetooth-enabled Programmable Photo/Motion Multi-Voltage Sensor (high/low/off)[1] **ZPC** Photocell **ZFMS** Douglas FMS Sensor with Dimming/Occupancy/Daylight Harvesting with Network Capabilities[2] **ZENLO** Enlighted Ruggedized Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted One System[3] **ZENLC** Enlighted Ruggedized Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted Connected System[3] **ZENLI** Enlighted Ruggedized Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted IoT System[3]	**Blank** No Options **EXT10** 10-Year Extended Warranty[4] **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) **WG** Wire Guard **WGE** Extended Wire Guard for End-Mounted Sensor **SC** Safety Cable **F** Fuse **EM2** Emergency Pack[5] **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] "_" = lens type. See Page 5 for lens descriptions.
[2] Max ceiling height for Douglas FMS sensor: 40 feet.
See Page 4 for more details on advanced controls.
[3] Max ceiling height for Enlighted Ruggedized sensor 50 feet.
See Page 4 for more details on advanced controls.
[4] Not available on all models. Certain conditions apply.
Consult factory or sales representative for details.
[5] EM2 - Up to 16W. 120-277V / 0°C-50°C ambient.

Controls Accessories *(order separately)*

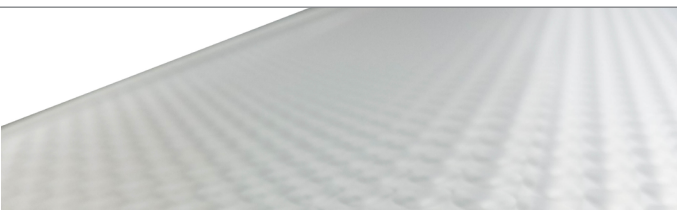**For Douglas Controls**
BT-DMSW-U-A   Bluetooth 1 Zone Dimmer
BT-4BTSW-U-A   Bluetooth 4-Button Wall Station
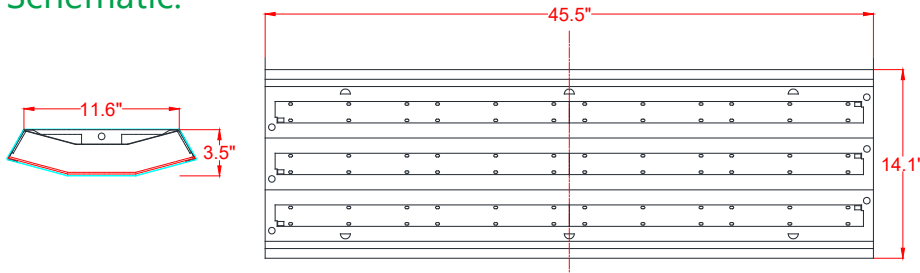BT-8BTSW-U-A   Bluetooth 8-Button Wall Station

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)

Schematic:

45.5"

11.6"

3.5"

14.1"

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PBL U_4_LED_v2.8
Page 2 of 5

Performance Chart:

Catalog #	Lumens	Watts	LPW
PBL U 4 VL UV A23F 835	11693	91	128.9
PBL U 4 LW UV A23F 835	15132	123	122.9
PBL U 4 MD UV A23F 835	19755	160	123.5
PBL U 4 HI UV A23F 835	21738	174	124.9

Catalog #	Lumens	Watts	LPW
PBL U 4 VL UV A23F 840	12080	91	133.2
PBL U 4 LW UV A23F 840	15633	123	127.0
PBL U 4 MD UV A23F 840	20408	160	127.5
PBL U 4 HI UV A23F 840	22456	174	129.1

Catalog #	Lumens	Watts	LPW
PBL U 4 VL UV A23F 850	12442	91	137.2
PBL U 4 LW UV A23F 850	16101	123	130.8
PBL U 4 MD UV A23F 850	21020	160	131.4
PBL U 4 HI UV A23F 850	23130	174	132.9

Lumen Adjustment Factors: WG: 0.95

Photometric Data:

PBL U 4 LW UV A23F 840

Test No.: LLIA000842-003
Luminaire Lumens: 15,132 lm
Luminaire Watts: 123.1W
Efficacy: 122.9 LPW
Spacing Criterion (0-180): 1.22
Spacing Criterion (90-270): 1.22

Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	12142	10757	10448
55	10265	8731	8401
65	8251	6711	6604
75	6086	4883	5236
85	3264	3353	4571
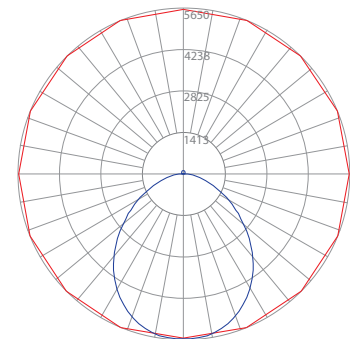
Coefficients Of Utilization - Zonal Cavity Method
Effective Floor Cavity Reflectance 0.20

RC		80				70				50			30		
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10
0	118	118	118	118	114	114	114		108	108	108	102	102	102
1	108	103	99	95	104	100	96	93	95	92	89	90	87	85
2	98	90	84	78	95	88	82	77	83	78	74	79	75	71
3	90	80	72	65	87	78	70	64	74	68	63	70	65	61
4	82	71	62	56	80	69	61	55	66	59	54	63	57	52
5	76	64	55	48	74	62	54	48	59	52	47	57	51	46
6	70	57	49	42	68	56	48	42	54	47	41	52	45	40
7	65	52	44	38	63	51	43	37	49	42	37	47	41	36
8	61	48	39	34	59	47	39	33	45	38	33	43	37	32
9	57	44	36	30	55	43	35	30	41	35	30	40	34	29
10	53	40	33	28	52	40	32	27	38	32	27	37	31	27

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

— Vert. Plane
— Horiz. Cone

Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20	2046.0	13.5
0-30	4300.4	28.4
0-40	6921.0	45.7
0-60	11542.7	76.3
0-80	13878.6	91.7
0-90	14280.4	94.4
90-120	456.5	3.0
90-130	568.3	3.8
90-150	742.9	4.9
90-180	851.6	5.6
0-180	15132.0	100.0

Re-boardABILITY

The PBL U 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.

PBL Demonstration

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

Douglas Lighting Controls, Inc.: Cloud-based controls

The PBL U 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.

FMS
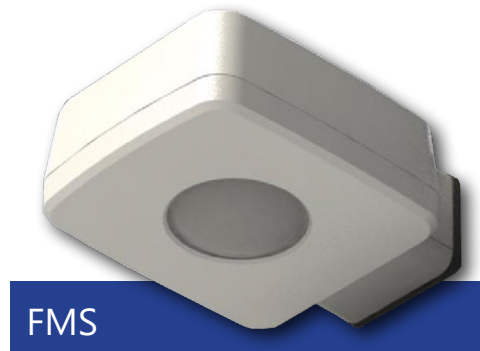
- Configuration from the floor via smartphone app
- Bluetooth mesh network is created between devices for control over a group of Douglas sensors
- Occupancy and daylight sensing
- IP65-rated
- 0-10V dimming
- 150 feet clear line of site, 50 feet through standard walls (distances may vary based on location 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 & Beaconing			✓
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
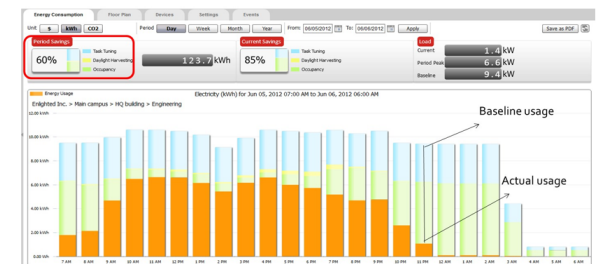
Learn more about our available advanced controls options here:
www.lumenfocus.com/controls-overview

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PBL U_4_LED_v2.8
Page 4 of 5

Other controls available:

FSP with L7 lens

FSIR-100

Above: Phone app interface for Z321B

Dimming Sensors (Z221B/Z321B)

- 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:** 360º lens, maximum coverage 48', diameter from 8' height
  - **L3:** 360º lens, maximum coverage 40', diameter from 20' height
  - **L7:** 360º lens, maximum coverage 100', diameter from 40' height

On/Off Occupancy Sensors (ZOS)

An optional occupancy sensor controls individual fixtures on or off based on occupancy in detection zone. Sensor used: Leviton OSFHU-ITW (pictured), or an equivalent.

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.

Shielding Available in a high efficiency 23 pattern acrylic lens (frosted or clear), and an impact resistant clear lexan lens

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

Hanging 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.

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Page 5 of 5