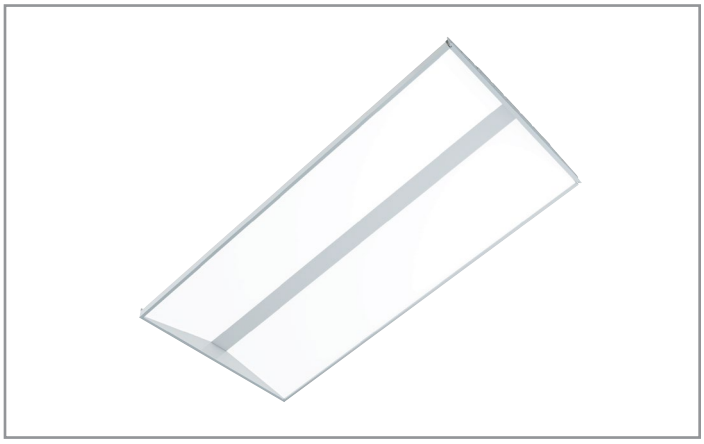
Project		**Catalog #**		**Type**	
Prepared by		**Notes**		**Date**	



Metalux

Encounter 24EN LED

2' x 4' Troffer LED Module
Specification Grade Troffer

Typical Applications

• Commercial Office Spaces • Schools • Hospitals • Retail
• Other Indoor Ambient Applications

Interactive Menu

Product Certification

Product Features

damp location

MWS MODULAR WIRING SYSTEM CLICK HERE

Connected Systems

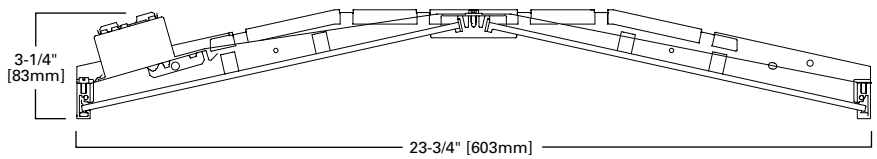
Rapid Response CLICK HERE

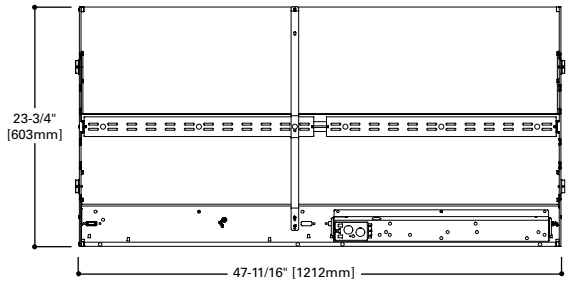
LINEAR DISCONNECT
Safe and convenient means of disconnecting power

Top Product Features

- Available in 1' x 2', 1' x 4', 2' x 2' and 2' x 4' recessed versions
- Leverages our patented WaveStream Technology with AccuAim™ optics
- Four CCT options: 3000K, 3500K, 4000K, and 5000K at 80CRI or 90 CRI
- Efficacy up to 143 lumens per watt
- Over 60% energy savings when compared to a fluorescent troffer

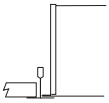
Dimensional and Mounting Details





Ceiling Compatibility

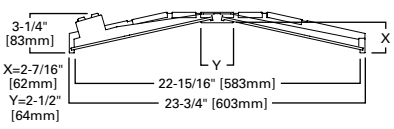
G
Grid/Lay-in
Standard



F
Drywall Frame
Kit

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

Lamp Configurations



Order Information

SAMPLE ORDER NUMBER: **24EN-LD2-67-UNV-L835-CD1-SVPD1-U**

Rating	Series	Air	Lamp Type	Lumen Outputs	Optics	Voltage
[Blank]=Standard **ATW-SW4**= Chicago Rated [6]	**24EN**=2' x 4' Encounter Series	**[Blank]**=Standard **A**=Air (Vented) [B]	**LD2**=LED 2.0	**Stock** **45**=4500 Lumens **54**=5400 Lumens **67**=6700 Lumens **MTO** **30**=3000 Lumens [3], [10] **34**=3400 Lumens [3], [10] **40**=4000 Lumens **49**=4900 Lumens **58**=5800 Lumens **70**=7000 Lumens [3] **74**=7400 Lumens [3]	**Blank**=Standard	**UNV**=Universal Voltage 120-277 **347V**=347 Volt [4] **48V**=48 Volt Low-voltage (Class 2) [C]
Notes (6) Chicago rated version does not allow for row mounting.	**Notes** (5) DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.	**Notes** (8) Air version is vented but does not meet air handling requirements.		**Notes** (3))Step-dim driver not available with 3000, 3400, 7000 and 7400 lumen options. (10) 5LTD DALI option not available with 3000 and 3400 lumen packages.		**Notes** (1) Products also available in non-US voltages and frequencies for international markets. (4) 347V emergency option not available. (C) Consult DLVP system pages for additional details and compatibility.

Emergency Options	CCT	Flex	Driver Type
EL7W=7-watt, 120V-277V emergency battery pack installed [2] **EL14W**=14-watt 120V-277V emergency battery pack installed [2] **ELV7W**=7-watt, DLVP-compatible low voltage emergency battery pack installed [C] **ELV14W**=14-watt DLVP-compatible low voltage emergency battery pack installed [C] **GTR2**=Bodine Generator Transfer Relay [9] **ETRD**=Iota Emergency Transfer Relay with dimming control [9]	**L830**=3000K **L835**=3500K **L840**=4000K **L850**=5000K **L930**=3000K **L935**=3500K **L940**=4000K **L950**=5000K	**A3/8-4/18GDIM**=3/8" Flex with 0-10V Dimming Leads Multiple other configurations available. See below for details.	**CD**=0-10V Dimming Driver (1%-100% Dimming) **SR**=Sensor-ready Dimming Driver for LWIPD1 option (5%-100% Dimming) [B] **5LTD**=Fifth Light DALI Driver (10%-100% Dimming) [10], [E] **5LTHD**=Fifth Light Dimming Driver (1%-100% Dimming) [7], [E] **LV1**=DLVP Dimming Driver (0%-100% Dimming) [C] **SD**=Step Dimming Driver (50% or 100% Dimming) [3] **LH**=Lutron HiLume (LDE1 series) 1%-100% EcoSystem Driver with Soft-on Fade to Black dimming [F] **L5**=Lutron 5 Series (LDE5-Series) 5%-100% EcoSystem Driver [F] **WN**=WaveLinx Wireless Fixture, No Sensor. [A], [G], [H]
Notes (2) 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. (9) Used to bypass local control during outage. Must be used in conjunction with UL 1008 device (provided by others). GTR2 option includes 2 relays on fixtures with dimming drivers. ETRD option only requires one relay when used on a dimming fixture. Must specify voltage as 120V or 277V when ordering these devices. (C) Consult DLVP system pages for additional details and compatibility.		**Flexible Metal Conduit Options** Flex options available for 0-10V dimming control, DALI dimming control, emergency and night light functions. 72-inch factory-installed and pre-wired to driver, fitted to luminaire housing access plate with 90° enclosed FMC connector. Not all options may be combined and installation ratings vary by type. **A3/8-4/18GDIM series notes:** Factory installed dimming option 3/8" flexible metal conduit with 2-#18 power and ground wires and 2-#18 UL-listed jacketed 0-10V +/- control wires. Meets UL 66, 83, 1479, 1569, 1581, 2556. NEC® 250.118, 300.22(C), 392, 396, 330, 501, 502, 503, 530, 504, 505, 518, 520, 530, 645, 72; Federal Specification A-A-59544 (formerly J-C-30B); all applicable OSHA and HUD Requirements. UL Classified 1-, 2-, and 3-hour through penetration with applicable fire stop product (not included). May be surface mounted, fished and/or embedded in plaster. Cable tray and approved raceway rated, install per NEC®; Environmental Air-Handling Space Installation per NEC® 300.22(C).	**Notes** (3) Step-dim driver not available with 3000, 3400, 7000 and 7400 lumen options. (7) Two drivers required for 5LTHD option for 6700 lumens and up. (10) 5LTD DALI option not available with 3000 and 3400 lumen packages. Integrated options must be used in conjunction with the associated system and may not be compatible with other options or accessories. Please refer to the following: (A) Consult WaveLinx system pages for additional details and compatibility. (B) Consult LumaWatt Pro system pages for additional details and compatibility. (C) Consult DLVP system pages for additional details and compatibility. (E) Consult Fifth Light system pages for additional details and compatibility. (F) Consult Marketplace Options - Lutron system pages for additional details and compatibility. Compatible only with driver series shown, and may require two or more drivers. Requires field commissioning to operate or dim. Contact Lutron at www.lutron.com. (G) Not compatible with GTR, ETRD, or integrated sensor options. (H) Available with UNV voltage only.

Number of Drivers	Integrated Sensing Systems	Packaging
1=1 Driver **2**=2 Drivers	**SWPD1**=WaveLinx Wireless Integrated Sensor [A] **LWIPD1**=LumaWatt Pro Wireless Integrated Sensor [B] **LWTPD1**=LumaWatt Pro Wireless Tile-mount Sensor [B] **SLVPD1**=DLVP Low-voltage Integrated Sensor [C] **SVPD1**=0-10V Stand-alone Integrated Sensor [D]	**U**=Unit Pack **PALC**=Job Pack, in carton
	Notes Integrated options must be used in conjunction with the associated system and may not be compatible with other options or accessories. Please refer to the following: (A) Consult WaveLinx system pages for additional details and compatibility. (B) Consult LumaWatt Pro system pages for additional details and compatibility. (C) Consult DLVP system pages for additional details and compatibility. (D) Consult SVPD series system pages for additional details and compatibility.	

Accessories (order separately)
T3A END E.Q. BRACKET PARTS BAG (Standard with fixture) **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 **ISHH-01**=Programming Remote for Integrated Sensor [D] **ISHH-02**=Personal Control Remote for Integrated Sensor [D]
Notes Integrated options must be used in conjunction with the associated system and may not be compatible with other options or accessories. Please refer to the following: (D) Consult SVPD series system pages for additional details and compatibility.

Product Specifications

Construction
- Shallow 3-1/16" deep housing extruded aluminum frame
- Injected molded composite end plates
- End plates screws for strength, rigidity and gap eliminations
- End plates accessory grid-lock feature adds safety
- Four auxiliary fixture end suspension points
- Large access plate for supply connection

Controls
- 0-10V dimming drivers to 1% standard
- WaveLinx wireless fixture for sensor-less wireless control
- WaveLinx sensor compatible for IoT capability
- LumaWatt Pro sensor compatible for IoT capability
- SVPD sensor compatible for out-of-the-box functionality
- DLVP sensor and driver compatible for low-voltage applications
- Fifth Light DALI driver, step-dimming and 3rd party drivers available

Electrical
- Long-life LED system with electrical driver for optimal performance
- LED's available in 3000K, 3500K, 4000K or 5000K with a minimum CRI of 80
- Projected life is 100,000 hours at 92% lumen output
- Electronic drivers available for 120-277V applications

Emergency Battery Pack Options
- Optional 120V-277V integral emergency battery pack available in 7W or 14W
- 90-minute backup period for code compliance
- Test switch with laser pointer allows safe testing from floor
- Patented EZ Key prevents accidental discharge during construction

Driver Access
- Drivers can be accessed via plenum

Finish
- High reflectance baked matte white enamel finish

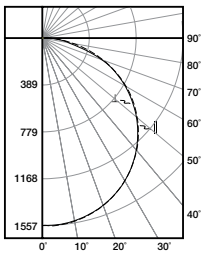
Optics
- Precision formed optical assembly
- Positively retained high optical grade acrylic lenses
- WaveStream technology provides a distribution

Compliance
- Components are UL recognized
- cULus listed for 25° C ambient indoor environments
- RoHS compliant
- Complies with IESNA LM-79 and LM-80 standards
- DesignLights Consortium® Qualified and classified for DLC Standard and DLC Premium (refer to www.designlights.org)

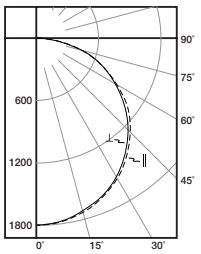
Warranty
- Five-year warranty

Photometric Data

View IES files



24EN-LD2-45-UNV-L835-CD1-U
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.29 x mounting height, (⊥) 1.29 x mounting height
Lumens: 4656
Input Watts: 38W
Efficacy: 122.5 lm/W
Test Report: 24EN-LD2-45-UNV-L835-CD1-U.IES



24EN-LD2-54-UNV-L835-CD1-U
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.3 x mounting height, (⊥) 1.3 x mounting height
Lumens: 5410
Input Watts: 43.0W
Efficacy: 125.8 lm/W
Test Report: 24EN-LD2-54-UNV-L835-CD1-U.IES

Energy and Performance Data by Catalog Number

Stock or MTO	Catalog Logic (Curved)	Delivered Lumens	Watts	Efficacy (LPW)
MTO	24EN-LD2-30-UNV-L830-CD1-U	3023	24.6	123
MTO	24EN-LD2-30-UNV-L835-CD1-U	3117	24.6	127
MTO	24EN-LD2-30-UNV-L840-CD1-U	3180	24.6	129
MTO	24EN-LD2-30-UNV-L850-CD1-U	3460	24.6	141
MTO	24EN-LD2-34-UNV-L830-CD1-U	3502	28.7	122
MTO	24EN-LD2-34-UNV-L835-CD1-U	3610	28.7	126
MTO	24EN-LD2-34-UNV-L840-CD1-U	3682	28.7	128
MTO	24EN-LD2-34-UNV-L850-CD1-U	4008	28.7	140
MTO	24EN-LD2-40-UNV-L830-CD1-U	4079	33.9	120
MTO	24EN-LD2-40-UNV-L835-CD1-U	4204	33.9	124
MTO	24EN-LD2-40-UNV-L840-CD1-U	4289	33.9	127
MTO	24EN-LD2-40-UNV-L850-CD1-U	4667	33.9	138
MTO	24EN-LD2-45-UNV-L830-CD1-U	4516	38.0	119
STOCK	24EN-LD2-45-UNV-L835-CD1-U	4656	38.0	123
STOCK	24EN-LD2-45-UNV-L840-CD1-U	4748	38.0	125
MTO	24EN-LD2-45-UNV-L850-CD1-U	5168	38.0	136
MTO	24EN-LD2-49-UNV-L830-CD1-U	4946	42.2	117
MTO	24EN-LD2-49-UNV-L835-CD1-U	5099	42.2	121
MTO	24EN-LD2-49-UNV-L840-CD1-U	5200	42.2	123
MTO	24EN-LD2-49-UNV-L850-CD1-U	5659	42.2	134
MTO	24EN-LD2-54-UNV-L830-CD1-U	5248	43.0	122
STOCK	24EN-LD2-54-UNV-L835-CD1-U	5410	43.0	126
STOCK	24EN-LD2-54-UNV-L840-CD1-U	5518	43.0	128
MTO	24EN-LD2-54-UNV-L850-CD1-U	6005	43.0	140
MTO	24EN-LD2-58-UNV-L830-CD1-U	5663	47.0	120
MTO	24EN-LD2-58-UNV-L835-CD1-U	5838	47.0	124
MTO	24EN-LD2-58-UNV-L840-CD1-U	5955	47.0	127
MTO	24EN-LD2-58-UNV-L850-CD1-U	6480	47.0	138
MTO	24EN-LD2-67-UNV-L830-CD1-U	6529	56.1	116
STOCK	24EN-LD2-67-UNV-L835-CD1-U	6731	56.1	120
STOCK	24EN-LD2-67-UNV-L840-CD1-U	6866	56.1	122
MTO	24EN-LD2-67-UNV-L850-CD1-U	7471	56.1	133
MTO	24EN-LD2-70-UNV-L830-CD1-U	6812	60.2	113
MTO	24EN-LD2-70-UNV-L835-CD1-U	7023	60.2	117
MTO	24EN-LD2-70-UNV-L840-CD1-U	7163	60.2	119
MTO	24EN-LD2-70-UNV-L850-CD1-U	7796	60.2	130
MTO	24EN-LD2-74-UNV-L830-CD1-U	7259	63.6	114
MTO	24EN-LD2-74-UNV-L835-CD1-U	7484	63.6	118
MTO	24EN-LD2-74-UNV-L840-CD1-U	7634	63.6	120
MTO	24EN-LD2-74-UNV-L850-CD1-U	8307	63.6	131

Lumen Maintenance

Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours)	Theoretical L70 (hours)
25°C	> 92%	> 448,000

90 CRI

Lumen Adjustment Factors 80->90 CRI	
3000K	0.861
3500K	0.864
4000K	0.883
5000K	0.86

Example of Lumen Adjustment Calculation

24EN-LD2-45-UNV-L835-CD1-U
at 90CRI at 3500K

Lumen Adjustment Factor = 0.864

Total Light Output =
4,651 lm x 0.864 = 4,022 lm

$$\text{Efficacy} = \frac{4{,}022\ lm}{38W} = 105.8\ lm/W$$

Shipping Data

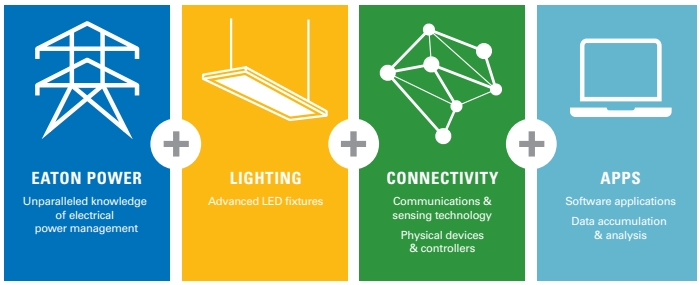
Catalog No.	Wt.
24EN-LD2-45	28 lbs.
24EN-LD2-54	28 lbs
24EN-LD2-67	28 lbs

Control Systems

- WaveLinx
- DLVP
- LumaWatt Pro
- iLumin Plus
- VividTune

Connected Systems CLICK HERE

We make connections work



Systems comparison chart

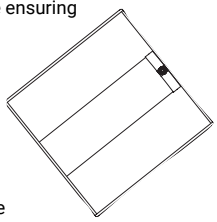
Eaton provides many lighting system solutions designed to satisfy code requirements and meet the unique needs of any project.

	Distributed Low-Voltage Power System	WaveLinx	LumaWatt Pro
Space type	**Interior**	**Interior/ Outdoor**	**Any**
Stand-alone or Network	**Stand-alone**	**Both**	**Network**
Need-based feature progression			
Basic compliance only	•	•	•
Occupancy sensing	•	•	•
Daylight harvesting	•	•	•
Zone control	•	•	•
Scheduling	•	•	•
0-10V dimming	•	•	•
Individual fixture control	•	•	•
Retrofit+Building Integration	•	•	•
Total wireless connectivity		•	•
A/V integration		•	•
BMS integration		•	•
UI options (touchscreen, apps, etc.)		•	•
Enterprise level building integration		•	•
Facility management & tools		•	•
Floor plan & reporting tools			•
Value-added services			•
Asset tracking			•
API integration		•	•
Analytics/higher problem solving			•

Integrated Sensor

The Encounter and Encounter HP with Integrated Sensor technology provides automatic energy savings without sacrificing performance. Traditionally, these types of energy savings required coordination between the luminaire and a lighting control system. The Encounter delivers superior lighting with integrated occupancy and daylighting controls.

Capture the benefits of traditional lighting controls, without complicated coverage planning or special wiring. Ideal for new construction or retrofit, the Encounter delivers automatic ON to an energy saving light level, while ensuring lighting is turned OFF when the space is unoccupied.



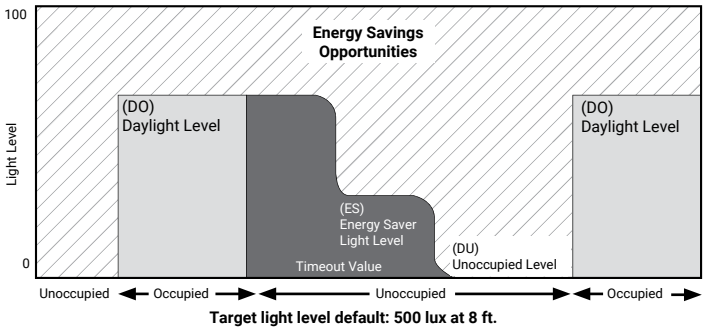
The integral daylight sensor reduces the need for special daylight zone planning. Each luminaire will automatically adjust the light level based on reflected light beneath the sensor in a closed loop method.

Occupied daylight light levels and unoccupied light levels can be adjusted using the integrated sensor programming remote (Catalog Number: ISHH-01). The integrated sensor personal remote (Catalog Number: ISHH-02) provides code compliant manual raise, lower, ON, OFF control.

The Encounter with Integrated Sensor is easy to install with no special wiring and ensures energy savings out-of-the-box with default control settings.

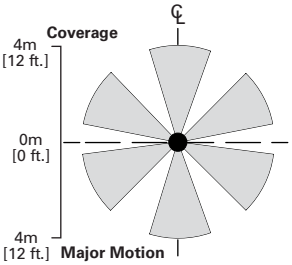
How it works:

- As the user enters the space controlled by the integral sensor, the lighting turns ON to the default daylight level.
- Lighting will remain at that the daylight level until the space is unoccupied. This will start the occupancy timeout period (default 20 minutes).
- If the space remains unoccupied for half of the timeout period, the lighting will automatically reduce to the Energy Saver light level. This adjustable light level is typically half of the occupied daylight level.
- At the end of the timeout period the lighting will go to the unoccupied light level. This adjustable light level uses the OFF default setting.

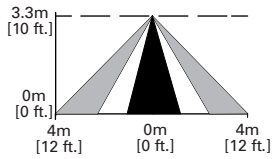


Target light level default: 500 lux at 8 ft.

Top View



Side View



Reccomended Mounting Height 8–12 ft.

Installation of integrated sensors within 3-ft (1m) of HVAC air vents is not recommended.

Optional Remote Controls

ISHH-01 Programming Remote

ISHH-02 Personal Control Remote

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