

FR Series
Premium Commercial LED Luminaire



Powering Business Worldwide



FR Premium Commercial LED Luminaire

Aesthetics, performance, value. The **FR** series is a premium commercial luminaire offering an excellent connected lighting solution with the latest solid state and optimized electronic driver technologies.

Aesthetics. Offered in two unique visual aesthetics – Standard and High Performance, the FR series is a modern styled luminaire suitable for any application such as offices, hospitals, schools, retail and other work spaces. With its styled design, FR series is a premium upgrade over traditional lensed troffers, parabolics and direct/indirect lighting products.

Performance. With performance as high as 145 lm/W, which is best in class within new fixture or any retrofit lighting solutions, the payback period for energy savings may be reduced and also qualify for standard and premium rebates. This connected lighting solution offers further flexibility with 0-10V dimming standard, and step/ Bi-level, 10% and 1% DALI and integrated sensor options to reduce energy consumption and cost while satisfying with national, state and local code requirements. All full complement of emergency lighting options is also available.

Value. Compared to traditional fluorescent and other LED solutions, the FR series offers superior energy efficiency and excellent application flexibility allowing the reduction of overall operating and maintenance costs.



 **Metalux**



FR Premium Commercial LED Luminaire



Construction

- Recessed: 2' x 2' and 2' x 4'
- Shallow depth: 3.25"
- Tool-less hinged door for easy access
- cULus damp location / IC Rated / RoHS compliant
- Sustainable materials
- Five-year warranty



Options

- Four stocked lumen packages in two CCTs
 - 2' x 2': 3200 (34.6W);
 - 2' x 4': 4000 (35.7W) and 6500 (61.5W)
 - Ten additional lumen packages offered as MTO
- Two different models – Standard (Single Bar) or High Performance (Dual Bar)
- Universal (120V/277V) or 347V
- Emergency – EL (700), EL10W (10 watts) and EL14 (1400)
- Surface mount field install kits
- Flex wiring configurations
- Chicago plenum rated version

Performance

- High-performance efficacy up to 134 lumens per watt
- Energy savings in excess of 50% compared to traditional fluorescent troffers
- Four Correlated Color Temperatures (3000K, 3500K, 4000K, 5000K) at typical 85 CRI
- 2' x 2': L83 @ 60,000 hrs.
2' x 4': L89 @ 60,000 hrs.
- Binning: Per ANSI, 3-step MacAdam ellipse

Controls

- FR series can include a factory-installed integrated sensor system for occupancy and daylight dimming control, with programming and manual controls from an optional handheld remote.
- FR series luminaires include 0-10V dimming drivers for control using wall dimmers (10% - 100%), daylighting sensors and room controllers from Eaton. Optional 1% dimming available.
- FR series luminaires are available with native DALI drivers for complete digital energy management using Fifth Light addressable lighting controls.





**FR with
Sensor**



**Optional Remote
Control**

FR luminaires with Integrated Sensor Controls

Consult with our factory about FR series luminaires with integrated sensor system which are optimized to meet energy codes for occupancy sensing and daylight harvesting. These sensor systems are factory wired to the luminaire, switching on or off based on occupancy, and dimming the light when enough daylight is available, offering out-of-the-box operation using thoughtful default settings. When the application demands more, the sensor system has an optional remote control allowing changes from the default settings for occupancy, target light level, preset lighting levels, and to temporarily override automatic controls.

Ordering Information

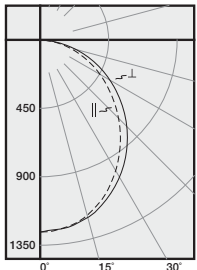
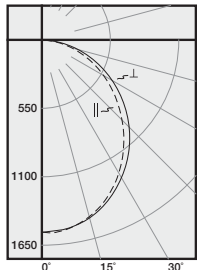
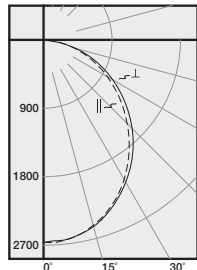
Sample Number: 24FR-LD4-40-UNV-L835-CD1-U

Rating	Width / Length	Series ⁹	Door Frame	LED Type	LED Lumens Output ⁴	Shielding		
[Blank]=Standard ATW-SW4=Chicago Rated	24=2' x 4' 22=2' x 2'	FR=Premium Commercial Luminaire	Standard=Flat White Steel Door (Leave Blank)	LD4=LED 4.0	2' x 2' Stock 32=3200 MTO 24=2400	2' x 4' Stock 40=4000 Lumens 65=6500 Lumens ⁷ MTO 30=3000 Lumens 50=5000 Lumens 69=6900 Lumens 72=7200 Lumens ⁷ 80=8000 Lumens	[Blank]=Curved Frosted Acrylic Lens (Standard) HP=High Performance, Curved Frosted Acrylic Lens	
Voltage ²		Options			Driver Type			
347V=347 Volt UNV=Universal Voltage 120-277		Emergency EL7W=7-watt, 120V-277V Emergency Battery Pack Installed ³ EL14W=14-watt, 120V-277V Emergency Battery Pack Installed ³ GTD2=Bodine Generator Transfer Device ⁸ ETS2=IOTA Emergency Transfer Switch ⁸			CCT L827=2700K L830=3000K L835=3500K L840=4000K L850=5000K		Flex Multiple Configurations Available	CD =0-10V Dimming Driver (10% - 100% Dimming) HCD =0-10V Dimming Driver (1% - 100% Dimming) SD =Step-Dim (Bi Level) ⁵ 5LTD =Fifth Light (DALI) Driver (10% - 100% Dimming) ^{5,6} 5LTHD =Fifth Light (DALI) Driver (1% - 100% Dimming) ^{5,6}
Number of Drivers	Options	Packaging	Accessories					
1=1 Driver 2=2 Drivers ⁷	PMW=Paint Matte White	U=Unit Pack	EQ-CLIP-U =T-BAR Safety Earthquake Clips ¹ DF-22-W =2' x 2' Drywall Frame Kit DF-24-W =2' x 4' Drywall Frame Kit SK-22-WS =2' x 2' Shallow Surface Mount Kit SK-24-WS =2' x 4' Shallow Surface Mount Kit SK-22-WT =2' x 2' Tall Surface Mount Kit SK-24-WT =2' x 4' Tall Surface Mount Kit DF10P-C =Decorator Dimmer, 0-10V SF10P-__ =Decorator Slide Dimmer, 0-10V ISHH-01 =Programming Remote for Integrated Sensor ISHH-02 =Personal Control Remote for Integrated Sensor					

NOTES: 1. An EQ Grid Clip is recommended for all 9/16" ceiling systems. Four required per fixture. 2. Products also available in non-US voltages and frequencies for international markets. 3. External 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. 4. Nominal lumen output. 5. Step-Dim (Bi-Level) and Fifth Light (DALI) only available for 3,200, 4,000, 5,000 and 6,500 lumens. 6. Must be in conjunction with a DALI control system. For complete DALI solutions by Fifth Light, visit www.eaton.com/lightingsystems 7. Two drivers required for 6,500 and 7,200 lumen versions. 8. Used to transfer fixture to secondary power source for life-safety operation. When used with a dimming fixture, two devices are required to ensure control is disabled while operating under emergency power. 9. DesignLights Consortium™ Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.

Specifications & dimensions subject to change without notice. Consult your Eaton Representative for availability and ordering information.

Photometrics

FR 2' x 2', 3200 Lumens	FR 2' x 4', 4000 Lumens	FR 2' x 4', 6500 Lumens
 <p>Electronic Driver Linear LED 3500K Spacing criterion: () 1.2 x mtg height, (⊥) 1.2 x mtg height Lumens = 3313 Input Watts = 34.6W Efficacy = 95.8 lm/W Test: 22FR-32-UNV-L835-CD1-U.IES</p>	 <p>Electronic Driver Linear LED 3500K Spacing criterion: () 1.2 x mtg height, (⊥) 1.2 x mtg height Lumens = 4158 Input Watts = 33.6W Efficacy = 123.8 lm/W Test: 24FR-40-UNV-L835-CD1-U.IES</p>	 <p>Electronic Driver Linear LED 3500K Spacing criterion: () 1.2 x mtg height, (⊥) 1.2 x mtg height Lumens = 6900 Input Watts = 68.1W Efficacy = 101.3 lm/W Test: 24FR-65-UNV-L835-CD1-U.IES</p>

2' x 2' Lumen Maintenance		
Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours)	Theoretical L70 (Hours)
25°C	> 86%	161,000

2' x 4' Lumen Maintenance		
Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours)	Theoretical L70 (Hours)
25°C	> 90%	223,000

Certification Data					
cULus - Damp Location	IC Rated	LM79/LM80 Compliant	ROHS Compliant	DesignLights Consortium™ Qualified	NOM Compliant

Energy Savings

Operating and maintenance costs of a lighting system are dramatically impacted by the specified lamp source and electrical system. Total system input watts and fixture operating life should be the driving considerations when addressing energy consumption and total cost of ownership. Energy savings increase when energy consumption is reduced and maintenance intervals are extended.

Catalog Number	Performance Type	Product Description	Nominal Lumens	Wattage	Efficacy (lm/W)
22FR-LD4-24-UNV-L835-CD1-U	Standard	2' x 2', Premium Commercial Troffer, 2200 lm, 3500K, UNV	2345	21.2	110.6
22FR-LD4-24-UNV-L840-CD1-U	Standard	2' x 2', Premium Commercial Troffer, 2200 lm, 4000K, UNV	2383	21.2	112.3
22FR-LD4-24-UNV-L850-CD1-U	Standard	2' x 2', Premium Commercial Troffer, 2200 lm, 5000K, UNV	2601	21.2	122.6
22FR-LD4-24-HP-UNV-L835-CD1-U	High Performance	2' x 2', Premium Commercial Troffer, 2200 lm, 3500K, UNV	2356	19.9	118.4
22FR-LD4-24-HP-UNV-L840-CD1-U	High Performance	2' x 2', Premium Commercial Troffer, 2200 lm, 4000K, UNV	2394	19.9	120.3
22FR-LD4-24-HP-UNV-L850-CD1-U	High Performance	2' x 2', Premium Commercial Troffer, 2200 lm, 5000K, UNV	2613	19.9	131.3
22FR-LD4-32-UNV-L835-CD1-U	Standard	2' x 2', Premium Commercial Troffer, 3200 lm, 3500K,	3313	34.6	95.8
22FR-LD4-32-UNV-L840-CD1-U	Standard	2' x 2', Premium Commercial Troffer, 3200 lm, 4000K,	3366	34.6	97.3
22FR-LD4-32-UNV-L850-CD1-U	Standard	2' x 2', Premium Commercial Troffer, 3200 lm, 5000K, UNV	3674	34.6	106.2
22FR-LD4-32-HP-UNV-L835-CD1-U	High Performance	2' x 2', Premium Commercial Troffer, 3200 lm, 3500K, UNV	3238	28.7	112.8
22FR-LD4-32-HP-UNV-L840-CD1-U	High Performance	2' x 2', Premium Commercial Troffer, 3200 lm, 4000K, UNV	3290	28.7	114.6
22FR-LD4-32-HP-UNV-L850-CD1-U	High Performance	2' x 2', Premium Commercial Troffer, 3200 lm, 5000K, UNV	3591	28.7	125.1
24FR-LD4-30-UNV-L835-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 3000 lm, 3500K, UNV	3023	26.0	116.4
24FR-LD4-30-UNV-L840-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 3000 lm, 4000K, UNV	3071	26.0	118.2
24FR-LD4-30-UNV-L850-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 3000 lm, 5000K, UNV	3352	26.0	129.1
24FR-LD4-30-HP-UNV-L835-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 3000 lm, 3500K, UNV	3067	22.8	134.5
24FR-LD4-30-HP-UNV-L840-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 3000 lm, 4000K, UNV	3116	22.8	136.7
24FR-LD4-30-HP-UNV-L850-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 3000 lm, 5000K, UNV	3401	22.8	149.2
24FR-LD4-40-UNV-L835-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 4000 lm, 3500K,	4096	35.7	114.7
24FR-LD4-40-UNV-L840-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 4000 lm, 4000K,	4162	35.7	116.6
24FR-LD4-40-UNV-L850-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 4000 lm, 5000K, UNV	4542	35.7	127.2
24FR-LD4-40-HP-UNV-L835-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 4000 lm, 3500K, UNV	4097	31.3	130.9
24FR-LD4-40-HP-UNV-L840-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 4000 lm, 4000K, UNV	4163	31.3	133.0
24FR-LD4-40-HP-UNV-L850-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 4000 lm, 5000K, UNV	4543	31.3	145.2
24FR-LD4-50-UNV-L835-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 5000 lm, 3500K, UNV	5034	47.6	105.8
24FR-LD4-50-UNV-L840-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 5000 lm, 4000K, UNV	5115	47.6	107.5
24FR-LD4-50-UNV-L850-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 5000 lm, 5000K, UNV	5583	47.6	117.3
24FR-LD4-50-HP-UNV-L835-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 5000 lm, 3500K, UNV	5090	40.2	126.6
24FR-LD4-50-HP-UNV-L840-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 5000 lm, 4000K, UNV	5172	40.2	128.6
24FR-50-HP-UNV-L850-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 5000 lm, 5000K, UNV	5645	40.2	140.4
24FR-LD4-65-UNV-L835-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 6500 lm, 3500K,	6703	65.2	102.9
24FR-LD4-65-UNV-L840-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 6500 lm, 4000K,	6810	65.2	104.5
24FR-LD4-65-UNV-L850-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 6500 lm, 5000K, UNV	7433	65.2	114.1
24FR-LD4-65-HP-UNV-L835-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 6500 lm, 3500K, UNV	6530	53.8	121.5
24FR-LD4-65-HP-UNV-L840-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 6500 lm, 4000K, UNV	6635	53.8	123.4
24FR-LD4-65-HP-UNV-L850-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 6500 lm, 5000K, UNV	7242	53.8	134.7
24FR-LD4-69-UNV-L835-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 6900 lm, 3500K, UNV	6900	68.1	101.3
24FR-LD4-69-UNV-L840-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 6900 lm, 4000K, UNV	7011	68.1	102.9
24FR-LD4-69-UNV-L850-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 6900 lm, 5000K, UNV	7652	68.1	112.4
24FR-LD4-72-UNV-L835-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 7200 lm, 3500K, UNV	7237	73.1	99.0
24FR-LD4-72-UNV-L840-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 7200 lm, 4000K, UNV	7353	73.1	100.6
24FR-LD4-72-UNV-L850-CD1-U	Standard	2' x 4', Premium Commercial Troffer, 7200 lm, 5000K, UNV	8026	73.1	109.8
24FR-LD4-72-HP-UNV-L835-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 7200 lm, 3500K, UNV	7265	63.3	114.8
24FR-LD4-72-HP-UNV-L840-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 7200 lm, 4000K, UNV	7381	63.3	116.6
24FR-LD4-72-HP-UNV-L850-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 7200 lm, 5000K, UNV	8057	63.3	127.3
24FR-LD4-80-HP-UNV-L835-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 8000 lm, 3500K, UNV	8028	71.7	112.0
24FR-LD4-80-HP-UNV-L840-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 8000 lm, 4000K, UNV	8157	71.7	113.8
24FR-LD4-80-HP-UNV-L850-CD1-U	High Performance	2' x 4', Premium Commercial Troffer, 8000 lm, 5000K, UNV	8903	71.7	124.2

Notes: Bold=stoked SKUs (STK), available for immediate shipment. Non-bold=MTO SKUs, available in less than two weeks.
All models also available in 2700K and 3000K.

**Our Lighting
Product Lines**

Halo
Halo Commercial
Portfolio
Iris
RSA
Metalux
Corelite
Neo-Ray
Fail-Safe
MWS
Ametrix
Shaper
io
Lumark
McGraw-Edison
Invue
Lumière
Streetworks
AtLite
Sure-Lites

**Our Controls
Product Lines**

Greengate
iLumin
Zero 88
Fifth Light Technology
iLight (International Only)

Eaton
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lighting

Canada Sales
5925 McLaughlin Road
Mississauga, Ontario L5R 1B8
P: 905-501-3000
F: 905-501-3172

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