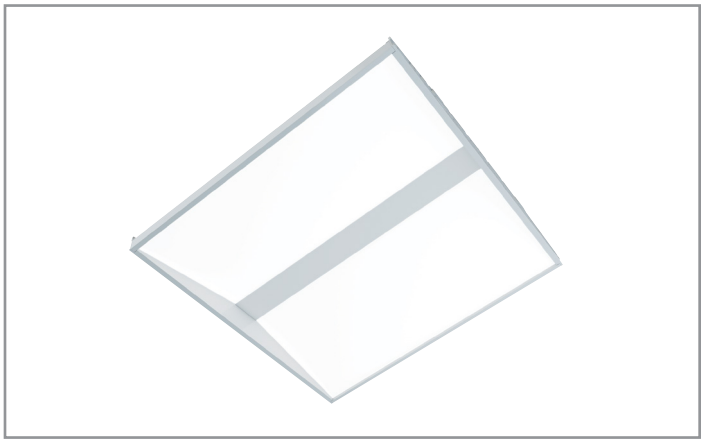
Project		**Catalog #**		**Type**	
Prepared by		**Notes**		**Date**	



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

Product Certification

Product Features

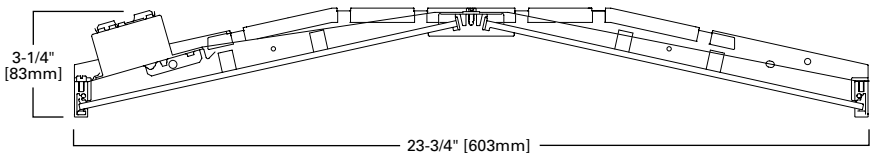
Top Product Features

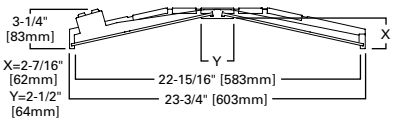
- Available in 1' x 2', 1' x 4', 2' x 2' and 2' x 4' recessed versions
- Leverages our patented WaveStream Technology with AccuAim™ optics
- Four CCT options: 3000K, 3500K, 4000K, and 5000K at 80+CRI or 90 CRI
- White tuning solutions available, either 3000K - 5000K or 2700K - 6500K
- Efficacy up to 130 lumens per watt
- Options to meet Build America, Buy America, Buy American and other domestic preference requirements

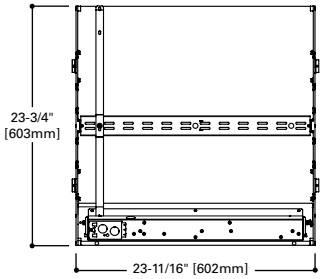
LINEAR DISCONNECT
Designed to provide safe and convenient means of disconnecting power

MWS MODULAR WIRING SYSTEM CLICK HERE

Dimensional and Mounting Details







Ceiling Compatibility

G
Grid/Lay-in
Standard

G or T
9/16" or 15/16"
Slot Grid

F
Drywall Frame
Kit

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-WPN-U**

Domestic Preferences [1]	Rating	Series [3]	Air	Lamp Type	Lumen Outputs	Voltage [8]
[Blank]=Standard **BAA**=Buy American Act **TAA**=Trade Agreements Act **BABAF**=FHWA and FTA projects funded through October 1, 2026	**[Blank]**=Standard **ATW-SW4**= Chicago Rated [2]	**22EN**=2' x 2' Encounter Series	**[Blank]**=Standard **A**=Air (Vented) [4]	**LD2**=LED 2.0	**Stock** **25**=2500 Lumens [5], [6] **34**=3400 Lumens [5], [6] **MTO** **19**=1900 Lumens [5], [6], [7] **30**=3000 Lumens [5], [6] **39**=3900 Lumens **43**=4300 Lumens	**UNV**=Universal Voltage 120-277 **347V**=347 Volt [9] **120V**=120 Volt [10] **277V**=277 Volt [10]
Notes (1) Only product configurations with these prefixes are built to be compliant with the Buy American Act of 1933 (BAA), Trade Agreements Act of 1979 (TAA), or the Build America Buy America Act (BABA). BABA is the minimum Government compliance requirement for the Build America Buy America standards which is part of the Infrastructure and Investment Jobs Act (IIJA). Individual Government Agencies may have more stringent compliance standards. BABAF designates the product will meet the standards set for FHWA and FTA. As noted, these must be funded by October 1, 2026. Please refer to DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team for more information. Components shipped separately may be separately analyzed under domestic preference requirements.	**Notes** (2) Chicago rated version does not allow for row mounting.	**Notes** (3) DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.	**Notes** (4) Air version is vented but does not meet air handling requirements.		**Notes** (5) 1900, 2500, 3000 and 3400 lumen option are not available with a Fifth Light DALI (5LTD) driver. (6) Step-dim driver not available with 1900, 2500, 3000 and 3400 lumen option. (7) White tuning not available with 1900 lumen option.	**Notes** (8) Products also available in non-US voltages and frequencies for international markets. (9) 347V emergency option not available. (10) Must specify voltage as 120V or 277V when ordering GTR2 option.

Emergency Options	CCT	Flex	Driver Type
EL7W=7-watt 120V-277V emergency battery pack [11] **EL10W**=10-watt 120V-277V emergency battery pack [11] **EL14W**=14-watt 120V-277V emergency battery pack [11] **EL10WSD**=10W emergency battery pack with self-diagnostic installed [11], [14] **EL14WSD**=14W emergency battery pack with self-diagnostic installed [11], [14] **GTR2**=Bodine Generator Transfer Relay [12], [13] **ETRD**=Emergency Transfer Relay with dimming control [12] **WNPS**=WaveLinx with Normal Power Sensing Beacon [15], [16], [17], [18] **WEM**=WaveLinx Enabled UL924 [15], [17], [18]	**L830**=80+CRI, 3000K **L835**=80+CRI, 3500K **L840**=80+CRI, 4000K **L850**=80+CRI, 5000K **L930**=90CRI, 3000K **L935**=90CRI, 3500K **L940**=90CRI, 4000K **L950**=90CRI, 5000K **L83050**=80CRI 3000K-5000K White Tuning [19] **L93050**=90CRI 3000K-5000K White Tuning [19] **L82765**=80CRI 2700K-6500K White Tuning [19] **L92765**=90CRI 2700K-6500K White Tuning [19]	**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 Driver (1%-100% Dimming) [23], [24] **5LTD**=DALI Driver (5%-100% Dimming) [20] **5LTHD**=DALI Driver (1%-100% Dimming) **SD**=Step Dimming Driver (50% or 100% Dimming) [21] **LH**=Lutron HiLume (LDE1 series) 1%-100% EcoSystem Driver with Soft-on Fade to Black dimming [F] **W2A**=White Tuning, 2ch, Intensity and CCT Control [22], [23] **SR**=Sensor-ready Driver (1%-100% Dimming)
Notes (11) Factory installed 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. Battery option increases total height by 1 inch. (12) 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. (13) Must specify voltage as 120V or 277V when ordering GTR2 option. (14) EL10WSD and EL14WSD not available with 347V. (15) Only available as part of a WaveLinx control system; must order with WLS or WPS sensor. Compatible with UNV CD drivers only. (16) WNPS is compatible with ESP-L or ESP-P emergency control devices. (17) Cannot be combined with other emergency, control or relay options. (18) For UL924 compliance, WEM and WNPS luminaires must be installed in the same application space.	**Notes** (19) 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** (20) 1900, 2500, 3000 and 3400 lumen options not available with DALI (5LTD) driver. (21) Step-dim (SD) driver not available with 1900, 2500, 3000 and 3400 lumen option. (22) 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. (23) WPS and WPN node used with CD or W2A drivers only. (24) WLS and WLN node used with CD drivers only. 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: (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.

Number of Drivers	Integrated Sensing Systems	Packaging	Accessories (order separately) [27]
1=1 Driver	**[Blank]**=No Sensor **WLS**=WaveLinx LITE Integrated Sensor, Dim and Daylight, Bluetooth, 8'-15' MH [26], [B] **WPS**=WaveLinx PRO Integrated Sensor, Dim and Daylight, ZigBee, 8'-15' MH [25], [A] **WLN**=WaveLinx LITE Integrated Node, Dim and Daylight, Bluetooth [26], [B] **WPN**=WaveLinx PRO Integrated Node, Dim and Daylight, Zigbee [25], [A]	**U**=Unit Pack **PALC**=Job Pack, in carton	**T3A END E.Q. BRACKET PARTS BAG** (Standard with fixture) **DF-22W-U**=2' x 2' Drywall Frame Kit **SMK-22-W**=4" Tall Surface Mount Kit, 2' x 2'
	Notes (25) WPS and WPN node used with CD or W2A drivers only. (26) WLS and WLN node used with CD drivers only. 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 PRO system pages for additional details and compatibility. (B) Consult WaveLinx LITE system pages for additional details and compatibility.		**Notes** (27) Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information. Integrated options must be used in conjunction with the associated system and may not be compatible with other options or accessories.

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 to 1% standard
- Integrated WaveLinx options provide wireless individual fixture control and enable code compliance, increased energy savings, grouping of fixtures, and connection to WaveLinx control systems
- DALI 2.0, Lutron, and step-dimming available

Electrical
- LED's available in 3000K, 3500K, or 4000K at 80+CRI or 90 CRI minimum
- Color accuracy ≤3-Step MacAdam ellipse (SDCM)
- TM21 life at 60,000 hours up to L92 and calculated L70 exceeds 288,000 hrs
- Drivers available in 120-277V and 347V
- Tunable white options available with Cooper Lighting's VividTune

Emergency Battery Pack Options
- 120V-277V integral emergency battery pack comes in 7-watts, 10-watt, or 14-watts
- Self-diagnostic emergency battery available in 10 or 14-watts (NFPA 101® Life Safety Code®)
- Constant power to the LED system for controlled, predictable discharge
- Integrated test switch/indicator light visible from floor
- Min. 90-minute backup period for code compliance
- Integral emergency transfer relay available for generator equipped power systems

WNPS - WaveLinx Normal Power Sensing
- Normal Power Sensing (NPS) wireless beacon enabled luminaire that signals normal power is present
- Must be ordered with WaveLinx LITE or PRO sensor as part of a WaveLinx control system
- For UL924 compliance, WNPS enabled luminaires with standard product and compatible emergency control devices (ESP-P/ESP-L) must be installed in same application space

WEM - WaveLinx UL924 Emergency Sensor
- Emergency control devices (ESP-P/ESP-L) not required when WEM and WNPS luminaires are installed in the same application space
- For UL924 compliance, order WEM and WNPS luminaires in the same application space
- WEM must be ordered with WLS or WPS sensor as part of a WaveLinx control system

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)

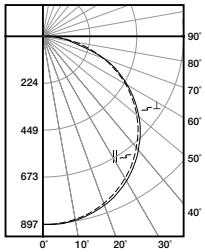
BABA Domestic Preference Compliance
- FHWA and FTA agencies are utilizing their BAA rules for BABA compliance. Cooper's products with a BAA designation are manufactured in the US and utilize a BAA COTS exemption rule for compliance. To verify a configured product with specific accessories and options meet BABA Domestic Preference Requirements; submit this catalog number to Cooper Lighting Quotation team for validation by our Engineering and Manufacturing teams. Please refer to the DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team for more information. Components shipped separately may be separately analyzed under domestic preference requirements.

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

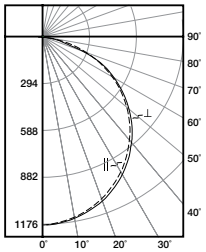
Driver Access
- Drivers can be accessed via plenum

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: 2595
Input Watts: 20W
Efficacy: 130 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: 3401
Input Watts: 28.5W
Efficacy: 119 lm/W
Test Report: 22EN-LD2-34-UNV-L835-CD1-U.IES

Energy and Performance Data

Stock or MTO	Catalog Number	Delivered Lumens	Watts	lm/W	Glare Performance	
					UGR [1]	Max Luminance [1]
MTO	22EN-LD2-19-UNV-L835-CD1	2049	16.5	124	19.7	2435
STOCK	22EN-LD2-25-UNV-L835-CD1	2595	20.0	130	20.5	3083
MTO	22EN-LD2-30-UNV-L835-CD1	3016	24.9	121	21	3584
STOCK	22EN-LD2-34-UNV-L835-CD1	3401	28.5	119	21.4	4041
MTO	22EN-LD2-39-UNV-L835-CD1	3899	33.3	117	21.9	4633
MTO	22EN-LD2-43-UNV-L835-CD1	4388	38.3	115	22.3	5214

Notes:
(1) UGR values per CIE 190:2010 with 4H, 8H, Reflectance: 70% Ceiling, 50% Wall, 20% Ref. Plane.
Luminance measured at 45-90 degrees from nadir.
UGR and Luminance values that meet WELL v2 L04 requirements for Managing Glare are shown with green highlighted cell (UGR < 16, Luminance < 6,000).
UGR and Luminance values that meet LEED v4.1 requirements for Glare Control are shown with green text (UGR < 19, Luminance < 7,000).

Key

	Meets WELL v2
TEXT	Meets LEED v4.1

Lumen Calculator

CCT Multiplier	80+CRI/90 CRI
3000K	0.99
3500K	1.00
4000K	1.03
5000K	1.02

Example of Lumen Adjustment Calculation

22EN-LD2-25-UNV-L835-CD1-U
at 90CRI at 3500K
Lumen Adjustment Factor = 1.00
Total Light Output = 2,595 lm x 1.00 = 2,595 lm
Efficacy = $\frac{2{,}595\ lm}{20W}$ = 130 lm/W

Lumen Maintenance

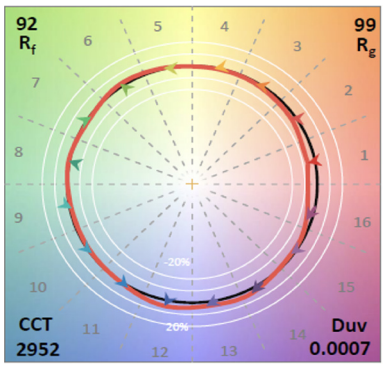
Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours) [1]	Theoretical L70 (Hours) [2]
25°C	> 90%	> 155,000

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.

Shipping Data

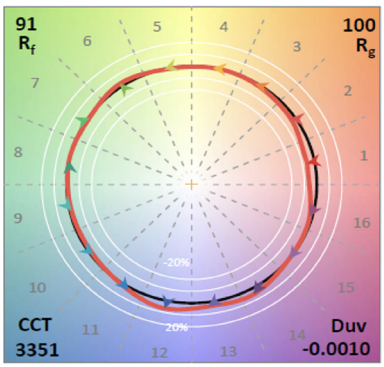
Catalog No.	Weight (lbs)	Units per Pallet 49"L x 52"W x 55"H
22EN-LD2	14	40

TM-30 DATA FOR 90 CRI (3000K)
ANSI/IES TM-30-18 Color Rendition Report



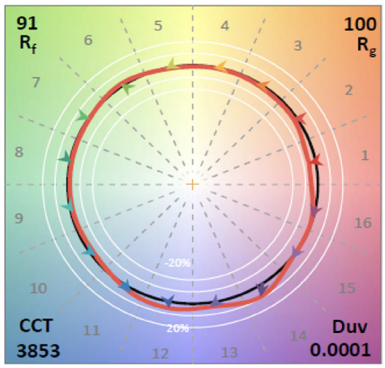
Reference Illuminant — Test Source

TM-30 DATA FOR 90 CRI (3500K)
ANSI/IES TM-30-18 Color Rendition Report



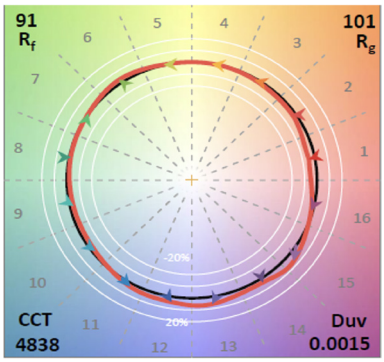
Reference Illuminant — Test Source

TM-30 DATA FOR 90 CRI (4000K)
ANSI/IES TM-30-18 Color Rendition Report



Reference Illuminant — Test Source

TM-30 DATA FOR 90 CRI (5000K)
ANSI/IES TM-30-18 Color Rendition Report



Reference Illuminant — Test Source

TM-30 data is extrapolated from LM-79 integrating sphere tests. Contact factory for specific TM-30 data.

CRI	CCT	CRI	R_f	R_g	R9
80+	3000K	93	92	99	53
	3500K	93	91	100	58
	4000K	93	91	100	63
	5000K	94	91	101	70

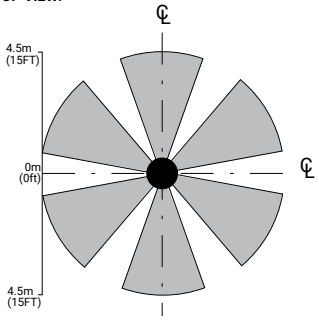
Control Solutions

- WaveLinx LITE wireless
- WaveLinx PRO wireless
- WaveLinx CAT wired
- WaveLinx DALI wired

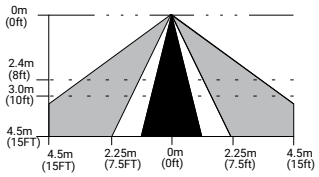
WaveLinx Digital Lighting Control Solutions

Integrated Sensor Coverage Pattern

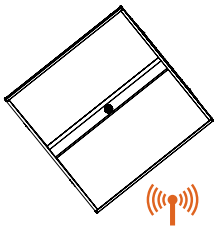
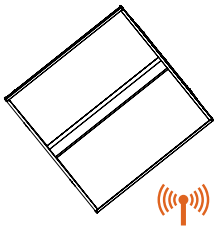
TOP VIEW:



SIDE VIEW:



***Note**: Installation of integrated sensors within 3-ft (1m) of HVAC air vents is not recommended. The pattern shown is intended solely as a general guide and is not to scale.*

With Integrated WaveLinx Sensor	With Integrated WaveLinx Node
	

Add a hidden WaveLinx Node (WPN, WLN) to your space lighting design!

To:

- Keep luminaire aesthetics
- Connect fixtures without space for a sensor, such as downlights
- Connect sealed fixtures without a standard sensor option such as products for clinical space

The Encounter with WaveLinx offers no-hassle lighting control with multiple luminaire level control solutions.

WaveLinx by Cooper Lighting Solutions is a wired and wireless solution for a single room, a parking lot, or an entire campus, helping meet energy codes, reduce energy use, and create healthier environments. As a true hybrid architecture, it enables the seamless integration of DALI, CAT, and PRO technologies and luminaires for unmatched reliability and flexibility, with sensor-enabled luminaires that can also share data with the WaveLinx CORE platform, further improving operations across office, education, healthcare, warehouse, and parking garage applications.

WaveLinx LITE is a Bluetooth wireless digital lighting control solution with out-of-the-box functionality that saves energy and meets energy codes. It's designed for applications that require occupancy-based, daylighting, or manual light control using WaveLinx LITE-enabled luminaires and a mobile app for cost-effective projects.

WaveLinx PRO is a Zigbee wireless solution that offers a rich portfolio of devices, WaveLinx PRO-enabled luminaires, and a mobile app and the WAC (WaveLinx Area Controller). It offers advanced energy savings and deep data integration to improve the occupant experience.

WaveLinx CAT is a scalable CAT5-wired solution for a single room and connected spaces, supporting applications that require occupancy-based, daylighting, or manual light control, with self-commissioning to meet energy codes and maximize energy savings.

WaveLinx DALI is a powerful two-wire DALI-2 solution for connected spaces, combining open-standard devices enabling interoperability with the simplicity of WaveLinx app-based commissioning. It delivers deterministic wired control, granular addressability, and tunable white.

Integrated Controls Options

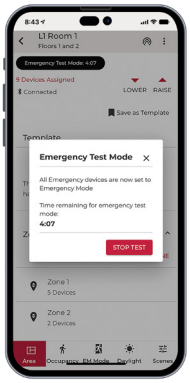
Option	Out of the Box Functionality	Luminaire Level Lighting Control (LLLC)	Automatic Dimming Photocell	Occupancy Sensing	CCT Control*
WLS (WaveLinx LITE Sensor)	X	X	X	X	
WLN (WaveLinx LITE Node)		X			
WPS (WaveLinx PRO Sensor)		X	X	X	X
WPN (WaveLinx PRO Node)		X			X

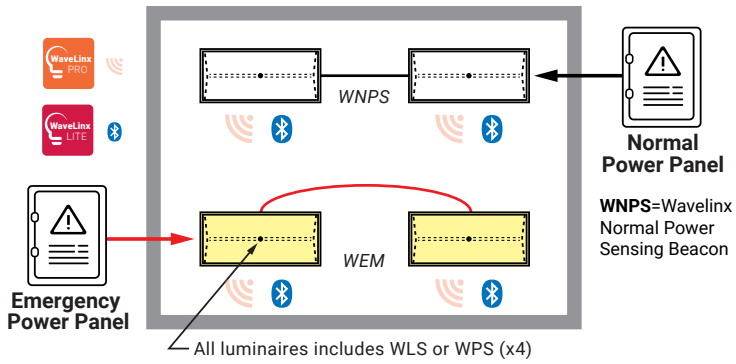
Note: *WaveLinx utilizes scenes to allow users to change an area's fixtures Correlated Color Temperature (CCT) and intensity using a commissioned wireless wallstation scene controller. To enable CCT adjustments through WaveLinx, include WPS or WPN devices in addition to VividTune or BioUp technologies for integrated fixture control. WPS with CCT controls the intensity of the fixture; an additional, externally mounted control device is needed to control the CCT. See RSP-P-010-347

The WNPS and WEM (**UL924** option) only available with WLS or WPS sensors. Must be specified when ordered. WEM must be associated with a group that includes a normal power sensing device to receive NPS beacon. Learn more about WaveLinx EM here.

WaveLinx EM

The WaveLinx Emergency (WEM) solution offered by WaveLinx wireless (PRO and LITE) makes it easy to design your UL924 certified emergency lighting solution. Fixture-integrated WaveLinx Emergency Modules (WEM) override lighting controls and increases light output to emergency level (100%) until normal power is restored. Needs programming. WaveLinx emergency systems are designed to meet UL 924 standards. Learn more here.

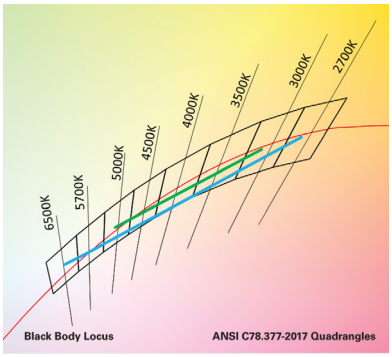




VividTune color tuning solutions

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)

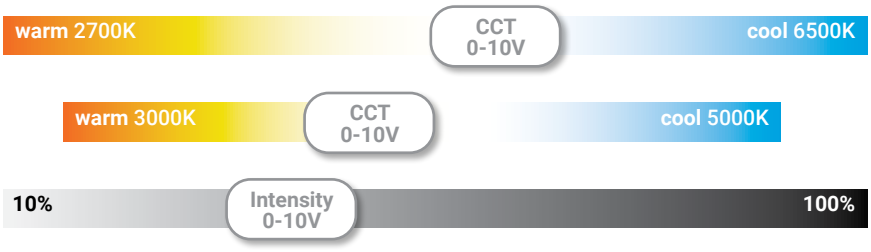
CCT	3000K-5000K		2700K-6500K	
	80 CRI	90 CRI	80 CRI	90 CRI
2700K	-	-	0.858	0.709
3000K	0.930	0.776	0.867	0.731
3500K	0.945	0.795	0.895	0.748
4000K	0.949	0.825	0.883	0.781
4500K	0.962	0.830	0.909	0.776
5000K	0.963	0.834	0.907	0.796
6500K	-	-	0.912	0.816

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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