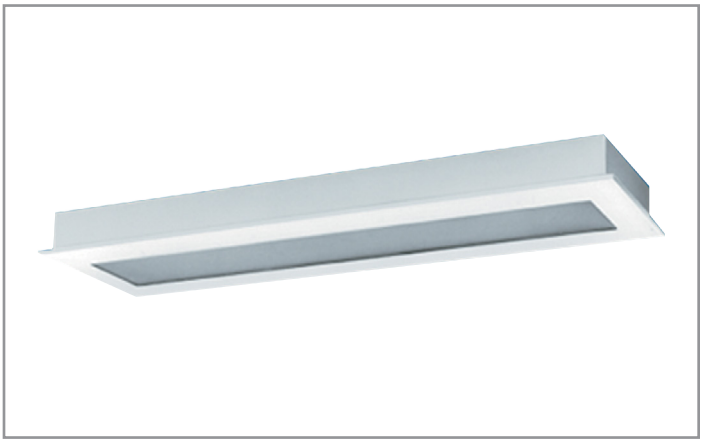
Project		**Catalog #**		**Type**	
Prepared by		**Notes**		**Date**	



Fail-Safe

FMR | LD4 LED

Confinement/Correctional, Security
Recessed Flange, 1' and 2' Width
1x1 / 1x2 / 1x4 / 2x2 / 2x4

Typical Applications

Confinement/Correctional • Inmate Cells • Psychiatric Wards • Secure Corridors • General Population Areas

Interactive Menu

- Order Information page 2
- Product Specifications page 2
- Nominal Input Watts/Delivered Lumens page 3
- Product Warranty

Product Certification

Product Features

wet location · IALD LIRC · BAA · LIGATURE RESISTANT · ISO CERTIFIED · LINEAR DISCONNECT Designed to provide safe and convenient means of disconnecting power

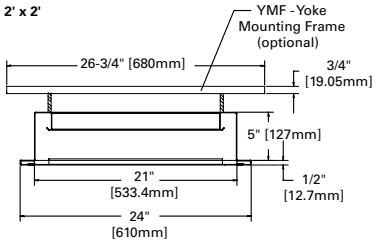
Top Product Features

- High Security (HS) option for use in High Risk Behaviorial Health Applications.
- Recessed flange for hard-lid ceilings requiring a robust fixture
- Die-formed 16-gauge continuous welded one-piece housing (14-gauge option); 12- to 18-gauge overlapping door
- Clear or prismatic acrylic, and polycarbonate or clear tempered glass lens
- Swing-out brackets or yoke mounting frame - mounting options
- 3500K, 4000K and 5000K CCT; 80 CRI minimum
- Options to meet Buy American Act requirements

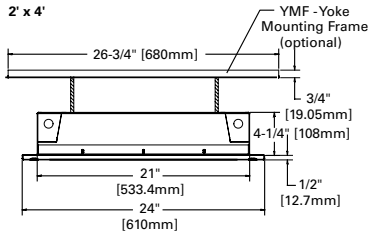
Dimensional and Mounting Details

2' WIDTH CROSS-SECTION DIMENSIONS / SHOWN WITH YOKE MOUNTING FRAME - YMF

2' x 2'

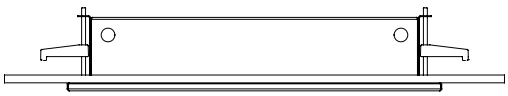


2' x 4'



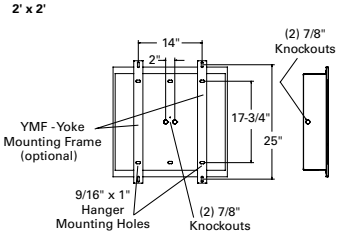
2' WIDTH WITH SWING-OUT BRACKET (SWBR)

2' x 2' / 2' x 4'

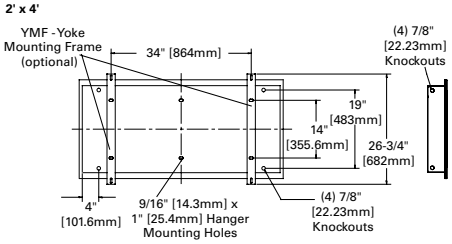


2' WIDTH TYPICAL MOUNTING DETAIL / SHOWN WITH YOKE MOUNTING FRAME - YMF

2' x 2'



2' x 4'



2' WIDTH CEILING CUTOUT DIMENSIONS

Ceiling Cutout	Width	Length
2' x 2'	23-1/4"	24-1/4"
2' x 4'	23-1/4"	48-1/4"

additional product diagrams

Order Information

SAMPLE ORDER NUMBER: **FMR-D24-4-LD4-4STD-40-80/86-EDD2-SWBR**
SAMPLE ORDER NUMBER: **FMR-X24-2-LD4-2LO-35-80/87-14G-EDD1-YMF**

Domestic Preferences	Product Family	Door	Width	Length	LED	No. of LEDs	Illumination Level	Color Temperature	Voltage
[Blank]=Standard **BAA**=Buy American Act	**FMR**	**S**=12 ga. (Ultimax) **X**=14 ga. (Maximum) **D**=16 ga. (Medium) **N**=18 ga. (Minimum)	**24**=24" Wide **12**=12" Wide	**1**=1' Length (1' x 1' only) **2**=2' Length **4**=4' Length	**LD4**=LED	**1**=(1) LED Module **2**=(2) LED Modules **3**=(3) LED Modules (24" width only) **4**=(4) LED Modules (24" width only)	**STD**=Standard **LO**=Low **HI**=High (10)	**30**=3000K **35**=3500K **40**=4000K **50**=5000K	**UNV**=120-277V
Notes (1) Only product configurations with this designated prefix are built to be compliant with the Buy American Act of 1933 (BAA). Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.							**Notes** (10) 24" width fixture, 4HI not available. 12" width fixture, 2HI not available.		

Inner Lens	Outer Lens	Driver	No. of Circuits	Options	Mounting	Accessories
Fixture Side **80**=0.125 Prismatic Acrylic **81**=0.156 Prismatic Polycarbonate **82**=0.187 Prismatic Polycarbonate	**Environmental Side** **84**=0.125 Clear Polycarbonate **85**=0.187 Clear Polycarbonate **86**=0.250 Clear Polycarbonate **87**=0.375 Clear Polycarbonate **88**=0.500 Clear Polycarbonate **94**=0.187 Clear Tempered Glass **96**=0.250 Clear Tempered Glass **97**=0.375 Clear Tempered Glass	**EDC**=Electronic Driver, Non-Dimming **EDD**=Electronic Driver, 0-10V Dimming 10% **ED1D**=Electronic Driver, 0-10V Dimming 1%	**1**=1 Circuit **2**=2 Circuits **3**=3 Circuits	**EL7W**=7W Emergency Battery Pack (3), (4) **EL10W**=10W Emergency Battery Pack (3), (4) **EL14W**=14W Emergency Battery Pack (3), (4) **LLNL**=Linear LED Night Light, Dimmable. (5) **GLR**=Fuse and Holder **14G**=14 Gauge Housing **CPHF**=Continuous Piano Hinge, Full Length **WL**=Wet Location Under Covered Ceiling **AM**=Antimicrobial matte white finish **90**=90 CRI **HS**=High Security. (8) Door has Welded Corners, 16gauge minimum. T20 Torx screws. **Stainless Steel Door** **SSN**=Natural Brushed Finish **SSP**=Polyester Powder Coat Finish **Fasteners** **SF3**=Allen-Head (center pin reject)	**SWBR**=Swing Out Brackets (6) **YMF**=Yoke Mounting Frame (7)	**9306**=Allen-Head Wrench **PF24-2FT**=Plaster Frame and Yoke Assembly **PF24-4FT**=Plaster Frame and Yoke Assembly **VRSD**=T20 Center Pin Tamperproof TORX® - head screwdriver
Notes (2) See lens guide for additional lens choices.				**Notes** (3) EM not available 1' x 1' or 1' x 2'. May be necessary to mount EM on back of 2' x 2' fixture adding 2" to fixture depth. (4) EM only available in "LO" or "STD" illumination levels. (5) LLNL nominal 600 delivered lumens. LLNL is a dedicated single circuit, with its own dimmable driver. LLNL not available on 1x1. (8) High Security (HS) For use in behaviorial health areas. Optional door gauges available in 14g or 12g. Lens overall thickness (environmental fixture) to be 0.250" minimum. Outer lens to be 0.125" thick polycarbonate, minimum. Glass lens not avaialable with HS.	**Notes** (6) SWBR - four swing out brackets, including hardware. (7) YMF consists of two C-channel frames, with four 3-1/2" bolts and nuts to attach YMF to fixture housing. YMF's attach to rigid structure above. YMF is not valid on 2x2 that requires a backbox.	**Notes** (9) Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.

Product Specifications

Application
- Confinement/correctional luminaire suitable for use in: Inmate cells, Psychiatric wards, Secure corridors, and General population areas

Housing
- Die-formed 16-gauge CRS body construction; 14-gauge option
- One-piece, seamless housing
- Continuous welded corners
- Maximum impact resistance and prevention of unauthorized fixture penetration
- High gloss, electrostatically applied, White powder coat finish
- Average minimum reflectance 92%

Door and Light Mask
- One-piece, CRS door frame with die-formed edges
- Available in 12-, 14-, 16- or 18-gauge
- Tightly closed corners increase rigidity
- Aircraft cable secures door to housing
- Gasketing around door prevents light leaks

Fasteners and Hinge
- Stainless steel tamper-resistant T20 TORX® screws with center pin reject standard
- Allen head screws with center pin reject optional
- Two stainless steel aircraft cables to attach door to housing is provided
- Concealed piano hinge to prevent removal optional
- Two stainless steel aircraft cables to attach door to housing is provided
- Concealed piano hinge to prevent removal optional

Lens and Lens Retention
- Choice of prismatic acrylic or prismatic polycarbonate on fixture side
- Clear polycarbonate or clear tempered glass on environmental side (see lens options)
- Lens secured by thru-studs
- Vertically adjustable internal CRS hold-downs

LEDs
- Available in 3500K, 4000K and 5000K; 85 CRI minimum
- Choice of Standard, Low or High illumination levels
- TM-21 calculations of 84% lumen maintenance at 60,000 hrs

Electrical
- Electronic driver 120-277V, dimming driver standard
- 0-10V dimming down to 1% or 10%
- Non-dimming available

Compliances
- cULus listed for damp locations
- Wet location listed under covered ceiling optional

Warranty
- Five year limited warranty on LEDs and Electrical, consult website for details. www.cooperlighting.com/legal

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Nominal Input Watts/Delivered Lumens

View IES files

*CRI: 80; CCT: 4000				80/84 Shielding	
Fixture Size	# Modules	Level	Nominal Input Watts	Nominal Delivered Lumens	LPW
1' x 1'	1	LO	5.85	605	103.4
	1	STD	8.325	810	97.3
	1	HI	10.8	994	92
	2	LO	11.7	1210	103.4
	2	STD	16.65	1621	97.4
1' x 2'	1	LO	11.7	1173	100.3
	1	STD	16.65	1571	94.4
	1	HI	21.6	1927	89.2
	2	LO	23.4	2346	100.3
	2	STD	33.3	3141	94.3
1' x 4'	1	LO	23.4	2554	109.1
	1	STD	33.3	3420	102.7
	1	HI	43.2	4195	97.1
	2	LO	46.8	5108	109.1
	2	STD	66.6	6840	102.7
2' x 2'	1	LO	11.7	1500	128.2
	1	STD	16.65	2009	120.7
	1	HI	21.6	2464	114.1
	2	LO	23.4	3001	128.2
	2	STD	33.3	4018	120.7
	2	HI	43.2	4929	114.1
	3	LO	35.1	4501	128.2
	3	STD	49.95	6028	120.7
	3	HI	64.8	7393	114.1
	4	LO	46.8	6001	128.2
	4	STD	66.6	8037	120.7
2' x 4'	1	LO	23.4	3001	128.2
	1	STD	33.3	4018	120.7
	1	HI	43.2	4929	114.1
	2	LO	46.8	6001	128.2
	2	STD	66.6	8037	120.7
	2	HI	86.4	9858	114.1
	3	LO	70.2	9002	128.2
	3	STD	99.9	12055	120.7
	3	HI	129.6	14786	114.1
	4	LO	93.6	12003	128.2
	4	STD	133.2	16073	120.7

Nominal input wattage values include LED voltage, drive current, and typical driver efficiency. Refer to LM79 data/photometric files for exact delivered lumen values and input wattage. Values in table are nominal values only.

Lumen Calculator

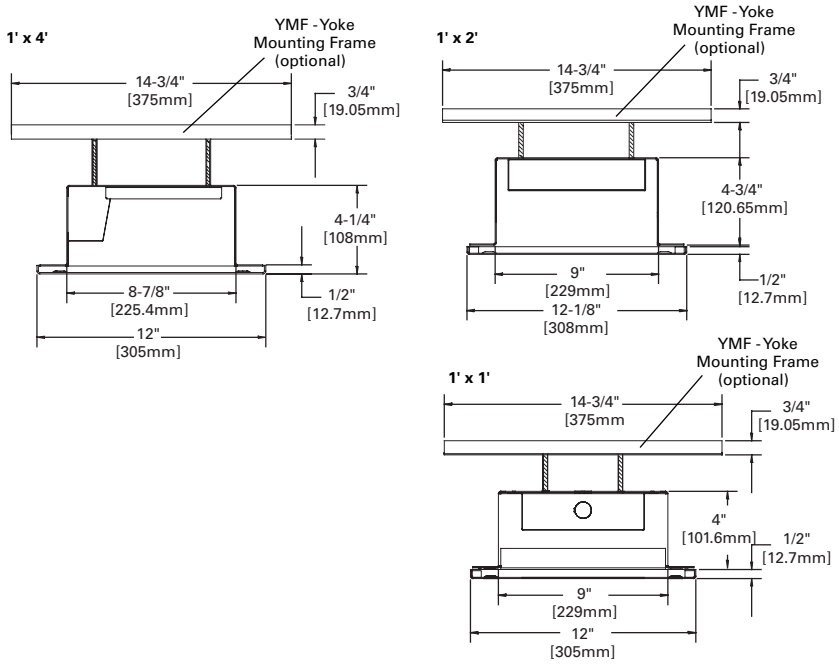
CCT	Multiplioer
2000	0.673
2700	0.893
3000	0.943
3500	0.99
4000	1
5000	1.017

Lens Multiplier Table

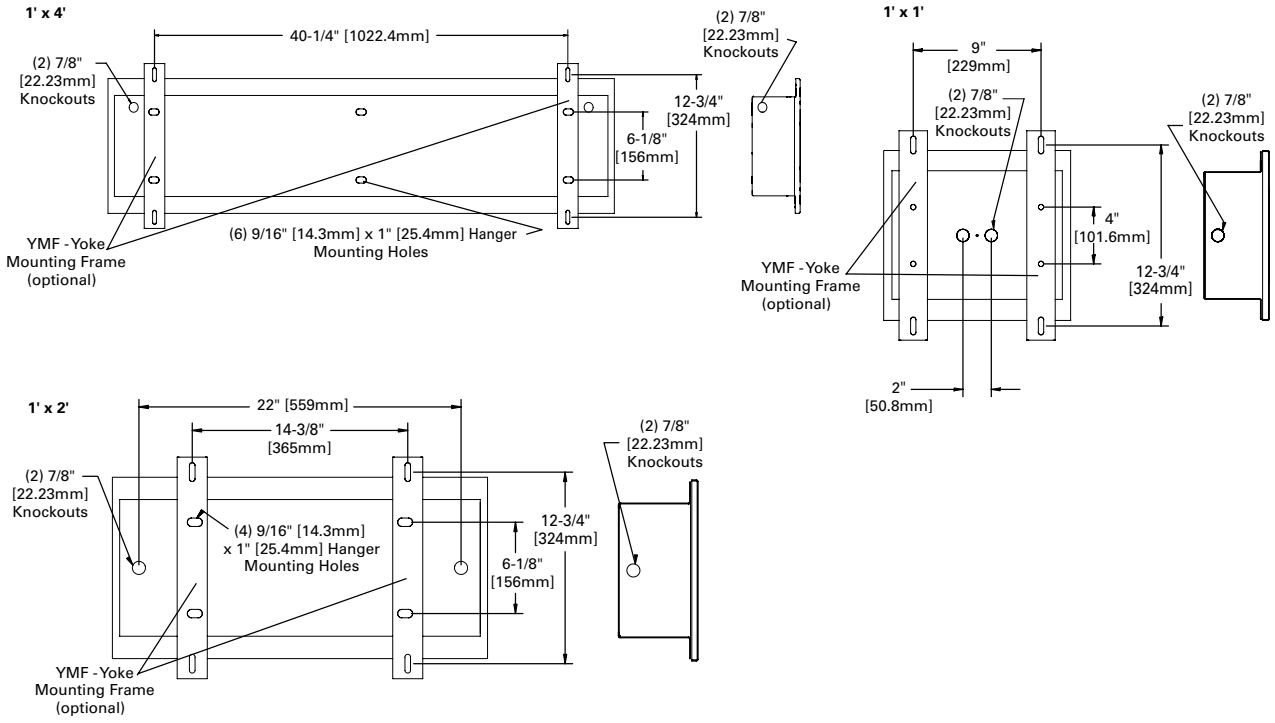
	Lens	Multiplioer
Fixture Side	80	1
	81	0.95
	82	0.93
	84	1
	85	0.981
Environment Side	86	0.969
	87	0.938
	88	0.844
	94	1
	96	0.991
	97	0.956

Dimensional and Mounting Details

1' WIDTH CROSS-SECTION DIMENSIONS / SHOWN WITH YOKE MOUNTING FRAME - YMF

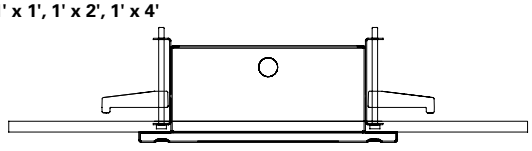


1' WIDTH TYPICAL MOUNTING DETAIL / SHOWN WITH YOKE MOUNTING FRAME - YMF



1' WIDTH - SWING-OUT BRACKET (SWBR)

1' x 1', 1' x 2', 1' x 4'



1' WIDTH CEILING CUTOUT DIMENSIONS

Ceiling Cutout	Width	Length
1' x 1'	11"	12-1/4"
1' x 2'	11"	24-1/4"
1' x 4'	11"	48-1/4"

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www.cooperlighting.com

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Specifications and dimensions subject to change without notice.