Metalux

DESCRIPTION

The Encounter™ redefines ambient lighting by being the first fixture to blend modern contemporary styling with the innovative WaveStream™ technology to deliver exceptional performance and superior energy savings. Encounter's highly efficient LED system with advance optical design delivers an unparalleled combination of optimal light uniformity for enhanced visual comfort and superior efficiency for greater energy savings.

Encounter is compatible with all of today's popular ceiling systems and available in a variety of configurations for application versatility. Its perfect balance of form and function make it an ideal choice for commercial office spaces, schools, hospitals, retail and other indoor ambient applications.

Catalog #		**Type**
Project		
Comments		**Date**
Prepared by		

SPECIFICATION FEATURES

Construction
Shallow 3-1/4" deep housing is extruded aluminum frame and injected molded composite end plates. End plates are securely attached with screws for strength and rigidity and the elimination of gaps. End plates have accessory grid-lock feature for safety and convenience. Four auxiliary fixture end suspension points are provided. Large access plate for supply connection.

Controls
The Encounter 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 Encounter 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 1% with the HD option, 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 typical CRI ≤ 85. Projected life is 60,000 hours at 85% lumen output. 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.

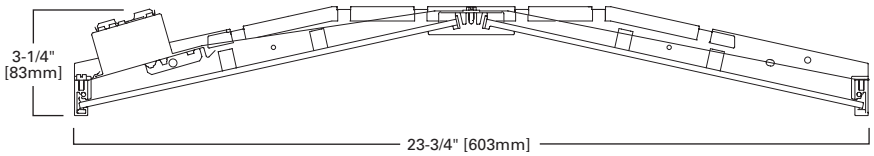
Driver Access
Drivers can be accessed via plenum.

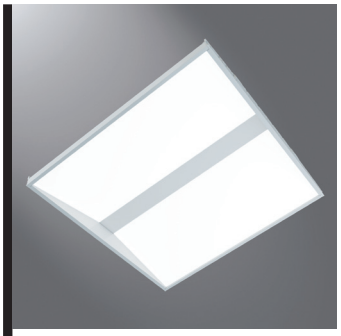
Finish
Durable frame has high reflectance baked matte white enamel finish for luminous uniformity.

Optics
Precision formed optical assembly with positively retained high optical grade acrylic lenses provide a directed optical distribution using WaveStream technology.

Compliance
Components are UL recognized. Indoor luminaires are cULus and CSA listed for 25° C ambient environments, RoHS compliant, and comply with IESNA LM-79. LEDs comply with LM-80 standards. DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.

Warranty
Five year warranty.





22EN
LED

2' X 2' TROFFER
LED MODULE

Specification Grade Troffer

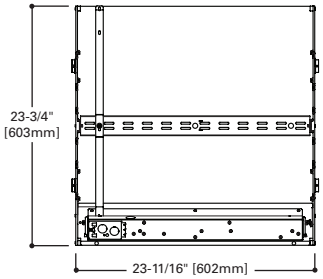
powered by fifthlight technology

CERTIFICATION DATA

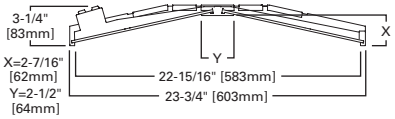
cULus - 1598 and 2043**
Damp Location Listed
CSA
IC Rated
LM79/LM80 Compliant
ROHS Compliant
DesignLights Consortium® Qualified
NOM Compliant

*See Drywall Frame Kit Accessory in Ordering Information section.
**Fixture construction is suitable for use in Air-handling and plenum rated spaces in accordance with Section 300.22 (C) of the National Electrical Code, Section 4.3.11.2.6.5 of NFPA 90A and Section 602.2.1.4 of ICC.

MOUNTING DATA



LAMP CONFIGURATIONS



CEILING COMPATIBILITY

G
Grid/Lay-in
Standard

F
Drywall Frame
Kit

Ceiling Type	Trim Type
Exposed Grid	G
Concealed T	G or T
Slot Grid	G or T
Flange	*

LINEAR DISCONNECT
Safe and convenient means of disconnecting power

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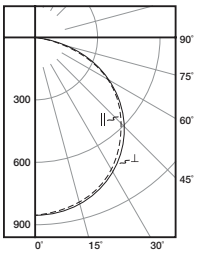
PHOTOMETRICS



22EN-LD1-25-UNV-L835-CD1-U
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.3 x mounting height
Lumens: 2537
Input Watts: 25.5W
Efficacy: 100 LPW
Test Report: 22EN-LD1-25-UNV-L835-CD1-U.IES

Candlepower

Angle	Along II	45°	Across ⊥
0	850	850	850
5	847	847	850
10	836	836	842
15	818	820	828
20	795	796	808
25	764	767	780
30	727	730	746
35	686	688	706
40	637	640	658
45	586	588	606
50	529	531	547
55	469	465	483
60	401	396	414
65	332	324	343
70	260	255	253
75	185	178	152
80	114	96	104
85	42	43	44
90	0	0	0

Coefficients of Utilization

Effective floor cavity reflectance 20%

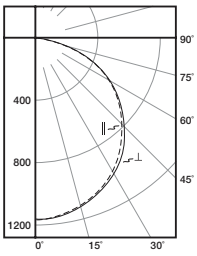
rc	80%				70%				50%			30%			10%			0%
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	99	95	106	101	97	94	97	94	91	93	90	88	90	87	85	83
2	98	90	83	77	96	88	82	76	85	79	74	81	77	73	78	74	71	69
3	90	79	71	64	87	77	70	63	74	68	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	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	35	63	50	41	35	48	41	35	47	40	35	45	39	34	32
8	60	46	37	32	58	45	37	31	44	37	31	43	36	31	42	35	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	23

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	667	26.3
0-40	1100	43.4
0-60	1976	77.9
0-90	2537	100.0
0-180	2537	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2229	2237	2305
55	2200	2181	2265
65	2113	2062	2183
75	1923	1850	1580
85	1296	1327	1358



22EN-LD1-34-UNV-L835-CD1-U
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.3 x mounting height
Lumens: 3424
Input Watts: 34.9W
Efficacy: 98 LPW
Test Report: 22EN-LD1-34-UNV-L835-CD1-U.IES

Candlepower

Angle	Along II	45°	Across ⊥
0	1156	1156	1156
5	1152	1150	1156
10	1136	1137	1144
15	1111	1112	1123
20	1078	1079	1094
25	1035	1037	1055
30	984	986	1007
35	927	929	952
40	861	865	887
45	791	791	815
50	715	712	738
55	630	626	649
60	542	534	558
65	449	439	463
70	346	342	345
75	247	238	204
80	152	129	139
85	57	58	58
90	0	0	0

Coefficients of Utilization

Effective floor cavity reflectance 20%

rc	80%				70%				50%			30%			10%			0%
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	99	95	106	101	97	94	97	94	91	93	91	88	90	87	85	83
2	98	90	83	77	96	88	82	76	85	79	75	81	77	73	78	75	71	69
3	90	79	71	64	87	77	70	63	74	68	62	72	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	52	46	59	51	46	57	50	45	55	49	45	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	31	44	37	31	43	36	31	42	35	31	29
9	56	42	34	28	54	42	34	28	41	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	38	31	26	37	30	26	37	30	25	36	30	25	23

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	904	26.4
0-40	1489	43.5
0-60	2669	77.9
0-90	3424	100.0
0-180	3424	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	3009	3009	3100
55	2955	2936	3044
65	2858	2794	2947
75	2567	2474	2120
85	1759	1790	1790

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours)	Theoretical L70 (Hours)
25°C	> 85%	>163,000

ENERGY AND PERFORMANCE DATA BY CATALOG NUMBER

Stock or MTO*	Catalog Logic (Curved)	Delivered Lumens	Watts	Efficacy (LPW)
MTO	22EN-LD1-19-UNV-L830-CD1-U	1903	18.8	101
MTO	22EN-LD1-19-UNV-L835-CD1-U	1936	18.7	104
MTO	22EN-LD1-19-UNV-L840-CD1-U	1955	18.8	104
MTO	22EN-LD1-19-UNV-L850-CD1-U	2068	18.8	110
MTO	22EN-LD1-25-UNV-L830-CD1-U	2487	25.5	97
STOCK	22EN-LD1-25-UNV-L835-CD1-U	2537	25.5	99
STOCK	22EN-LD1-25-UNV-L840-CD1-U	2627	25.5	103
MTO	22EN-LD1-25-UNV-L850-CD1-U	2779	25.4	109
MTO	22EN-LD1-30-UNV-L830-CD1-U	2907	30.3	96
MTO	22EN-LD1-30-UNV-L835-CD1-U	3002	30.4	99
MTO	22EN-LD1-30-UNV-L840-CD1-U	3072	30.3	102
MTO	22EN-LD1-30-UNV-L850-CD1-U	3249	30.3	107
MTO	22EN-LD1-34-UNV-L830-CD1-U	3276	34.8	94
STOCK	22EN-LD1-34-UNV-L835-CD1-U	3424	34.9	98
STOCK	22EN-LD1-34-UNV-L840-CD1-U	3466	34.8	100
MTO	22EN-LD1-34-UNV-L850-CD1-U	3666	34.8	105
MTO	22EN-LD1-39-UNV-L830-CD1-U	3799	41.6	91
MTO	22EN-LD1-39-UNV-L835-CD1-U	3915	41.7	94
MTO	22EN-LD1-39-UNV-L840-CD1-U	4018	41.7	96
MTO	22EN-LD1-39-UNV-L850-CD1-U	4250	41.6	102
MTO	22EN-LD1-43-UNV-L830-CD1-U	4207	47.4	89
MTO	22EN-LD1-43-UNV-L835-CD1-U	4396	47.6	92
MTO	22EN-LD1-43-UNV-L840-CD1-U	4452	47.4	94
MTO	22EN-LD1-43-UNV-L850-CD1-U	4709	47.4	99

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

SHIPPING DATA

Catalog No.	Wt.
22EN-LD1-25	14 lbs.
22EN-LD1-34	14 lbs.

Powering Business Worldwide

Eaton
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lighting

Specifications and dimensions subject to change without notice.

ORDERING INFORMATION

SAMPLE NUMBER: 22EN-LD1-34-UNV-L835-CD1-SVPD1-U

Rating
Blank=Standard
ATW-SW4=Chicago Rated [9]

Series [8]
22EN=2' x 2' Encounter Series

Air
[Blank] =Standard
A=Air (Vented) [10]

Lamp Type
LD1=LED 1.0

Stock Lumen Outputs
25=2500 Lumens [3]
34=3400 Lumens

MTO Lumen Outputs [7]
19=1900 Lumens [3]
30=3000 Lumens
39=3900 Lumens
43=4300 Lumens

Optics
Blank=Standard

Voltage [1]
347V=347 Volt [6]
UNV=Universal Voltage 120-277

Options
Emergency
EL7W=7-watt, 120V-277V emergency battery pack installed [4]
EL14W=14-watt 120V-277V emergency battery pack installed [4]
GTD2=Bodine Generator Transfer Device [13]
ETS2=IOTA Emergency Transfer Switch [13]

CCT
L830=3000K
L835=3500K
L840=4000K
L850=5000K

Flex [12]
Multiple Configurations Available

Driver Type
CD=0-10V Dimming Driver (10% - 100% Dimming)
HCD=0-10V Dimming Driver (1% - 100% Dimming)
SD=Step-dim Driver [5]
5LTD=Fifth Light DALI Driver (10% - 100% Dimming) [2]
5LTHD=Fifth Light DALI Driver (1% - 100% Dimming) [2]

Number of Drivers
1=1 Driver

Product Family
S=Integrated Sensor

Control Type
B=Sensor Mounting, No Sensor
V=Analog (0-10V) Output for Local Control [11]

Occupancy Technology
P=Passive Infrared

Sensing Technology
D=Dimming Daylight Harvesting (Closed Loop)

Coverage Pattern
1= ~144 Square Feet

Packaging
U=Unit Pack
PALC=Job Pack, in carton

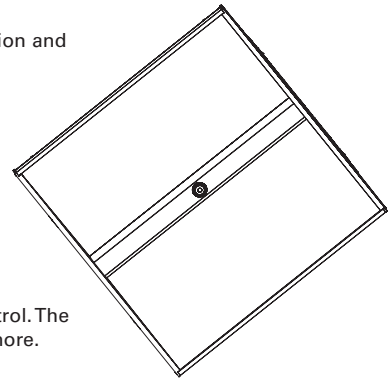
ACCESSORIES

T3A END E.Q. BRACKET PARTS BAG (Standard with fixture)
DF-22-W=2' x 2' Drywall Frame Kit
SK-22-WS=2' x 2' Shallow Surface Mount Kit
SK-22-WT=2' x 2' 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] Products also available in non-US voltages and frequencies for international markets. [2] Must be used in conjunction with a DALI control system. For complete DALI soluitions by Fifth Light, visit www.eaton.com/lightingsystems [3] 1900, 2500 and 3000 lumen option are not available with a Fifth Light DALI (5LTD) driver. [4] 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. [5] Step-dim driver not available with 1900, 2500 and 3000 lumen option. [6] 347V emergency option not available. [7] Made-to-order (MTO) requites four week lead time. [8] DesignLights Consortium™ Qualified and classified for DLC Standard (all lumen packages), refer to www.designlights.org for details. [9] Chicago rated version does not allow for row mounting. [10] Air version is vented but does not meet air handling requirements; a 6% reduction in delivered lumens is experienced with this option. [11] Integral sensor works only with "CD" driver and is factory prewired to the driver for stand-alone control. [12] Flex does not include dimming leads. Control leads provided by others. [13] 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.

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.

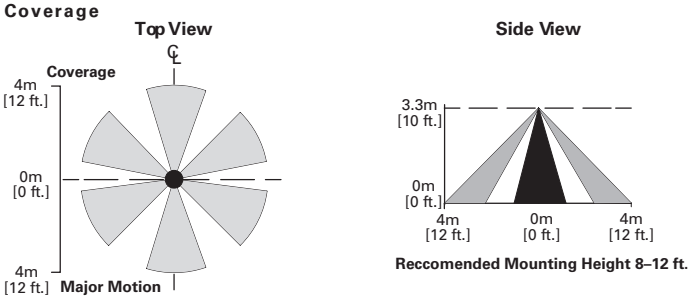
Metalux Integrated Sensor Sequence of Operation
The occupancy sensing portion of the sensor uses Passive Infrared (PIR) technology with Auto-on/Auto-off operation. The small lens in the center of the sensor directs the view of a passive infrared occupancy detector to sense occupants moving through the 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



Reccomended Mounting Height 8–12 ft.

Optional Remote Control

HHPRG-MS Remote

Powering Business Worldwide

Eaton
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lighting

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