

LCAT22

2' x 2' LED CONTEMPORARY ARCHITECTURAL TROFFER

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

FEATURES

- High efficiency acrylic center lens features linear prisms for high performance without pixelation
- Appropriate for offices, schools, medical, and public spaces
- High performance reflector with matte white paint standard
- LED modules and electrical accessible from below
- Optional architecturally styled integration of daylight and occupancy sensor(s)
- QR code traceability
- Compatible with Dual-Lite inverters

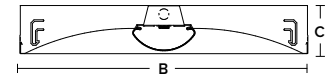


SERVICE PROGRAMS
STOCK QS10



Typical Dimensions and Weights				
Sizes	(A) Length Inches (mm)	(B) Width Inches (mm)	(C) Height Inches (mm)	Weight lbs (kg)
2x2	23.75 (603)	23.77 (604)	3.98 (101)	11 (5)

CONTROLS TECHNOLOGY



SPECIFICATIONS

CONSTRUCTION

- Luminaire housing, reflectors and end caps are die-formed code-gauge cold-rolled steel
- High transmission extruded acrylic enclosed lens features linear prisms with custom frost for high efficacy without pixelation
- All reflective surfaces are finished after fabrication with unique formula high-reflectivity matte white paint for soft, uniform indirect illumination

OPTICS

- Removable lens for easy access to LED module and electrical components

INSTALLATION

- An access plate is furnished with each luminaire for fast wiring access without the necessity to open the fixture or wireway
- Luminaire fits recessed exposed Grid ceilings (G); four integral T-bar clips with holes for seismic wires are standard
- Can be placed in Slot Grid (SG) style ceiling with regress 3/8" above ceiling plane
- A Flange Kit (FK) accessory is available for recessed hard ceiling applications
- Surface Mount (SM) option allows placement below ceiling plane
- Cable Mount (CM) option allows suspension below ceiling plane

ELECTRICAL

- 60,000 hour LEDs at L80 for reduced maintenance
- 83 CRI standard or optional 90 CRI for color sensitive applications

CONTROLS

- Optional SpectraSync™ Tunable White solution integrates seamlessly into a variety of control systems
- NX Lighting Controls provides options for standalone and networked integrated sensor with wired or wireless connectivity for NX system deployments
- NX Connect is a standalone wireless deployment for room based application using wireless enabled and battery operated devices

CERTIFICATIONS

- Emergency battery pack options are California Energy Commission (CEC) Title 20 Compliant
- IC label is standard for recessed products. Note that IC label is void if product is installed on site with a combination of both battery pack plus through wiring or for air return fixtures
- All luminaires are built to UL1598 and bear appropriate cCSAus labels
- CSA certified to UL 924 standards with battery pack or DTS (Dimming Bypass Module) options

CERTIFICATIONS (CONTINUED)

- Damp Location label standard
- Adheres to LM79, LM80, and TM21 industry standards
- The DTS, Dimming Bypass Module, is for emergency circuit control loads including sensors and wireless systems CSA certified to UL 924.
- Product configurations not including battery packs or controls meet federal procurement law requirements under the Trade Agreements Act (FAR 52.225-11). See Buy America(n) Solutions
- DLC® (DesignLights Consortium) Qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org

WARRANTY

- 5 year warranty

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= Service Program
Limit of 250 luminaires **QS10**

ORDERING GUIDE

Example: LCAT22-35MLG-ESDU

CATALOG #

LCAT22														
Model	CRI	Color Temp		Nominal Lumens ²		Ceiling Type		Shielding	Air Function	Driver ⁵				
LCAT22 2' x 2' LED Contemporary Architectural Troffer	Blank	>80	30	3000K	VW	1510-1681	G	Grid Lay-in ³	Blank	Curve	Blank	Static	E	Fixed Output
	9	>90	35	3500K	MW	1998-2253	SM	Surface Mount ⁴					A	Air Return Side Slots
			40	4000K	LW	2581-2903			R	Rectangular	ED1	0-10V 1% Dimming		
			50	5000K	ML	3141-3532	CM	Cable Suspended Mount ⁴			EDD	0-10V Dim-to-Off ⁷		
			2765T	2700K-6500K SpectraSync™ Tunable White ¹	HL	4056-4286					ESD	Step Dimming ⁷		
				VL	4253-4794					LUTH	Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology ^{7,8}			
										DALIP	Powered by DALI ^{7,8}			

Options	Control Options ¹³
ELL14 Emergency Battery Pack Installed, 1400 Lumens ^{8,9,10}	NX Lighting Controls
ELL14ST Emergency Battery Pack, 1400 Lumens, Self Test ^{8,9,10}	<u>Networked Wireless</u>
ELL14H2 Emergency Battery Pack, 2-Hour Run Time ^{8,9,10,11}	NXW NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor ^{14,15,16}
DTS Dimming Bypass Module ^{8,10,12}	NXWSM NX Networked Wireless Enabled Integral NXSMP2-SMI PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming ^{14,16}
C388 3-wire Flex	<u>Networked Wired</u>
C488 4-wire Flex	NXE NX Wired Dual RJ45 SmartPORTS, without Sensor ^{14,15,16}
C588 5-wire Flex	NXESM NX Wired Dual RJ45 SmartPORTS and Integral NXSMP2-SMI PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming ^{14,15,16}
GLR Fast Blow Fuse	<u>Independent Control</u>
EOR End of Row (SM and CM only. Provides end wiring access for continuous row mounting.)	NXCS NX Connect NXC-WIZ20 Wireless Indoor Occupancy and Photocell Sensor ^{8,17,18,19,21}
INT Intermediate (SM and CM only. Provides ends with wiring access for continuous row mounting.)	<u>Other Lighting Controls</u>
CP Chicago Plenum	<u>Networked Wireless</u>
	LVR Lutron Vive Integral Fixture Control DFCSJ-OEM-RF (RF only) ^{8,19,20,21}
	LVS Lutron Vive Integral Fixture Control DFCSJ-OEM-OCC with Daylight and Occupancy Sensing ^{8,19,20,21}
	AWNRR Lutron Athena Integral Fixture Control A-WN-DO1-RF-WH (RF only) ^{8,16,19,22}
	AWNS Lutron Athena Integral Fixture Control A-WN-DO1-OCC-WH with Daylight and Occupancy Sensing ^{8,16,19}
	<u>Independent Control</u>
	ODPG Occupancy and Daylight Sensors w/ Grouping, Philips SNS200 ^{8,19,21}

Accessories

- FK22** 2' x 2' Single Flange Kit (Shipped separately)
- CM48Y2SC3F-KIT** 48" Cable Mount Kit for 2' wide Cable Mount fixtures, 3-wire

Notes:

- 1 Available with ED driver and 80 CRI only. Not available with VL lumen package
- 2 Refer to performance tables for exact values and available lumen outputs for fixture size
- 3 For drywall, order G with flange kit accessory
- 4 Not available with Air Return (A) air function
- 5 Dimming curves may vary dependent upon lumen output and driver option chosen. Separate dimming circuits are recommended if multiple driver options are chosen.
- 6 1V minimum low-end trim recommended when paired with a 0-10V dimmer
- 7 Not available in all lumen packages, refer to Driver Availability table
- 8 Not available with 347V
- 9 To determine lumen output in emergency mode, multiply the battery pack wattage by the fixture lumens per watt (LPW)
- 10 For compatibility with Dual-Lite Litegear inverters, contact lighting representative
- 11 Not available for use in Canada
- 12 For emergency circuit control loads including sensors and wireless systems CSA certified to UL 924. Only available with 0-10V drivers. Universal voltage only. See wiring diagram.

All Controls

- 13 Minimum ambient temperature: 0°C (32°F)

NX Lighting Controls Options

- 14 NX combined with SpectraSync is not available in 347V
- 15 Not compatible with Surface Mount Kit
- 16 Available with ED, ED1 or EDD drivers only
- 17 NX Connect devices can be configured using the NX Connect Mobile App, available in the Apple App Store
- 18 NX Connect devices are not compatible with NX Networked Wireless or Wired Options

Other Lighting Controls Options

- 19 Not available with SpectraSync
- 20 Vive is a trademark of Lutron Electronics Co., Inc.
- 21 Only available with DALIP driver option
- 22 When installing in a hard ceiling application room side mounting is suggested, please consult factory

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PRODUCT EXCEPTIONS & DETAILS

Driver options listed below are available for the outputs as shown.

DRIVER AVAILABILITY TABLE						
	VW	MW	LW	ML	HL	VL
E	X	X	X	X	X	X
ED	X	X	X	X	X	X
ED1	X	X	X	X	X	X
EDD		X	X	X	X	
ESD			X	X	X	X
LUTH		X	X	X		
DALIP	X	X	X	X	X	X
347	X	X	X	X	X	X

DELIVERED LUMENS

(View 90 CRI data on supplemental document)

Product Availability 80 CRI					
Lumen Package	Shielding	Color	Lumens	Input Watts	LPW
VW		3000K	1561	12.3	127
		3500K	1663	12.3	135
		4000K	1681	12.3	137
		5000K	1681	12.3	137
	R	3000K	1510	12.3	123
		3500K	1609	12.2	132
		4000K	1627	12.2	133
		5000K	1627	12.2	133
MW		3000K	2099	16.4	128
		3500K	2229	16.4	136
		4000K	2253	16.4	138
		5000K	2253	16.4	138
	R	3000K	1998	16.4	122
		3500K	2121	16.4	129
		4000K	2144	16.4	131
		5000K	2144	16.4	131
LW		3000K	2705	20.6	131
		3500K	2871	20.6	139
		4000K	2903	20.6	141
		5000K	2903	20.6	141
	R	3000K	2581	20.6	125
		3500K	2740	20.6	133
		4000K	2770	20.6	134
		5000K	2770	20.6	134
ML		3000K	3291	25.8	127
		3500K	3494	25.8	135
		4000K	3532	25.8	137
		5000K	3532	25.8	137
	R	3000K	3141	25.9	121
		3500K	3334	25.9	129
		4000K	3371	25.9	130
		5000K	3371	25.9	130

Product Availability 80 CRI (continued)					
Lumen Package	Shielding	Color	Lumens	Input Watts	LPW
HL		3000K	4196	33.5	125
		3500K	4239	33.1	128
		4000K	4286	33.1	129
		5000K	4286	33.1	129
	R	3000K	4056	33.5	121
		3500K	4100	33.1	124
		4000K	4146	33.1	125
		5000K	4146	33.1	125
VL		3000K	4468	35.1	127
		3500K	4741	35.1	135
		4000K	4794	35.1	136
		5000K	4794	35.1	136
	R	3000K	4253	35.2	121
		3500K	4513	35.2	128
		4000K	4564	35.2	130
		5000K	4564	35.2	130

PROJECTED LUMEN MAINTENANCE

Calculation Method	Ambient Temp	25,000 hrs	50,000 hrs	60,000 hrs *
TM-21-11	25C/77F	0.94	0.89	0.87
TM-21-21	25C/77F	0.94	0.88	0.86

* Lumen maintenance values calculated per TM-21 using six times the LM-80 test time for the LED and in-situ thermal testing of the luminaire.

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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
	NXWSM	NX Networked Wireless Enabled Integral NXSMP2-SMI PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth® Programming	✓	✓	✓	✓	✓	✓	✓	✓		NXSMP2-SMI
NX Wired	NXE	NX Wired Dual RJ45 SmartPORTS , without Sensor	✓	✓	✓	-	-	✓	✓	✓ ¹		NXDSP
	NXESM	NX Wired Dual RJ45 SmartPORTS and Integral NXSMP2-SMI PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth® Programming	✓	✓	✓	✓	✓	✓	✓	✓		NXDSP NXSMP2-SMI
NX Independent	NXCS	NX Connect NXC-WIZ20 Wireless Indoor Occupancy and Photocell Sensor	-	✓	-	✓	✓	✓	✓	✓ ²		NXC-WIZ20

- 1 Requires NXBTC, order separately.
- 2 Requires use of NX Connect App available for download from Apple app store.

DEFAULT SETTINGS

NX Wireless & Wired	Occupancy Sensor	Enabled
	Occupancy Sensor Sensitivity	7 Minutes
	Occupancy Sensor Timeout	15 Minutes
	Occupied Dim Level	100%
	Unoccupied Dim Level	0% (OFF)
	Daylight Sensor	Disabled
	Bluetooth	Enabled
	2.4GHz Wireless Mesh	Off
	Passcode	
	Factory Passcode: HubbN3T!	Enabled

NX Independent - NX Connect	Settling/Dwell Time	5 sec
	Hold Time	10 min
	Group Hold Time	10 min
	Grace Time	-
	Strategy	Auto ON/OFF
	Occupancy Sensitivity	5 (highest)
	Occupancy Indicator	ON
	Partial Off/Standby	0%
	Background Level	50%
	Task Level	100%
	Daylight Harvesting	-
	Low Ambient Output	250%
	High Ambient Output	OFF

CONTROLS TECHNICAL SUPPORT

1-800-888-8006 (7:00 am–7:00 pm est)

APP INFORMATION

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

NX Connect App



The NX Connect mobile App is a free to use mobile application for programming a NX Connect System. The mobile App allows you to discover, configure and share your NX Connect system.



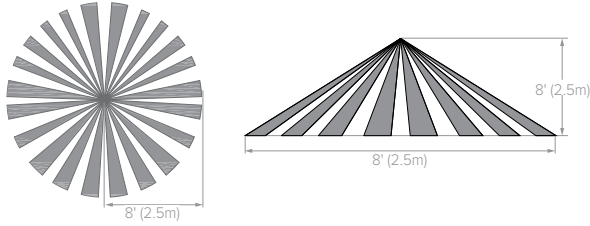
Apple iOS

LCAT22

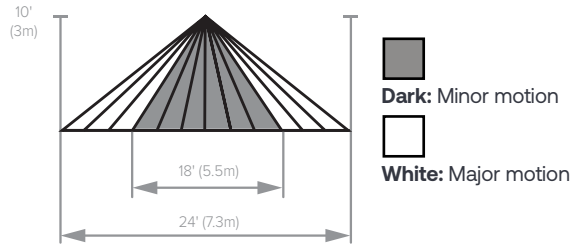
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COVERAGE PATTERNS

NXWSM/NXESM (NXSMP2-SMI SENSOR)



NXCS (NXC-WIZ20 SENSOR)



OTHER 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			
Other	ODPG	Occupancy sensing, daylight harvesting and task tuning in one device. ¹	-	✓	-	✓	✓	✓	✓	✓ ³		SNS200
	LVR	The Vive integral fixture control is a radio frequency (RF) device that controls either Lutron EcoSystem or DALI drivers based on RF input from Pico remote controls, Radio Powr Savr wireless sensors, or Vive hubs. ²	✓	✓	✓	-	-	-	✓	-		DFCSJ-OEM-RF
	LVS		✓	✓	✓	✓	✓	-	✓	-		DFCSJ-OEM-OCC
	AWN-R	The Athena wireless node is a radio frequency (RF) device that enables simple, digital control of individual light fixtures in an Athena control system. ³	✓	✓	-	-	-	✓	✓	-		A-WN-D01-RF-WH
	AWN-S		✓	✓	✓	✓	✓	✓	✓	-		A-WN-D01-OCC-WH

1 Philips MasterConnect App required for field configuration.
 2 Lutron Vive Hub required to enable Networking, Grouping and Scheduling.
 3 Lutron Athena Hub required to enable Networking, Grouping and Scheduling.

Philips EasySense Controls ODPG Sensor:



- Occupancy sensing, daylight harvesting, task tuning and grouping in one device
- Standalone control or grouping to wireless switches¹
- Uses Philips field apps for on site commissioning^{2,3}
- Ability to create scenes for various room configurations
- Cost-effective solution for energy-savings and code-compliance strategies
- DLC® Qualified: Listed on the GPL for Networked Lighting Controls. Please refer to the DLC website for specific product qualifications at www.designlights.org

1 Wireless switches only compatible with ODPG Philips EasySense
 2 Requires android device or IR dongle.

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CONTROLS (CONTINUED)

SpectraSync™ Color Tuning Technology:

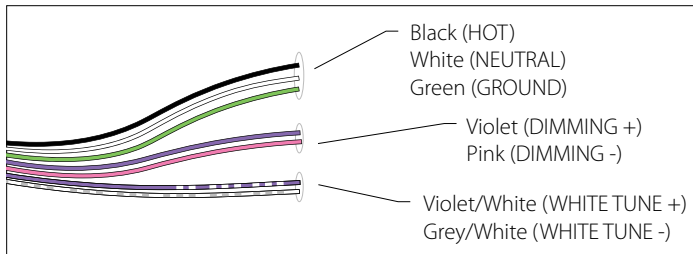
Control your space based on the needs of the application, specific activities throughout the day and preferences of the occupants with distinct SpectraSync™ Color Tuning Technologies.



SPECTRASYNCH COLOR TUNING TECHNOLOGY		
Mode	Kelvin Range	Description
Tunable White	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

SpectraSync Tunable White

Requires two 0–10V controllers, one for intensity and one for CCT. Minimum 5% dimming.

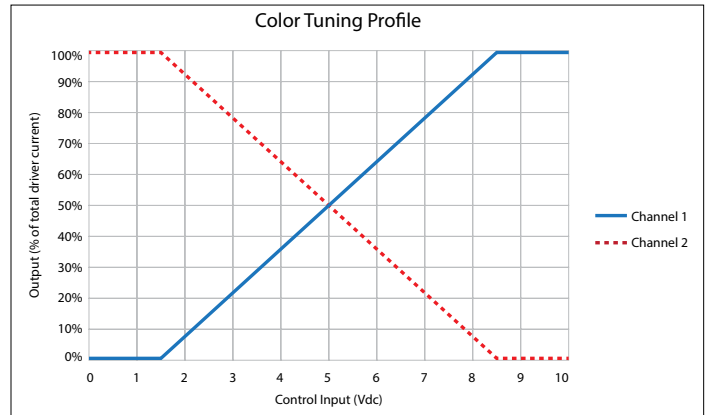


SpectraSync Tunable White luminaires are provided with two 0–10V circuits. The violet and pink circuit is for wiring to any qualified 0–10V controller for dimming. The violet/white and grey/white circuit is for wiring to any qualified 0–10V controller for Tunable White CCT control.

Controller Manufacturer Data

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

- NX Lighting Controls Room Controller (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 NX SpectraSync technical sheet.

DELIVERED LUMENS, SPECTRASYNCH™

Shielding	Lumen Output	Watts	2700		3000		3500		4000		5000		6500	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
Curve	VW	14	1500	110	1567	115	1595	117	1616	119	1669	123	1644	121
	MW	18	1961	109	2049	114	2086	116	2113	117	2182	121	2149	119
	LW	23	2582	114	2698	119	2747	122	2782	123	2873	127	2830	125
	ML	29	3177	111	3320	116	3380	118	3423	119	3536	123	3483	121
	HL	32	3444	108	3599	113	3664	115	3711	117	3833	121	3775	119
Rectangle	VW	13	1479	110	1545	115	1573	117	1593	119	1645	123	1621	121
	MW	18	1930	109	2017	114	2053	116	2080	117	2148	121	2116	120
	LW	23	2547	113	2661	118	2709	120	2743	121	2834	125	2791	124
	ML	29	3127	109	3267	114	3326	116	3368	117	3479	121	3427	119
	HL	32	3391	107	3543	112	3607	114	3653	116	3773	119	3717	118

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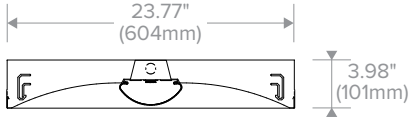
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TYPE: _____ PROJECT: _____

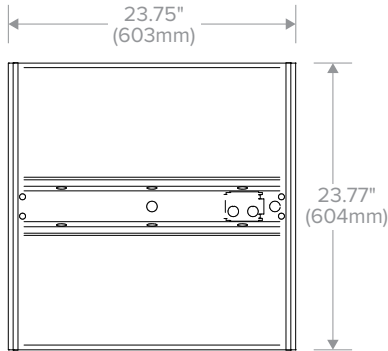
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DIMENSIONS

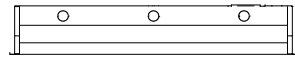
GRID



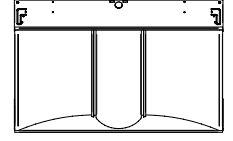
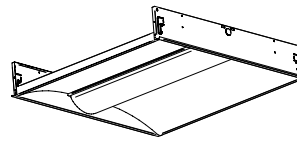
Grid, recessed section



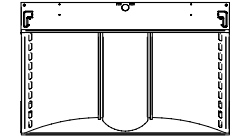
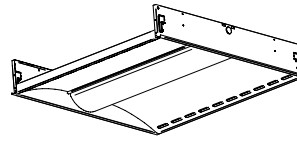
Grid, back of housing



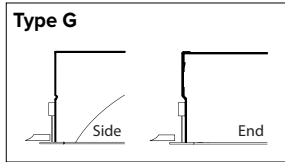
GRID, STATIC



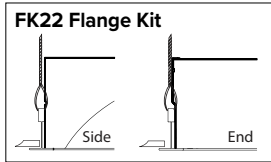
GRID, AIR RETURN



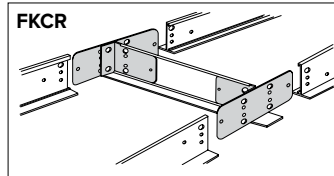
CEILING COMPATIBILITY



For lay-in installation in exposed grid ceilings. Maximum tee widths of 1" and maximum tee heights of 2" allowed.



For hard ceiling applications, order FK22 flange kit. Flange kit wires directly into concealed ceiling opening for a clean, finished appearance.

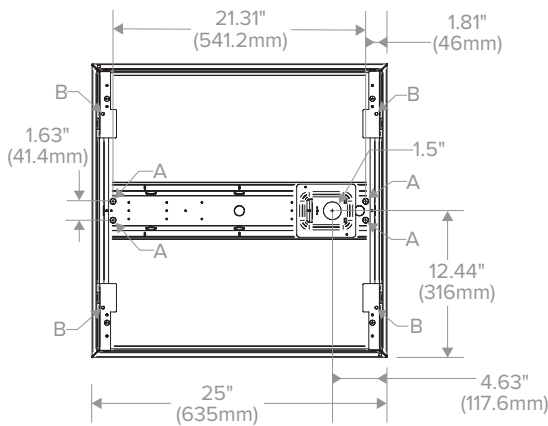


For flanged fixtures in row configurations, the FKCR adapter bracket kit is required in addition to the FK22 kit. Order one less FKCR than the total number of fixtures in row. (Example: Row of two, order (2) FK22 & (1) FKCR)

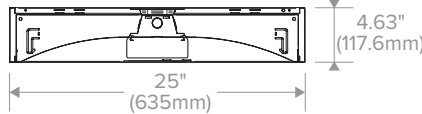
Row cut out dimensions using FK22s & FKCR adapters: Width 24 3/8", Length [24" x (# in row)] + 3/8". Example: (24" x 2) + 3/8" = 48 3/8"

Flange kit cut out dimension for single unit only: 24 3/8" x 24 3/8"

SURFACE MOUNT OR CABLE MOUNT, STATIC ONLY



Surface Mount (SM) and Cable Mount (CM), back of housing



Surface section (SM)

Surface Mount:

Order SM ceiling type. Mounting collar required for surface mounting. (4) Mounting knock-outs, 3/8", provided in center channel as indicated at left, marked A.

Cable Mount:

Order CM ceiling type. Use CM48Y2SC3F-KIT 48" Cable Mount Kit for 2' wide CM trim fixtures. Mounting holes are provided in diagonal straps shown at left, marked B.

* For Cable Mount a 2' x 3" access plate with (4) 3/8" KOs provided in place of Mounting Collar shown.

NOTE: All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

PHOTOMETRY

LCAT22-35MLG-EU

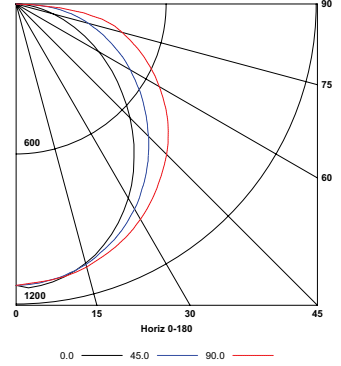
LUMINAIRE DATA

Test No.	16543
Description	2' x 2' LED architectural troffer with frosted linear prisms lens
Delivered Lumens	3420
Watts	28.70
Efficacy	119
Mounting	Recessed
Spacing Criterion	0° = 1.19 90° = 1.31

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0-30	871	25.5
0-40	1424	41.7
0-60	2539	74.2
0-90	3420	100
0-180	3420	100

POLAR GRAPH



ADDITIONAL INFORMATION

DTS WIRING DIAGRAM (0-10V DIMMING DRIVER SHOWN)

