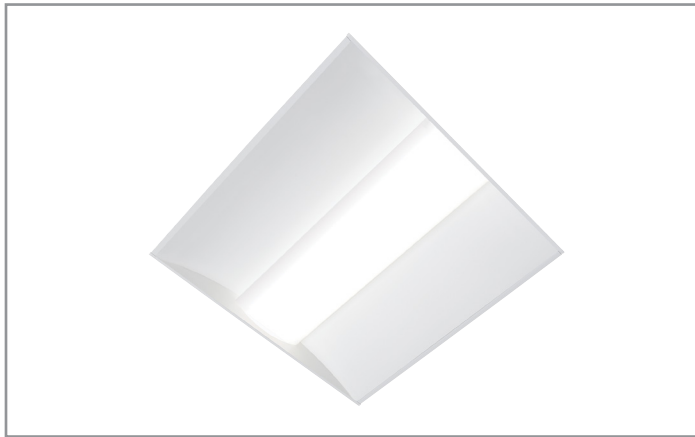| Project		Catalog #		Type	
Prepared by		Notes		Date	

Fail-Safe

FCZ2 Fail-Safe Cruze ST 2x2 LED

2' x 2' LED Sealed Specification Grade Troffer

Typical Applications

• Healthcare • Medical • Exam Room • Procedure Room • Surgery
• Patient Room • Cleanroom • Behavior Health • Education • Laborgatory

Interactive Menu

- Order Information page 2
- Photometric Data page 3
- VividTune Tunable White page 5
- Product Warranty

Product Certification

RoHS COMPLIANT • NSF • NSF SPLASH ZONE • IP65 • ISO5 CLEANROOM • wet location • SYSTEMS CERTIFIED

Product Features

VividTune color tuning solutions • Connected Systems • LINEAR DISCONNECT Safe and convenient means of disconnecting power

Top Product Features

- Visually pleasing center basket design
- IP65 rated – added protection from elements (dust, water)
- High performance efficacy up to 139 lm/W
- Integrated Wavelinx and tile-mount
- Enlighted connected lighting options available
- VividTune tunable white (3000K-5000K and 2700K-6500K) available in 80CRI or 90CRI

Dimensional and Mounting Details

3-1/4" [83mm]

7" [179mm]

23-3/4" [603mm]

23-3/4" [603mm]

23-3/4" [603mm]

10-1/2" [267mm]

15" [381mm]
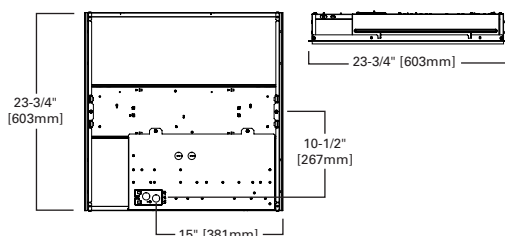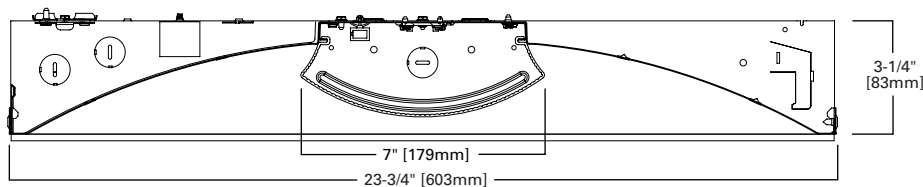
Ceiling Compatibility

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: **22FCZ2-34HE-UNV-L82765-CP125-W2A1**

Series	Lumen Output		Efficacy	Shielding	Voltage (2)	CRI/CCT
22FCZ2=24 inch width, 2 ft. length	**20**=2000 Lumens [9] **24**=2400 Lumens [9] **29**=2900 Lumens [13] **32**=3200 Lumens [12] **34**=3400 Lumens [13] **39**=3900 Lumens **44**=4400 Lumens **50**=5000 Lumens [11] **55**=5500 Lumens [11] **60**=6000 Lumens [11] **65**=6500 Lumens [11]	**70**=7000 Lumens [11] **75**=7500 Lumens [11] **80**=8000 Lumens [11] **85**=8500 Lumens [11] **90**=9000 Lumens [11] **95**=9500 Lumens [11] **100**=10000 Lumens [11] **110**=11000 Lumens [11]	**[Blank]**=Standard Efficacy [8], [10] **HE**=High Efficacy [10] **VHE**=Very High Efficacy [11]	**[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**=Square Lens	**UNV**=Universal Voltage 120-277 **347V**=347 Volt [5]	**L830**=80CRI, 3000K **L835**=80CRI, 3500K **L840**=80CRI, 4000K **L850**=80CRI, 5000K **L83050**=80CRI 3000K-5000K White Tuning [6] **L82765**=80CRI 2700K-6500K White Tuning [6] **L930**=90CRI, 3000K **L935**=90CRI, 3500K **L940**=90CRI, 4000K **L950**=90CRI, 5000K **L93050**=90CRI 3000K-5000K White Tuning [6] **L92765**=90CRI 2700K-6500K White Tuning [6]
Notes				**Notes**	**Notes**	**Notes**
(8) White tuning not available with this model. (9) Not available with WN driver. (10) Available up to 4400 lumens. (11) Currently only available with CD driver option. (12) Only available in Standard Efficacy. (13) Not available in Standard Efficacy.					(2) Products also available in non-US voltages and frequencies for international markets. (5) 347 versions 6000 lumens and below are available with emergency options, 347 versions with emergency 5LTHD, step-dim or sensors are not available.	(6) 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. Not compatible with other control or sensor options. Must be used in conjunction with W2A driver only. Must be used with two (2) 10V dimming control channels, 1 color, 1 intensity. Not compatible with other control or sensor options

Flex	Shielding	Bottom Lens	Driver Type	Number of Drivers
[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.	**[Blank]**=Frosted Ribbed **RDP**=Round Perf Insert **S**=Frosted Smooth **HRP**=High Efficiency Round Perf **CURV**=Curve Pattern **SWRL**=Swirl Pattern **PRSM**=Prism Pattern **MCRO**=Micro Prism Pattern	**CA08**=0.080" Clear Acrylic **CA125**=0.125" Clear Acrylic **CP125**=Clear Polycarbonate 0.125" **CP187**=Clear Polycarbonate 0.187" **CP250**=Clear Polycarbonate 0.250"	**CD**=0-10V driver (1%-100% dimming) **SR**=Sensor-ready Dimming Driver for LWIPD1 option (1%-100% Dimming) [8] **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% or 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 [7] **WN**=Wavelinx Wireless Fixture, No Sensor [A], [G], [H]	**1**=1 Driver
Flexible Metal Conduit Options			**Notes**	
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. **A3/8-4/18DIM 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).			(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. Not compatible with other control or sensor options. Must be used in conjunction with W2A driver only. Must be used with two (2) 10V dimming control channels, 1 color, 1 intensity. Not compatible with other control or sensor options. 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 emergency or integrated sensor options. (H) Available with UNV voltage only.	

Options	Options Emergency	Integrated Sensing Systems	Accessories (order separately)
[Blank]=No Element Fuse **GL**=Single Element Fuse **GM**=Double Element Fuse	**[Blank]**=No Emergency Pack **EL7W**=7-watt, 120V-277V emergency battery pack installed [3] **ELV7W**=7-watt, DLVP-compatible low voltage emergency battery pack installed [C] **EL14W**=14-watt 120V-277V emergency battery pack installed [3] **ELV14W**=14-watt, DLVP-compatible low voltage emergency battery pack installed [C] **GTR2**=Generator Transfer Relay [6] **ETRD**=Emergency Transfer Relay with dimming control [6]	**[Blank]**=No Sensor **LWTPD1**=Enlighted Wireless Tile-mount Sensor [B]	**[Blank]**=No Accessory **FCZ2-EQCLIP-U-PK**=Pack of four Fail-Safe Cruze grid security clips [1] **DFCL-2424W-U**=2' x 2' gasketed drywall framing kit. Ships with gasket to be applied in field. Cutout Dimensions 24.25" x 24.25" **DFVR/FCZ-2424W-U**=2' x 2' secured tamper resistant drywall kit. Cutout dimensions 24.25" x 24.25" **ISHH-01**=Programming Remote for Integrated Sensor [D] **ISHH-02**=Personal Control Remote for Integrated Sensor [D]
Notes		**Integrated Sensing and Control System Options**	**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. (6) Used to bypass local control during outage. Must be used in conjunction with UL 1008 device (provided by others). GTR2 option includes 2 relays on fixtures with dimming drivers. ETRD option only requires one relay when used on a dimming fixture. Must specify voltage as 120V or 277V when ordering these devices. 347 not available. 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: (C) Consult DLVP 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: (B) Consult Enlighted system pages for additional details and compatibility.	(1) 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) Consult SVPD series system pages for additional details and compatibility.

COOPER Lighting Solutions

Product Specifications

Construction
- Formed steel housing with integral Grid-lock feature and optional grid security clips

Integrated Controls
- Standard with 0-10V dimming. Optionally available with Lutron and Dali

LED and Light Engine
- Available in 3000, 3500, 4000, and 5000K fixed color temperatures, or with Vividtune white tuning technology
- Drivers available in 120-277V and 347V
- TM21 life at 60,000 hours up to L85 and L70 exceeds 132,000 hours

Emergency Battery Options
- Optional 120-277V emergency battery available in 7W or 14W
- 90-minute backup period for code compliance
- Test switch with laser pointer and testing from floor feature for ease of use
- Generator transfer options available

Finish
- High Gloss white finish standard

Shielding
- Standard ribbed frosted acrylic diffuser
- Optional clear diffuser with perf or decorative pattern inserts
- Optional smooth acrylic frosted lens (S)
- Optional metal perforated acrylic lens (RDP)
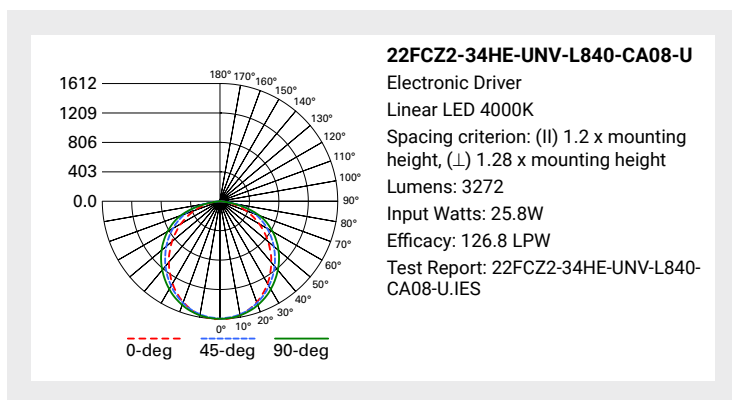- Optional High-Efficiency Round Perf Inlay (HRP)

Compliance
- IC rated, cULus Wet Location
- RoHS compliant
- NSF, ISO5 Cleanroom with bottom lens, IP65

Warranty
- Five year warranty standard

Photometric Data

View IES files

22FCZ2-34HE-UNV-L840-CA08-U
Electronic Driver
Linear LED 4000K
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.28 x mounting height
Lumens: 3272
Input Watts: 25.8W
Efficacy: 126.8 LPW
Test Report: 22FCZ2-34HE-UNV-L840-CA08-U.IES

Energy and Performance Data

Shielding

Lumen Adjustment Factors			
S	RDP	HRP	SQR
1.05	0.67	0.85	0.96

Lumen Calculator

CCT Multiplier	80 CRI	90 CRI
3000K	0.994	0.830
3500K	1.00	0.845
4000K	1.00	0.854
5000K	1.065	0.852

Lumen Maintenance

Version	TM-21 Lumen Maintenance (60,000 hours) [1]	Theoretical L70 (Hours) [2]
Standard	> 85%	> 131,000
High Efficiency	> 94%	> 290,000
Very 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.)	10.6
Low Temp. Start	-20ºC

Shipping Data

Catalog No.	Wt.	Pallet 49"L x 52"W x 55"H
2' x 2'	12.5 lbs.	48

Energy and Performance Data Catalog Number

Standard Efficacy Versions – Single Row of LEDs

Catalog Number	Watts	CA08	LPW	CA125	LPW	CP125	LPW	CP187	LPW	CP250	LPW
22FCZ2-20-XXXX-UNV-35-CD1	17.9	2031	113	2024	113	1984	111	1900	106	1885	105
22FCZ2-24-XXXX-UNV-35-CD1	21.9	2368	108	2360	108	2314	106	2216	101	2198	100
22FCZ2-32-XXXX-UNV-35-CD1	26.7	3170	119	3159	118	3097	116	2966	111	2942	110
22FCZ2-39-XXXX-UNV-35-CD1	34.5	3811	110	3797	110	3723	108	3566	103	3537	103
22FCZ2-44-XXXX-UNV-35-CD1	42.7	4275	100	4260	100	4177	98	4001	94	3968	93

High Efficacy Versions – Two Rows of LEDs

Catalog Number	Watts	CA08	LPW	CA125	LPW	CP125	LPW	CP187	LPW	CP250	LPW
22FCZ2-20HE-XXXX-UNV-35-CD1	16.0	1975	123	1968	123	1930	121	1848	116	1833	115
22FCZ2-24HE-XXXX-UNV-35-CD1	19.2	2335	122	2327	121	2281	119	2185	114	2167	113
22FCZ2-29HE-XXXX-UNV-35-CD1	22.2	2844	128	2833	128	2778	125	2661	120	2639	119
22FCZ2-34HE-XXXX-UNV-35-CD1	25.8	3272	127	3261	126	3197	124	3062	119	3037	118
22FCZ2-39HE-XXXX-UNV-35-CD1	30.3	3798	125	3785	125	3711	122	3554	117	3525	116
22FCZ2-44HE-XXXX-UNV-35-CD1	35.0	4314	123	4299	123	4215	120	4037	115	4004	114

Very High Efficacy Versions – Three Rows of LEDs

Catalog Number	Watts	CA08	LPW	CA125	LPW	CP125	LPW	CP187	LPW	CP250	LPW
22FCZ2-20VHE-XXXX-UNV-35-CD1	14.2	1941	137	1934	136	1896	134	1896	134	1801	127
22FCZ2-24VHE-XXXX-UNV-35-CD1	17.5	2417	138	2409	138	2362	135	2362	135	2243	128
22FCZ2-29VHE-XXXX-UNV-35-CD1	21.7	3010	139	2999	138	2940	136	2940	136	2793	129
22FCZ2-34VHE-XXXX-UNV-35-CD1	25.1	3477	139	3465	138	3398	135	3398	135	3227	129
22FCZ2-39VHE-XXXX-UNV-35-CD1	28.6	3941	138	3927	137	3851	135	3851	135	3658	128
22FCZ2-44VHE-XXXX-UNV-35-CD1	32.6	4465	137	4449	137	4363	134	4363	134	4144	127
22FCZ2-50VHE-XXXX-UNV-35-CD1	36.2	4924	136	4907	136	4811	133	4811	133	4570	126
22FCZ2-55VHE-XXXX-UNV-35-CD1	39.4	5345	136	5325	135	5222	133	5222	133	4960	126
22FCZ2-60VHE-XXXX-UNV-35-CD1	44.1	5905	134	5884	133	5770	131	5770	131	5480	124
22FCZ2-65VHE-XXXX-UNV-35-CD1	47.9	6339	132	6316	132	6194	129	6194	129	5883	123
22FCZ2-70VHE-XXXX-UNV-35-CD1	50.3	6782	135	6757	134	6626	132	6626	132	6294	125
22FCZ2-75VHE-XXXX-UNV-35-CD1	54.7	7304	134	7278	133	7136	131	7136	131	6778	124
22FCZ2-80VHE-XXXX-UNV-35-CD1	59.1	7821	132	7793	132	7641	129	7641	129	7258	123
22FCZ2-85VHE-XXXX-UNV-35-CD1	63.6	8326	131	8296	130	8135	128	8135	128	7727	122
22FCZ2-90VHE-XXXX-UNV-35-CD1	68.2	8819	129	8788	129	8617	126	8617	126	8185	120
22FCZ2-95VHE-XXXX-UNV-35-CD1	72.7	9288	128	9255	127	9075	125	9075	125	8620	119
22FCZ2-100VHE-XXXX-UNV-35-CD1	77.7	9769	126	9734	125	9545	123	9545	123	9066	117
22FCZ2-110VHE-XXXX-UNV-35-CD1	87.7	10694	122	10656	122	10448	119	10448	119	9925	113

VividTune™
color tuning solutions

24 FCZ 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
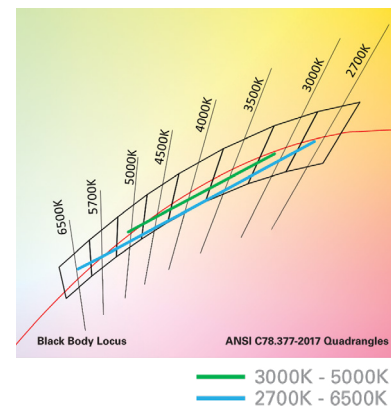
Performance Data*

	Tunable White - Lumen Adjustment Factors			
CCT	**3000K-5000K**		**2700K-6500K**	
	80 CRI	**90 CRI**	**80 CRI**	**90 CRI**
2700K	-	-	0.878	0.750
3000K	0.904	0.744	0.903	0.779
3500K	0.956	0.813	0.934	0.819
4000K	1.004	0.878	0.954	0.844
4500K	1.014	0.893	0.972	0.866
5000K	1.014	0.893	0.985	0.884
6500K	-	-	0.999	0.908

	2' x 4' FCZ LED - Example of Approximate Lumen Calculation		
	Standard Catalog #	**VividTune 80 CRI Catalog #**	**VividTune 90 CRI Catalog #**
CCT Setting	**22FCZ2-40HE-UNV-L835-CD1-U**	**22FCZ2-40HE-UNV-L83050-W2A1-U**	**22FCZ2-40HE-UNV-L93050-W2A1-U**
3000K	-	3641	2998
3500K	4029	3853	3275
4000K	-	4046	3537
4500K	-	4084	3599
5000K	-	4084	3599

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%

COOPER
Lighting Solutions