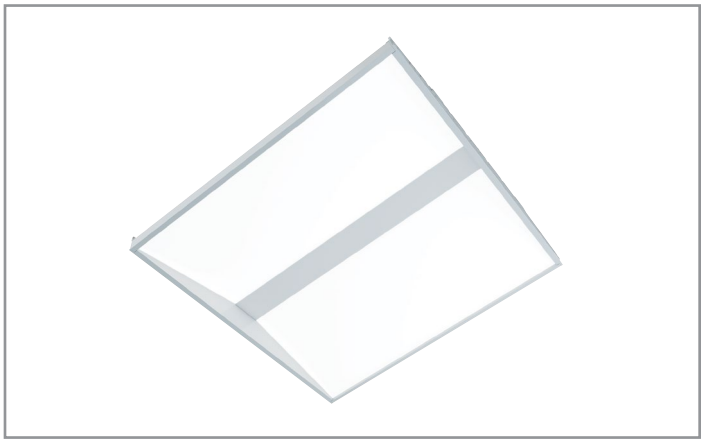
Project		**Catalog #**		**Type**	
Prepared by		**Notes**		**Date**	



Metalux

Encounter 22EN LED

2' x 2' Troffer LED Module
Specification Grade Troffer

Typical Applications

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

Interactive Menu

- Order Information page 2
- Photometric Data page 3
- Control Solutions page 4
- Connected Systems page 4
- Product Warranty

Product Certification

c UL us LISTED · DLC · DLC PREMIUM · damp location · IC RATED · IP40 · ISTA CERTIFIED

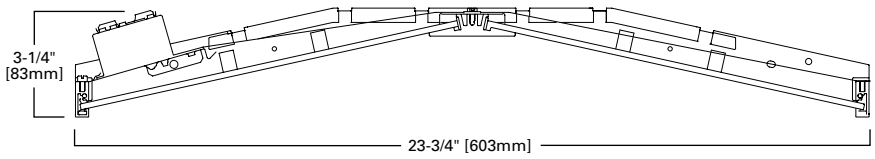
Product Features

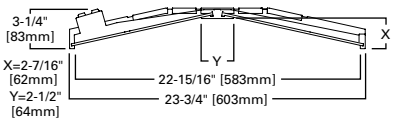
Connected Systems · VividTune color tuning solutions · MWS MODULAR WIRING SYSTEM CLICK HERE · Rapid Response CLICK HERE · LINEAR DISCONNECT Safe and convenient means of disconnecting power

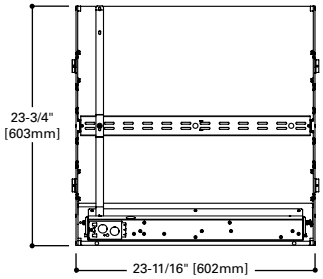
Top Product Features

- 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
- White tuning solutions available, either 3000K - 5000K or 2700K - 6500K
- Efficacy up to 143 lumens per watt

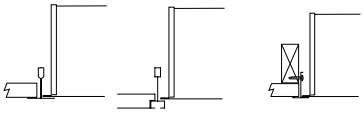
Dimensional and Mounting Details







Ceiling Compatibility



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

Notes:
*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.

Order Information

SAMPLE ORDER NUMBER: **22EN-LD2-34-UNV-L835-CD1-SVPD1-U**

Rating / Series / Air / Lamp Type / Lumen Outputs / Voltage

Rating	Series [6]	Air	Lamp Type	Lumen Outputs	Voltage [1]
[Blank]=Standard **ATW-SW4**= Chicago Rated [7]	**22EN**=2' x 2' Encounter Series	**[Blank]**=Standard **A**=Air (Vented) [8]	**LD2**=LED 2.0	**Stock** **25**=2500 Lumens [2], [4], [10] **34**=3400 Lumens [2], [4] **MTO** **19**=1900 Lumens [2], [4], [10], [11] **30**=3000 Lumens [2], [4] **39**=3900 Lumens **43**=4300 Lumens	**UNV**=Universal Voltage 120-277 **347V**=347 Volt [5] **48V**=48 Volt Low-voltage (Class 2) [C]
Notes (7) Chicago rated version does not allow for row mounting.	**Notes** (6) 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** (2) 1900, 2500, 3000 and 3400 lumen option are not available with a Fifth Light DALI (5LTD) driver. (4) Step-dim driver not available with 1900, 2500, 3000 and 3400 lumen option. (10) Not compatible with WN driver. (11) White tuning not available with 1900 lumen option.	**Notes** (1) Products also available in non-US voltages and frequencies for international markets. (5) 347V emergency option not available. (C) Consult DLVP system pages for additional details and compatibility.

Emergency Options / CCT / Flex / Driver Type

Emergency Options	CCT	Flex	Driver Type
EL7W=7-watt, 120V-277V emergency battery pack installed [3] **EL14W**=14-watt 120V-277V emergency battery pack installed [3] **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 **L83050**=80CRI 3000K-5000K White Tuning [12] **L93050**=90CRI 3000K-5000K White Tuning [12] **L82765**=80CRI 2700K-6500K White Tuning [12] **L92765**=90CRI 2700K-6500K White Tuning [12]	**A3/8-4/18GDIM**=3/8" Flex with 0-10V Dimming Leads Multiple other configurations available. See below for details. **A3/8-5/18GDIM**=Flex with 0-10V Dimming leads and Blue for alternate wiring. 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) [2], [E] **5LTHD**=Fifth Light Dimming Driver (1%-100% Dimming) [E] **LV1**=DLVP Dimming Driver (0%-100% Dimming) [C] **SD**=Step Dimming Driver (50% or 100% Dimming) [4] **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] **W2A**=White Tuning, 2ch, Intensity and CCT Control [12] **WN**=WaveLinx Wireless Fixture, No Sensor. [A], [G], [H]
Notes (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. (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. (C) Consult DLVP system pages for additional details and compatibility.	**Notes** (12) White tuning provides correlated color temperatures (CCT) between 3000K (warm) to 5000K (cool) or 2700K (warm) to 6500K (cool). Must be used in conjunction with W2A driver only. Must be used with two (2) 10V dimming control channels, 1 color, 1 intensity.	**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** (2) 1900, 2500, 3000 and 3400 lumen option are not available with a Fifth Light DALI (5LTD) driver. (4) Step-dim driver not available with 1900, 2500, 3000 and 3400 lumen option. (12) White tuning provides correlated color temperatures (CCT) between 3000K (warm) to 5000K (cool) or 2700K (warm) to 6500K (cool). Must be used in conjunction with W2A driver only. Must be used with two (2) 10V dimming control channels, 1 color, 1 intensity. 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 Enlighted 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 / Accessories

Number of Drivers	Integrated Sensing Systems	Packaging	Accessories (order separately)
1=1 Driver	**SWPD1**=WaveLinx Wireless Integrated Sensor [A], [13] **LWIPD1**=Enlighted Wireless Integrated Sensor [B], [13] **LWTPD1**=Enlighted Wireless Tile-mount Sensor [B], [13] **SLVPD1**=DLVP Low-voltage Integrated Sensor [C], [13] **SVPD1**=0-10V Stand-alone Integrated Sensor [D], [13]	**U**=Unit Pack **PALC**=Job Pack, in carton	**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 **ISHH-01**=Programming Remote for Integrated Sensor [D] **ISHH-02**=Personal Control Remote for Integrated Sensor [D]
	Notes (13) Sensors are not available with the W2A driver. Vivid Tune is not DLC Qualified. 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 Enlighted 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.		**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
- Enlighted 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
- LED's available in 3000K, 3500K, or 4000K at 80 CRI or 90 CRI minimum
- TM21 life at 60,000 hours up to L92 and calculated L70 exceeds 288,000 hrs
- Drivers available in 120-277V and 347V
- White Tuning options available with Cooper Lighting's Vividtune

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

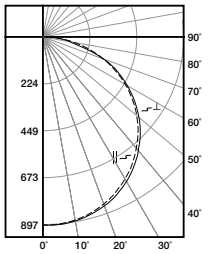
Optics
- Precision formed optical assembly
- Positively retained high optical grade acrylic lenses
- WaveStream technology provides a visually comfortable fully luminous surface

Compliance
- Components are UL recognized
- cULus Damp Location listed for 25C ambient indoor environments
- 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)

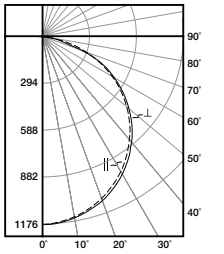
Warranty
- Five year warranty standard. Optional ten year warranty available

Photometric Data

View IES files



22EN-LD2-25-UNV-L835-CD1-U
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.27 x mounting height, (⊥) 1.29 x mounting height
Lumens: 2648
Input Watts: 20W
Efficacy: 132.4 lm/W
Test Report: 22EN-LD2-25-UNV-L835-CD1-U.IES



22EN-LD2-34-UNV-L835-CD1-U
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.27 x mounting height, (⊥) 1.29 x mounting height
Lumens: 3471
Input Watts: 28.5W
Efficacy: 121.8 lm/W
Test Report: 22EN-LD2-34-UNV-L835-CD1-U.IES

Energy and Performance Data

Stock or MTO	Catalog Logic (Curved)	Delivered Lumens	Watts	Efficacy (LPW)
MTO	22EN-LD2-19-UNV-L835-CD1-U	2091	16.5	127
STOCK	22EN-LD2-25-UNV-L835-CD1-U	2648	20	132
STOCK	22EN-LD2-25-UNV-L840-CD1-U	2701	20	135
MTO	22EN-LD2-30-UNV-L835-CD1-U	3078	24.9	124
STOCK	22EN-LD2-34-UNV-L835-CD1-U	3471	28.5	122
STOCK	22EN-LD2-34-UNV-L840-CD1-U	3540	28.5	124
MTO	22EN-LD2-39-UNV-L835-CD1-U	3979	33.3	119
MTO	22EN-LD2-43-UNV-L835-CD1-U	4478	38.3	117

Shipping Data

Catalog No.	Weight (lbs)	Units per Pallet 49"L x 52"W x 55"H
22EN-LD2	14	40

Lumen Maintenance

Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours) [1]	Theoretical L70 (Hours) [2]
25°C	> 92%	> 288,000

Notes: (1) Supported by IES TM-21 standards. (2) Theoretical values represent estimations commonly used; however, refer to the IES position on LED Product Lifetime Prediction, IES PS-10-18, that explains proper use of IES TM-21 and LM-80.

Lumen Calculator

CCT Multiplier	80 CRI	90 CRI
3000K	0.970	0.835
3500K	1.000	0.864
4000K	1.020	0.901
5000K	1.110	0.955

Example of Lumen Adjustment Calculation

22EN-LD2-25-UNV-L835-CD1-U
at 90CRI at 3500K

Lumen Adjustment Factor = 0.864

Total Light Output = 2,648 lm x 0.864 = 2,287 lm

Efficacy = $\frac{2{,}287\ lm}{20W}$ = 114.3 lm/W

Control Systems

- WaveLinx
- DLVP
- Enlighted
- iLumin Plus
- VividTune

Connected Systems
CLICK HERE

Systems comparison chart

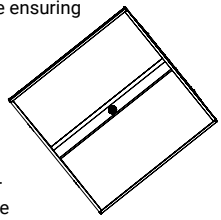
Cooper Lighting Solutions provides many lighting system solutions designed to satisfy code requirements and meet the unique needs of any project.

	Distributed Low-Voltage Power System	WaveLinx	Enlighted
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 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.

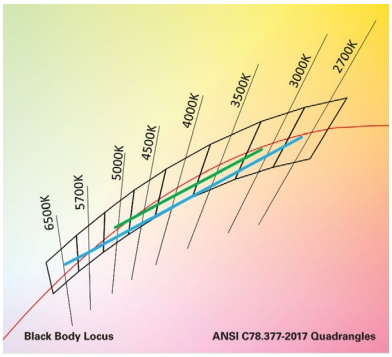
How it works:

- 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.

VividTune color tuning solutions

22EN LED with VividTune Tunable White

VividTune tunable white luminaires from Cooper Lighting Solutions deliver high-quality light in a broad range of continuously variable color temperatures and intensities. Create a dynamic environment by adjusting the ambient light warmer or cooler to influence mood, support the task at hand, or create a dramatic ambience. The ability to control correlated color temperature and intensity separately using simple controls is the next evolution of LED lighting for the commercial, educational, healthcare and hospitality space. The unparalleled flexibility and number of available lighting environments enable users to find the right light with tunable white.



Performance Data*

Tunable White - Lumen Adjustment Factors (example only)

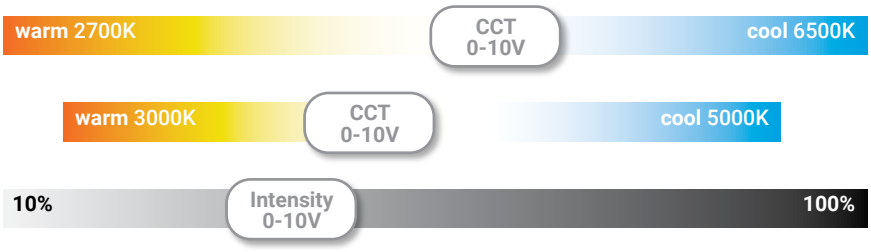
CCT	3000K-5000K		2700K-6500K	
	80 CRI	90 CRI	80 CRI	90 CRI
2700K	-	-	0.858	0.709
3000K	0.930	0.776	0.867	0.731
3500K	0.945	0.795	0.895	0.748
4000K	0.949	0.825	0.883	0.781
4500K	0.962	0.830	0.909	0.776
5000K	0.963	0.834	0.907	0.796
6500K	-	-	0.912	0.816

2' x 2' Encounter LED - Example of Approximate Lumen Calculation

	Standard Catalog #	VividTune 80 CRI Catalog #	VividTune 90 CRI Catalog #
CCT Setting	22EN-LD2-25-UNV-L835-CD1-U	22EN-LD2-25-UNV-L83050-W2A1-U	22EN-LD2-25-UNV-L93050-W2A1-U
3000K	-	2462	2056
3500K	2648	2502	2104
4000K	-	2513	2186
4500K	-	2547	2197
5000K	-	2549	2207

Controlling VividTune Tunable White

VividTune luminaires make tunable white more accessible by using simple and familiar controls. From wall dimmers to wireless controls, VividTune tunable white luminaires are compatible with industry standard 0-10V dimming controls. A single 0-10V dimming input is used to control intensity (brightness) while a second 0-10V dimming input is used to adjust CCT. For suggested control configurations, click here for tunable white application guides.



Example of Lumen Adjustment Calculation

22EN-LD2-25-UNV-L83050-W2A1-U
at 80 CRI tuned to 3500K

Adjusted Lumen =
published lm x adjusted lm factor

*Adjusted Lumen = 2648 * 0.945*

Adjusted Lumen = 2502 lm

** Lumen adjustment factors are for reference and may be different for each product selected. Refer to IES files for actual performance data on each.*

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www.cooperlighting.com

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Specifications and dimensions subject to change without notice.