

DESCRIPTION

Cruze LED is a specification lensed troffer series. This high quality luminaire is dedicated to the latest solid state lighting and driver technology for optimal performance and energy efficiency. The Cruze is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

The Cruze series features efficiency, quality and performance. The series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Rigid housing is die formed of code gauge prime cold rolled steel and features full length die-formed stiffeners and unibody endplate for added strength. Side flanges are hemmed. Innovative design provides superior lens brightness uniformity and visual comfort. Unibody endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. Endplates have integral Grid-lock feature for safety and convenience.

Controls

The Cruze LED is Powered by Fifth Light, with a standard 0-10V continuous dimming driver that works with any 0-10V control/dimmer. Combine with energy saving products like occupancy sensors, daylighting controls and lighting relay panels to maximize energy savings. In addition, the Cruze can include a factory-installed integrated sensor system for occupancy and daylight dimming control and manual control from an optional handheld remote. Or, specify the Digital Addressable Lighting Interface (DALI) drivers, dimmable down to 10%, for use with Fifth Light controls. See ordering information for details on all three options.

Electrical

Long-Life LED system coupled with electrical driver to deliver optimal performance. LED's available in 3000K, 3500K, 4000K or 5000K with a CRI \geq 85. Projected life is 60,000 hours at 89% lumen output. cULus listed. Electronic drivers are available for 120-277V applications.

Emergency Battery Pack Option

Optional 120v-277v integral emergency battery pack is available in 7-watts or 14-watts to meet critical life-safety lighting requirements. The 90-minute batteries provide constant power to the LED system, ensuring code-compliance. A test switch/indicator button can be tested safely from the ground using a laser pointer, while the patented EZ Key prevents accidental discharge of the battery during construction. See ordering information for details.

Finish

Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibition. Housing finished with 90% reflective white enamel for superior performance.

Hinging/Latching

Positive cam action steel latches with baked white enamel finish. Safety-lock T-hinges allow hinging and latching either side. Door assembly hinges down for easy access from below.

Frame/Shielding

Die formed, heavy gauge, flat steel door with reinforced mitered corners and painted after fabrication, baked matte white enamel finish. Positive light seals. Acrylic frosted lens.

Compliance

Modules are UL recognized components and indoor luminaires are cULus listed for 25°C ambient environments, RoHS compliant, and LED modules comply with IESNA LM-79 and LM-80 standards. DesignLights Consortium™ Qualified and classified for DLC Standard, refer to www.designlights.org for details.

Warranty

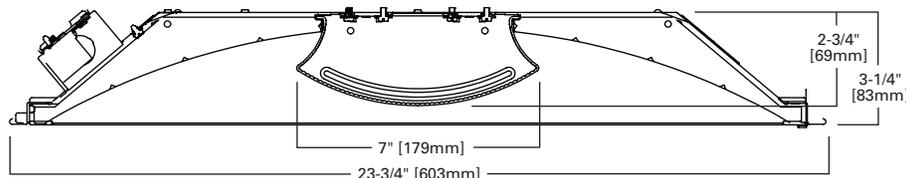
Five year warranty.



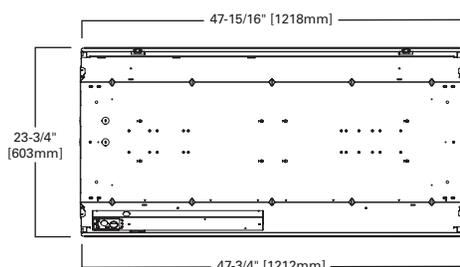
**24CZ
LED**

**2' X 4' TROFFER LED
MODULE**

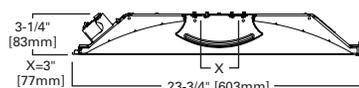
Specification Grade Troffer



MOUNTING DATA



LAMP CONFIGURATIONS



CERTIFICATION DATA

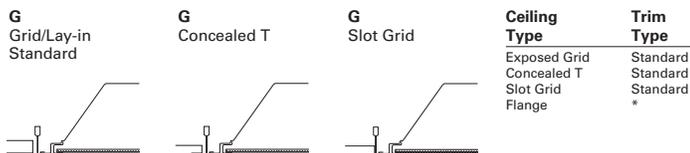
cULus - 1598
 Damp Location Listed
 IC Rated
 LM79/LM80 Compliant
 ROHS Compliant
 DesignLights Consortium™ Qualified
 NOM Compliant

*See Drywall Frame Kit Accessory in Ordering Information Section

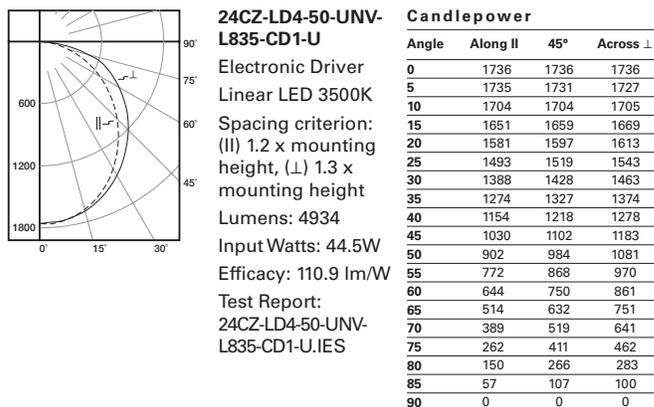
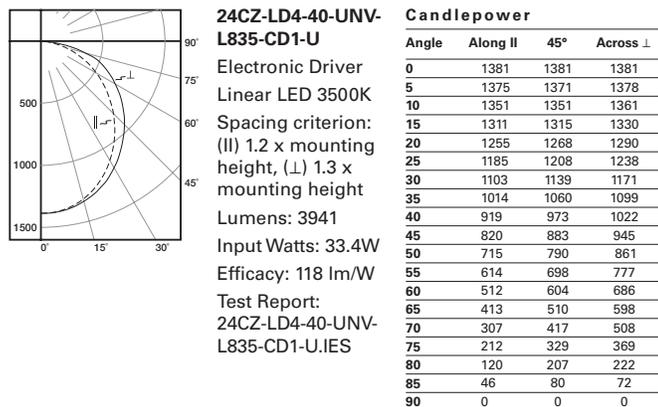
LINEAR DISCONNECT

Safe and convenient means of disconnecting power

CEILING COMPATIBILITY



PHOTOMETRICS



Coefficients of Utilization

rc rw RCR	Effective floor cavity reflectance																							
	80%				70%				50%				30%				10%				0%			
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100						
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83						
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	68						
3	89	79	70	64	87	77	69	63	74	67	62	71	65	61	69	64	60	57						
4	82	69	61	54	79	68	60	53	66	58	53	63	57	52	61	56	51	49						
5	75	62	53	46	73	61	52	46	59	51	45	57	50	45	55	49	44	42						
6	69	56	47	40	67	55	46	40	53	45	40	51	45	39	50	44	39	37						
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	33						
8	60	46	38	32	58	45	37	32	44	37	31	43	36	31	42	36	31	29						
9	56	42	34	29	55	42	34	28	41	33	28	40	33	28	39	32	28	26						
10	52	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	25	24						

Coefficients of Utilization

rc rw RCR	Effective floor cavity reflectance																							
	80%				70%				50%				30%				10%				0%			
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100						
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83						
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	68						
3	89	79	70	63	87	77	69	63	74	67	62	71	65	61	69	64	60	57						
4	82	69	60	54	79	68	60	53	66	58	52	63	57	52	61	56	51	49						
5	75	62	53	46	73	61	52	46	59	51	45	57	50	45	55	49	44	42						
6	69	56	47	40	67	55	46	40	53	45	40	53	45	40	51	45	39	37						
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	33						
8	60	46	38	32	58	45	37	32	44	37	31	43	36	31	42	36	31	29						
9	56	42	34	29	55	42	34	28	41	33	28	40	33	28	39	32	28	26						
10	52	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	25	24						

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	1060	26.9
0-40	1723	43.7
0-60	3027	76.8
0-90	3941	100.0
0-180	3941	100.0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	1330	26.9
0-40	2157	43.7
0-60	3786	76.7
0-90	4934	100.0
0-180	4934	100.0

ENERGY AND PERFORMANCE DATA BY CATALOG NUMBER

Stock or MTO*	Catalog Logic (Ribbed Lens)	Delivered Lumens	Watts	Efficacy (lm/W)
MTO	24CZ-LD4-30-UNV-L830-CD1-U	2700	25.6	110
MTO	24CZ-LD4-30-UNV-L835-CD1-U	2940	24.6	120
MTO	24CZ-LD4-30-UNV-L840-CD1-U	3098	24.6	126
MTO	24CZ-LD4-30-UNV-L850-CD1-U	3233	24.6	132
MTO	24CZ-LD4-35-UNV-L830-CD1-U	3174	29.3	108
MTO	24CZ-LD4-35-UNV-L835-CD1-U	3456	29.3	118
MTO	24CZ-LD4-35-UNV-L840-CD1-U	3641	29.3	124
MTO	24CZ-LD4-35-UNV-L850-CD1-U	3801	29.3	130
MTO	24CZ-LD4-40-UNV-L830-CD1-U	3619	33.4	108
STOCK	24CZ-LD4-40-UNV-L835-CD1-U	3941	33.4	118
STOCK	24CZ-LD4-40-UNV-L840-CD1-U	4152	33.4	124
MTO	24CZ-LD4-40-UNV-L850-CD1-U	4334	33.4	130
MTO	24CZ-LD4-45-UNV-L830-CD1-U	4091	39.3	104
MTO	24CZ-LD4-45-UNV-L835-CD1-U	4455	39.3	113
MTO	24CZ-LD4-45-UNV-L840-CD1-U	4694	39.3	120
MTO	24CZ-LD4-45-UNV-L850-CD1-U	4899	39.3	125
MTO	24CZ-LD4-50-UNV-L830-CD1-U	4531	44.5	102
STOCK	24CZ-LD4-50-UNV-L835-CD1-U	4934	44.5	111
STOCK	24CZ-LD4-50-UNV-L840-CD1-U	5199	44.5	117
MTO	24CZ-LD4-50-UNV-L850-CD1-U	5426	44.5	122
MTO	24CZ-LD4-55-UNV-L830-CD1-U	4989	50.2	99
MTO	24CZ-LD4-55-UNV-L835-CD1-U	5433	50.2	108
MTO	24CZ-LD4-55-UNV-L840-CD1-U	5724	50.2	114
MTO	24CZ-LD4-55-UNV-L850-CD1-U	5975	50.2	119
MTO	24CZ-LD4-60-UNV-L830-CD1-U	5529	56.2	98
MTO	24CZ-LD4-60-UNV-L835-CD1-U	6021	56.2	107
MTO	24CZ-LD4-60-UNV-L840-CD1-U	6344	56.2	113
MTO	24CZ-LD4-60-UNV-L850-CD1-U	6621	56.2	118
MTO	24CZ-LD4-65-UNV-L830-CD1-U	6003	62.0	97
MTO	24CZ-LD4-65-UNV-L835-CD1-U	6537	62.0	105
MTO	24CZ-LD4-65-UNV-L840-CD1-U	6888	62.0	111
MTO	24CZ-LD4-65-UNV-L850-CD1-U	7189	62.0	116
MTO	24CZ-LD4-70-UNV-L830-CD1-U	6502	68.8	95
MTO	24CZ-LD4-70-UNV-L835-CD1-U	7080	68.8	103
MTO	24CZ-LD4-70-UNV-L840-CD1-U	7460	68.8	108
MTO	24CZ-LD4-70-UNV-L850-CD1-U	7786	68.8	113
MTO	24CZ-LD4-75-UNV-L830-CD1-U	6890	74.5	92
MTO	24CZ-LD4-75-UNV-L835-CD1-U	7503	74.5	101
MTO	24CZ-LD4-75-UNV-L840-CD1-U	7905	74.5	106
MTO	24CZ-LD4-75-UNV-L850-CD1-U	8251	74.5	111

*Made to order (MTO) requires a typical four week lead time.

Stock or MTO*	Catalog Logic (Smooth Lens)	Delivered Lumens	Watts	Efficacy (lm/W)
MTO	24CZ-LD4-30-S-UNV-L830-CD1-U	2760	25.6	112
MTO	24CZ-LD4-30-S-UNV-L835-CD1-U	3005	24.6	122
MTO	24CZ-LD4-30-S-UNV-L840-CD1-U	3166	24.6	129
MTO	24CZ-LD4-30-S-UNV-L850-CD1-U	3305	24.6	135
MTO	24CZ-LD4-35-S-UNV-L830-CD1-U	3244	29.3	111
MTO	24CZ-LD4-35-S-UNV-L835-CD1-U	3532	29.3	121
MTO	24CZ-LD4-35-S-UNV-L840-CD1-U	3722	29.3	127
MTO	24CZ-LD4-35-S-UNV-L850-CD1-U	3885	29.3	133
MTO	24CZ-LD4-40-S-UNV-L830-CD1-U	3699	33.4	111
MTO	24CZ-LD4-40-S-UNV-L835-CD1-U	4028	33.4	121
MTO	24CZ-LD4-40-S-UNV-L840-CD1-U	4244	33.4	127
MTO	24CZ-LD4-40-S-UNV-L850-CD1-U	4430	33.4	133
MTO	24CZ-LD4-45-S-UNV-L830-CD1-U	4182	39.3	107
MTO	24CZ-LD4-45-S-UNV-L835-CD1-U	4553	39.3	116
MTO	24CZ-LD4-45-S-UNV-L840-CD1-U	4798	39.3	122
MTO	24CZ-LD4-45-S-UNV-L850-CD1-U	5007	39.3	128
MTO	24CZ-LD4-50-S-UNV-L830-CD1-U	4631	44.5	104
MTO	24CZ-LD4-50-S-UNV-L835-CD1-U	5043	44.5	113
MTO	24CZ-LD4-50-S-UNV-L840-CD1-U	5314	44.5	119
MTO	24CZ-LD4-50-S-UNV-L850-CD1-U	5546	44.5	125
MTO	24CZ-LD4-55-S-UNV-L830-CD1-U	5100	50.2	102
MTO	24CZ-LD4-55-S-UNV-L835-CD1-U	5553	50.2	111
MTO	24CZ-LD4-55-S-UNV-L840-CD1-U	5851	50.2	117
MTO	24CZ-LD4-55-S-UNV-L850-CD1-U	6107	50.2	122
MTO	24CZ-LD4-60-S-UNV-L830-CD1-U	5652	56.2	101
MTO	24CZ-LD4-60-S-UNV-L835-CD1-U	6154	56.2	110
MTO	24CZ-LD4-60-S-UNV-L840-CD1-U	6484	56.2	115
MTO	24CZ-LD4-60-S-UNV-L850-CD1-U	6768	56.2	121
MTO	24CZ-LD4-65-S-UNV-L830-CD1-U	6136	62.0	99
MTO	24CZ-LD4-65-S-UNV-L835-CD1-U	6682	62.0	108
MTO	24CZ-LD4-65-S-UNV-L840-CD1-U	7040	62.0	114
MTO	24CZ-LD4-65-S-UNV-L850-CD1-U	7348	62.0	118
MTO	24CZ-LD4-70-S-UNV-L830-CD1-U	6646	68.8	97
MTO	24CZ-LD4-70-S-UNV-L835-CD1-U	7237	68.8	105
MTO	24CZ-LD4-70-S-UNV-L840-CD1-U	7625	68.8	111
MTO	24CZ-LD4-70-S-UNV-L850-CD1-U	7958	68.8	116
MTO	24CZ-LD4-75-S-UNV-L830-CD1-U	7043	74.5	94
MTO	24CZ-LD4-75-S-UNV-L835-CD1-U	7669	74.5	103
MTO	24CZ-LD4-75-S-UNV-L840-CD1-U	8080	74.5	108
MTO	24CZ-LD4-75-S-UNV-L850-CD1-U	8433	74.5	113

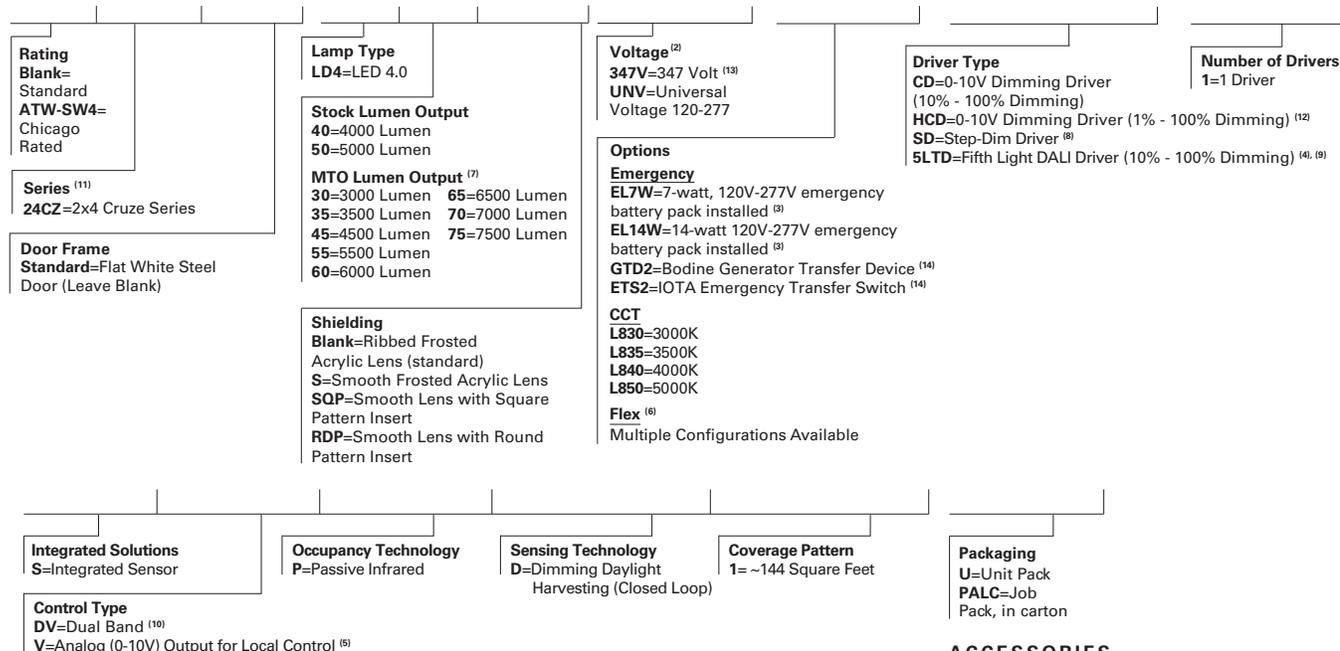
*Made to order (MTO) requires a typical four week lead time.

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours)	Theoretical L70 (Hours)
25°C	> 89%	> 201,000

ORDERING INFORMATION

SAMPLE NUMBER: 24CZ-LD4-45-UNV-L835-CD1-U



ACCESSORIES

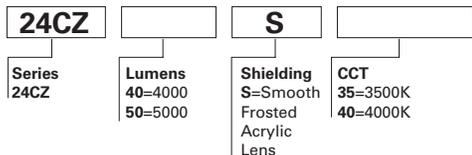
- EQ-CLIP-U=T-BAR Safety Earthquake Clips ⁽¹⁾
- DF-24-W=2' x 4' Drywall Frame Kit
- SK-24-WS=2' x 4' Shallow Surface Mount Kit
- SK-24-WT=2' x 4' Tall Surface Mount Kit
- DF10P-C_=Decorator Dimmer, 0-10V
- SF10P-_=Decorator Slide Dimmer, 0-10V
- HHPRG-MS=Programming Remote for Integrated Sensor
- ISHH-02=Personal Control Remote for Integrated Sensor

NOTES: ⁽¹⁾An EQ Grid Clip is recommended for all 9/16" ceiling systems. Four required per fixture. ⁽²⁾Products also available in non-US voltages and frequencies for international markets. ⁽³⁾With integral test switch/indicator/laser test. For approximate delivered lumens multiply the lumens per watt of the desired fixture by the wattage of the emergency battery pack (100 lm/W x 7=700 lumens). IES-format photometry for luminaire under emergency operation available. ⁽⁴⁾Must be used in conjunction with a DALI control system. For a complete listing of Fifth Light Technology products and other solutions from Cooper Controls, visit www.eaton.com/lightingsystems ⁽⁵⁾Integral sensor works only with "CD" driver and is factory prewired to the driver for stand-alone control. ⁽⁶⁾Flex does not include dimming leads. Control leads provided by others. ⁽⁷⁾Made-to-order (MTO) requires a typical four week leadtime. ⁽⁸⁾Step dim driver option is not available with 3000 and 3500 lumen packages. Two step-dim drivers required for 7000 and 75000 lumen packages. ⁽⁹⁾Fifth Light (5LTD) driver option is not available with 3000 and 3500 lumen packages. ⁽¹⁰⁾Provides blank band on opposite side from sensor band to provide symmetric appearance. ⁽¹¹⁾DesignLights Consortium™ Qualified and classified for DLC Standard (all lumen packages), refer to www.designlights.org for details. ⁽¹²⁾HCD driver option is not available with 6500, 7000 and 7500 lumen packages. ⁽¹³⁾347V versions are not available with emergency options. ⁽¹⁴⁾Used to transfer fixture to secondary power source for life-safety operation. When used with a dimming fixture, two devices are required to ensure control is disabled while operating under emergency power.

Specifications & dimensions subject to change without notice. Consult your Eaton Representative for availability and ordering information.

QUICK SHIP SKUS

SAMPLE NUMBER: 24CZ40S35



NOTES: Options are not available with these SKUs. Refer to standard SKU ordering information to add options. Voltage is 120-277V. Driver type is 0-10V dimming. Lead-time is 10 days. Must be ordered in pallet quantities only (28 per pallet).

SHIPPING DATA

Catalog No.	Wt.
24CZ-LD4-45	20.5 lbs.
24CZ-LD4-55	20.5 lbs.

INTEGRATED SENSOR

Description

This innovative luminaire-integrated sensor control system is optimized for code-compliant occupancy detection and daylight harvesting – all from within the foot print of Metalux’s award-winning recessed ambient luminaires.

No New Wires

An in-place fixture retrofit is all that’s needed to meet most energy codes in commercial spaces. The sensor system is factory wired to the luminaire, switching on or off based on occupancy, and dimming the light when enough daylight is available.

Sophisticated lighting control without commissioning

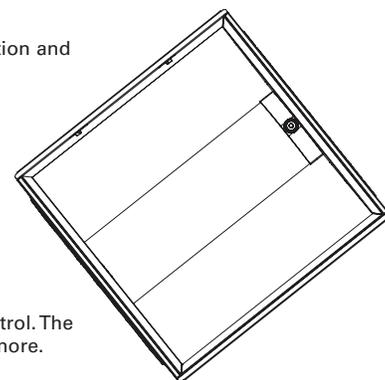
The luminaire-integrated sensor system offers out-of-the-box operation using thoughtful default settings.

Flexibility and Individual Control

When the application demands more, the sensor system has the option to make changes using a remote control. The remote allows changes from the default settings for occupancy, target light level, preset lighting levels, and more.

Cost-effective, Stand-alone Operation

With a single product to mount and a single electrical connection to make, the Metalux luminaire with an integrated sensor system saves money on the total installed cost when occupancy or daylight harvesting controls are needed. The integrated sensor system works stand-alone, without the need for additional switches and dimmers. When manual-on, manual dimming or other code-required control schemes are needed, please see the comprehensive offering of Greengate and Fifth Light solutions from Cooper Controls at www.coopercontrol.com.



Metalux Integrated Sensor Sequence of Operation

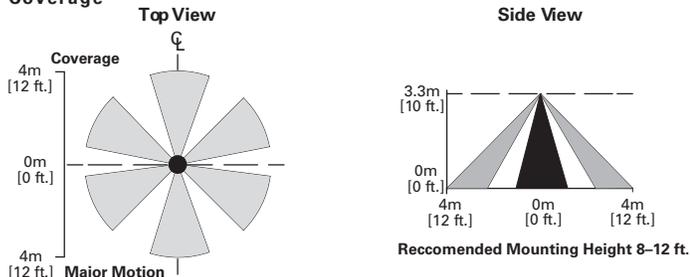
The occupancy sensing portion of the sensor uses Passive Infrared (PIR) technology with Auto-on/Auto-off operation. The small lens in the center of the sensor directs the view of a passive infrared occupancy detector to sense occupants moving through the room. To trigger the light on, an occupant must cross at least two passive infrared beams. When motion in the coverage area ceases, the sensor logic concludes the room is unoccupied, and begins a count-down timer. By default, the timer is factory-set to 20 minutes, and can be adjusted to 5, 10, 15 and 20 minutes using the optional remote control, model number HHPRG-MS. Any motion detected during the count-down timer will cause the light to remain on and resets the timer. When motion is detected, a red LED will blink. In addition to the default on/off functionality, the sensor has an Energy Saver feature, where the light can be set to dim to a preset level after the sensor detects no occupancy for half of the count-down timer, when the timer is complete the lighting will change to the unoccupied setting. The Energy Saver feature works when the count-down timer is set to at least 15 minutes, and the preset level and feature are configured using the optional remote control. See the Sensor Programming Guide that comes with the HHPRG-MS remote for details on this feature. The sensitivity of the occupancy detection can be adjusted, using the HHPRG-MS remote. By default, the sensor operates at the full detection range shown on the coverage pattern diagram. Using the “LO” button on the HHPRG-MS remote, reduces the sensor detection range by 50%. Full coverage can be restored at any time by pressing the “HI” button on the remote. The red LED indicator will blink repeatedly to confirm any programming change.

The dimming daylight harvesting portion of the sensor uses a small photo sensor located next to the occupancy sensing lens. The sensor continuously measures the available light in the room, even when the fixture is turned off. This allows sensor to operate in one of three daylighting modes, where the artificial light from the paired Metalux luminaire can adjust the light based on the amount of ambient light from surrounding natural and artificial light sources. Since the sensor measures light from its luminaire along with other light sources, this sensor follows a closed-loop dimming daylight harvesting style. The first mode, Daytime, is active when the sensor detects light of at least 100 lux in the room. In Daytime mode, when the light is turned on after detecting occupancy, the sensor will begin balancing the luminaire light level relative to the total available light it measures. The default light balancing target in daytime mode is 500 lux. This level can be adjusted higher or lower using the optional HHPRG-MS remote, and pressing “SET” and then the “DO” (Daytime Occupied) button to store the new light level. Similarly, the Daytime Unoccupied, “DU” has a default of level of 0 lux, or off, but can be adjusted higher to prevent the lights from turning off completely when unoccupied. More details on this function are found in the Sensor Programming Guide for the HHPRG-MS remote.

The next two modes, Twilight and Nighttime, function in a similar way, allowing the artificial light to adjust to different levels based on the surroundings. While primarily for use in outdoor luminaires, these modes are available for use in areas with a wide range of natural light, including atriums, day lit stairwells, and rooms with large or continuous windows. The Twilight mode is active when the sensor detects 50-100 lux in the off position, and has a 300 lux default light balancing target. The Nighttime mode is active when the sensor detects less than 50 lux, and has a 250 lux default light balancing target. Like the Daytime mode, there are separate settings for Twilight Occupied (“TO”), Twilight Unoccupied (“TU”), Nighttime Occupied (“NO”) and Nighttime Unoccupied (“NU”) which can be adjusted and set using the optional HHPRG-MS remote.

In addition to programming the sensor, the optional HHPRG-MS remote can be used for personal control to adjust the lighting temporarily override the functions of the sensor temporarily. The remote has raise/lower buttons to adjust the light level for special tasks, as well as a power button to turn the lights on or off. Unless the SET button and another function is selected, any changes made using these buttons will revert to the programmed settings after the sensor has detected no occupancy for its programmed time out, and turned off the lighting. The next time the sensor detects occupancy, it will revert to its programmed settings for count-down timer and light balancing.

Coverage



Optional Remote Control



HHPRG-MS Remote