# 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
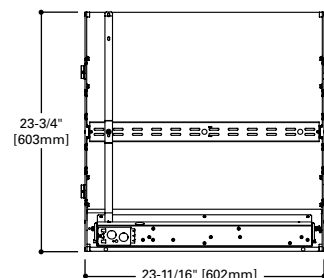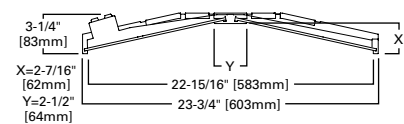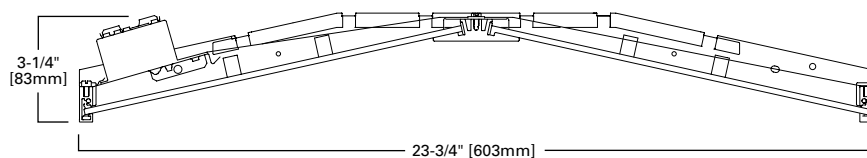- Product Warranty

## Product Certification

UL CERTIFIED  DLC LISTED  DLC LISTED PREMIUM  damp location  IC RATED  IP40  ISO CERTIFIED

## Product Features

WaveLinx LITE  WaveLinx PRO  VividTune color tuning solutions  BAA BUY AMERICAN ACT AVAILABLE  BABA BUILD AMERICA BUY AMERICA AVAILABLE

LINEAR DISCONNECT
Designed to provide safe and convenient means of disconnecting power
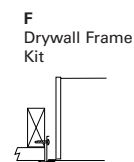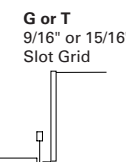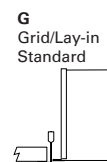
MWS® MODULAR WIRING SYSTEM CLICK HERE

## 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
- Options to meet Build America, Buy America, Buy American and other domestic preference requirements

## Dimensional and Mounting Details

3-1/4" [83mm]

23-3/4" [603mm]

3-1/4" [83mm]
X=2-7/16" [62mm]
Y=2-1/2" [64mm]
22-15/16" [583mm]
23-3/4" [603mm]

23-3/4" [603mm]

23-11/16" [602mm]

## 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.

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## Order Information

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

| | Domestic Preferences | Rating | Series | Air | Lamp Type | Lumen Outputs | Voltage |
|---|---|---|---|---|---|---|---|

| Domestic Preferences (1) | Rating | Series (3) | Air | Lamp Type | Lumen Outputs | Voltage (8) |
|---|---|---|---|---|---|---|
| **[Blank]**=Standard<br>**BAA**=Buy American Act<br>**TAA**=Trade Agreements Act<br>**BABAF**=FHWA and FTA projects funded through October 1, 2026 | **[Blank]**=Standard<br>**ATW-SW4**= Chicago Rated (2) | **22EN**=2' x 2' Encounter Series | **[Blank]**=Standard<br>**A**=Air (Vented) (4) | **LD2**=LED 2.0 | **Stock**<br>**25**=2500 Lumens (5), (6)<br>**34**=3400 Lumens (5), (6)<br>**MTO**<br>**19**=1900 Lumens (5), (6), (7)<br>**30**=3000 Lumens (5), (6)<br>**39**=3900 Lumens<br>**43**=4300 Lumens | **UNV**=Universal Voltage 120-277<br>**347V**=347 Volt (9)<br>**120V**=120 Volt (10)<br>**277V**=277 Volt (10) |
| **Notes**<br>(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**<br>(2) Chicago rated version does not allow for row mounting. | **Notes**<br>(3) DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details. | **Notes**<br>(4) Air version is vented but does not meet air handling requirements. | | **Notes**<br>(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**<br>(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 |
|---|---|---|---|---|

| Emergency Options | CCT | Flex | Driver Type |
|---|---|---|---|
| **EL7W**=7-watt 120V-277V emergency battery pack (11)<br>**EL10W**=10-watt 120V-277V emergency battery pack (11)<br>**EL14W**=14-watt 120V-277V emergency battery pack (11)<br>**EL10WSD**=10W emergency battery pack with self-diagnostic installed (11), (14)<br>**EL14WSD**=14W emergency battery pack with self-diagnostic installed (11), (14)<br>**GTR2**=Bodine Generator Transfer Relay (12), (13)<br>**ETRD**=Emergency Transfer Relay with dimming control (12) | **L830**=3000K<br>**L835**=3500K<br>**L840**=4000K<br>**L850**=5000K<br>**L930**=3000K<br>**L935**=3500K<br>**L940**=4000K<br>**L950**=5000K<br>**L83050**=80CRI 3000K-5000K White Tuning (15)<br>**L93050**=90CRI 3000K-5000K White Tuning (15)<br>**L82765**=80CRI 2700K-6500K White Tuning (15)<br>**L92765**=90CRI 2700K-6500K White Tuning (15) | **A3/8-4/18GDIM**=3/8" Flex with 0-10V Dimming Leads Multiple other configurations available. See below for details.<br>**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)<br>**5LTD**=DALI Driver (5%-100% Dimming) (16)<br>**5LTHD**=DALI Driver (1%-100% Dimming)<br>**SD**=Step Dimming Driver (50% or 100% Dimming) (17)<br>**LH**=Lutron HiLume (LDE1 series) 1%-100% EcoSystem Driver with Soft-on Fade to Black dimming (F)<br>**W2A**=White Tuning, 2ch, Intensity and CCT Control (18)<br>**SR**=Sensor-ready Driver (1%-100% Dimming) |
| **Notes**<br>(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. | **Notes**<br>(15) 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**<br>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.<br>**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**<br>(16) 1900, 2500, 3000 and 3400 lumen options not available with DALI (5LTD) driver. (17) Step-dim (SD) driver not available with 1900, 2500, 3000 and 3400 lumen option. (18) 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.<br><br>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 |
|---|---|---|---|---|

| Number of Drivers | Integrated Sensing Systems | Packaging | Accessories (order separately) (21) |
|---|---|---|---|
| **1**=1 Driver | **[Blank]**=No Sensor<br>**WLS (formerly WAB)**=WaveLinx LITE Wireless Sensor, Occupancy w/ photocell, Independent & Networked (20), (B)<br>**WPS (formerly WAA)**=WaveLinx PRO Wireless Sensor, Occupancy w/ photocell, Networked (19), (A)<br>**WLN**=WaveLinx LITE Wireless Control Node, without sensor (20), (B)<br>**WPN**=WaveLinx PRO Wireless Control Node, without sensor (19), (A) | **U**=Unit Pack<br>**PALC**=Job Pack, in carton | **T3A END E.Q. BRACKET PARTS BAG** (Standard with fixture)<br>**DF-22W-U**=2' x 2' Drywall Frame Kit<br>**SMK-22-W**=4" Tall Surface Mount Kit, 2' x 2' |
| | **Notes**<br>(19) WPS sensor and WPN node to be used with CD or W2A driver. Consult factory for WPN with tunable white W2A driver. (20) WAB sensor and WLN node to be used with CD driver.<br><br>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**<br>(21) Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.<br><br>Integrated options must be used in conjunction with the associated system and may not be compatible with other options or accessories. |

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## 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

### 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.
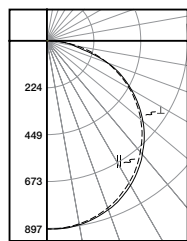
### Warranty

- Five year limited warranty standard. Optional ten year limited warranty available
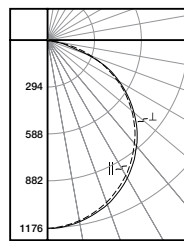
### Driver Access

- 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: 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 | 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

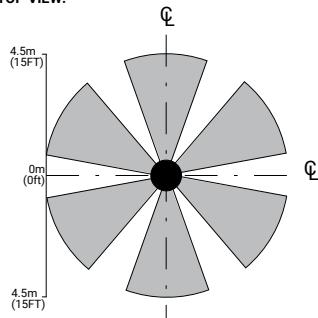$$\text{Efficacy} = \frac{2{,}287 \text{ lm}}{20W} = 114.3 \text{ lm/W}$$

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## Control Solutions

- WaveLinx LITE wireless
- WaveLinx PRO wireless
- WaveLinx CAT wired
- WaveLinx Wired

**WaveLinx** Digital Lighting Control Solutions

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

**WaveLinx PRO** is a wireless lighting control solution, for connected spaces, that significantly reduces a building's energy consumption. From a single floor to an entire campus, WaveLinx PRO connects more than lighting assets; it shares aggregated sensor data with the WaveLinx CORE platform and other building systems, so building owners can improve operations, spaces environment, and tenants' experience. WaveLinx PRO offers a rich portfolio of wireless devices, WaveLinx PRO-enabled luminaires, and an intuitive WaveLinx mobile app for office, education, warehouse, and parking garage applications.

**WaveLinx LITE** is a cost effective, wireless digital lighting control solution, with out-of-the-box functionality, that saves energy and meets code. It's designed for applications that require occupancy-based, daylighting, or manual light control. Customize installations for office, education, warehouse and parking garages using the secure, simple mobile app.

### Integrated Sensor Coverage Pattern

**TOP VIEW:**



**SIDE VIEW:**



**With Integrated WaveLinx Sensor**
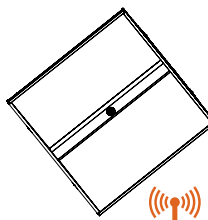
**With Integrated WaveLinx Node**
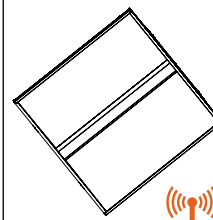
**Add a hidden WaveLinx sensor node (WPN, WLN) to your space lighting design!**

Allows to:
- Keeps luminaire aesthetics
- Connect fixtures without the realestate to include sensor option such as downlights
- Connect sealed fixtures without a standard sensor option such as products for clinical space.

*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.*

### Integrated Controls Options

| Option | Out of the Box Functionality | Luminaire Level Lighting Control (LLLC) | Automatic Dimming Photocell | Occupancy Sensing | CCT Control* |
|---|---|---|---|---|---|
| WLS | X | X | X | X | |
| WLN | | X | | | |
| WPS | | X | X | X | X |
| WPN | | 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
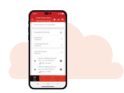
The WNPS option is available with WLS or WPS sensors. Must be specified when ordered. Also note that WLS and WPS are also compatible with ESP-L-010-347 and ESP-P-010-347, respectively. Learn more about WaveLinx EM here.

## Systems comparison chart

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

|  | Luminaire with standalone sensor | Standalone Spaces WaveLinx LITE | Standalone Spaces WaveLinx CAT | Networked Spaces WaveLinx PRO | Enterprise WaveLinx CORE |
|---|---|---|---|---|---|
| Occupancy | Yes | Yes | Yes | Yes | Yes |
| Daylighting | Yes | Yes | Yes | Yes | Yes |
| Wallstations | – | Yes | Yes | Yes | Yes |
| Gateways | – | – | – | 1 WAC | 300 WACs |
| Devices (MAX) | – | 40 per Area (1120 per space) | 40 per Area | 200 per WAC2 | 32,500 per CORE Enterprise |
| Software | – | WaveLinx LITE Mobile App | WaveLinx CAT Mobile App | WaveLinx Mobile App | CORE |
| Areas | – | 28 per Space | Unlimited | 50 per WAC2 | up to 3,000 |
| Zones | – | 16 per Area | 16 per Area | 16 per Area | up to 9,000 |
| Scheduling | – | – | – | Local | Global |
| VividTune™ | – | – | – | Yes | Yes |
| Plug-Load Control | – | Yes | Yes | Yes | Yes |
| Low-Voltage Power | – | – | Yes | Yes | Yes |
| Integration | – | – | – | – | BACnet, API |
| Dashboards | – | – | – | – | Energy, Occupancy |
| Configuration | – | Installer | Installer | Technician | Technician / IT |

**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.



Black Body Locus          ANSI C78.377-2017 Quadrangles

— 3000K - 5000K
— 2700K - 6500K
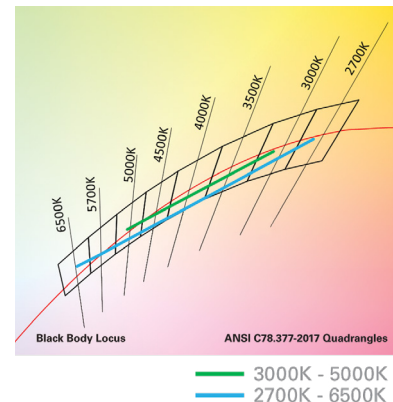
## Performance Data*

| 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 | | | |
|---|---|---|---|
| CCT Setting | Standard Catalog #<br>22EN-LD2-25-UNV-L835-CD1-U | VividTune 80 CRI Catalog #<br>22EN-LD2-25-UNV-L83050-W2A1-U | VividTune 90 CRI Catalog #<br>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.



warm 2700K    CCT 0-10V    cool 6500K

warm 3000K    CCT 0-10V    cool 5000K

10%    Intensity 0-10V    100%
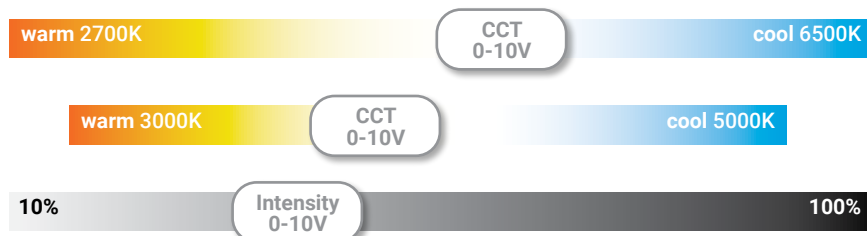
### Example of Lumen Adjustment Calculation

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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**Cooper Lighting Solutions**
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Specifications and dimensions
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