

LFR-4SQDS SpectraSync

LITEFRAME 4" SQUARE SHALLOW DOWNLIGHT
WITH COLOR TUNING

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

LITEFRAME[®]
2.0

FEATURES

- 4" LED shallow downlight delivering 1000–1500 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

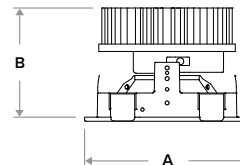


SERVICE PROGRAMS

STOCK



CONTROLS TECHNOLOGY



Typical Dimensions and Weights			
Lumen Package	"A" Width Inches (mm)	"B" Height Inches (mm)	Weight lbs (kg)
10L - 15L	5.38 (137)	3.56 (90)	3.8 (1.7)

See DIMENSIONS section for complete details

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 housings
- 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

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
- Remote emergency battery option 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 damp locations
- EMR: Certified under UL 924 standard for emergency lighting and power equipment
- 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

KEY DATA	
Lumen Range	1000–1500
Wattage Range	12.7–19.4
Efficacy Range (LPW)	68–81
Reported Life (Hours)	L70 / >60,000
Input Current (mA)	106–162 (120V)

*Based on Specular 30K, 90 CRI

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ORDERING GUIDE

DATE:	LOCATION:
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Gray Shading = Service Program **STOCK**

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

CATALOG #

FIXTURE MODULE

LFR-4SQDS-M										
Ap/Shp/Funct	Lumen Output		CCT	CRI	Distribution	Driver Options	Control Options	Voltage	Module Options	
LFR-4SQDS-M 4" Square Shallow Downlight Fixture Module for Direct Install <i>(Non-IC frame or IC housing available under Housing Options below)</i>	10L	1000	2230TD	2200K–3000K SpectraSync™ Dim to Warm	9 90+	VNR Very Narrow (22°/0.4 SC)	DMTW SpectraSync™ Dim to Warm, 0–10V Dimming to 5% ¹	<u>NX Lighting Controls</u> <u>Networked Wireless</u> NXW NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor <u>Networked Wired</u> NXE NX Wired Dual RJ45 SmartPORTS, without Sensor	<i>Standard</i> 120–277V	CP Chicago Plenum ^{3,6} EMR 6W Emergency Battery Pack (CEC Title 20 Compliant) with remote test switch and indicator light ⁶ DTS Device Transfer Switch with Dimming Bypass ⁶
	15L	1500				NR Narrow (26°/0.4 SC)	DMT SpectraSync™ Tunable White, 0–10V Dimming to 5% ²			
			2750T	2700K–5000K SpectraSync™ Tunable White		MD Medium (35°/0.6 SC)				
			2765T	2700K–6500K SpectraSync™ Tunable White		WD Wide (56°/0.9 SC)				

TRIM (Ships separately)

LFR-4SQDS-T				
Aperture/Shape/Function	Distribution	Reflector Finish/Color	Flange Color Options	Lower Trim Options
LFR-4SQDS-T 4" Square Shallow Downlight Trim Assembly	<i>Standard</i> VNR, NR, MD, WD	S Specular SS Semi-Specular WC Painted White Cone and Flange	<i>Standard matches reflector color</i> WT White Flange ⁷ BT Black Flange	FM Flush Mount Flange ¹¹

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 ^{8,9}

Accessories	
<input type="checkbox"/> LiteGear	LiteGear® Inverter, 125VA-250VA
<input type="checkbox"/> LPS Series	LightPower Micro-Inverter, 20VA-55VA
<input type="checkbox"/> LF-FMR4-SQ	Flush Mount Mud-in Ring, 4" Square ¹¹
<input type="checkbox"/> LF-MOR4-SQ-WH	Metal Oversized Ring, 4" Square, White (8.3" outside dimension)

Notes:

- Must select 2230TD with DMTW driver.
- Must select either 2750T or 2765T with DMT driver.
- CP not available with Controls.
- Module options not available in combination.
- WT not needed for WC.
- IC available up to 10L
- IC Housing not for use in combination with Controls or with Module Options CP, EMR, DTS.
- Flush Mount Flange (FM) requires FMR accessory (sold separately).

DATE:



LOCATION:

TYPE:

PROJECT:

CATALOG #:

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

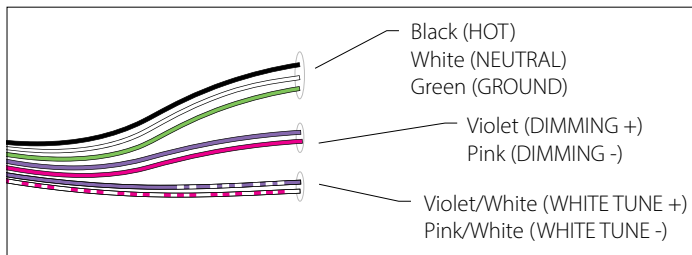
Control your space based on the needs of the application, specific activities throughout the day and preferences of the occupants with distinct SpectraSync[™] Color Tuning Technologies.



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.

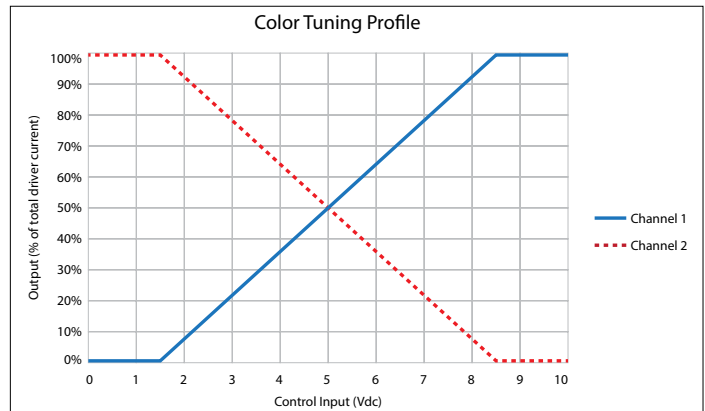


SpectraSync Tunable White luminaires are provided with two 0–10V circuits. The violet and pink circuit is for wiring to any qualified 0–10V controller for dimming. The violet/white and pink/white circuit is for wiring to any qualified 0–10V controller for Tunable White CCT control.

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: DDTV, 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	Very Narrow	1011	12.7	80
		Narrow	992	12.7	78
		Medium	962	12.7	76
		Wide	1033	12.7	81
15L	1500	Very Narrow	1386	19.4	71
		Narrow	1359	19.4	70
		Medium	1319	19.4	68
		Wide	1415	19.4	73

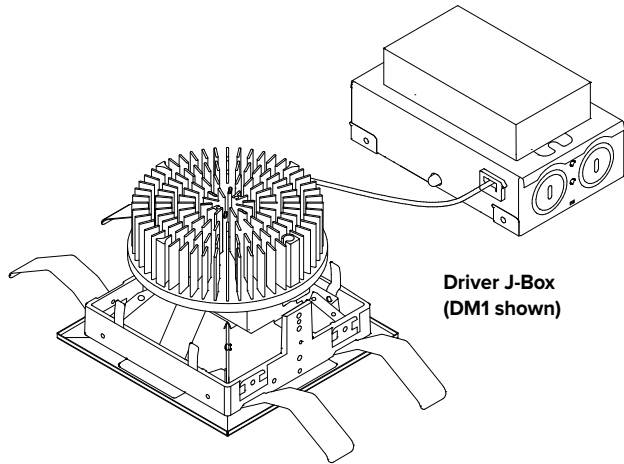
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DIMENSIONS

LFR-4SQDS-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.

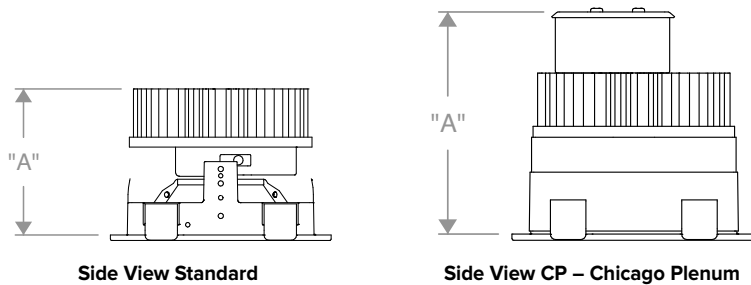


DIMENSIONAL DATA		
APERTURE		□ 4.00" (101.6mm)
FLANGE WIDTH	Standard	0.69" (17.5mm)
	Flush Mount	0.18" (4.6mm)
FLANGE TO FLANGE	Standard	□ 5.38" (136.7mm)
	Flush Mount	□ 4.37" (111.0mm)
CEILING CUTOUT	Standard	□ 4.75" (120.7mm)
	Flush Mount	□ 4.88" (123.9mm)
CEILING THICKNESS		0.50"–2.50" (12.7–63.5mm)

LFR-4SQDS LIGHT ENGINE

OVERALL LIGHT ENGINE HEIGHT "A" *		
LUMEN PACKAGE	FIXTURE MODULE	BEAM DISTRIBUTION
		VNR /NR / MD/ WD
10L–15L	STANDARD	3.56" (90.4mm)
	CP	4.93" (125.2mm)

* Note: Add ½" minimum plenum clearance above overall Light Engine Height.
** For 15L: Marked spacing required 36" fixture center to center; 18" fixture center to building member; 0.5" above fixture.
*** Non-IC rating requires 3" from insulation and combustible materials.

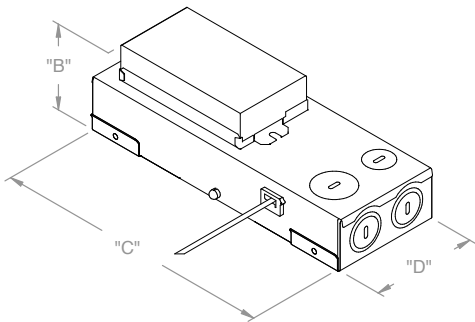


LFR-4SQDS SpectraSync

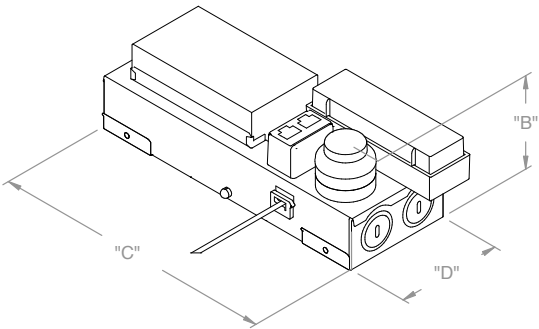
LITEFRAME 4" SQUARE SHALLOW DOWNLIGHT
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DIMENSIONS CONTINUED

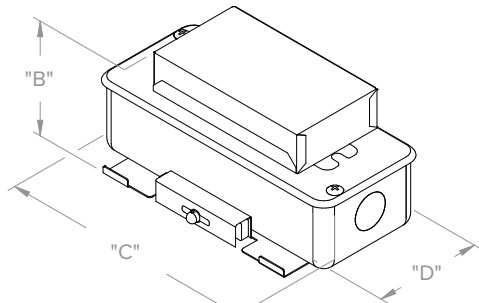
DRIVER J-BOX



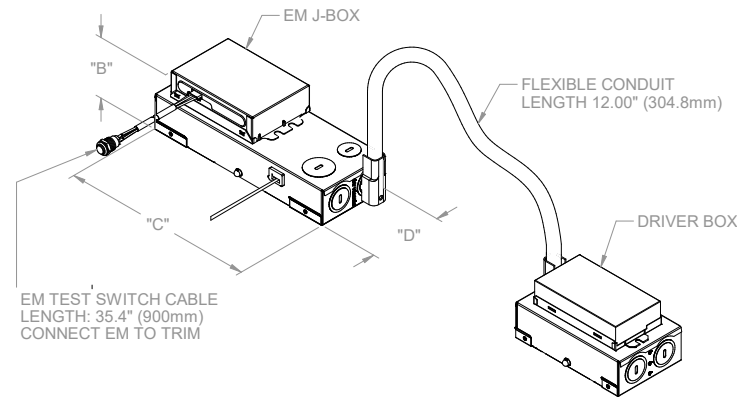
DMT/DMTW



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)

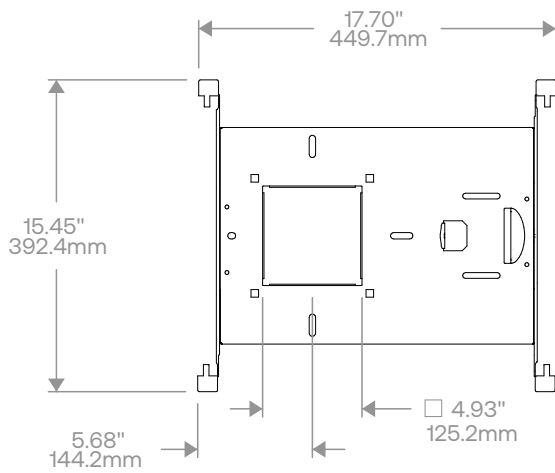
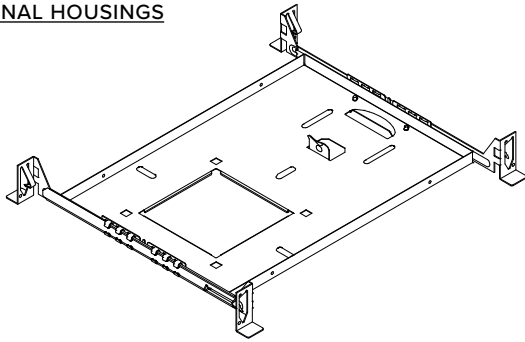
OVERALL DRIVER J-BOX DIMENSIONS (ALL LUMEN OUTPUTS)				
DRIVER/ CONTROLS OPTIONS	"B" (HEIGHT)	"C" (LENGTH)	"D" (WIDTH)	MINIMUM J-BOX PLENUM CLEARANCE
DMT/DMTW	2.67" (67.8mm)	8.68" (220.5mm)	3.23" (82.0mm)	4.00" (101.6mm)
NX	3.02" (76.7mm)	8.68" (220.5mm)	3.23" (82.0mm)	6.00" (152.4mm)
EM	2.73" (69.3mm)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

LFR-4SQDS SpectraSync

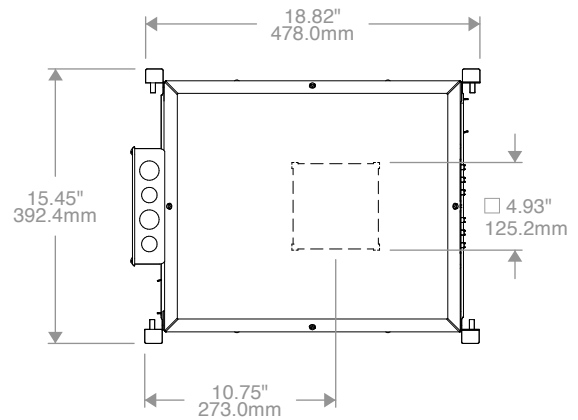
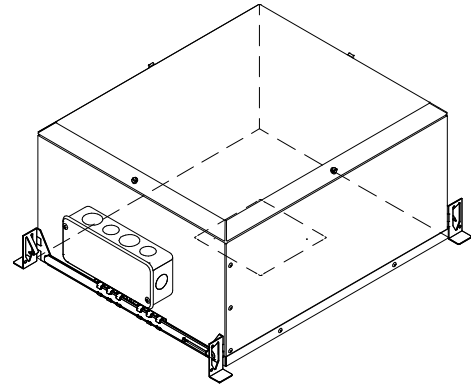
LITEFRAME 4" SQUARE SHALLOW DOWNLIGHT
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DIMENSIONS CONTINUED

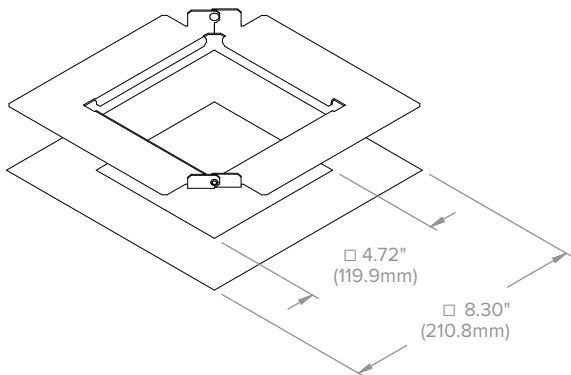
OPTIONAL HOUSINGS



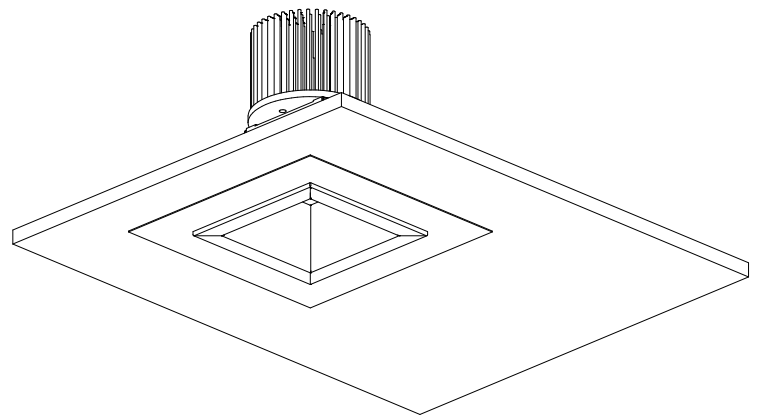
LFR-4SQD-H
NON-IC HOUSING FRAME



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)



DATE:	LOCATION:
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LFR-4SQDS SpectraSync

LITEFRAME 4" SQUARE SHALLOW DOWNLIGHT
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PHOTOMETRY

LFR-4SQDS-M-15L2230TD9VNR-DMT / LFR-4SQDS-T-S

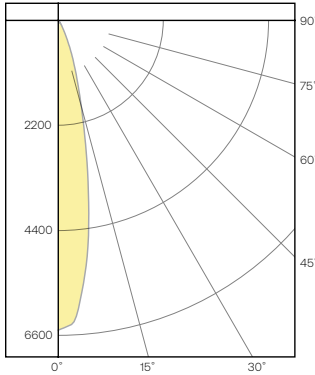
LUMINAIRE DATA

Test No.	22.01186
Description	1500 lm, Very Narrow, 3000K, 90 CRI
Delivered Lumens	1386
Watts	19.4W
Efficacy	71
Mounting	Recessed/Ceiling
Spacing Criterion	0.4
Beam Angle (FWHM)	22

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	1336	96.4
0-60	1385	100.0
0-90	1386	100.0
0-180	1386	100.0

POLAR GRAPH



CANDELA DISTRIBUTION

Degree	Candela
0	6468
5	5684
15	1874
25	472
35	135
45	51
55	9
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	6987
55°	1520
65°	0
75°	0
85°	0

*Candela/Square Meter

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

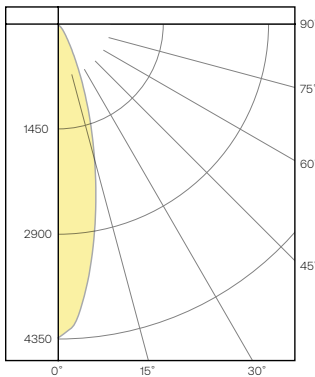
LUMINAIRE DATA

Test No.	22.01185
Description	1500 lm, Narrow, 3000K, 90 CRI
Delivered Lumens	1359
Watts	19.4W
Efficacy	70
Mounting	Recessed/Ceiling
Spacing Criterion	0.5
Beam Angle (FWHM)	28

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	1293	95.2
0-60	1358	100.0
0-90	1359	100.0
0-180	1359	100.0

POLAR GRAPH



CANDELA DISTRIBUTION

Degree	Candela
0	4318
5	3847
15	1947
25	631
35	181
45	69
55	11
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	9453
55°	1858
65°	0
75°	0
85°	0

*Candela/Square Meter

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

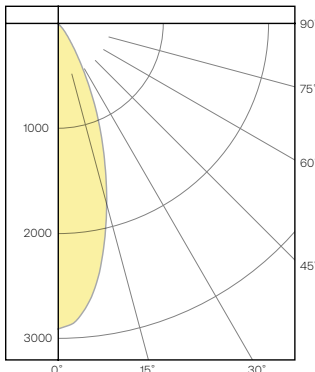
LUMINAIRE DATA

Test No.	22.01184
Description	2000 lm, Medium, 3500K, 80 CRI
Delivered Lumens	1319
Watts	19.4W
Efficacy	68
Mounting	Recessed/Ceiling
Spacing Criterion	0.6
Beam Angle (FWHM)	36

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	1257	95.3
0-60	1319	100.0
0-90	1319	100.0
0-180	1319	100.0

POLAR GRAPH



CANDELA DISTRIBUTION

Degree	Candela
0	2903
5	2750
15	1794
25	795
35	223
45	62
55	11
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	8494
55°	1858
65°	0
75°	0
85°	0

*Candela/Square Meter

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

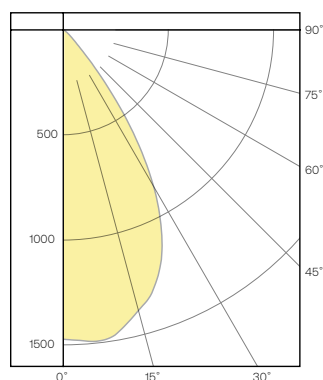
LUMINAIRE DATA

Test No.	22.01187
Description	1500 lm, Wide, 3000K, 90 CRI
Delivered Lumens	1415
Watts	19.4W
Efficacy	73
Mounting	Recessed/Ceiling
Spacing Criterion	0.9
Beam Angle (FWHM)	63

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-40	1348	95.3
0-60	1415	100.0
0-90	1415	100.0
0-180	1415	100.0

POLAR GRAPH



CANDELA DISTRIBUTION

Degree	Candela
0	1471
5	1487
15	1379
25	1105
35	523
45	61
55	6
65	0
75	0
85	0
90	0

LUMINANCE DATA*

Vertical Angle	Average
45°	8357
55°	1013
65°	0
75°	0
85°	0

*Candela/Square Meter

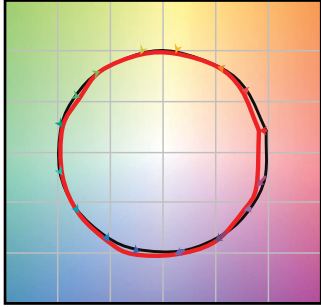
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TM-30 DATA

SPECTRASYNC™ TUNABLE WHITE (2765T)

COLOR VECTOR GRAPHIC
2700K, 90+ CRI



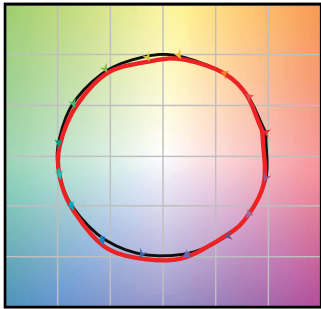
— Reference Illuminant — Test Source

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 _f	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

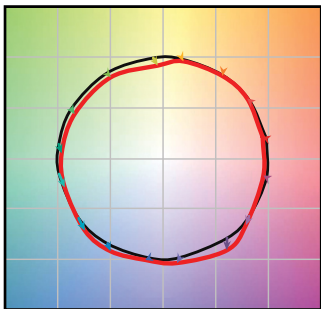


— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
4600K, 90+ CRI

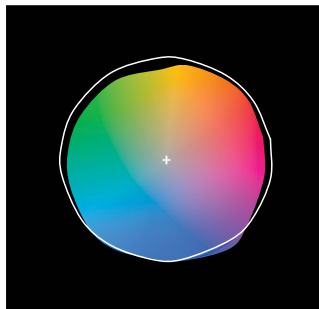


COLOR VECTOR GRAPHIC
6500K, 90+ CRI



— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC
6500K, 90+ CRI



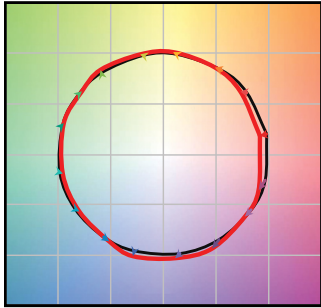
LFR-4SQDS SpectraSync

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TM-30 DATA CONTINUED

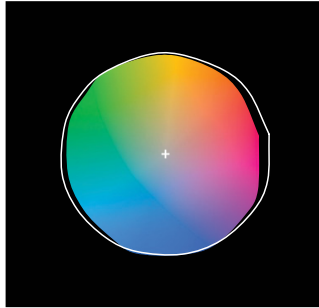
SPECTRASYNCTM DIM TO WARM (2230TD)

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



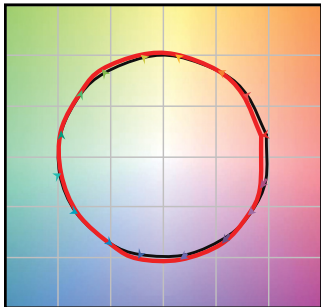
— Reference Illuminant — Test Source

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



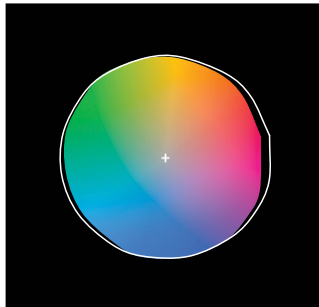
TEST RESULTS - DIM TO WARM @ 3 DIMMING LEVELS			
Value	100%	50% Dim	5% Dim
Luminous Flux (lm)	1470	833	50
Wattage (W)	20.3	20.1	20.6
Efficacy (lm/W)	71.7	88.5	82.1
R _f	90	89	87
R _g	97	99	97
CCT (K)	2799	4177	7184
D _{uv}	0.0032	0.0088	0.0024
x	0.4468	0.3680	0.3047
y	0.3992	0.3515	0.3109
CIE R _a	90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

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

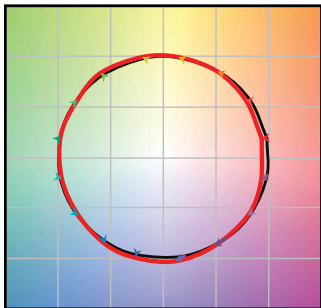


— Reference Illuminant — Test Source

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

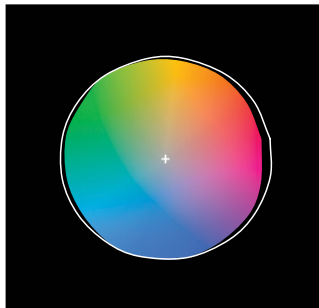


COLOR VECTOR GRAPHIC
2200K, 90 CRI @ 5% DIM



— Reference Illuminant — Test Source

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



LFR-4SQDS SpectraSync

LITEFRAME 4" SQUARE SHALLOW 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

* Values for DM1 option shown, values for other dimming options may vary.

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 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.

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	