

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

LED

WVL 4 | LED Vaportight High Bay

Features:

- High performance LED technology
- 0-10V dimming drivers standard
- Field replaceable LED boards and drivers
- Heat management system helps maximize efficacy and system life
- Multiple hanging options, including surface, chain, and aircraft cable, for easy installation
- Durable materials and craftsmanship allows the WVL to withstand some of the harshest environments

Applications:

- Most industrial, retail, and recreational low bay and high bay applications
- Warehouse
 - Manufacturing Facility
 - Food Processing
 - Freezer
 - Gymnasium
 - Parking Garage
 - Car Wash

Ambient Operating Temp.:

- 30°C to 40°C (for LW, MD, HI models)
 -30°C to 35°C (for SH models)

Predicted L70 Lifetime:

- >100,000 hrs (calculated)
- >72,000 hrs (reported)
- 80% lumen maintenance @ 72,000 hrs (based on LM-80, TM-21 and in-situ laboratory testing)

Construction:

- UL 5VA fiberglass housing (will not melt or burn)
- Impact resistant acrylic and UV stabilized polycarbonate lenses
- Pre-painted cold rolled steel board trays
- Acetal copolymer secure locking plastic latches (stainless steel latches optional)
- Stainless steel mounting hardware

Certifications:

- UL 1598, suitable for wet locations
- IP65, IP66, IP67
- NEMA 4X
- NSF
- PSI 1500
- RoHS
- 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



Ordering Guide:

example: WVL 4 HI UV FA 840 RBS C6

Series	Length	Output	Voltage	Shielding	CRI/CCT	Hanging	Controls	Options
WVL	4							
WVL	4 4'	LW Low	UV 120-277	CP Clear Polycarbonate with Frosted Ends	835 80 CRI/3500K	Blank V-Hook (For Chain or Cable Mount)	Blank No Controls	Blank No Options
		MD Medium	34 347V	CA Clear Acrylic with Frosted Ends	840 80 CRI/4000K	RBS Rigid Mounting Beam - Stainless Steel	ZOS Occupancy Sensor (On/Off)	C6 6' Single Circuit Cord
		HI High	48 480V	FA Frosted Acrylic	850 80 CRI/5000K	RBZ Rigid Mounting Beam - Zinc Plated	Z221BL_ Wattstopper Programmable Photo/Motion Multi-Voltage Sensor (high/low/off) ⁽¹⁾	C6(LVL) C6 With Integrated Dimming Leads
		SH Super High				FCM Flexible Ceiling Mount	Z321BL_ Wattstopper Bluetooth-enabled Programmable Photo/Motion Multi-Voltage Sensor (high/low/off) ⁽¹⁾	C10 10' Single Circuit Cord
						QC 10' Quick Hang Cable Kit	ZOSMD 0-10V Dimming Microwave Occupancy Sensor	C10(LVL) C10 With Integrated Dimming Leads
						QC20 20' Quick Hang Cable Kit	ZPC Photocell	D6 6' Dual Circuit Cord
							ZIFC Douglas IFC Controller With Network Capabilities ⁽²⁾	D10 10' Dual Circuit Cord
							ZFMS Douglas FMS Sensor with Dimming/Occupancy/Daylight Harvesting with Newtork Capabilities ⁽³⁾	P(NEMA) Plug (Specify NEMA configuration)
							ZENLO Enlighted Ruggedized Sensor with Dimming/Occupancy/ Daylight Harvesting and Enlighted One System ⁽⁴⁾	EM1 Emergency Pack - Up To 10W ⁽⁵⁾
							ZENLC Enlighted Ruggedized Sensor with Dimming/Occupancy/ Daylight Harvesting and Enlighted Connected System ⁽⁴⁾	EM1C Emergency Pack - Up To 10W ⁽⁶⁾
							ZENLI Enlighted Ruggedized Sensor with Dimming/Occupancy/ Daylight Harvesting and Enlighted IoT System ⁽⁴⁾	EM2 Emergency Pack - Up To 20W ⁽⁵⁾
								SCL Stainless Steel Captive Latches
								SC Safety Cable
								F Fuse
								SDT(480V) 480V To 277V Step Down Transformer
								LVL 0-10V Dimming Leads for Easy Field Access
								BAA Buy American Act Compliant

Notes

- ⁽¹⁾ " " = lens type. See Page 6 for lens descriptions.
⁽²⁾ IFC controller - see Page 6 for more details.
⁽³⁾ Max ceiling height for Douglas FMS sensor: 40 feet.
See Page 5 for more details on advanced controls.
⁽⁴⁾ Max ceiling height for Enlighted Ruggedized sensor 50 feet. See
Page 5 for more details on advanced controls.
⁽⁵⁾ EM1 and EM2 - 120-277V / 0°C-50°C ambient.
⁽⁶⁾ EM1C - 120-277V / -20°C-50°C ambient. Adds 30W to system wattage.

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)



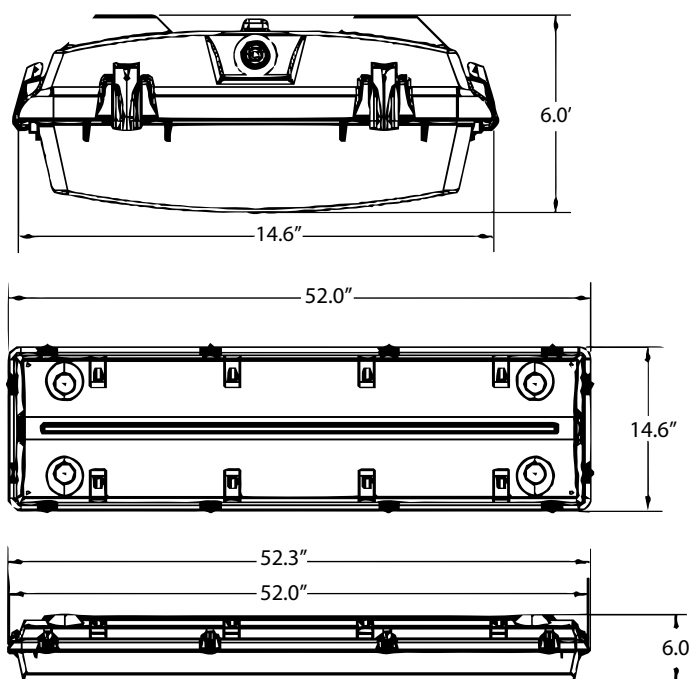
Performance Chart:

Catalog #	Lumens	Watts	LPW
WVL 4 LW UV FA 835	16109	122	131.8
WVL 4 MD UV FA 835	20051	156	128.5
WVL 4 HI UV FA 835	22687	169	134.4
WVL 4 SH UV FA 835	30546	206	148.2
WVL 4 LW UV CA 835	16366	122	133.9
WVL 4 MD UV CA 835	20371	156	130.6
WVL 4 HI UV CA 835	23049	169	136.5
WVL 4 SH UV CA 835	31034	206	150.6
WVL 4 LW UV CP 835	16071	122	131.5
WVL 4 MD UV CP 835	20004	156	128.2
WVL 4 HI UV CP 835	22634	169	134.1
WVL 4 SH UV CP 835	30475	206	147.9

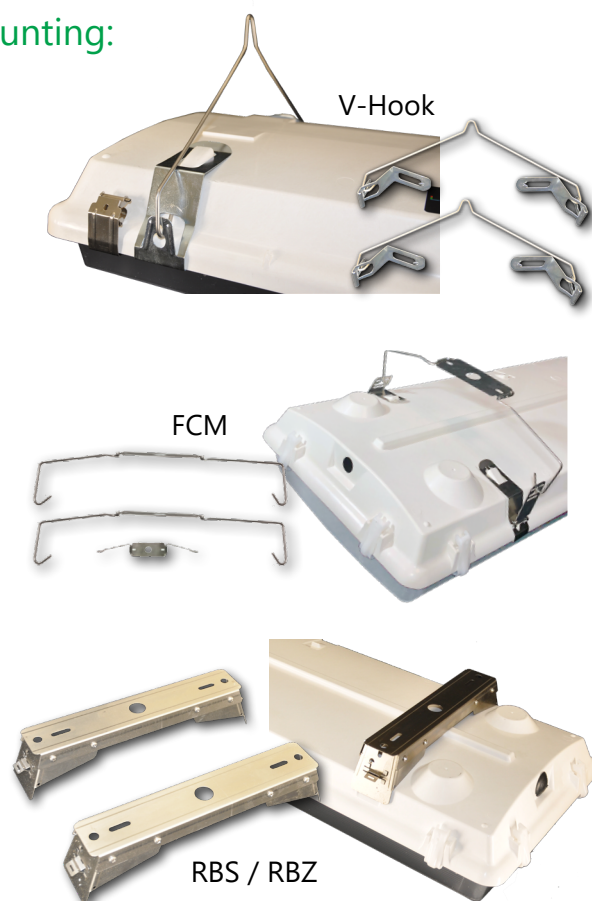
Catalog #	Lumens	Watts	LPW
WVL 4 LW UV FA 840	16642	122	136.2
WVL 4 MD UV FA 840	20714	156	132.8
WVL 4 HI UV FA 840	23437	169	138.8
WVL 4 SH UV FA 840	31394	206	152.4
WVL 4 LW UV CA 840	16907	122	138.3
WVL 4 MD UV CA 840	21044	156	134.9
WVL 4 HI UV CA 840	23811	169	141
WVL 4 SH UV CA 840	31895	206	154.8
WVL 4 LW UV CP 840	16603	122	135.8
WVL 4 MD UV CP 840	20665	156	132.5
WVL 4 HI UV CP 840	23382	169	138.5
WVL 4 SH UV CP 840	31320	206	152

Catalog #	Lumens	Watts	LPW
WVL 4 LW UV FA 850	17141	122	140.2
WVL 4 MD UV FA 850	21335	156	136.8
WVL 4 HI UV FA 850	24140	169	143
WVL 4 SH UV FA 850	32242	206	156.5
WVL 4 LW UV CA 850	17415	122	142.5
WVL 4 MD UV CA 850	21676	156	138.9
WVL 4 HI UV CA 850	24526	169	145.3
WVL 4 SH UV CA 850	32756	206	159
WVL 4 LW UV CP 850	17101	122	139.9
WVL 4 MD UV CP 850	21285	156	136.4
WVL 4 HI UV CP 850	24084	169	142.7
WVL 4 SH UV CP 850	32166	206	156.1

Schematic:



Mounting:



Photometric Data:

WVL 4 MD UV FA 835

Test No.: LLIA000744-002

Luminaire Lumens: 20,051 lm

Luminaire Watts: 155.5W

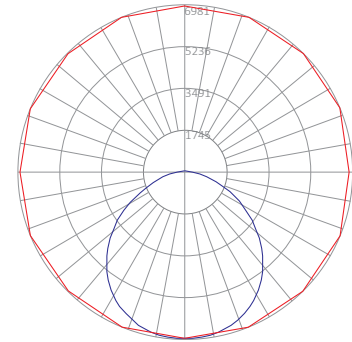
Efficacy: 128.9 LPW

Spacing Criterion (0-180): 1.26

Spacing Criterion (90-270): 1.26

Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	12328	11333	11070
55	10848	9700	9317
65	8988	7629	7598
75	7016	5959	6910
85	4401	4486	5616



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	115	115	115	115	109	109	109	104	104	104
1	108	103	98	94	105	100	96	93	95	92	89	91	88	86
2	98	90	83	77	95	88	81	76	83	78	74	80	75	71
3	89	79	71	64	87	77	70	63	74	67	62	70	65	60
4	82	70	61	55	79	68	60	54	66	58	53	63	57	52
5	75	63	54	47	73	61	53	47	59	51	46	57	50	45
6	70	56	48	41	68	55	47	41	53	46	40	51	45	40
7	65	51	42	36	63	50	42	36	48	41	36	47	40	35
8	60	47	38	32	58	46	38	32	44	37	32	43	36	31
9	56	43	35	29	55	42	34	29	41	34	29	39	33	28
10	53	40	32	26	51	39	31	26	38	31	26	37	30	26

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

WVL 4 MD UV CA 835

Test No.: LLIA000744-003

Luminaire Lumens: 20,371 lm

Luminaire Watts: 155.6W

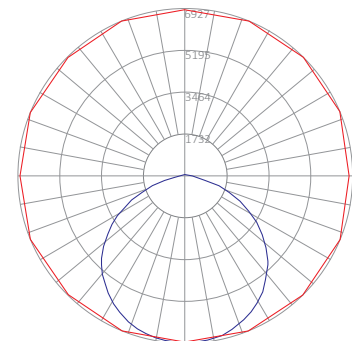
Efficacy: 130.9 LPW

Spacing Criterion (0-180): 1.28

Spacing Criterion (90-270): 1.30

Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	13074	11991	11840
55	12207	11038	11183
65	10522	9357	5121
75	7153	4126	5583
85	3170	4177	4225



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	110	110	110		105	105	105
1		108	104	99	95		106	101	97	94	97	93	90		93	90	87
2		99	90	84	78		96	88	82	77	85	79	75		81	77	73
3		90	79	71	65		87	78	70	64	74	68	63		72	66	61
4		82	70	61	55		80	69	61	54	66	59	53		64	58	53
5		76	63	54	47		73	62	53	47	59	52	46		57	51	45
6		70	56	47	41		68	55	47	41	53	46	40		52	45	40
7		65	51	42	36		63	50	42	36	49	41	36		47	40	35
8		60	47	38	32		58	46	38	32	44	37	32		43	36	31
9		56	43	34	29		55	42	34	29	41	34	29		40	33	28
10		53	39	31	26		51	39	31	26	38	31	26		37	30	26

Zonal Lumen Summary

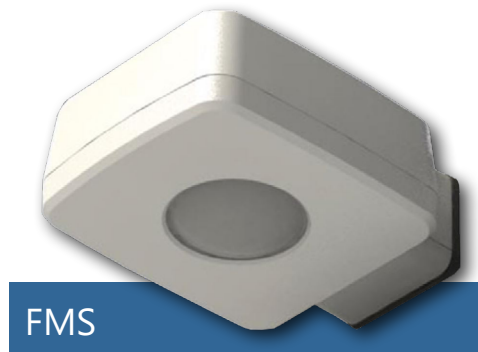
Zone	Lumens	%Fixt
0-20	2539.3	12.5
0-30	5427.6	26.6
0-40	8958.2	44.0
0-60	16109.1	79.1
0-80	19618.7	96.3
0-90	20104.1	98.7
90-120	183.9	0.9
90-130	220.1	1.1
90-150	260.7	1.3
90-180	266.9	1.3
0-180	20371.0	100.0



Douglas Lighting Controls, Inc.: High bay sensors

The WVL 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.

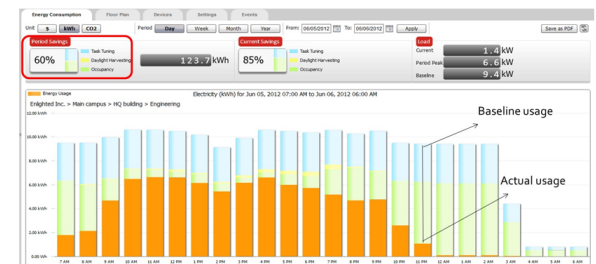
Enlighted sensors come standard with the Enlighted One system (the "ZENLO" option). Enlighted Connected ("ZENLC") offers even more options. The Enlighted IoT ("ZENLI") option allows the full implementation of Enlighted's services. Each system can be fully upgraded to the next tier in the future. So if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



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

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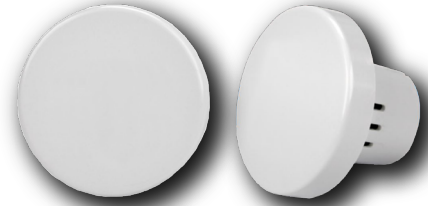
1) The Wattstopper FSP sensor. **2)** The phone app interface for the Z321B. **3)** The FSIR-100 wireless configuration tool.

Dimming Sensors (Z221B/Z321B)

- The Wattstopper FSP sensor provides multi-level control based on motion and/or daylight contribution
- 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

Douglas Lighting Controls, Inc.: Intelligent Fixture Controller (IFC)

The WVL can be equipped with the Douglas Bluetooth Intelligent Fixture Controller (IFC).



- 0-10V dimming with dim-to-off
- Bluetooth beacon for digital ceiling, IoT and location service strategies
- 150-foot clear line of sight, 50 feet through standard walls
- May be used with dual-channel, tunable white LED drivers providing auxiliary power and dim-to-off capability
- Commissioning through Douglas Lighting Controls, Inc. app from Apple app store
- Listed for emergency control when used on dedicated emergency power bus

