

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Cat. #: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Quantity: \_\_\_\_\_

LED

## RCL 2 | LED Channel Retrofit Kit

### 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
- Saves on installation cost, material cost, and waste
- Advanced controls available

### Applications:

Suitable for most commercial, industrial and institutional applications

- Office
- Retail
- Warehouse
- Coves
- Valences

### 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/>



### Ambient Operating Temp.:

- -30°C to 40°C

### Warranty:

- 5 year limited system warranty - see [www.LumenFocus.com](http://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.)*



## Ordering Guide:

example: RCL 2 MD UV FR 840 4.25" ZOSMD EM1

Series	Length	Output	Voltage	Shielding	CRI/CCT	Channel Width	Controls	Options
RCL	2							
RCL	2 2'	<b>LW</b> Low	<b>UV</b> 120-277	<b>Blank</b> No Lenses	<b>835</b> 80 CRI/3500K	<b>x.xx"</b> Specify Channel Width (in inches)	<b>Blank</b> No Controls	<b>Blank</b> No Options
		<b>MD</b> Medium	<b>34</b> 347V	<b>FR</b> Frosted Acrylic Diffusers	<b>840</b> 80 CRI/4000K	<b>VAR</b> Variable - Adjusts to fit channel widths from 4.00" to 5.00"	<b>ZOSMD</b> Microwave Occupancy Sensor with Photocell (On/Off/Dim) <sup>(1)</sup>	<b>EXT10</b> 10-Year Extended Warranty <sup>(5)</sup>
		<b>HI</b> High			<b>850</b> 80 CRI/5000K		<b>ZIFS</b> Douglas IFS Sensor with Dimming/Occupancy/Daylight Harvesting with Newtork Capabilities <sup>(2)</sup>	<b>EM1</b> Emergency Pack - Up to 8W <sup>(6)</sup>
		<b>VH</b> Very High					<b>ZIFC</b> Douglas IFC Controller with Newtork Capabilities <sup>(3)</sup>	<b>EM2</b> Emergency Pack - Up to 16W <sup>(6)</sup>
							<b>ZENLO</b> Enlighted One Micro Sensor with Dimming/Occupancy/Daylight Harvesting <sup>(4)</sup>	<b>CC</b> Conformal Coating
							<b>ZENLC</b> Enlighted Connected Micro Sensor with Dimming/Occupancy/Daylight Harvesting <sup>(4)</sup>	<b>LVL</b> 0-10V Dimming Leads for Easy Field Access
							<b>ZENLI</b> Enlighted IoT Micro Sensor with Dimming/Occupancy/Daylight Harvesting <sup>(4)</sup>	<b>BAA</b> Buy American Act Compliant

## Notes

- <sup>(1)</sup> 120-277V only. Max mounting height 49'. See page 5 for more details.  
<sup>(2)</sup> Max mounting height 16.4'. See page 6 for more details.  
<sup>(3)</sup> See page 6 for more details.  
<sup>(4)</sup> Max mounting height 15'. See page 6 for more details.  
<sup>(5)</sup> Not available on all models. Certain conditions apply. Consult factory or sales representative for details.  
<sup>(6)</sup> 120-277V only / 0°C-50°C ambient.

## Accessories (order separately)

**STD(480V)** 480V to 277V Step Down Transformer

## Controls Accessories (order separately)



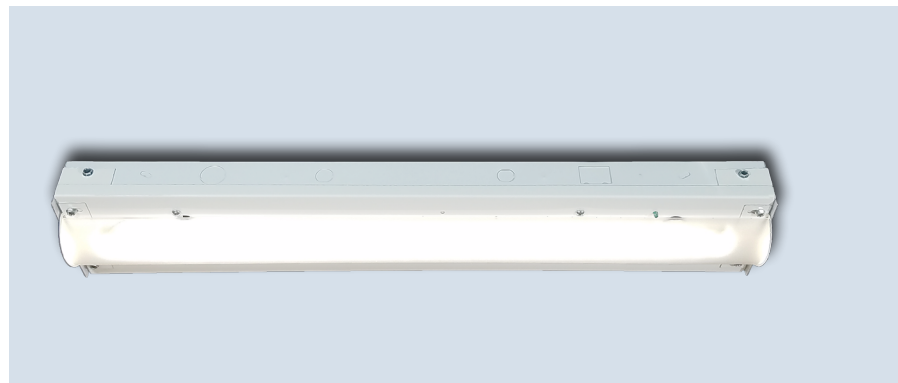
### For Douglas Controls

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

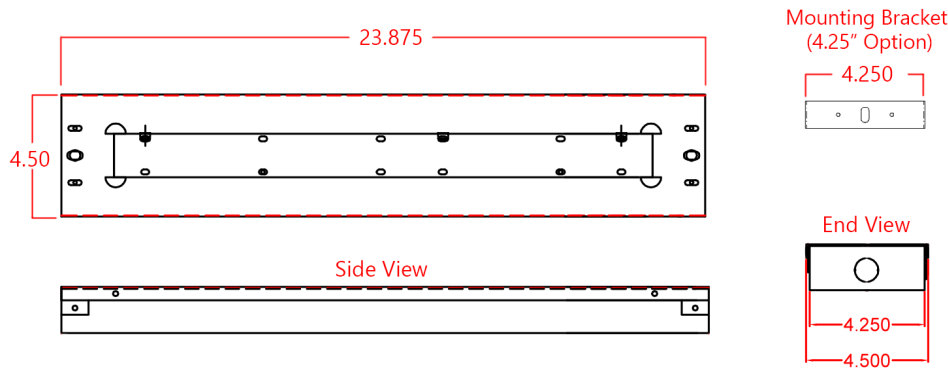


### For Enlighted Controls

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:



Performance Chart:

Catalog #	Lumens	Watts	LPW	Catalog #	Lumens	Watts	LPW	Catalog #	Lumens	Watts	LPW
RCL 2 LW UV 835	837	8	104.7	RCL 2 LW UV 840	863	8	107.9	RCL 2 LW UV 850	889	8	111.1
RCL 2 MD UV 835	1950	17.5	111.4	RCL 2 MD UV 840	2011	17.5	114.9	RCL 2 MD UV 850	2071	17.5	118.3
RCL 2 HI UV 835	3085	23	134.1	RCL 2 HI UV 840	3180	23	138.3	RCL 2 HI UV 850	3275	23	142.4
RCL 2 VH UV 835	3963	32	123.9	RCL 2 VH UV 840	4086	32	127.7	RCL 2 VH UV 850	4208	32	131.5
RCL 2 LW UV FR 835	804	8	100.5	RCL 2 LW UV FR 840	828	8	103.6	RCL 2 LW UV FR 850	853	8	106.7
RCL 2 MD UV FR 835	1852	17.5	105.8	RCL 2 MD UV FR 840	1910	17.5	109.1	RCL 2 MD UV FR 850	1967	17.5	112.4
RCL 2 HI UV FR 835	2960	23	128.7	RCL 2 HI UV FR 840	3052	23	132.7	RCL 2 HI UV FR 850	3143	23	136.7
RCL 2 VH UV FR 835	3804	32	118.9	RCL 2 VH UV FR 840	3921	32	122.5	RCL 2 VH UV FR 850	4039	32	126.2

LUMENFOCUS  
Re-boardABILITY

The RCL 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:

### RCL 2 MD UV 835

Test No.: LLIA000735-002

Luminaire Lumens: 1,947 lm

Luminaire Watts: 17.5W

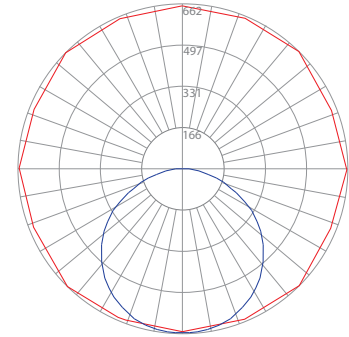
Efficacy: 111.2 LPW

Spacing Criterion (0-180): 1.30

Spacing Criterion (90-270): 1.30

#### Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	9227	8582	8393
55	8922	8106	7887
65	8281	7215	6658
75	6865	5086	4819
85	3240	1877	1790



— Vert. Plane  
— Horiz. Cone

#### 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	61	
4	82	70	61	54		80	69	60	54	66	59	53		64	57	52	
5	75	62	53	47		73	61	53	46	59	52	46		57	50	45	
6	70	56	47	41		68	55	47	40	53	46	40		52	45	40	
7	64	51	42	36		63	50	42	36	48	41	35		47	40	35	
8	60	46	38	32		58	46	37	32	44	37	31		43	36	31	
9	56	42	34	28		55	42	34	28	41	33	28		40	33	28	
10	52	39	31	26		51	39	31	26	38	30	26		37	30	25	

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

#### Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20	240.45	12.40
0-30	514.20	26.40
0-40	849.80	43.70
0-60	1532.06	78.70
0-80	1916.18	98.40
0-90	1946.55	100.00
90-120	0.02	0.00
90-130	0.02	0.00
90-150	0.02	0.00
90-180	0.02	0.00
0-180	1946.57	100.00

### RCL 2 MD UV FR 835

Test No.: LLIA000735-001

Luminaire Lumens: 1,852 lm

Luminaire Watts: 17.5W

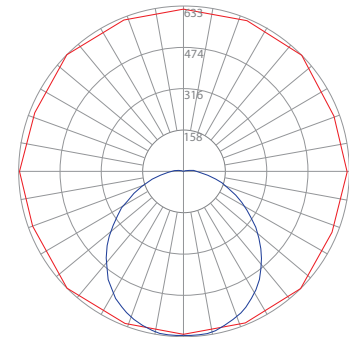
Efficacy: 105.8 LPW

Spacing Criterion (0-180): 1.24

Spacing Criterion (90-270): 1.28

#### Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7612	7715	7807
55	6539	7029	7290
65	5532	6240	6619
75	4587	5568	5915
85	4041	5683	5854



— Vert. Plane  
— Horiz. Cone

#### 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			
0	118	118	118	118		115	115	115	115	110	110	110		105	105	105
1	107	102	98	94		104	100	96	92	95	92	88		91	88	85
2	98	89	82	76		95	87	80	75	83	77	73		79	75	71
3	89	78	70	63		86	76	69	62	73	66	61		70	64	59
4	81	69	60	53		79	68	59	53	65	58	52		62	56	51
5	75	62	53	46		72	60	52	46	58	51	45		56	49	44
6	69	56	47	40		67	55	46	40	52	45	39		51	44	39
7	64	50	42	35		62	49	41	35	48	40	35		46	39	34
8	60	46	37	32		58	45	37	31	44	36	31		42	36	31
9	56	42	34	28		54	42	34	28	40	33	28		39	32	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

#### Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20	228.84	12.40
0-30	486.45	26.30
0-40	795.41	42.90
0-60	1389.14	75.00
0-80	1736.57	93.70
0-90	1806.37	97.50
90-120	42.97	2.30
90-130	44.26	2.40
90-150	45.94	2.50
90-180	45.98	2.50
0-180	1852.35	100.00

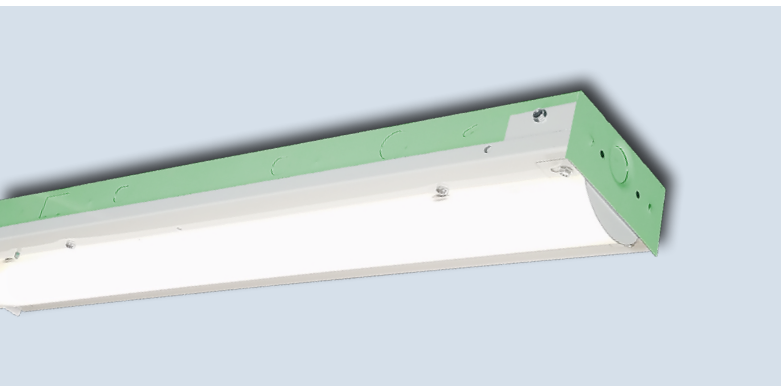


## ZOSMD option: **Leviton 0-10V High Frequency Microwave Sensor**

The RCL can be equipped with an integrated Leviton 0-10V dimming high frequency microwave sensor ("ZOSMD" option). The ZOSMD detects motion through low density materials allowing it to be installed out of site, under the RCL's frosted lens. The high frequency waves offer less interference and false tripping than traditional sensing technology for reliable occupancy applications. The integrated daylighting sensor detects natural light and turns lights ON or keeps lights OFF in response to available natural light or the daylight set point when motion is detected.

### Features:

- Automatic switching or dimming based on motion
- Ambient light override
- Designed to detect movement behind low-density fixture materials or behind objects made of plastic or glass
- up to 49' mounting height
- Detection Zone: 52' diameter x 49' Height Max
- Standby Dimming Level: 10% / 20% / 30% / 50%
- IP20 rated
- 120-277V



## Douglas Lighting Controls, Inc.: Cloud-based controls

The RCL 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
- Up to 16.4' (5m) mounting height

### 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

## 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.

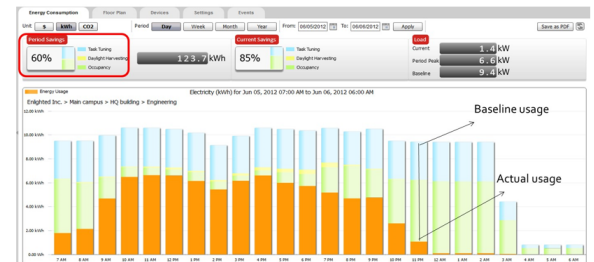
Enlighted sensors come standard with the Enlighted One system (the "ZENLO" option). Enlighted Connected ("ZENLC") offers even more options. The Enlighted IoT ("ZENLI") option allows the full implementation of Enlighted's services. Each system can be fully upgraded to the next tier in the future. So if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



## 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 ZENLC and ZENLI

Learn more about our available advanced controls options here:

[www.lumenfocus.com/controls-overview](http://www.lumenfocus.com/controls-overview)

© 2021 Enlighted for all Enlighted content and images.

© 2021 Douglas Lighting Controls, Inc. for all Douglas content and images. The Bluetooth® word, mark and logos are registered trademarks owned by the Bluetooth SIG, Inc. and any use of such marks by Douglas Lighting Controls is under license. Other trademarks and trade names are those of their respective owners.

