



CLEAN ROOM LED

FGR220 (2X4) SERIES (2X2 AVAILABLE)

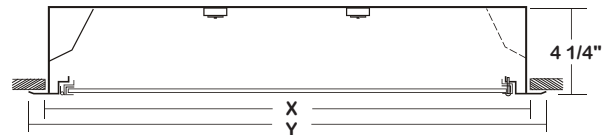
CLASS 100 TRIM FLANGE CLEAN ROOM LUMINAIRE

DATE	
JOB	

WWW.LALIGHTING.COM
626-454-8300

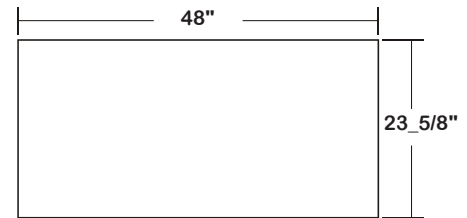
CLASS 100 RECESSED MOUNTED LED LUMINAIRE

DIMENSIONS



Ceiling Opening X - 24_1/2" X 48_1/2"
Overall Width By Length Y - 25_5/8" X 50"

*No Unused Holes And KO's On Backplate.



APPLICATIONS

- Clean Room, Sealed Ceiling Areas, Commercial

FEATURES

- 0-10V dimming driver standard (See *DRIVER OPTIONS* for other dimming types)
- Supports California Title 24 compliance

OPTIONS

- Wet location available (UL listed with sprinkler test)
- Full customization available upon request
- Additional lumen packages and color temperatures available
- Controls and sensors available (See *SENSOR OPTIONS* for controls and sensors)
- Wireless control options available (See *SENSOR OPTIONS* for wireless controls)
- Variety of lenses available (See *OPTICAL OPTIONS* for lenses)
- Emergency battery pack available (See *BATTERY PACK OPTIONS* for battery pack options)
- Antimicrobial finished housing and door frame available
- Tamper proof screws available
- Hanger yokes available (See *ACCESSORIES* for details)

SPECIFICATIONS

CONSTRUCTION

- Class 100 / ISO Class 5 equivalent
- 22 ga. cold rolled steel welded housing
- All parts fitted and sealed, no unused holes or knockouts
- 20 ga. cold rolled steel door frame secured by full length piano hinge and 2 captive screws
- Door frame and lens sealed with closed cell neoprene gasket

FINISH

- Baked white powder coated finish / welded and painted after fabrication / minimum reflectance 90%

OPTICAL

- Inverted clear prismatic acrylic lens (nominal 0.125) standard

ELECTRICAL

- High efficiency drivers coupled with long-life LEDs
- Service life greater than 50,000 hours (L70)
- Universal voltage 120V through 277V (347V / 480V available)
- Power Factor (PF) ≥ 0.9
- Total Harmonic Distortion (THD) $\leq 20\%$

LISTING

- UL USA and Canada listed / suitable for damp locations

WARRANTY

- 5-year limited warranty



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Revised 01-16-19

WARNING

ORDERING INFORMATION

EXAMPLE: FCR220-12-4L-FSW-PA2-BPL10-1DRDM-UNV-2/840

SERIES	LED LUMEN PACKAGE	EFFICACY	NOMINAL LENGTH	FINISH	DOOR FRAME	OPTICAL	MECHANICAL	ELECTRICAL	DRIVER	VOLTAGE	# OF LED ROW	CRI / CCT
FCR220			4L		FSW				1DRDM	UNV	2	
FCR220 Class 100 Trim Flange Clean Room LED Luminaire	2 Nom. 2000 Lumens 4 Nom. 4000 Lumens 6 Nom. 6000 Lumens 8 Nom. 8000 Lumens 12 Nom. 12000 Lumens *Additional Lumen Packages Available	(Blank) Standard HE High Efficacy (Only 2000 / 4000 / 6000 / 12000 lumens Systems)	4L 2' x 4'	AMF Antimicrobial Finished Housing and Door Frame *Leave Blank if Not Specified	FSW Flat Steel White Enamel Door Frame See DOOR FRAME for Options	PA2 Clear Prismatic Acrylic 0.125 Nominal DRP8 High Impact Clear Prismatic Acrylic 0.187 Nominal FPA2 Frosted Prismatic Acrylic 0.125 Nominal See OPTICAL OPTIONS for Options	WL Wet Location TP Tamper Proof Screws (Hex Socket with Post) *Leave Blank if Not Specified Additional Mechanical Options	BPL10 Emergency Battery Pack, Constant 10W Nom. 1500 lm See BATTERY PACK OPTIONS for Options MSxx Motion Sensor WLC(LED RU) Wireless Control See SENSOR OPTIONS for Options *Leave Blank if Not Specified Additional Electrical Options	1DRDM 0-10V One Dimming Driver See DRIVER OPTIONS for Options	UNV 120V-277V See DRIVER OPTIONS for Options	2 Two LED Rows	830 80+CRI / 3000K Color Temp. 835 80+CRI / 3500K Color Temp. 840 80+CRI / 4000K Color Temp. 850 80+CRI / 5000K Color Temp. *Additional Color Temp. Available

SYSTEM DATA

THESE ARE THE MOST POPULAR LUMEN PACKAGES. PLEASE CONSULT FACTORY FOR ADDITIONAL SYSTEM DATA.

NOMINAL SIZE	LED LUMEN PACKAGE	OPTICAL OPTION	CRI / CCT	DELIVERED LUMENS	SYSTEM WATTS	LUMINAIRE EFFICACY	FLUORESCENT EQUIVALENT	IES FILES
2' x 4'	2000 lm	PA2	840	1763 lm	15.2 W	116.0 lm/W	1-F32T8	*
	2000HE lm	PA2	840	1616 lm	12.6 W	128.7 lm/W	1-F32T8	*
	4000 lm	PA2	840	3447 lm	31.3 W	110.1 lm/W	2-F32T8, 1-F54T5HO	LA-T3174-1
	4000HE lm	PA2	840	3272 lm	25.4 W	128.9 lm/W	2-F32T8, 1-F54T5HO	*
	6000 lm	PA2	840	4903 lm	45.5 W	107.9 lm/W	3-F32T8	LA-T3395-1
	6000HE lm	PA2	840	4904 lm	38.5 W	127.4 lm/w	3-F32T8	*
	8000 lm	PA2	840	6587 lm	66.7 W	98.8 lm/W	4-F32T8, 2-F54T5HO	*
	8000HE lm	PA2	840	6513 lm	51.8 W	125.6 lm/W	4-F32T8, 2-F54T5HO	*
	12000 lm	PA2	840	9419 lm	104.6 W	90.0 lm/W	6-F32T8, 3-F54T5HO	*
12000HE lm	PA2	840	9663 lm	79.3 W	121.9 lm/W	6-F32T8, 3-F54T5HO	*	

NOTE:

System data above is based on 120V input voltage.
Actual performance may differ as a result of end-user environment and application.
This fixture has been tested and listed in accordance with UL Standards. L.A. Lighting certifies that it will operate safely when installed properly, and within an ambient temperature range from -20°C to 35°C.

Additional lumen packages and color temperatures available.

PERFORMANCE DATA

[VIEW PHOTOMETRICS](#)



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SENSOR OPTIONS

HIGH FREQUENCY - INTERNALLY MOUNTED BEHIND FIXTURE LENS

MSHPC - Motion Sensor High Frequency (Microwave) with Photocell Option

- Super high frequency motion sensor (also known as microwave sensor) which detects movement when installed behind low density fixture materials, such as polycarbonate, acrylic and glass diffusers
- Holds lights OFF when sufficient daylight is present regardless of motion detection
- Selectable sensitivity and detection area
- Universal Voltage (120V-277V)
- Photocell is disabled by default

MSH - Motion Sensor High Frequency (Microwave)

- Super high frequency motion sensor (also known as microwave sensor) which detects movement when installed behind low density fixture materials, such as polycarbonate, acrylic and glass diffusers
- Turns light ON/OFF based on motion detection
- Universal Voltage (120V-277V)



CONTROLS AND SENSORS

WLC(LED RU) - EnOcean® LED Relay Zone Controller

- Supports a single LED fixture or multiple daisy chained LED fixtures
- Module installed inside lighting fixture

ESRPU-W-EO - EnOcean® Rocker Switch – Single – Surface Mount

- Wireless single rocker switch with mounting plate
- No batteries needed

EDRPU-W-EO - EnOcean® Rocker Switch – Double – Surface Mount

- Wireless double rocker switch with mounting plate
- No batteries needed

S3054-N300 - EnOcean® Navigan NWC 300U – Commissioning Tool

- Navigan Wireless Commissioner is used to configure EnOcean controllers & sensors
- It can be used to define link tables, change parameters/settings, and to edit & store projects
- Configuration settings can be saved and cloned to enable quick configuration
- Connectivity is through the NWC 300U USB Stick

EOSWU-W-EO - EnOcean® Occupancy Sensor – Wall Mount

- Wireless wall mounted occupancy sensor
- Solar powered - no batteries needed (coin battery operated in low light conditions)
- PIR motion sensor with both wide angle (50') and long range (100') options
- Mounting height: 6-8 feet

EOSCU-W-EO - EnOcean® Occupancy Sensor – Ceiling Mount

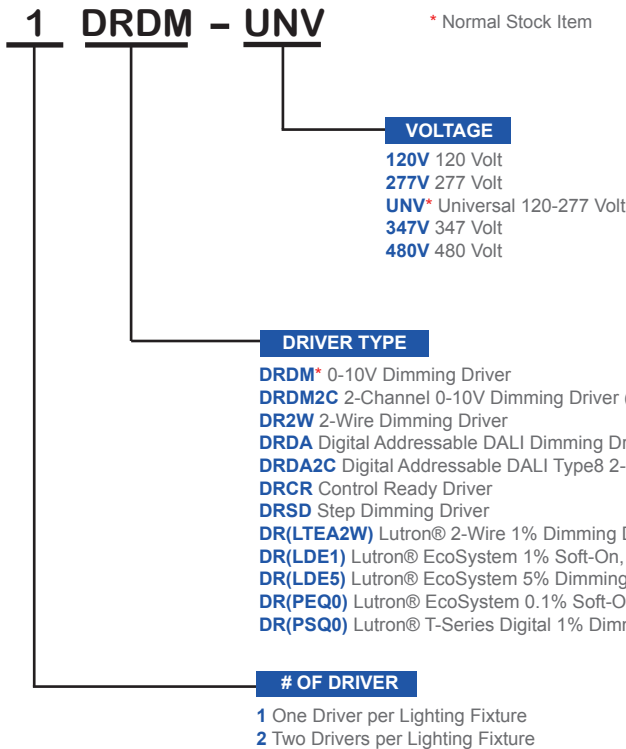
- Wireless ceiling mounted occupancy sensor
- Solar powered - no batteries needed (coin battery operated in low light conditions)
- PIR motion sensor with 360 degree viewing angle lens (34' diameter)
- Mounting height: 7-10 feet

ELLSU-W-EO - EnOcean® Light Level Sensor – Ceiling Mount

- Light Level sensor that measures and reports the level of available natural light
- Solar powered - no batteries needed (coin battery operated in low light conditions)
- Enables implementation of daylight harvesting control systems
- Mounting position: At the ceiling, close to ambient light source

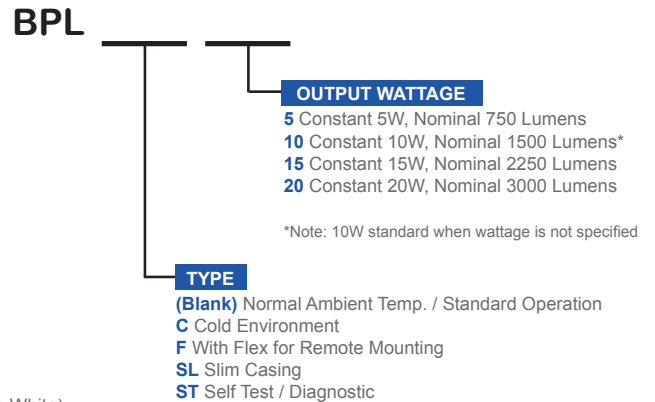
DRIVER OPTIONS

PLEASE CONSULT FACTORY TO SEE IF YOUR SELECTED DRIVER OPTION WORKS WITH THIS FIXTURE.



BATTERY PACK OPTIONS

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WARNING

OPTICAL OPTIONS

STANDARD LENSES FOR FCR220

PA2	Clear Prismatic Acrylic, Nom. 0.125 OA Thickness, Female Prisms 3/16 Square Base
DRP8	High Impact Clear Prismatic Acrylic, Nom. 0.187 OA Thickness, Female Prisms 3/16 Square Base
FPA2	Frosted Prismatic Acrylic, Nom. 0.125 OA Thickness

ADDITIONAL AVAILABLE LENSES

(Not all optics suitable for fixture. Please consult factory to ensure selected optical option suits fixture. Please consult factory regarding any optical options not shown)

EXTRUDED PRISMATIC PATTERNS

PA	Clear Prismatic Acrylic, No Thickness Specified, Female Prisms 3/16 Square Base
PA3	Clear Prismatic Acrylic, Min. 0.125 OA Thickness, Female Prisms 3/16 Square Base
PA8	Clear Prismatic Acrylic, Nom. 0.187 OA Thickness, Female Prisms 3/16 Square Base
P15	Clear Prismatic Acrylic, Nom. 0.200 OA Thickness, Female Prisms 3/8 Square Base
P195	Clear Prismatic Acrylic, Nom. 0.150 OA Thickness, Male Conical Prisms 3/16 Square Base
P198	Clear Prismatic Acrylic, Nom. 0.187 OA Thickness, Male Conical Prisms 3/16 Square Base
PWA2	White Prismatic Acrylic, Nom. 0.125 OA Thickness, Female Prisms 3/16 Square Base
P3E	3E Batwing Pattern Lens
P195RF	Clear Prismatic Acrylic, 19 Shunts Radio Frequencies To Ground, Nom. 0.150 OA Thickness
PA2UV	Clear Prismatic Acrylic, UV Blocking, Nom. 0.125 OA Thickness

FLAT DIFFUSERS

FWA	Flat White Acrylic, No Thickness Specified, Stippled Finish	FWA2	Flat White Acrylic, Nom. 0.125 Thickness, Stippled Finish
FFA	Frosted Flat Acrylic, No Thickness Specified	FFA2	Frosted Flat Acrylic, Nom. 0.125 Thickness
CA8	Clear Acrylic, Nom. 0.187 OA Thickness	CA	Clear Acrylic, No Thickness Specified
		CA2	Clear Acrylic, Nom. 0.125 OA Thickness

HIGH IMPACT

VL25	Clear Polycarbonate, Nom. 0.125 Thickness with 0.125 Clear Prismatic Acrylic Overlay
VL37	Clear Polycarbonate, Nom. 0.250 Thickness with 0.125 Clear Prismatic Acrylic Overlay
CPC2	Clear Polycarbonate, Nom. 0.125 OA Thickness
CPC8	Clear Polycarbonate, Nom. 0.187 OA Thickness
PPC8	Clear Prismatic Polycarbonate, Nom. 0.187 OA Thickness, Female Prisms 3/16 Square Base
DRP3	High Impact Clear Prismatic Acrylic, Min. 0.125 OA Thickness, Female Prisms 3/16 Square Base
DRP2	High Impact Clear Prismatic Acrylic, Nom. 0.125 OA Thickness, Female Prisms 3/16 Square Base
PPC2	Clear Prismatic Polycarbonate, Nom. 0.125 OA Thickness, Female Prisms 3/16 Square Base



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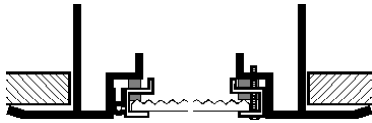
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DOOR FRAME

CROSS SECTION



FEATURES

- Full Length Piano Hinge
- Inverted Lens
- Two 10-24 Captive Machine Screws
- Sealed with Closed Cell Neoprene Gasket

FS W

FINISHES

- W** White Enamel
- B** Black Enamel

STYLES

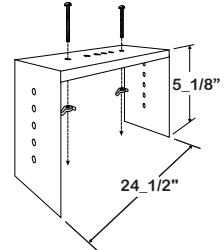
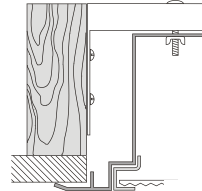
- FS** Flat Steel

ACCESSORIES

HS-24_1/2

- Hanger Yokes
- Compatible with all types of recessed flanged fixtures
- 1/4 - 20 x 3" machine screws locate into knockout on back of fixture housing
- Two (2) per fixture

Note: Must drill own holes. Caulking compound should be used to seal the holes.



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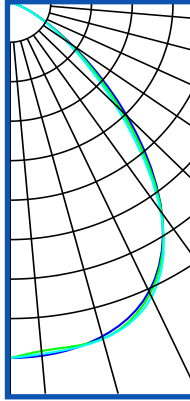
PHOTOMETRIC DATA - FCR220 SERIES

FCR220-4-4L-FSW-PA2-1DRDM-UNV-2/840

TEST NO.=LA-T3174-1
 LED TYPE=48 LED MODULE
 NO. OF MODULE=4
 SYSTEM WATT (W)=31.3
 CRI ≥ 80
 L70(Hrs.) ≥ 50,000
 PHOTOMETRY TYPE=C



Ceiling Opening X - 24_1/2" X 48_1/2"
 Overall Width By Length Y - 25_5/8" X 50"



CANDLEPOWER

ANGLE	END	45	CROSS
0	1872	1872	1872
5	1867	1841	1857
15	1820	1832	1833
25	1679	1691	1710
35	1350	1349	1339
45	845	804	757
55	380	363	346
65	134	131	126
75	37	36	36
85	5	5	5
90	0	0	0
95	0	0	0
115	0	0	0
125	0	0	0
135	0	0	0
145	0	0	0
155	0	0	0
165	0	0	0
175	0	0	0
180	0	0	0

ZONAL LUMEN SUMMARY

DEGREES	LUMENS	% LAMP	% FIXTURE
0-30	1479	32.9	42.9
0-40	2325	51.8	67.4
0-60	3273	73.0	94.9
0-90	3447	76.8	100.0
90-120	.04	0.0	0.0
90-150	.04	0.0	0.0
90-180	.04	0.0	0.0
0-180	3447	76.8	100.00

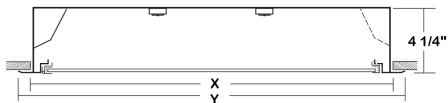
Luminaire Output= 3447 lumens
 Luminaire Efficacy = 110.1 lm/W

SPACING CRITERION

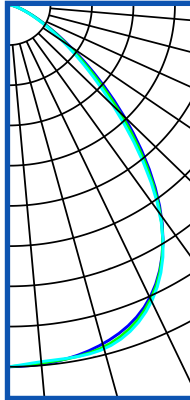
ALONG	ACROSS
1.19	1.20

FCR220-6-4L-FSW-PA2-1DRDM-UNV-2/840

TEST NO.=LA-T3395-3
 LED TYPE=48 LED MODULE
 NO. OF MODULE=4
 SYSTEM WATT (W)=45.5
 CRI ≥ 80
 L70(Hrs.) ≥ 50,000
 PHOTOMETRY TYPE=C



Ceiling Opening X - 24_1/2" X 48_1/2"
 Overall Width By Length Y - 25_5/8" X 50"



CANDLEPOWER

ANGLE	END	45	CROSS
0	2707	2707	2707
5	2698	2689	2679
15	2625	2650	2664
25	2416	2430	2447
35	1924	1914	1906
45	1178	1133	1071
55	533	505	478
65	190	183	176
75	52	52	50
85	7	7	6
90	0	0	0
95	0	0	0
115	0	0	0
125	0	0	0
135	0	0	0
145	0	0	0
155	0	0	0
165	0	0	0
175	0	0	0
180	0	0	0

ZONAL LUMEN SUMMARY

DEGREES	LUMENS	% LAMP	% FIXTURE
0-30	2132	34	43
0-40	3335	53	68
0-60	4662	75	95
0-90	4904	79	100
90-120	0	0	0
90-150	0	0	0
90-180	0	0	0
0-180	4904	79	100

Luminaire Output= 4903.7 lumens
 Luminaire Efficacy = 107.8 lm/W

SPACING CRITERION

ALONG	ACROSS
1.19	1.19

