Metalux

Cruze ST 14CZ2

1' x 4' LED Specification Grade Troffer

Typical Applications

Office • Education • Healthcare • Hospitality • Retail

Interactive Menu

Product Certification

c UL us LISTED · DLC DLC LISTED · DLC DLC LISTED PREMIUM · Efficiency Standards T24 Can be used to comply with California Title 24 Non-Residential · RoHS COMPLIANT · IC RATED · SYSTEMS CERTIFIED 1500

Product Features

Connected Systems · Bluetooth® · powered by fifthlight technology · damp location · VividTune color tuning solutions

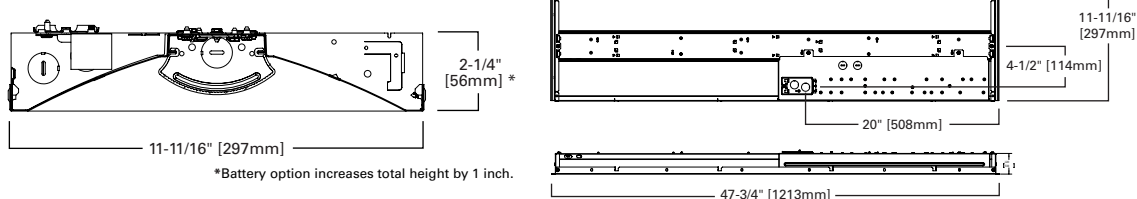LINEAR DISCONNECT — Safe and convenient means of disconnecting power · MWS MODULAR WIRING SYSTEM CLICK HERE
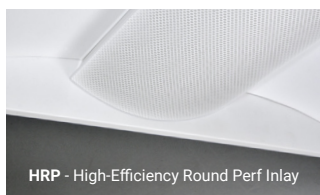
Top Product Features

- Latch-less design provides clean architectural look
- VividTune CCT tuning options from 3000K-5000K or 2700K-6500K
- Designers delight - ribbed, smooth and round perforated lens options
- High performance efficacy up to 138 lm/W
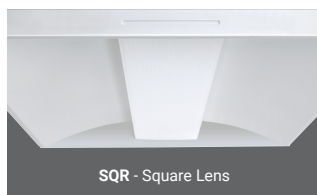
Dimensional and Mounting Details

11-11/16" [297mm]

2-1/4" [56mm] *

*Battery option increases total height by 1 inch.

11-11/16" [297mm]

4-1/2" [114mm]

20" [508mm]

47-3/4" [1213mm]

Shielding

2' wide versions shown for detail.

HRP - High-Efficiency Round Perf Inlay

SQR - Square Lens

See ordering information for more shielding options.

Ceiling Compatibility

G Grid/Lay-in Standard

G Concealed T

G Slot Grid

Ceiling Type	Trim Type
Exposed Grid	Standard
Concealed T	Standard
Slot Grid	Standard
Flange	*

*See Drywall Frame Kit Accessory in Ordering Information Section

Order Information

SAMPLE ORDER NUMBER: **14CZ2-39HE-UNV-L835-CD1-U**

Rating	Series	Lumen Output	Shielding (3)	Voltage (4)	Options	Emergency Options
[Blank]=Standard **ATW-SW4**=Chicago Rated	**14CZ2**=1x4 Cruze ST	**High Efficacy** **39HE**=3800 Lumens [1] **48HE**=4800 Lumens [1] **60HE**=6000 Lumens [1] **Standard Efficacy** **20**=2000 Lumens [2] **25**=2500 Lumens [2] **29**=2900 Lumens **35**=3500 Lumens **39**=3900 Lumens **44**=4400 Lumens	**[Blank]**=Ribbed Frosted Acrylic Lens (standard) **S**=Smooth Frosted Acrylic Lens **RDP**=Smooth Lens with Round Pattern Insert **HRP**=High-Efficiency Round Perf Inlay **SQR**=Ribbed Square Frosted Acrylic Lens	**UNV**=Universal Voltage 120-277 **347V**=347 Volt **48V**=48 Volt Low-voltage (Class 2) (C)	**GL**=Single Element Fuse **GM**=Double Element Fuse	**[Blank]**=No emergency **EL7W**=7-watt 120V-277V emergency battery pack [5] **EL14W**=14-watt 120V-277V emergency battery pack [5] **EL10WSD**=Bodine 10W emergency battery pack with self diagnostic installed [5], [11] **ELV7W**=7-watt DLVP-compatible low voltage emergency battery pack (C) **ELV14W**=14-watt DLVP-compatible low voltage emergency battery pack (C) **ETRD**=Iota Emergency Transfer Relay with dimming control [6] **RRU**=LVS Controls Emergency Transfer Relay with dimming control [6] **UEL7W**=UL924 Listed luminaire, 7-watt, 120V-277V emergency battery pack [5] **UEL14W**=UL924 Listed luminaire, 14-watt 120V-277V emergency battery pack [5] **UEL10WSD**=Bodine 10W emergency battery pack with self diagnostic installed [5], [12] **UETRD**=UL924 Listed luminaire, Iota Emergency Transfer Relay with dimming control [6] **URRU**=UL924 Listed luminaire, LVS Controls Emergency Transfer Relay with dimming control [6]
		Notes (1) White tuning not available with this model. (2) Not compatible with WN driver.	**Notes** (3) Smooth and Perforated versions are not available in Square shape.	**Notes** (4) Products also available in non-US voltages and frequencies for international markets. (C) Consult DLVP system pages for additional details and compatibility.		**Notes** (5) 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. (6) Used to bypass local control during outage. Must be used in conjunction with UL 1008 device (provided by others). Devices are universal voltage (UNV). 347 not available. (11) EL10WSD not available with 347V. (12) UEL10WSD not available with 347V.(C) Consult DLVP system pages for additional details and compatibility.

CRI/CCT	Flex	Driver Type	Number of Drivers
L830=80CRI, 3000K **L835**=80CRI, 3500K **L840**=80CRI, 4000K **L850**=80CRI, 5000K **L930**=90CRI, 3000K **L935**=90CRI, 3500K **L940**=90CRI, 4000K **L950**=90CRI, 5000K **L83050**=80CRI 3000K-5000K White Tuning [7] **L93050**=90CRI 3000K-5000K White Tuning [7] **L82765**=80CRI 2700K-6500K White Tuning [7] **L92765**=90CRI 2700K-6500K White Tuning [7]	**[Blank]**=No Flex **A3/8-4/18GDIM**=3/8" Flex with 0-10V Dimming Leads **A3/8-2/18G**=3/8" Flex with line and common **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) **WN**=WaveLinx Wireless Fixture, No Sensor. (A), (G), (H) **5LTD**=Fifth Light DALI Driver (5%-100% Dimming) (E) **5LTHD**=Fifth Light Dimming Driver (1%-100% Dimming) (E) **LV**=DLVP Dimming Driver (0%-100% Dimming) (C) **SD**=Step Dimming Driver (50%-100% Dimming) **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, 2 ch, Analog 0-10V Intensity and CCT Control (8) **SR**=Sensor-ready Dimming Driver 1%-100% Dimming)	**1**=1 Driver
Notes (7) 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. May be combined with Wavelinx sensor control systems only.	**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. See online configurator for all flex options. **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** (8) 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. May be combined with Wavelinx sensor control systems 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 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.	

Integrated Sensing Systems (9)	Packaging	Accessories (order separately)
[Blank]=No Sensor **SVPD1**=0-10V Stand-alone Integrated Sensor (D)	**U**=Unit Pack **PAL**=Job Pack, out of carton **PALC**=Job Pack, in carton	**CZ2-EQCLIP-U-PK**=Cruze Plus "CZ2" Earthquake Clip Kit (4 clips per bag kit) [10] **DF-14W-U**=1' x 4' Drywall Frame Kit **SK-14-WT**=1' x 4' Tall Surface Mount Kit **ISHH-01**=Programming Remote for Integrated Sensor (D) **ISHH-02**=Personal Control Remote for Integrated Sensor (D)
Notes (9) Matching width lens band on other side of sensor band may be supplied for symmetrical appearance. Required for use with sensor and emergency combination. Add "D" to sensor ordering as shown - SDVPD1. 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.		**Notes** (10) An EQ Grid Clip is recommended for all 9/16" ceiling systems. Four required per fixture. 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) For use with SVPD sensor only. Consult SVPD series system pages for additional details and compatibility.

Cooper Lighting Solutions

Product Specifications

Construction
- Die formed of code gauge prime cold rolled steel with full length die-formed stiffeners
- Unibody endplates attached with interlocking tabs and screws
- Hemmed side flanges
- Four auxiliary fixture end suspension points
- Integral Grid-lock feature for endplates for added safety
- Optional earthquake clips available

Integrated Controls
- 0-10V dimming to 1% standard
- WaveLinx wireless fixture for sensor-less wireless control
- WaveLinx wireless sensor compatible for standalone, controlled, connected, and IoT capability
- SVPD sensor compatible for standalone functionality
- Low-voltage sensor and driver compatible for DLVP applications
- DALI 2.0, Lutron, and step-dimming available

LED and Light Engine
- LED's available in 3000K, 3500K, 4000K, or 5000K at 80 CRI minimum and 90 CRI minimum
- Color accuracy ≤3-Step MacAdam ellipse (SDCM)
- TM21 life at 60,000 hours up to L94 and calculated L70 exceeds 290,000 hrs.
- Drivers available in 120-277V and 347V
- Tunable white options available with Cooper Lighting Solutions' Vividtune

Emergency Battery Options
- Optional emergency battery available in 7W and 14W
- 90-minute backup period for code compliance
- Laser point test from floor for ease of use on 7W and 14W versions
- EZ Key feature prevents accidental discharge during construction on 7W and 14W versions
- Integral emergency transfer relay options available

Finish
- Multistage, iron phosphate pretreatment
- 90% reflective, matte white enamel finish
- Full fixture housing painted after fabrication

Shielding
- Ribbed acrylic frosted lens standard
- Optional smooth acrylic frosted lens (S)
- Optional metal perforated acrylic lens (RDP)
- Optional High-Efficiency Round Perf Inlay (HRP)
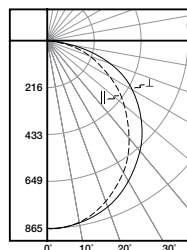
Compliance
- IC rated for insulation contact
- cULus listed for damp locations
- RoHS compliant
- Tested to IESNA LM-79 and LM-80
- Stated life tested to TM21 standards
- Can be used for State of California Title 24 high efficacy luminaire

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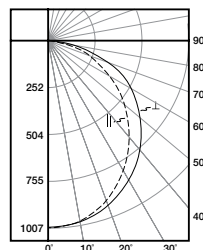- Five-year warranty standard. Optional ten year warranty available.

Photometric Data

View IES files

14CZ2-25-UNV-L830-CD1-U
Dimming Driver
Linear LED 3000K
Spacing criterion: (II) 1.19 x mounting height, (⊥) 1.28 x mounting height
Lumens: 2459
Input Watts: 20.5W
Efficacy: 120 LPW
Test Report: 14CZ2-25-UNV-L830-CD1-U.IES

14CZ2-29-UNV-L830-CD1-U
Dimming Driver
Linear LED 3000K
Spacing criterion: (II) 1.19 x mounting height, (⊥) 1.27 x mounting height
Lumens: 2863
Input Watts: 24.3W
Efficacy: 117.8 LPW
Test Report: 14CZ2-29-UNV-L830-CD1-U.IES

COOPER
Lighting Solutions

Energy and Performance Data

Standard Efficacy Versions – Single Row of LEDs

Catalog Number	Lumens	Watts	lm/W
14CZ2-20-UNV-L835-CD1-U	2008	16.3	123
14CZ2-25-UNV-L835-CD1-U	2473	20.5	121
14CZ2-29-UNV-L835-CD1-U	2879	24.3	119
14CZ2-35-UNV-L835-CD1-U	3545	31.2	114
14CZ2-39-UNV-L835-CD1-U	3931	32.3	122
14CZ2-44-UNV-L835-CD1-U	4511	38.3	118

High Efficacy Versions – Two Rows of LEDs

Catalog Number	Lumens	Watts	lm/W
14CZ2-39HE-UNV-L835-CD1-U	3965	29.3	135
14CZ2-48HE-UNV-L835-CD1-U	4823	36.9	131
14CZ2-60HE-UNV-L835-CD1-U	6021	48.3	125

Shielding

Lumen Adjustment Factors			
S	RDP	HRP	SQR
1.01	0.64	0.80	0.96

Lumen Calculator

CCT Multiplier	80 CRI	90 CRI
3000K	0.994	0.830
3500K	1.00	0.854
4000K	1.00	0.854
5000K	1.065	0.852

Example of Lumen Adjustment Calculation

14CZ2-35-UNV-L935-CD1-U at 90CRI at 3500K

Lumen Adjustment Factor = 0.845

Total Light Output =

3,545 lm x 0.845 = 2,996 lm

$$Efficacy = \frac{2{,}996\ lm}{31.2W} = 96.1\ lm/W$$

Lumen Maintenance

Version	TM-21 Lumen Maintenance (60,000 hours) [1]	Theoretical L70 (Hours) [2]
Standard	> 85%	> 131,000
High Efficiency	> 94%	> 290,000

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.

Load Data (Stock Product)

Thd	6%
Power Factor	0.99
Weight (lbs.)	9.9
Low Temp. Start	-20°C

Shipping Data

Catalog No.	Wt.	Pallet 52"L x 49"W x 53.5"H
1' x 4'	22 lbs.	32

Control Systems

- WaveLinx Wireless
- WaveLinx Wired
- DLVP
- VividTune

Connected Systems
CLICK HERE

The Cruze ST with Integrated Sensor technology provides automatic energy savings without sacrificing performance. The Cruze ST delivers superior lighting with integrated occupancy and daylighting controls.

For standalone and controlled applications, the WaveLinx Lite integral sensor provides out-of-the-box functionality with no gateways required and factory startup is not needed.

When more connectivity is required, the WaveLinx Wireless sensor meets modern code and utility requirements, delivers energy and cost savings, while enabling buildings to become smart buildings.
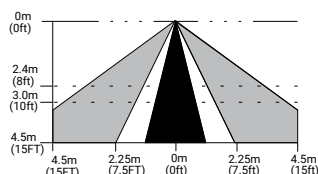
The WaveLinx Wireless Connected Lighting System combined with Trellix provides an open IoT platform and infrastructure that connects intelligent sensors leveraging the real-estate of the physical light fixture to solve higher complexity problems to deliver actionable insights through the aggregation of valuable data.
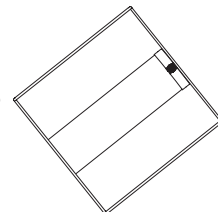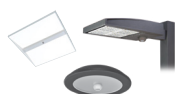
TOP VIEW:
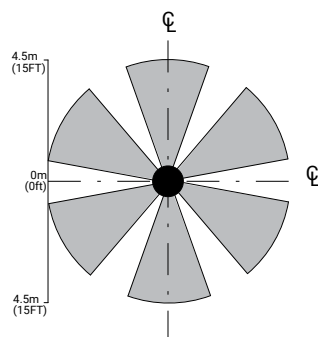
SIDE VIEW:

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.*

Systems comparison chart

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

	Standalone	**Controlled** WaveLinx Lite	**Connected** WaveLinx Wireless	**Enterprise** Trellix
Occupancy	Yes	Yes	Yes	Yes
Daylighting	Yes	Yes	Yes	Yes
Gateways	–	–	1 WAC	300 WACs
Devices	–	50 per Area (1400 per site)	150 per WAC	45,000 per Core Enterprise
Software	–	WaveLinx Lite Mobile App	WaveLinx Mobile App	Trellix Core
Areas	–	28 per Site	16 per WAC	up to 4,800
Zones	–	16 per Area	16 per Area	up to 76,800
Scheduling	–	–	Local	Global
VividTune™	–	–	Yes	Yes
Plug-Load Control	–	–	Yes	Yes
Integration	–	–	–	BACnet, API
Dashboards	–	–	–	Energy, Occupancy
Configuration	–	Installer	Technician	Technician / IT

SCALABILITY

devices → areas → floors → buildings

VividTune™
color tuning solutions

14 Cruze ST 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
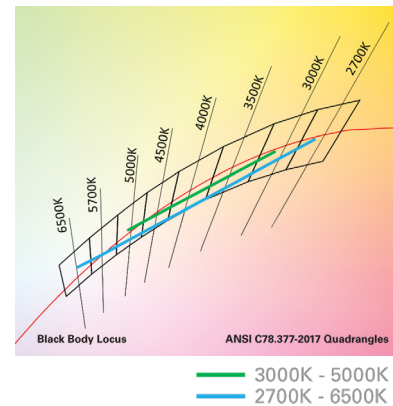
Performance Data*

Tunable White - Lumen Adjustment Factors				
CCT	3000K-5000K		2700K-6500K	
	80 CRI	90 CRI	80 CRI	90 CRI
2700K	-	-	0.903	0.771
3000K	0.929	0.765	0.928	0.801
3500K	0.983	0.836	0.961	0.842
4000K	1.033	0.903	0.981	0.868
4500K	1.042	0.918	0.999	0.891
5000K	1.042	0.918	1.013	0.909
6500K	-	-	1.028	0.933

1' x 4' Cruze ST LED - Example of Approximate Lumen Calculation			
	Standard Catalog #	VividTune 80 CRI Catalog #	VividTune 90 CRI Catalog #
CCT Setting	14CZ2-35-UNV-L835-CD1-U	14CZ2-35-UNV-L83050-W2A1-U	14CZ2-35-UNV-L93050-W2A1-U
3000K	-	3294	2712
3500K	3545	3486	2963
4000K	-	3660	3200
4500K	-	3695	3255
5000K	-	3695	3255

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, go to www.cooperlighting.com for tunable white application guides.

warm 2700K   CCT 0-10V   cool 6500K

warm 3000K   CCT 0-10V   cool 5000K

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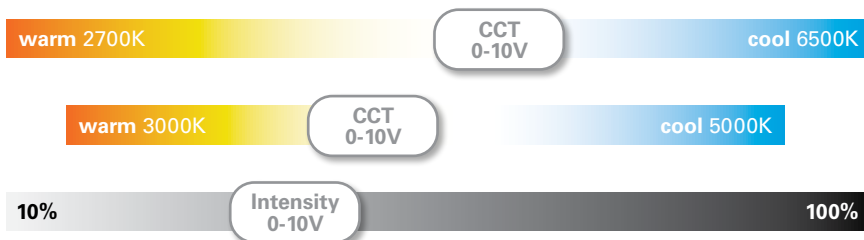
Example of Lumen Adjustment Calculation

14CZ2-35-UNV-L83050-W2A1-U
at 80 CRI tuned to 3500K

Adjusted Lumen = published lm x adjusted lm factor

Adjusted Lumen = 3545 x 0.983

Adjusted Lumen = 3486 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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