LUMENFOCUS

Project: _____

Location: _____

Cat. #: _____

Type: _____

Quantity: _____

LED

ECL 4 | LED Strip

Features:
• High performance LED technology
• 0-10V dimming drivers standard
• Field replaceable LED boards and drivers
• Frosted diffuser available to help minimize glare and improve aesthetics
• A wide variety of lumen packages and lengths allows for flexibility in design and helps maximize energy savings
• Advanced controls available

Applications:
Suitable for most commercial, industrial and institutional applications
• Office
• Retail
• Warehouse
• Coves
• Valences

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

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

Construction:
• Precision brake formed from heavy gauge cold rolled steel
• 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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LumenFocus reserves the right to change specifications without notice. Consult factory for most up to date specifications.

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252-430-6970

ECL_4_LED_v7.3
Page 1 of 6

Ordering Guide:

example: ECL 4 MD UV FR 840

Series	Length	Output	Voltage	Shielding	CRI/CCT	Hanging	Controls	Options	Finish
ECL	*4*								
ECL	4 4'	**LW** Low	**UV** 120-277	**Blank** No Lenses	**835** 80 CRI/3500K	**Blank** None	**Blank** No Controls	**Blank** No Options	**Blank** White
		MD Medium	**34** 347V	**FR** Frosted Acrylic Diffusers	**840** 80 CRI/4000K	**VC** V-Chain Hangers	**ZOS** Occupancy Sensor (On/Off)[1]	**EXT10** 10-Year Extended Warranty[8]	**BK** Matte Black
		MH Medium High			**850** 80 CRI/5000K	**QC** 10' Quick Hang Cable Kit	**ZOSD** Occupancy Sensor w/ Daylight Harvesting (On/Off/Dim)[1]	**C6** 6' Single Circuit Cord	**SL** Metallic Silver
		HI High				**QC20** 20' Quick Hang Cable Kit	**ZSOL** Leviton Intellect Solo PIR Sensor[2]	**C65W** 6' Single Circuit Cord with Low Voltage Connections	
		VH Very High				**SH** Slide Hanger	**Z211L_** Wattstopper FSP Programmable Photo/Motion Multi-Voltage Sensor (high/low/off)[4]	**C10** 10' Single Circuit Cord	
							Z311L_ Wattstopper FSP Bluetooth-enabled Programmable Photo/Motion Multi-Voltage Sensor (high/low/off)[4]	**C105W** 10' Single Circuit Cord with Low Voltage Connections	
							ZOSMD Microwave Daylight/Motion Sensor With Step-Dimming (High/Low/Off)[3]	**D6** 6' Dual Circuit Cord	
							ZPC Photocell	**D10** 10' Dual Circuit Cord	
							ZIFS Douglas IFS sensor with dimming/occupancy/daylight harvesting and network capabilities[5]	**P(NEMA)** Plug (Specify NEMA configuration)	
							ZIFC Douglas IFC controller with network capabilities[6]	**WG** Wire Guard	
							ZENLO Enlighted Micro Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted One System[7]	**SC** Safety Cable	
							ZENLC Enlighted Micro Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted Connected System[7]	**F** Fuse	
							ZENLI Enlighted Micro Sensor with Dimming/Occupancy/Daylight Harvesting and Enlighted IoT System[7]	**EM1** Emergency Pack - Up to 8W[9]	
								EM2 Emergency Pack - Up to 16W[9]	
								QWH(_) Quick Wire Harness[10]	
								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

[1] Max mounting height 40'. End mounted.
[2] Max mounting height 10'. See Page 6 for more details.
[3] Max mounting height 49'. See Page 6 for more details.
[4] "_" = lens type. See Page 6 for lens descriptions.
[5] Max mounting height 16.4'. See Page 5 for more details.
[6] See Page 5 for more details.
[7] Max mounting height 15'. See page 5 for more details.
[8] Not available on all models. Certain conditions apply. Consult factory or sales representative for details.
[9] EM1 and EM2: 120-277V / 0°C-50°C ambient.
[10] "_" for 2-circuit wiring, specify circuit A or B here.

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)
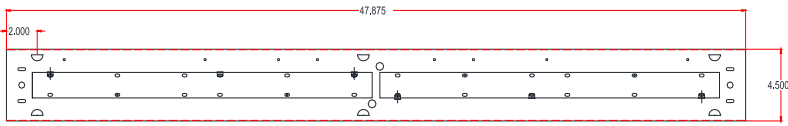WS-2-00-IL — Enlighted Remote Control Wall Switch (for Enlighted One)

Matte Black finish option

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Schematic:

Performance Chart:

Catalog #	Lumens	Watts	LPW
ECL 4 LW UV 835	2305	18	128.0
ECL 4 MD UV 835	3832	32	119.7
ECL 4 MH UV 835	4829	36	134.1
ECL 4 HI UV 835	6705	46	145.8
ECL 4 VH UV 835	8901	68	130.9
ECL 4 LW UV FR 835	2212	18	122.9
ECL 4 MD UV FR 835	3640	32	115.5
ECL 4 MH UV FR 835	4635	36	128.7
ECL 4 HI UV FR 835	6436	46	139.9
ECL 4 VH UV FR 835	8543	68	125.6

Catalog #	Lumens	Watts	LPW
ECL 4 LW UV 840	2376	18	132.0
ECL 4 MD UV 840	3950	32	123.4
ECL 4 MH UV 840	4978	36	138.3
ECL 4 HI UV 840	6913	46	150.3
ECL 4 VH UV 840	9177	68	134.9
ECL 4 LW UV FR 840	2280	18	126.7
ECL 4 MD UV FR 840	3752	32	119.1
ECL 4 MH UV FR 840	4778	36	132.7
ECL 4 HI UV FR 840	6635	46	144.2
ECL 4 VH UV FR 840	8807	68	129.5

Catalog #	Lumens	Watts	LPW
ECL 4 LW UV 850	2447	18	136.0
ECL 4 MD UV 850	4069	32	127.1
ECL 4 MH UV 850	5128	36	142.4
ECL 4 HI UV 850	7120	46	154.8
ECL 4 VH UV 850	9452	68	139.0
ECL 4 LW UV FR 850	2349	18	130.5
ECL 4 MD UV FR 850	3865	32	122.7
ECL 4 MH UV FR 850	4921	36	136.7
ECL 4 HI UV FR 850	6834	46	148.6
ECL 4 VH UV FR 850	9071	68	133.4

The ECL 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.

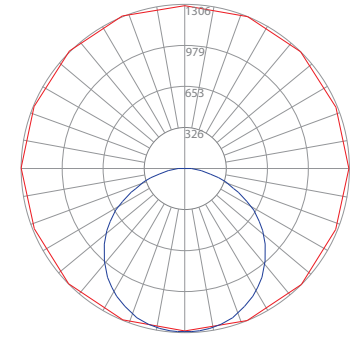# Photometric Data:

ECL 4 MD UV 835

Test No.: LLIA000584-035
Luminaire Lumens: 3,832 lm
Luminaire Watts: 32.0W
Efficacy: 119.7 LPW
Spacing Criterion (0-180): 1.30
Spacing Criterion (90-270): 1.28

Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	9235	9059	8867
55	8996	8731	8490
65	8454	8006	7741
75	7075	6525	6317
85	3661	3475	3231

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	94	97	94	91	93	91	88
2	99	90	83	78	96	88	82	77	85	80	75	82	77	73
3	90	79	71	64	87	78	70	64	75	68	63	72	66	62
4	82	70	61	54	80	69	60	54	66	59	53	64	58	52
5	75	62	53	47	73	61	53	46	59	52	46	57	51	45
6	70	56	47	41	68	55	47	40	53	46	40	52	45	40
7	65	51	42	36	63	50	42	36	48	41	35	47	40	35
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31
9	56	42	34	29	55	42	34	29	41	33	28	40	33	28
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26

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	477.46	12.50
0-30	1019.39	26.60
0-40	1681.25	43.90
0-60	3014.67	78.70
0-80	3768.32	98.30
0-90	3831.59	100.00
90-120	0.41	0.00
90-130	0.41	0.00
90-150	0.41	0.00
90-180	0.41	0.00
0-180	3832.00	100.00

ECL 4 MD UV FR 835

Test No.: LLIA000614-007
Luminaire Lumens: 3,683 lm
Luminaire Watts: 31.5W
Efficacy: 116.9 LPW
Spacing Criterion (0-180): 1.26
Spacing Criterion (90-270): 1.28

Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7819	7539	7456
55	6856	6841	6847
65	5573	5936	6015
75	4180	5033	4992
85	3378	4593	4238

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	103	98	94	105	100	96	92	95	92	89	91	88	86
2	98	89	82	76	95	87	81	75	83	78	73	80	75	71
3	89	78	70	63	86	77	69	63	73	67	61	70	65	60
4	82	69	60	54	79	68	60	53	65	58	52	62	56	51
5	75	62	53	46	73	61	52	46	58	51	45	56	50	44
6	69	56	47	40	67	55	46	40	53	45	39	51	44	39
7	64	51	42	36	62	50	41	35	48	40	35	46	40	35
8	60	46	38	32	58	45	37	31	44	36	31	42	36	31
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25

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	457.01	12.40
0-30	972.24	26.40
0-40	1591.93	43.20
0-60	2792.60	75.80
0-80	3480.09	94.50
0-90	3611.53	98.10
90-120	71.49	1.90
90-130	71.50	1.90
90-150	71.50	1.90
90-180	71.50	1.90
0-180	3683.03	100.00

Douglas Lighting Controls, Inc.: Cloud-based controls

The ECL can be equipped with the Douglas Bluetooth Intelligent Fixture Sensor (IFS) as well as the Intelligent Fixture Controller.

IFS

- Occupancy, vacancy, partial-on and partial-off
- Occupancy timeout adjustable from 5 to 90 minutes
- Primary and secondary daylight harvesting

IFC

- Listed for emergency control when used on dedicated emergency power bus
- Same occupancy and daylight controls as the IFS when networked with one or more IFS sensors

Available with both IFS and 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

Note: Additional equipment required for IoT capabilities; max mounting height for sensor: 16.4 ft

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 SMART Micro Sensor is an all-in-one unit: task tuning, high-end trimming, daylight harvesting, and occupancy/vacancy detection. Max installation height is 15 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
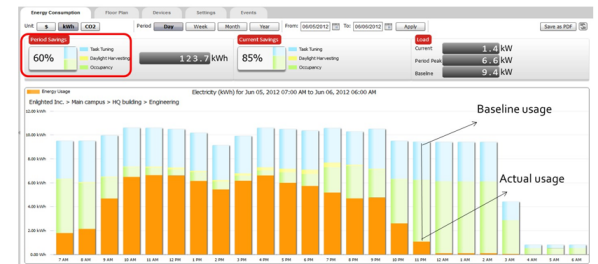
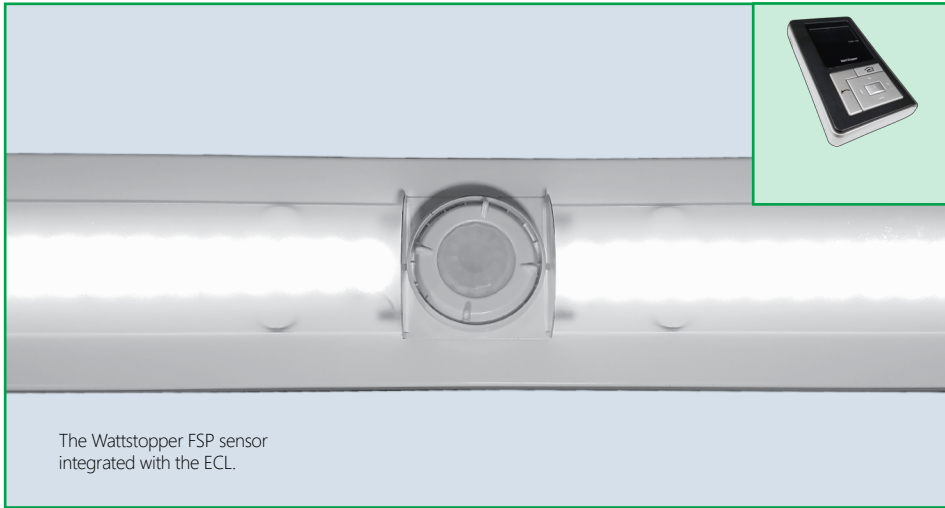Learn more about our available advanced controls options here:
www.lumenfocus.com/controls-overview

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ECL_4_LED_v7.3
Page 5 of 6

LUMENF⚙CUS

Other controls available:

The Wattstopper FSP sensor integrated with the ECL.

Dimming Sensors (Z211/Z311)

- The Wattstopper FSP sensor provides multi-level control based on motion and/or daylight contribution
- Comes pre-installed on the fixture
- Rated for cold locations
- Parameters for Bluetooth-enabled Z311 adjustable via phone app - iOS or Android
- Parameters for Z211 adjustable via wireless configuration tool (FSIR-100 - sold separately)
- Available with black lens for black finishes (pictured right)
- 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

Left: The phone app interface for the Z311 sensor

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.

Wireguards are available for added protection (shipped separately).

Microwave Occupancy Sensor (ZOSMD)

The Leviton OSM3D-V1W (or equivalent) detects motion through low density materials using high frequency electromagnetic waves. This means it can sit discretely behind the ECL's frosted lens. The ZOSMD features automatic switching based on motion and ambient light level. ZOSMD option also features step-dimming functionality - standby dimming level 10% / 20% / 30% / 50%. Max mounting height for ZOSMD 49 feet.

Leviton Intellect Solo PIR Sensor (ZSOL)

The ECL can be equipped with an integrated Leviton Intellect Solo Sensor ("ZSOL" option). This is a 0-10V dimming Passive Infrared (PIR) occupancy and daylight harvesting sensor. It includes partial-on and partial-off capabilities. Mounting height is 8' to 10'. It is IP20 rated with a detection angle of 120 degrees. An IR remote is available for programming sensor from the floor (sold separately). The sensor can be used to comply with IECC, ASHRAE 90.1 and 2019 Title 24, Part 6 dimming, occupancy/vacancy sensing and daylight harvesting requirements.
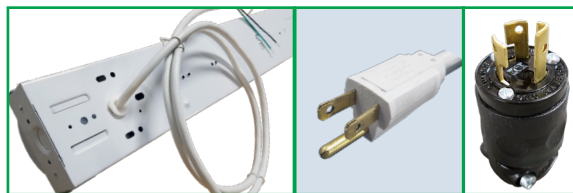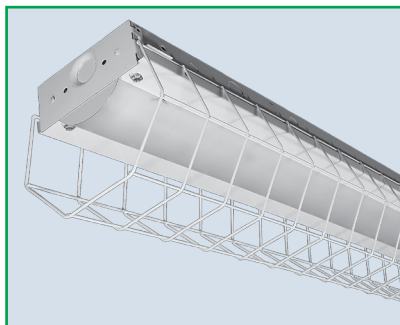
Hanging The QC hanging kit (1) comes in 10' or 20'. Cables are pre-looped for easy installation and designed for easy fixture height adjustment. QCs come boxed with each fixture. V-hangers and slide hangers are also optional.