# LUMENFOCUS



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



# ECL G2 2 | LED Strip

### Features:

- High performance LED technology
- 0-10V dimming drivers standard
- DALI drivers available
- 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

• 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

- Office
- Retail
- Warehouse
- Coves
- Valences

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

# Predicted Lifetime:

- L70:  $\geq$  129,000 hrs (calculated)
- L80: ≥ 81,000 hrs (calculated)
- L90: ≥ 39,000 hrs (reported)

 85% lumen maintenance @ 60,000 hrs (based on LM80 and insitu laboratory testing)

### Construction:

 Precision brake formed from cold rolled steel with a highly durable matte white finish. Optional matte black and metallic silver options constructed of brake formed aluminum

# Certifications:

- UL 1598 listed for US and Canada, suitable for damp locations
- DesignLights Consortium gualified 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.)



USING DOMESTIC AND FOREIGN COMPONENTS









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# Ordering Guide:

Ordering Guide: example: ECL G2 2 MD UV FR 9										
Series	Version	Length	Output	Voltage	Shielding	CRI/CCT	Hanging	Controls	Options	Finish
ECL	G2	2								
ECL	<b>G2</b> Gen 2	<b>2</b> 2'	<b>LW</b> Low	<b>UV</b> 120-277	Blank No Lenses	<b>930</b> 90 CRI/3000K	Blank None	<b>Blank</b> No Controls	Blank No Options	Blank White
			ML Medium Low MD Medium HI High VH Very High Super High	<b>34</b> 347V	FR Frosted Acrylic Diffusers	935 90 CRI/3500K 940 90 CRI/4000K 950 90 CRI/5000K	VC V-Chain Hangers QC 10' Quick Hang Cable Kit QC20 20' Quick Hang Cable Kit SH Slide Hanger	2SOL Leviton Intellect Solo Programmable PIR/Daylight Harvesting Sensor <sup>(1)</sup> 2LDU Leviton Bluetooth-enabled Programmable Dimming/Occupancy/ Daylight Harvesting Sensor with Grouping (120-277V) <sup>(1)</sup> 2Leviton Bluetooth-enabled Programmable Dimming/Occupancy/ Daylight Harvesting Sensor with Grouping, Scheduling (120-480V) <sup>(1)</sup>	EXT10 10-Year Extended Warranty <sup>(5)</sup> 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	BK Matte Black SL Metallic Silver
<ul> <li>(2) " _" = le</li> <li>(3) 120-27</li> <li>(4) See Pa</li> <li>(5) Not av sales re</li> <li>(6) 120-27 emerge of the lue ex. ECL</li> </ul>	ge 5 for m ens type. S 7V only. Se ge 6 for m ailable on epresentat 7V / 0°C-5 ency mode, uminaire it i G2 2 MD U	ee Page 5 ore detail all models ive for det 5°C ambie multiply E s installed JV 940 EM	for more d for more d s. certain co tails. ent. To estim M wattage b	etails. onditions a ate lumen o by the Lume .PW x 10W	ens per Watt	factory or		Wattstopper FSP Programmable Photo/ Motion Multi-Voltage Sensor (high/low/off) <sup>(2)</sup> Z311L_ Wattstopper FSP Bluetooth-enabled Programmable Photo/Motion Multi- Voltage Sensor (high/low/off) <sup>(2)</sup> ZOSMD Microwave Daylight/Motion Sensor With Step-Dimming (High/Low/Off) <sup>(3)</sup> ZSLFC2 Keystone SmartLoop Wireless Bluetooth Mesh Occupancy/Daylight Harvesting Smart Sensor <sup>(1)</sup> ZLDS Leviton Intellect DALI Sensor with Dimming/Occupancy/Daylight Harvesting with Newtork Capabilities <sup>(4)</sup> ZLTS Leviton Intellect 0-10V Sensor with Dimming/Occupancy/Daylight Harvesting with Newtork Capabilities <sup>(4)</sup>	D6 6' Dual Circuit Cord D10 10' Dual Circuit Cord P(NEMA) Plug (Specify NEMA configuration) SC Safety Cable F Euse EM6 6.5W Emergency Pack <sup>(6)</sup> EM10 10W Emergency Pack <sup>(6)</sup> EM14 14W Emergency Pack <sup>(6)</sup> QWH(_) Quick Wire Harness <sup>(7)</sup> SDT(480V)	
The EC and dr efficien rare ev defecti ensure	Re-bo IL G2 fea ivers. Th t technoc rent of a ve comp you wo	atures fie is allows logy in failure, j ponents. n't get s	ABI eld replac s you to u the future you can r Re-boar	eable bo upgrade e. Or, in t apidly re dABILITY an obso	bards to more he place ' helps to plete light			Leviton Intellect DALI Fixture Controller with Newtork Capabilities <sup>(4)</sup> <b>ZL7C</b> Leviton Intellect 0-10V Fixture Controller with Newtork Capabilities <sup>(4)</sup> <b>ZENLC</b> Enlighted Micro Sensor with Dimming/ Occupancy/Daylight Harvesting and Enlighted Micro Sensor with Dimming/ Occupancy/Daylight Harvesting and Enlighted IoT System <sup>(4)</sup>	480V to 277V Step Down Transformer CC Conformal Coating LVL 0-10V Dimming Leads for Easy Field Access BAA Buy American Act Compliant	



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#### Accessories (order separately) Wire Guard

WG(ECL2)



#### Controls Accessories (order separately)

#### For Leviton Programmable Sensor



IR Programming Remote ZLSOR-RA1

#### For WattStopper Controls FSIR-100

Wireless IR Programming Tool (For Z211Lx)

#### For Keystone SmartLoop Controls

KTSL-WS1-B-SG/G2 5-Button Bluetooth Wireless Wall Switch KTSL-TK1-USB USB Time Keeper

#### For Leviton Intellect Controls



400

1-Button Wireless Wall Controller 2-Button Wireless Wall Controller 4-Button Wireless Wall Controller 8-Button Wireless Wall Controller

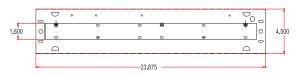
#### For Enlighted Controls WS-2-00

Enlighted Remote Control Wall Switch (for Enlighted Connected & IoT)

# Performance Chart:

Catalog #	Watts	Lumens (930)	LPW (930)	Lumens (935)	LPW (935)	Lumens (940)	LPW (940)	Lumens (950)	LPW (950)
ECL G2 2 LW UV FR 9xx	8.5	1050.9	123.5	1055.3	124.0	1080.4	127.0	1080.4	127.0
ECL G2 2 ML UV FR 9xx	12.1	1561.9	129.1	1568.5	129.6	1605.8	132.7	1605.8	132.7
ECL G2 2 MD UV FR 9xx	16.0	2032.9	127.4	2041.5	128.0	2089.9	131.0	2089.9	131.0
ECL G2 2 HI UV FR 9xx	22.6	3092.9	137.1	3105.9	137.7	3179.7	141.0	3179.7	141.0
ECL G2 2 VH UV FR 9xx	29.1	4056.3	139.6	4073.4	140.2	4170.2	143.5	4170.2	143.5
ECL G2 2 SH UV FR 9xx	37.3	5076.3	136.2	5097.6	136.8	5218.7	140.1	5218.7	140.1
ECL G2 2 LW UV 9xx	8.5	1110.8	130.5	1115.4	131.1	1141.9	134.2	1141.9	134.2
ECL G2 2 ML UV 9xx	12.1	1650.9	136.5	1657.9	137.0	1697.3	140.3	1697.3	140.3
ECL G2 2 MD UV 9xx	16.0	2148.7	134.7	2157.7	135.3	2209.0	138.5	2209.0	138.5
ECL G2 2 HI UV 9xx	22.6	3269.0	145.0	3282.8	145.6	3360.8	149.0	3360.8	149.0
ECL G2 2 VH UV 9xx	29.1	4287.4	147.6	4305.5	148.2	4407.7	151.7	4407.7	151.7
ECL G2 2 SH UV 9xx	37.3	5365.4	143.8	5388.0	144.4	5516.0	147.8	5516.0	147.8

# Schematic:



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# **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).





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. V-hangers and slide hangers are also optional.

**Finish** in addition to the standard white finish, the ECL G2 is also available in matte black (pictured) and metallic silver.



# Controls Summary:

Control Code	Туре	Capabilities	Communication
ZSOL	Motion (PIR), Daylight Harvesting	High/Low/Off	Wired 0-10V, Programmable via IR remote (sold separately)
ZLD1	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping	Wired 0-10V, Programmable via Bluetooth App (iOS, Android)
ZLDU	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Scheduling	Wired 0-10V, Programmable via Bluetooth App (iOS, Android)
Z211Lx	Motion (PIR), Photosensor	High/Low/Off, High-End Trim	Wired 0-10V, Programmable via IR remote (sold separately)
Z311Lx	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim	Wired 0-10V, Programmable via Bluetooth App (iOS, Android)
ZOSMD	Motion (Microwave), Photosensor	On/Low/Off	Wired 1-10V
ZSLFC2	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Scheduling, LLLC (Keystone TechSmartLoop)	Wireless Bluetooth Mesh, Programmable via Keystone SmartLoop App for iOS or Android
ZLxS	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Scheduling, Demand Response*, BMS Integration*, LLLC (GreenMAX DRC)	Wireless Zigbee 2.4 GHz Mesh, Programmable via GreenMAX DRC app. for iOS or Android along with DRKDN-UxW Wall Controller (sold separately)
ZLxC	Controller, No Sensors	High/Low/Off, High-End Trim, Grouping, Scheduling, Demand Response*, BMS Integration*, LLLC (GreenMAX DRC)	Wireless Zigbee 2.4 GHz Mesh, Programmable via GreenMAX DRC app. for iOS or Android along with DRKDN-UxW Wall Controller (sold separately)
ZENLC	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Scheduling*, Energy Monitor- ing*, BMS Integration*, Upgradable to IoT (ZENLI), LLLC (Enlighted IoT)	Wireless Bluetooth Low Energy Mesh, Programmable via Enlighted IoT Software
ZENLI	Motion (PIR), Daylight Harvesting	High/Low/Off, High-End Trim, Grouping, Scheduling*, Energy Monitor- ing*, 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



# **LUMENF©CUS**

**Microwave Occupancy Sensor** 

frequency electromagnetic waves. This means it can sit

The Leviton OSM3D-DDW (or equivalent) detects

motion through low density materials using high

discretely behind the ECL G2's frosted

lens. The ZOSMD features automatic

ambient light level. ZOSMD option adds

step-dimming functionality - standby

dimming level 10% / 20% / 30% / 50%. Max mounting height for ZOSMD

Leviton Intellect Solo **Dimming Sensor (ZSOL)** The ECL G2 can be equipped with an integrated Leviton Intellect Solo Sensor ("ZSOL" option). This is

switching based on motion and

### Dimming Sensors (Z211/Z311)

- The Wattstopper FSP sensor provides multi-level control based on motion and/or davlight 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)
- Two 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



# Keystone SmartLoop Wireless Control System

The SmartLoop wireless lighting control system by Keystone is a Bluetooth mesh lighting control system that allows you to set up and manage your lighting ecosystem guickly and easily. It's powerful enough to run a space with multiple lighting zones, but simple enough to program in minutes with your smartphone - perfect for warehouses, offices, schools, and auditoriums, whether new construction or retrofit.

- Wireless Bluetooth 2.4 GHz mesh network
- Supports up to 100 devices on a single region, with unlimited regions
- Independent per-fixture control: Occupancy, Daylight Harvesting, Task Tuning, Grouping, Scene Setting, Scheduling
- Commissioned via SmartLoop mobile app for iPhone and Android



ZSLFC2

- Low voltage individual fixture controller for SmartLoop system
- Integrated daylight and PIR motion sensors
- Up to 16' mounting height. 16' radius at 16' height.
- Works with 0-10V dim-to-off drivers with 12V aux. power

# SmartLoop Accessories

- Bluetooth Wireless Wall Switch: KTSL-WS1-B-SG/G2
  - Battery Powered: 2x CR2032
  - 5 Button: Power Toggle, Dimming, Automatic Sensor/Preset Level Operation, Scene Activation



- USB Time Keeper: KTSL-TK1-USB
- Relays time to system components after a power loss
- Powered by standard USB charging port Internal CR1220 battery backup

#### a 0-10V dimming Passive Infrared (PIR) occupancy and daylight harvesting sensor. Other features:

• Partial-on

(ZOSMD)

• Partial-off

40 feet.

- 8' to 10' mounting height
- IP20 rated
- Detection angle: 120 degrees
- IR remote available for programming sensor from the floor

(sold separately)

• Can be used to comply with IECC, ASHRAE 90.1 and 2019 Title 24, Part 6 dimming, occupancy/vacancy sensing and daylight harvesting requirements.



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### Smart Sensors (ZLD1/ZLDU)



The ZLDx option includes high bay and low bay lenses along with aisleway masks that can easily be installed

or swapped out in the field. The high bay lens is good for 20'-40' mounting heights, while the low bay lens is good for 8'-20' mounting heights.

- Leviton Smart IP66 passive infrared (PIR) sensors · Features mesh grouping (16 devices per group), occupancy sensing, daylight harvesting, scheduling (for ZLDU only), single-level switching
- Comes pre-installed on the center face of the fixture
- Rated for cold locations
- Configurable through the Leviton Smart Sensor App using a smartphone or other Bluetoothenabled iOS or Android device

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# GreenMAX DRC Wireless Networked Control System

### with Leviton Intellect Sensors & Controllers

The GreenMAX DRC Wireless Keypad Room Controllers are used as the brain of the system, managing the fixture integrated Leviton Intellect sensors & controllers. Wirelessly commission, configure, control, monitor and provision the GreenMAX DRC system using the GreenMAX DRC App and an Android or iOS smart device.

- Occupancy/Vacancy Sensing
- Multi-Level Lighting, Partial-On, Partial-Off
- Daylight Harvesting
- Task Tuning
- Scheduling
- Grouping
- Demand Response
- BMS Integration
- ZigBee 2.4 GHz Wireless Mesh Network
- Up to 75' between devices

\* DRKDN-UxW room controller required for full functionality and programming of Intellect sensors & controllers





- PIR Occupancy Sensor
- Daylight Sensor
- 0-10V or DALI
- Up to 20' mounting height



Wireless fixture controller, no sensor
 0-10V or DALL

### DRKDN-UxW Room Controllers



- 1-, 2-, 4-, and 8-button configurations
- Line voltage powered: 120-277V
- Max capacity: 60 devices
- Programmable: On/Off/Raise/Lower/ Toggle/Scene
- Use any Android or iOS device for configuration using the GreenMAX DRC App

# 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 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.

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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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# Lumen Fécus

### Photometric Data:

#### ECL G2 2 SH UV 950

Test No.: LLIA001735-011A	Angle In	Average	Average	Average
Luminaire Lumens: 5,516 lm	Degrees	0-Deg	45-Deg	90-Deg
Luminaire Watts: 37.3W	45 55	26197 25667	25361 24530	25281 24031
Efficacy: 147.8 LPW	65	24107	22269	21675
Spacing Criterion (0-180): 1.30 Spacing Criterion (90-270): 1.32	75	20356	17428	17040
spacing citienon (30-270): 1.32	85	11213	7741	7259

Luminance Data (cd/sg.m)

Luminance Data (cd/sq.m)

Angle In

Değrees

45

55 65

75

85

Average 0-Deg

21651

18581

14656

10407

5463

Average

45-Deg

21091

19027

16516

13966

12715

Average

90-Deg

21287

19553

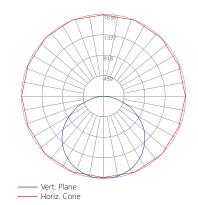
17296

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13022

#### 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	79	75	81	77	73
3	90	79	71	64	87	77	70	64	74	68	62	72	66	61
4	82	70	61	54	80	68	60	54	66	59	53	64	57	52
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45
6	69	56	47	40	67	55	46	40	53	45	40	51	45	39
7	64	51	42	35	63	50	41	35	48	41	35	47	40	35
8	60	46	37	32	58	45	37	31	44	37	31	43	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



#### Zonal Lumen Summary Zone Lumens

Zone	Lumens	%FIXt
0-20	674.90	12.20
0-30	1445.02	26.20
0-40	2391.81	43.40
0-60	4324.81	78.40
0-80	5425.51	98.40
0-90	5515.51	100.00
90-120	0.51	0.00
90-130	0.51	0.00
90-150	0.51	0.00
90-180	0.51	0.00
0-180	5516.02	100.00

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

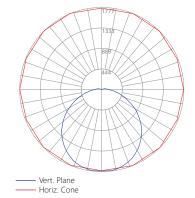
#### ECL G2 2 SH UV FR 950

Test No.: LLIA001735-013 Luminaire Lumens: 5,219 lm Luminaire Watts: 37.3W Efficacy: 140.1 LPW Spacing Criterion (0-180): 1.24 Spacing Criterion (90-270): 1.28

# 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	63	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	40	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	32	44	37	31	42	36	31
9	56	42	34	29	54	42	34	28	40	33	28	39	33	28
10	52	39	31	26	51	38	31	26	37	30	26	36	30	25



Zonal Lumen Summary									
Zone	Lumens	%Fixt							
0-20	650.53	12.50							
0-30	1383.00	26.50							
0-40	2263.42	43.40							
0-60	3961.89	75.90							
0-80	4933.95	94.50							
0-90	5123.07	98.20							
90-120	95.78	1.80							
90-130	95.78	1.80							
90-150	95.78	1.80							
90-180	95.78	1.80							
0-180	5218.86	100.00							

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



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