LA LIGHTING

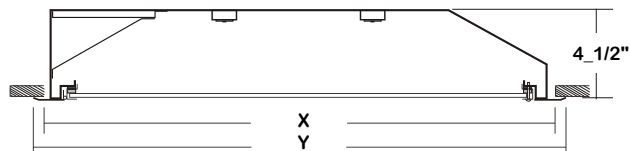# CLEAN ROOM LED
FCR221 (2X4) SERIES (2X2 AVAILABLE)
CLASS 100 TRIM FLANGE CLEAN ROOM LUMINAIRE

DATE

JOB

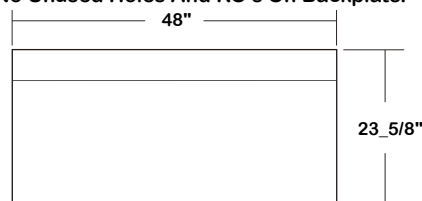WWW.LALIGHTING.COM
626-454-8300

CLASS 100 RECESSED MOUNTED LED LUMINAIRE

DIMENSIONS

4_1/2"

X
Y

Ceiling Opening X - 24_1/2" X 48_1/2"
Overall Width By Length Y - 25_5/8" X 49_5/8"

*No Unused Holes And KO's On Backplate.

48"

23_5/8"

APPLICATIONS

• Class 100 Clean Room, Sealed Ceiling Areas, Commercial

FEATURES

• Class 100 / ISO Class 5 equivalent
• 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
• 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 stainless steel piano hinge and 2 stainless steel captive screws
• Door frame and lens sealed with closed cell neoprene gasket
• 18 ga. trim flange

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 tested at 50,000-51,000 hours (L70)
• Universal voltage 120V through 277V (347V / 480V available)
• Power Factor (PF) ≥ 0.9
• Total Harmonic Distortion (THD) ≤ 20%

LISTING
• UL USA and Canada listed / suitable for damp locations

WARRANTY
• 5-year limited warranty

Due to continued product improvements and enhancements, Los Angeles Lighting Manufacturing Company reserves the right to alter specifications, dimensions, data, and/or materials without notice.
Please visit our website to view the most current information.

MADE IN THE U.S.A.

Revised 10-08-18
WARNING

ORDERING INFORMATION

EXAMPLE: FCR221-12-4L-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
FCR221			**4L**						**1DRDM**	**UNV**	**2**	
FCR221 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	**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 **WLC(LEDRU)** EnOcean 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.

LED LUMEN PACKAGE	NORMAL AMBIENT TEMPERATURE PRODUCT CODE	DELIVERED LUMENS	SYSTEM WATTS	LUMINAIRE EFFICACY	AMBIENT TEMP.	FLUORESCENT EQUIVALENT	IES FILES
2000 Lumens (Nominal)	FCR221-2-4L-FSW-PA2-1DRDM-UNV-2/840	1820 lm	15.2 W	119.8 lm/W	-20°C / 35°C	1-F32T8	*
4000 Lumens (Nominal)	FCR221-4-4L-FSW-PA2-1DRDM-UNV-2/840	3561 lm	31.4 W	113.2 lm/W	-20°C / 35°C	2-F32T8, 1-F54T5HO	*
6000 Lumens (Nominal)	FCR221-6-4L-FSW-PA2-1DRDM-UNV-2/840 *	5752 lm	47.5 W	121.09 lm/W	-20°C / 35°C	3-F32T8	LA-T3340-2
8000 Lumens (Nominal)	FCR221-8-4L-FSW-PA2-1DRDM-UNV-2/840	6802 lm	64.8 W	105 lm/W	-20°C / 35°C	4-F32T8, 2-F54T5HO	LA-T3099-1
12000 Lumens (Nominal)	FCR221-12-4L-FSW-PA2-1DRDM-UNV-2/840	9724 lm	104.6 W	92.9 lm/W	-20°C / 35°C	6-F32T8	*

LED LUMEN PACKAGE	NORMAL AMBIENT TEMPERATURE (HIGH EFFICACY) PRODUCT CODE	DELIVERED LUMENS	SYSTEM WATTS	LUMINAIRE EFFICACY	AMBIENT TEMP.	FLUORESCENT EQUIVALENT	IES FILES
2000 Lumens (Nominal)	FCR221-2HE-4L-FSW-PA2-1DRDM-UNV-2/840	1669 lm	12.6 W	132.9 lm/W	-20°C / 35°C	1-F32T8	*
4000 Lumens (Nominal)	FCR221-4HE-4L-FSW-PA2-1DRDM-UNV-2/840	3378 lm	25.4 W	133.0 lm/W	-20°C / 35°C	2-F32T8, 1-F54T5HO	*
6000 Lumens (Nominal)	FCR221-6HE-4L-FSW-PA2-1DRDM-UNV-2/840	5063 lm	38.5 W	131.5 lm/W	-20°C / 35°C	3-F32T8	*
8000 Lumens (Nominal)	FCR221-8HE-4L-FSW-PA2-1DRDM-UNV-2/840	6724 lm	51.8 W	127.9 lm/W	-20°C / 35°C	4-F32T8, 2-F54T5HO	*
12000 Lumens (Nominal)	FCR221-12HE-4L-FSW-PA2-1DRDM-UNV-2/840	9975 lm	79.3 W	125.8 lm/W	-20°C / 35°C	6-F32T8	*

NOTE:

System data is based on 120V input voltage. DLC system data based on DLC testing parameters. 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 noted in the system data table.

Additional lumen packages and color temperatures available. Due to constant updates on this product, please visit the DLC QPL Website for the most accurate system data and information.

PERFORMANCE DATA

VIEW LIGHTING FACTS   VIEW PHOTOMETRICS

MADE IN THE U.S.A.

Revised 10-08-18

WARNING

SENSOR OPTIONS

enocean® CONTROLS AND SENSORS

WLC(LEDRU) - 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

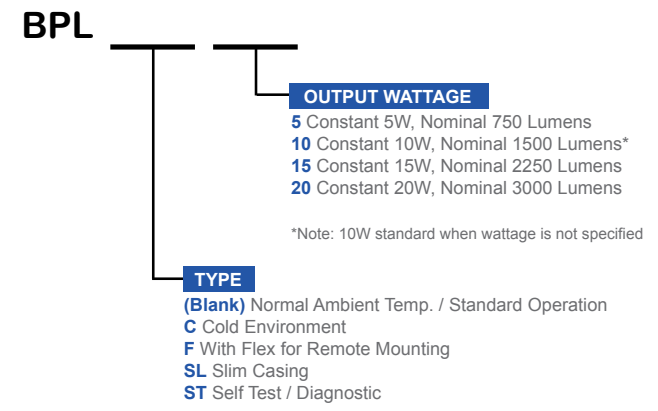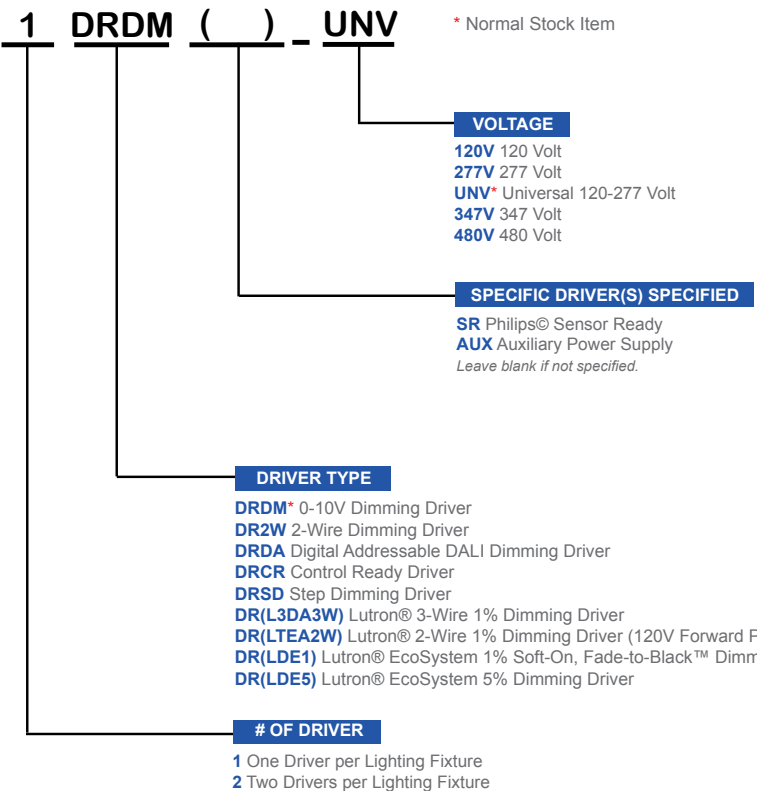**ELLSU-W-EO - EnOcean® Light Level Sensor – Ceiling Mount**
• Light Level sensor that measures and reports the level of available natural light
• Solar powered - no batteries needed (coin battery operated in low light conditions)
• Enables implementation of daylight harvesting control systems
• Mounting 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.

1 DRDM ( ) - UNV

* Normal Stock Item

VOLTAGE
120V 120 Volt
277V 277 Volt
UNV* Universal 120-277 Volt
347V 347 Volt
480V 480 Volt

SPECIFIC DRIVER(S) SPECIFIED
SR Philips© Sensor Ready
AUX Auxiliary Power Supply
Leave blank if not specified.

DRIVER TYPE
DRDM* 0-10V Dimming Driver
DR2W 2-Wire Dimming Driver
DRDA Digital Addressable DALI Dimming Driver
DRCR Control Ready Driver
DRSD Step Dimming Driver
DR(L3DA3W) Lutron® 3-Wire 1% Dimming Driver
DR(LTEA2W) Lutron® 2-Wire 1% Dimming Driver (120V Forward Phase only)
DR(LDE1) Lutron® EcoSystem 1% Soft-On, Fade-to-Black™ Dimming Driver
DR(LDE5) Lutron® EcoSystem 5% Dimming Driver

 # OF DRIVER
1 One Driver per Lighting Fixture
2 Two Drivers per Lighting Fixture

BATTERY PACK OPTIONS

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

BPL __ __

OUTPUT WATTAGE
5 Constant 5W, Nominal 750 Lumens
10 Constant 10W, Nominal 1500 Lumens*
15 Constant 15W, Nominal 2250 Lumens
20 Constant 20W, Nominal 3000 Lumens

*Note: 10W standard when wattage is not specified

TYPE
(Blank) Normal Ambient Temp. / Standard Operation
C Cold Environment
F With Flex for Remote Mounting
SL Slim Casing
ST Self Test / Diagnostic

OPTICAL OPTIONS

STANDARD LENSES FOR FCR221

| 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

CLICK HERE FOR FULL OPTICAL OPTIONS LIST

DOOR FRAME

CROSS SECTION
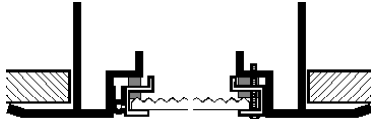
FEATURES

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

FS W

FINISHES
W White Enamel
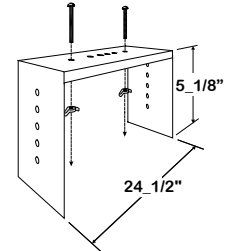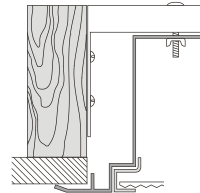**B** Black Enamel

STYLES
FS Flat Steel
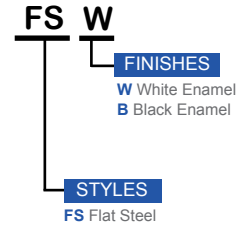
ACCESSORIES

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.

5_1/8"

24_1/2"

MADE IN USA | DLC | cULus | LED lighting facts | RoHS COMPLIANT

MADE IN THE U.S.A.

Revised 10-08-18

WARNING

LED lighting facts

FCR221-6-4L-PA2-1DRDM-UNV-2/840

- **6000 Lumen System**
- **L70 performance at 51,000 hours**

LED lighting facts

Los Angeles Lighting Mfg.Co.

Light Output (Lumens)	**5752**
Watts	**47.5**
Lumens per Watt (Efficacy)	**121.09**

Color Accuracy
Color Rendering Index (CRI) — **86**

Light Color
Correlated Color Temperature (CCT) — **4080 (Bright White)**

Warm White	Bright White	Daylight
2700K 3000K	4500K	6500K

Warranty** — **Yes**

All results, except LED Lumen Maintenance, are according to IESNA LM-79-2008: *Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.*

**** See www.lightingfacts.com/products for details.**

Registration Number: -B5W3ZA (5/22/2018)
Model Number: FCR221-6-4L-XXX-XXX-PA2-XX-XXXXX-1DRDM(XXX)-UNV-2/840
Type: Luminaire - Troffer/Grid Ceiling

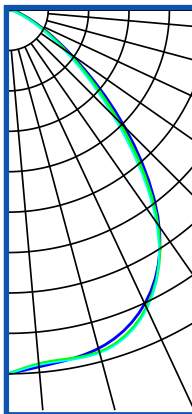**LOS ANGELES LIGHTING MFG. CO.** 10141 OLNEY ST. / EL MONTE, CA 91731
TEL 626-454-8300 | FAX 626-454-8399 | www.lalighting.com

FCR221_4FT

PHOTOMETRIC DATA - FCR221 SERIES

FCR221-8-4L-FSW-PA2-1DRDM-UNV-2/840

TEST NO.= LA-T3099-1
LED TYPE=48 LED MODULE
NO. OF MODULE=4
SYSTEM WATT (W)=64.8

CRI ≥ 80
L70(Hrs.) ≥ 50,000
PHOTOMETRY TYPE=C

4_1/2"

Ceiling Opening X - 24_1/2" X 48_1/2"
Overall Width By Length Y - 25_5/8" X 49_5/8"

CANDLEPOWER

ANGLE	END	45	CROSS
0	3619	3619	3619
5	3563	3532	3545
15	3486	3522	3534
25	3225	3265	3280
35	2627	2605	2573
45	1645	1556	1471
55	763	711	666
65	307	274	244
75	126	101	73
85	73	45	11
90	30	14	2
95	18	10	2
105	23	10	1
115	23	10	2
125	20	10	2
135	16	8	2
145	10	7	1
155	6	7	0
165	7	4	0
175	1	0	0
180	0	0	0

ZONAL LUMEN SUMMARY

DEGREES	LUMENS	% LAMP	% FIXTURE
0-30	2844	33.2	41.8
0-40	4479	52.3	65.8
0-60	6324	73.8	93
0-90	6743	78.7	99.1
90-120	35.5	0.4	0.5
90-150	55	0.7	0.8
90-180	59	0.7	0.9
0-180	6802	79.4	100
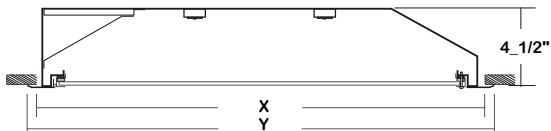
Luminaire Output= 6802 lm
Luminaire Efficacy = 105 lm/W

SPACING CRITERION

ALONG	ACROSS
1.19	1.19

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