

LFR-4SQD SpectraSync

LITEFRAME 4" SQUARE DOWNLIGHT WITH COLOR TUNING

DATE: _____ LOCATION: _____
 TYPE: _____ PROJECT: _____
 CATALOG #: _____

LITEFRAME[™] 2.0



FEATURES

- 4" LED downlight delivering 1000–2000 lumens
- Direct Install from below ceiling for New Construction or Remodel applications
- Optional housing accessories available
- Four beam distributions
- SpectraSync™ Color Tuning technology allows the flexibility to tailor CCT to aesthetic preferences
- Available in Dim to Warm (2200K–3000K) or Tunable White (2700K–5000K or 2700K–6500K), 90+ CRI
- NX Lighting Controls wired and wireless controls capability available

SERVICE PROGRAMS



CONTROLS TECHNOLOGY



SPECIFICATIONS

CONSTRUCTION

- Standard Fixture Module designed for Non-IC, Direct Install construction
- Optional Non-IC frame or IC housing available with pre-installed bar hangers
- Die cast aluminum fixture module support ring with spring steel clips for secure mounting to ceiling
- Driver J-Box can be installed and accessed from below the ceiling as direct install or easily snap on to optional housing frame/enclosure
- Light Engine connections use plenum rated (CMP) cable

OPTICS

- High purity, four panel aluminum reflector, self-flanged
- Specular or Semi-Specular anodized or White painted cone reflector finish/colors
- Painted flange options in White or Black
- Optional clear lens trim for wet location applications

ELECTRICAL

- LED array with 3 SDCM color consistency
- Dim to Warm (2200K–3000K) or Tunable White (2700K–5000K or 2700K–6500K) options available
- 90+ CRI standard
- Long LED life: L70 at >60,000 hours (TM-21)
- Universal voltage 120V–277V driver,
- UL Class 2, inherent short circuit and overload protection, RoHS compliant
- Flicker free 0–10V dimming to 5%
- NX Lighting Controls provides options for standalone and networked functionality with wired or wireless connectivity for NX system deployments
- Integral and remote emergency battery options available

INSTALLATION

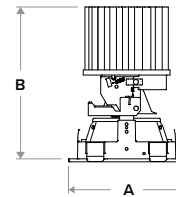
- Accommodates ceiling thickness from 0.50" to 2.50"
- Fixture Module including driver fully accessible from above or below the ceiling

CERTIFICATIONS

- cCSAus certified to UL 1598
- Suitable for wet locations, covered ceiling when used with CL lens trim; all other configurations, suitable for damp locations
- EM/EMR: Certified under UL 924 standard for emergency lighting and power equipment
- EM/EMR: Emergency battery packs are California Energy Commission (CEC) Title 20 Compliant
- Approved for 8 (4 in/4 out) No. 12AWG conductors rated for 90°C through wiring

WARRANTY

- 5 year warranty



Typical Dimensions and Weights			
Lumen Package	"A" Width (SQ) Inches (mm)	"B" Height Inches (mm)	Weight lbs (kg)
10L - 15L	5.38 (137)	5.53 (140)	4 (1.8)
20L	5.38 (137)	7.11 (181)	4.3 (1.9)

See DIMENSIONS section for complete details

KEY DATA	
Lumen Range	1000–2000
Wattage Range	13–33
Efficacy Range (LPW)	60–84
Reported Life (Hours)	L70 / >60,000
Input Current (mA)	108–275 (120V)

*Based on Specular, 30K, 90 CRI

LFR-4SQD SpectraSync

LITEFRAME 4" SQUARE DOWNLIGHT WITH COLOR TUNING

Gray Shading = Service Program **STOCK**

ORDERING GUIDE

Example: LFR-4SQD-M-10L2230TD9-WD-DMTW / LFR-4SQD-T-S / LFR-4SQD-H

CATALOG #

FIXTURE MODULE

LFR-4SQD-M	Lumen Output		CCT	CRI	Distribution	Driver Options	Control Options	Voltage	Module Options	
Ap/Shp/Funct	10L	1000	2230TD	2200K-3000K SpectraSync™ Dim to Warm	9 90+	NR Narrow (25°/0.4 SC)	DMTW SpectraSync™ Dim to Warm, 0-10V Dimming to 5% ¹	NX Lighting Controls <u>Networked Wireless</u>	<i>Standard</i> 120-277V	CP Chicago Plenum ^{2,4}
LFR-4SQD-M 4" Square Downlight Fixture Module for Direct Install	15L	1500	2750T	2700K-5000K SpectraSync™ Tunable White	MD Medium (30°/0.5 SC)	DMT SpectraSync™ Tunable White, 0-10V Dimming to 5% ²	NXW NX Networked Wireless Radio Module NXR2 and Bluetooth Programming, without Sensor		EM 6W Emergency Battery Pack (CEC Title 20 Compliant) with integral test switch and indicator light ⁴	
<i>(Non-IC frame or IC housing available under Housing Options below)</i>	20L	2000	2765T	2700K-6500K SpectraSync™ Tunable White	WD Wide (46°/0.7 SC)		<u>Networked Wired</u>		EMR 6W Emergency Battery Pack (CEC Title 20 Compliant) with remote test switch and indicator light ⁴	
					XW Extra Wide (57°/0.9 SC) ⁹		NXE NX Wired Dual RJ45 SmartPORTS, without Sensor		DTS Device Transfer Switch with Dimming Bypass ⁴	

TRIM (Ships separately)

LFR-4SQD-T	Reflector Finish/Color	Flange Color Options	Lens Options	Lower Trim Options
Aperture/Shape/Function	S Specular ⁹	<i>Standard matches reflector color</i>	<i>Standard no lens</i>	EM Pre-punched reflector for EM integral test switch and indicator ⁶
LFR-4SQD-T 4" Square Downlight Trim Assembly	SS Semi-Specular	WT White Flange ⁵	CL Clear Lens (Wet listed) ⁶	FM Flush Mount Flange ¹⁰
	WC Painted White Cone and Flange	BT Black Flange		

HOUSING OPTIONS (Ships separately)

Aperture/Shape/Function	
<input type="checkbox"/> LFR-4SQD-H	4" Housing Frame, New Construction, Non-IC
<input type="checkbox"/> LFR-4SQD-H-IC	4" Housing Enclosure, New Construction, IC Rated ^{7,8}

Accessories

- SFL4** Soft Focus Lens and Clip, 4" Square
- WAL4** Wide Angle 80° Lens and Clip, 4" Square
- LiteGear** LiteGear® Inverter, 125VA-250VA
- LPS Series** LightPower Micro-Inverter, 20VA-55VA
- LF-FMR4-SQ** Flush Mount Mud-in Ring, 4" Square ¹⁰
- LF-MOR4-SQ-WH** Metal Oversized Ring, 4" Square, White (8.3" outside dimension)



Notes:

- 1 Must select 2230TD with DMTW driver.
- 2 Must select either 2750T or 2765T with DMT driver.
- 3 CP not available with Controls.
- 4 Module options not available in combination.
- 5 WT not needed for WC.
- 6 CL lens and EM trim options not available in combination.
- 7 IC available up to 10L
- 8 IC Housing not for use in combination with Controls or with Module Options CP, EM, EMR, DTS.
- 9 XW distribution is not available for Specular (S) reflector finish.
- 10 Flush Mount Flange (FM) requires FMR accessory (sold separately).

LFR-4SQD SpectraSync

LITEFRAME 4" SQUARE DOWNLIGHT WITH COLOR TUNING

NX LIGHTING CONTROLS

Control Option Ordering Logic & Description			Control Option Functionality								Control Option Components	
			Networkable	Grouping	Scheduling	Occupancy/Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming		
NX Wireless	NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor	✓	✓	✓	-	-	✓	✓	✓		NXRM2-H
NX Wired	NXE	NX Wired Dual RJ45 SmartPORTS, without Sensor	✓	✓	✓	-	-	✓	✓	✓ ¹		NXDSP

¹ Requires NXBTC, order separately.

NX LIGHTING CONTROLS APP



The NX Lighting Controls App is a free to use mobile application for programming both an NX Lighting Controls System or Standalone Bluetooth Sensors. The mobile app allows you to configure devices, discover and setup wireless enabled luminaires and program your NX system settings.



Android



Apple iOS

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SPECTRASYN[™] COLOR TUNING TECHNOLOGY

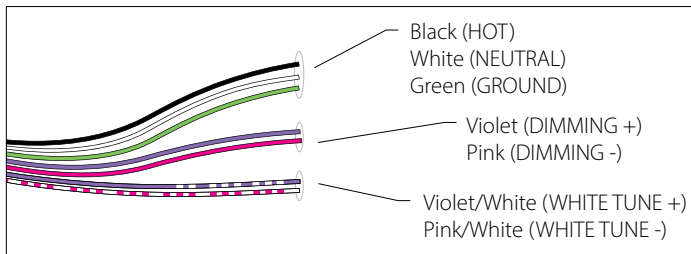
Control your space based on the needs of the application, specific activities throughout the day and preferences of the occupants with distinct SpectraSync[™] Color Tuning Technologies.



SPECTRASYN [™] COLOR TUNING TECHNOLOGY		
Mode	Kelvin Range	Description
Dim to Warm	2200K-3000K	Mimics the familiar warming effect that occurs with traditional incandescent sources as they are dimmed
Tunable White	2700K-5000K 2700K-6500K	Offers users the ability to tailor CCT to their personal preference, enhancing task visibility, material and colors or the aesthetics of the space
Scheduled White	2700K-5000K 2700K-6500K	Mimics the rhythm of natural light or follows an alternative user-defined schedule throughout the day, enhancing an occupant's mood and well-being

SpectraSync Tunable White

Available in two options: 2750T (2700K–5000K) or 2765T (2700K–6500K). Requires two 0–10V controllers, one for intensity and one for CCT. Minimum 5% dimming.

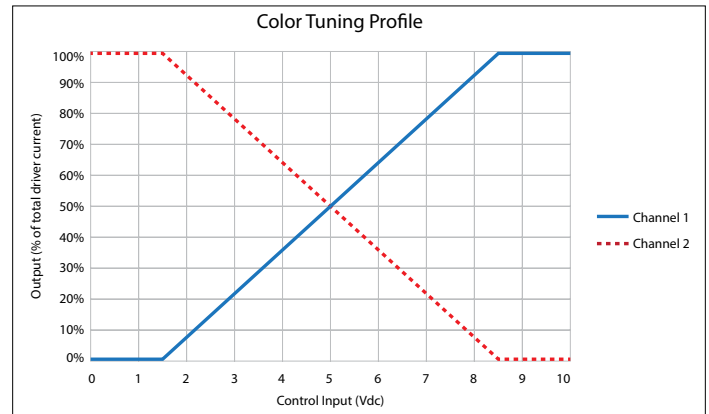


SpectraSync Tunable White luminaires are provided with two 0–10V circuits. The violet and pink circuit is for wiring to any qualified 0–10V controller for dimming. The violet/white and pink/white circuit is for wiring to any qualified 0–10V controller for Tunable White CCT control.

Controller Manufacturer Data

SpectraSync Tunable White was designed to be used with sinking style dimmers (provided by others) and is compatible with:

- Current: NX Lighting Controls Room Controllers (NXRC) and In-fixture Controllers (NXFM)
- Lutron: DVTV, DVSTV, and NFTV dimmers
- Wattstopper: ADF120277 and CD4BL (Titan) dimmers



To enable scheduling and for use with NX wall control preset stations please refer to SpectraSync technical sheet.

PERFORMANCE DATA TABLE

Performance data provided below is for 2230TD, 90 CRI with Specular Clear reflector finish/color

Lumen Package	Nominal Lumens	Distribution	Delivered Lumens	Watts	LPW
10L	1000	Narrow	1054	12.5	84
		Medium	1030	12.5	82
		Wide	1025	12.5	82
		Extra Wide	1022	12.5	82
15L	1500	Narrow	1599	20.5	78
		Medium	1563	20.5	76
		Wide	1555	20.5	76
		Extra Wide	1550	20.5	76
20L	2000	Narrow	2008	32.2	62
		Medium	1962	32.2	61
		Wide	1952	32.2	61
		Extra Wide	1947	32.2	60

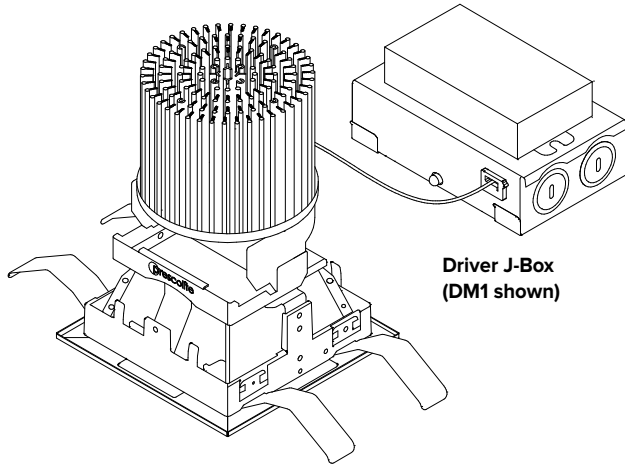
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DIMENSIONS

LFR-4SQD-M

Fixture Module consists of Light Engine and Driver J-Box assemblies.
Overall dimensions for each are dependent upon configuration selected.
See the following pages for details.



**Light Engine
with Trim assembly installed**

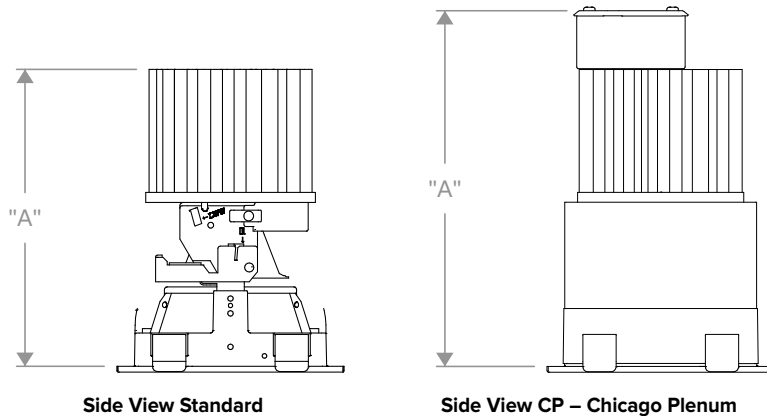
**Driver J-Box
(DM1 shown)**

DIMENSIONAL DATA		
APERTURE		□ 4.00" (101.6mm)
FLANGE WIDTH	Standard	0.69" (17.5mm)
	Flush Mount	0.18" (4.6mm)
FLANGE TO FLANGE	Standard	□ 5.38" (136.7mm)
	Flush Mount	□ 4.37" (111.0mm)
CEILING CUTOUT	Standard	□ 4.75" (120.7mm)
	Flush Mount	□ 4.88" (123.9mm)
CEILING THICKNESS		0.50" – 2.50" (12.7 – 63.5mm)

LFR-4SQD LIGHT ENGINE

OVERALL LIGHT ENGINE HEIGHT "A" *			
LUMEN PACKAGE	FIXTURE MODULE	BEAM DISTRIBUTION	
		NR / MD/ WD	XW
10L-15L	STANDARD	5.53" (140.5mm)	5.18" (131.6mm)
	CP	8.51" (216.2mm)	8.16" (207.3mm)
20L	STANDARD	7.11" (180.6mm)	6.76" (171.7mm)
	CP	8.51" (216.2mm)	8.16" (207.3mm)

* Note: Add 1/2" minimum plenum clearance above overall Light Engine Height.
** Non-IC rating requires 3" from insulation and combustible materials..

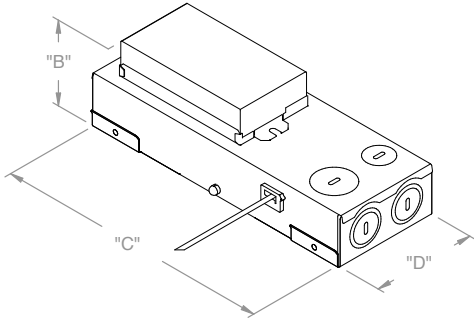


LFR-4SQD SpectraSync

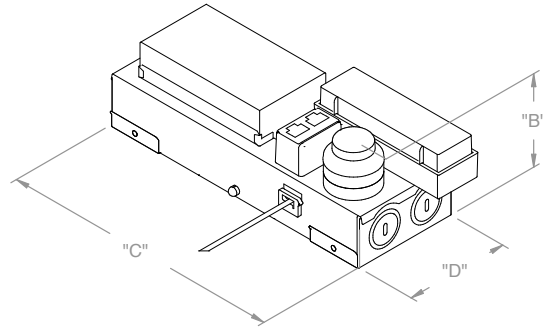
LITEFRAME 4" SQUARE DOWNLIGHT WITH COLOR TUNING

DIMENSIONS CONTINUED

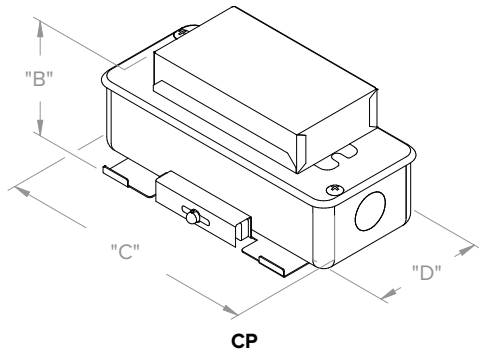
DRIVER J-BOX



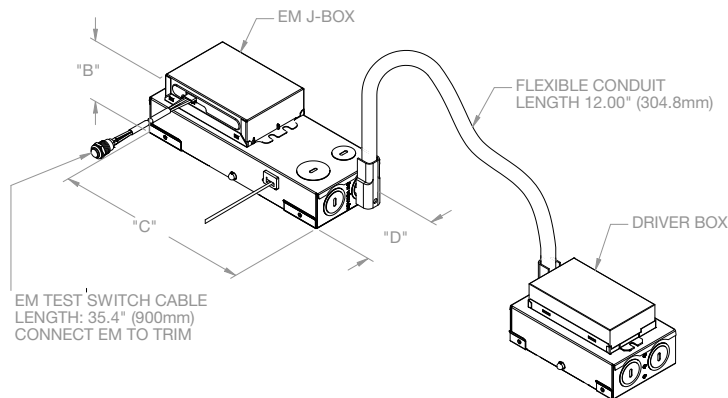
DMT/DMTW



NX CONTROLS OPTION



CP



DMT/DMTW EM/EMR OPTION

EMR/Driver J-Box Conduit (provided) connects to Driver J-Box
(see Driver J-Box for additional details)

OVERALL DRIVER J-BOX DIMENSIONS (ALL LUMEN OUTPUTS)				
DRIVER/CONTROLS OPTIONS	"B" (HEIGHT)	"C" (LENGTH)	"D" (WIDTH)	MINIMUM J-BOX PLENUM CLEARANCE
DMT/DMTW	2.67" (67.8mm)	8.68" (220.5mm)	3.23" (82.0mm)	4.00" (101.6mm)
NX	3.02" (76.7mm)	8.68" (220.5mm)	3.23" (82.0mm)	6.00" (152.4mm)
EM	2.73" (69.3mm)	8.68" (220.5mm)	3.23" (82.0mm)	4.00" (101.6mm)
CP	1.89" (73.4mm)	6.50" (165.1mm)	2.72" (69.1mm)	5.00" (127.0mm)

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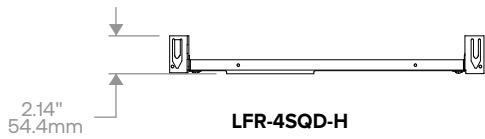
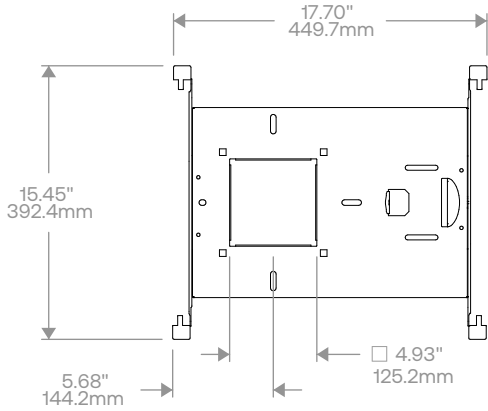
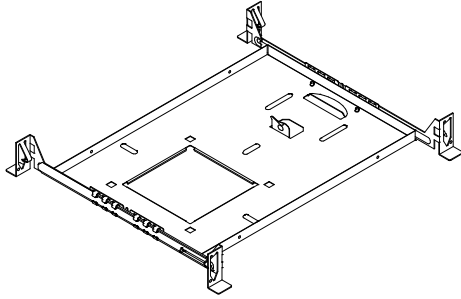
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TYPE: _____ PROJECT: _____

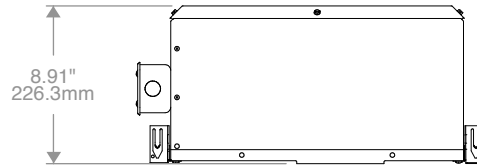
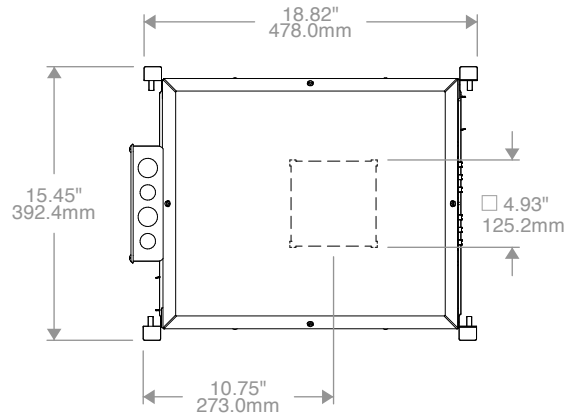
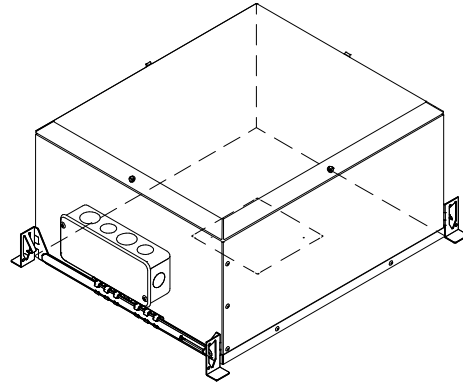
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DIMENSIONS CONTINUED

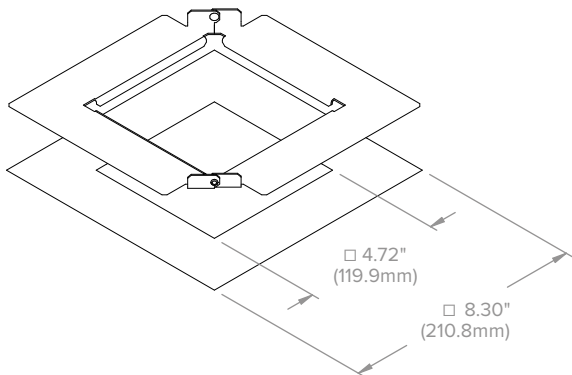
OPTIONAL HOUSINGS



**LFR-4SQD-H
NON-IC HOUSING FRAME**

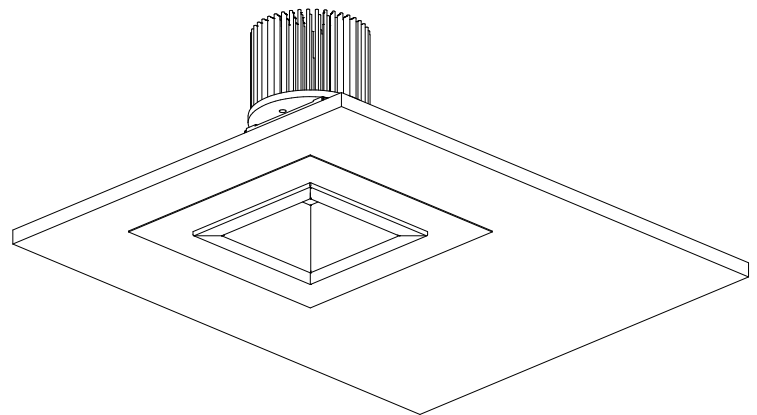


**LFR-4SQD-H-IC
IC HOUSING**
Not for use with CP Shroud



**LF-MOR4-SQ
METAL OVERSIZED RING**

(See LF-MOR Installation Instruction for more details)



LFR-4SQD SpectraSync

LITEFRAME 4" SQUARE DOWNLIGHT WITH COLOR TUNING

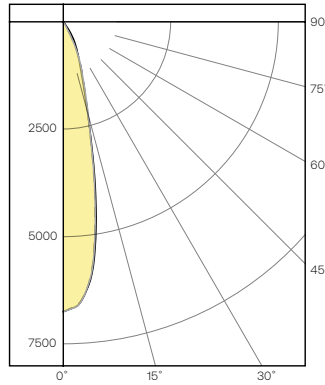
PHOTOMETRY

LFR-4SQD-M-15L2230TD9NR-DMT / LFR-4SQD-T-S

LUMINAIRE DATA

Test No.	22.01181
Description	1500 lm, Narrow, 3000K, 90 CRI
Delivered Lumens	1599
Watts	20.5W
Efficacy	78
Mounting	Recessed/Ceiling
Spacing Criterion	0.4
Beam Angle (FWHM)	24

POLAR GRAPH



CANDELA DISTRIBUTION

Degree	Candela
0	6740
5	6246
15	2203
25	713
35	43
45	9
55	0
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	1233
55°	0
65°	0
75°	0
85°	0

*Candela/Square Meter

ZONAL LUMEN SUMMARY

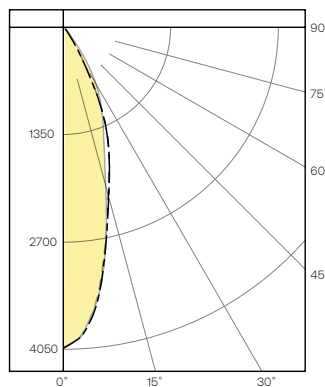
Zone	Lumens	% Luminaire
0-40	1589	99.4
0-60	1599	100.0
0-90	1599	100.0
0-180	1599	100.0

LFR-4SQD-M-15L2230TD9MD-DMT / LFR-4SQD-T-S

LUMINAIRE DATA

Test No.	22.01180
Description	1500 lm, Medium, 3000K, 90 CRI
Delivered Lumens	1562
Watts	20.5W
Efficacy	76
Mounting	Recessed/Ceiling
Spacing Criterion	0.5
Beam Angle (FWHM)	33

POLAR GRAPH



CANDELA DISTRIBUTION

Degree	Candela
0	4019
5	3679
15	2151
25	1079
35	102
45	12
55	1
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	1644
55°	169
65°	0
75°	0
85°	0

*Candela/Square Meter

ZONAL LUMEN SUMMARY

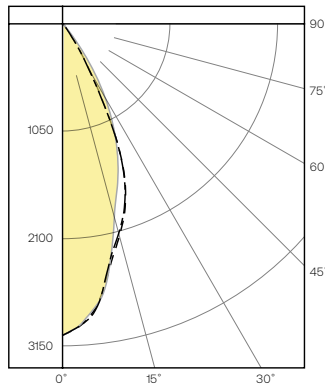
Zone	Lumens	% Luminaire
0-40	1546	98.9
0-60	1563	100.0
0-90	1563	100.0
0-180	1563	100.0

LFR-4SQD-M-15L2230TD9WD-DMT / LFR-4SQD-T-S

LUMINAIRE DATA

Test No.	22.01182
Description	1500 lm, Wide, 3000K, 90 CRI
Delivered Lumens	1555
Watts	20.5W
Efficacy	76
Mounting	Recessed/Ceiling
Spacing Criterion	0.7
Beam Angle (FWHM)	45

POLAR GRAPH



CANDELA DISTRIBUTION

Degree	Candela
0	3039
5	2878
15	2139
25	1224
35	135
45	13
55	0
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	1781
55°	169
65°	0
75°	0
85°	0

*Candela/Square Meter

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	1536	98.8
0-60	1555	100.0
0-90	1555	100.0
0-180	1555	100.0

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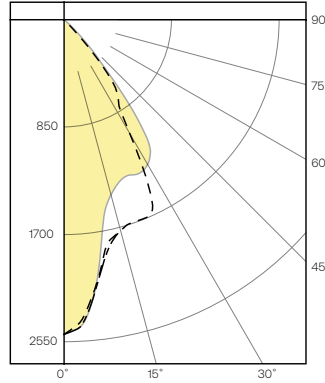
PHOTOMETRY CONTINUED

LFR-4SQD-M-15L2230TD9XW-DMT / LFR-4SQD-T-S

LUMINAIRE DATA

P22.00839	22.01183
Description	1500 lm, Extra Wide, 3000K, 90 CRI
Delivered Lumens	1550
Watts	20.5W
Efficacy	76
Mounting	Recessed/Ceiling
Spacing Criterion	1.0
Beam Angle (FWHM)	58

POLAR GRAPH



CANDELA DISTRIBUTION

Degree	Candela
0	1837
5	1724
15	1437
25	1300
35	534
45	45
55	1
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	6165
55°	169
65°	0
75°	0
85°	0

*Candela/Square Meter

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	1451	93.6
0-60	1550	100.0
0-90	1550	100.0
0-180	1550	100.0

LENS OPTION / LENS FILTER ACCESSORY MULTIPLIER (Based on Clear Specular)

Option	CL (Clear Lens)
Multiplier	0.95

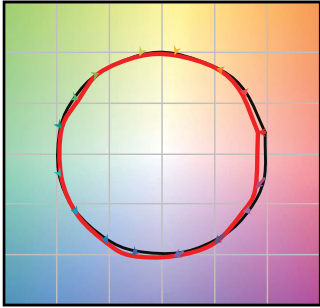
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LITEFRAME 4" SQUARE DOWNLIGHT WITH COLOR TUNING

TM-30 DATA

SPECTRASYNCTM TUNABLE WHITE (2765T)

COLOR VECTOR GRAPHIC
2700K, 90+ CRI



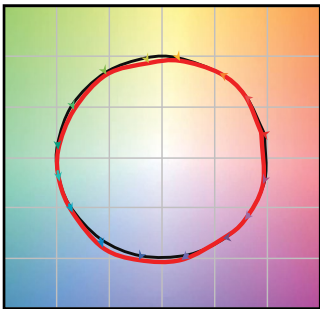
— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
2700K, 90+ CRI



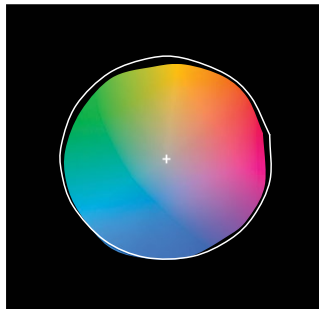
TEST RESULTS - TUNABLE WHITE @ 1500 LUMENS (NOMINAL)			
Value	2700K	4600K	6500K
Luminous Flux (lm)	1469	1779	1692
Wattage (W)	20.5	20.1	20.6
Efficacy (lm/W)	71.7	88.5	82.1
R _r	90	89	87
R _g	97	99	97
CCT (K)	2799	4177	7184
D _{uv}	0.0032	0.0088	0.0024
x	0.4468	0.3680	0.3047
y	0.3992	0.3515	0.3109
CIE R _a	90	94	94
CIE R _g	46.7	85.4	87.7

COLOR VECTOR GRAPHIC
4600K, 90+ CRI

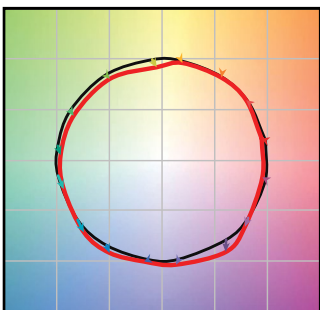


— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
4600K, 90+ CRI

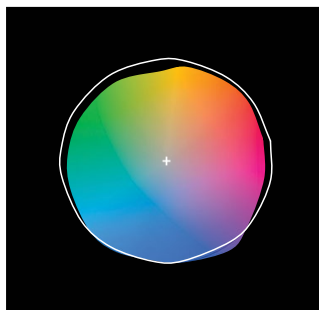


COLOR VECTOR GRAPHIC
6500K, 90+ CRI



— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
6500K, 90+ CRI



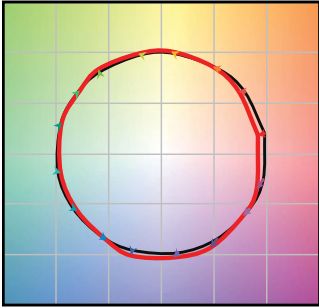
LFR-4SQD SpectraSync

LITEFRAME 4" SQUARE DOWNLIGHT WITH COLOR TUNING

TM-30 DATA CONTINUED

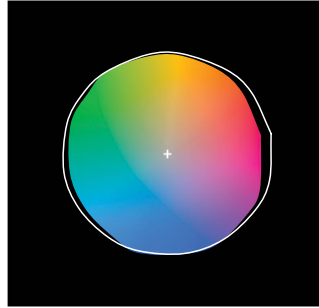
SPECTRASYNCTM DIM TO WARM (2230TD)

COLOR VECTOR GRAPHIC
3000K, 90+ CRI @ 100%



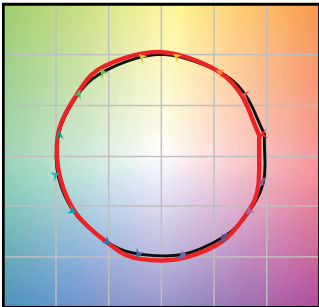
— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
3000K, 90+ CRI @ 100%



TEST RESULTS - DIM TO WARM @ 3 DIMMING LEVELS			
Value	100%	50% Dim	5% Dim
Luminous Flux (lm)	1470	833	50
Wattage (W)	20.3	20.1	20.6
Efficacy (lm/W)	71.7	88.5	82.1
R _t	90	89	87
R _g	97	99	97
CCT (K)	2799	4177	7184
D _{uv}	0.0032	0.0088	0.0024
x	0.4468	0.3680	0.3047
y	0.3992	0.3515	0.3109
CIE R _a	90	94	94
CIE R _g	46.7	85.4	87.7

COLOR VECTOR GRAPHIC
2600K, 90 CRI @ 50% DIM

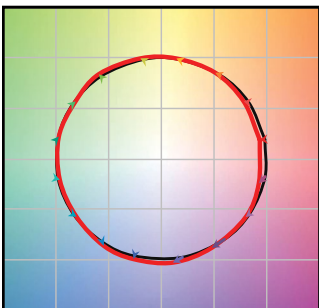


— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
2600K, 90 CRI @ 50% DIM

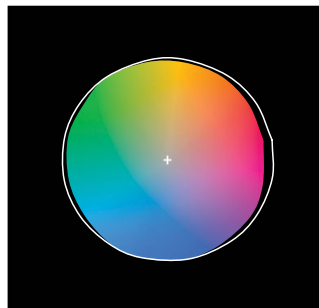


COLOR VECTOR GRAPHIC
2200K, 90 CRI @ 5% DIM



— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
2200K, 90 CRI @ 5% DIM



LFR-4SQD SpectraSync

LITEFRAME 4" SQUARE DOWNLIGHT WITH COLOR TUNING

ELECTRICAL DATA

DRIVER DATA	
Input Voltage	120–277 V
Input Frequency	50/60 Hz
Power Factor	≥0.90
THD	<20%
EMI Filtering (FCC 47 CFR Part 15)	Class A

ADDITIONAL INFORMATION

Dimming Compatibility

For more details and recommended dimmer list, see Dimming Compatibility Information on currentlighting.com/prescolite.

Central Inverters

For full fixture output in back-up mode, we recommend you visit currentlighting.com/dual-lite.com for your Central Lighting Inverter options. Please contact your local Current representative for any assistance with proper sizing and loading of your inverter selection. Central lighting inverters must be ordered separately.

Lumen Output in Emergency Mode

To determine the lumen output in emergency mode, multiply the battery pack wattage by the fixture lumens per watt (LPW). For example, 6W x 120 LPW = 720 lumens in emergency mode.