Columbia LIGHTING

LCAT24-S
2' × 4' SHALLOW LED CONTEMPORARY ARCHITECTURAL TROFFER

FEATURES

- Light weight, low profile construction for crowded ceilings and shallow plenums
- High lumen outputs for expanded mounting height options
- High efficiency, low glare center lens delivers comfortable illumination
- Discreetly integrated control options drive energy efficiency and code compliance
- Appropriate for offices, schools, medical, and public spaces
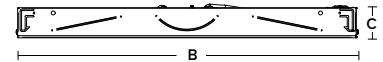- LED modules accessible from below, electrical accessible from the plenum

Certifications: cCSAus · IC · DLC LISTED · DLC LISTED PREMIUM · UL Sanitation · ISO 5 · CP Chicago Plenum · WET LOCATION · Built to UL 924 Standards · BAA · TAA

SERVICE PROGRAMS
QS10

Typical Dimensions and Weights

Sizes	(A) Length Inches (mm)	(B) Width Inches (mm)	(C) Height Inches (mm)	Weight lbs (kg)
2x4	47.72 (1212)	23.77 (604)	2.25 (57)	14 (6.4)

CONTROLS TECHNOLOGY

SpectraSync™ Color Tuning Technology · NX WIRELESS · NX WIRED · NX CONNECT · OCCUPANCY SENSING · DAYLIGHT HARVESTING

SPECIFICATIONS

CONSTRUCTION
- Luminaire housing, reflectors and end caps are die-formed code-gauge cold-rolled steel
- 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
- High transmission extruded acrylic enclosed lens features linear prisms with custom frost for high efficacy without pixelation

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 ⅜" 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
- 66,000 hour LEDs at L80 for reduced maintenance
- 80 CRI standard or optional 90 CRI for color sensitive applications

CONTROLS
- 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 applications using wireless enabled and battery operated devices.
- Optional SpectraSync™ Color Tuning Technology offers a Tunable White solution and integrates seamlessly into a variety of control systems

CERTIFICATIONS
- 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
- All luminaires are built to UL1598 standards, and bear appropriate cCSAus labels
- 0° to 25°C when integrated batteries are selected
- CSA certified to UL 924 standards with battery pack or DTS (Dimming Bypass Module) options
- Emergency battery pack options are California Energy Commission (CEC) Title 20 Compliant

CERTIFICATIONS (CONTINUED)
- Damp Location label standard, Wet Location option available
- UL Sanitation certified to NSF standards
- Adheres to LM79, LM80, and TM21 industry standards
- Optional ISO5, tested in accordance with ISO 14644-1; suitable for ISO Class 5-9 positive and negative pressure clean rooms
- DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at www.designlights.org
- The DTS, Dimming Bypass Module, is for emergency circuit control loads including sensors and wireless systems CSA certified to UL 924.
- For -BAA Option: This product meets federal procurement law requirements under the Buy American Act (FAR 52.225-9). See Buy America(n) Solutions
- 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

WARRANTY
- 5 year warranty

Current

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ORDERING GUIDE

Gray Shading = **Service Program**
Limit of 250 Luminaires
(Limit of 50 for orders with NX or CP options added)

QS10

Example: LCAT24-S-40L070G-EDU

Model	Plenum	CRI	Color Temp	Nominal Lumens [3]	Ceiling Type	Shielding	Driver
LCAT24 2' x 4' LED Contemporary Architectural Troffer	**S** Shallow	**Blank** >80 **9** >90	**30** 3000K **35** 3500K **40** 4000K **50** 5000K **2765T** 2700K–6500K SpectraSync™ Tunable White [1,2]	**L032** 3200 Lumens **L036** 3600 Lumens **L042** 4200 Lumens **L048** 4800 Lumens **L058** 5800 Lumens **L070** 7000 Lumens **L085** 8500 Lumens **L097** 9700 Lumens **L120** 12000 Lumens **L130** 13000 Lumens **L140** 14000 Lumens **L160** 16000 Lumens	**G** Grid Lay-in [4] **SM** Surface Mount **CM** Cable Suspended Mount	**Blank** Curve **CRG** Curve Reduced Glare	**ED** 0–10V Dimming **ED1** 0–10V 1% Dimming **EDD** 0-10V Dim to Off **ESD** Step Dimming [5] **LUTH** Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology [5] **DALIP** Powered by DALI [5]

Voltage	Options	Control Options [13]
U 120–277V **347** 347V	**ELL14** 10W Emergency Battery Pack (CEC Title 20 Compliant) Installed [5,6,7,8] **ELL14ST** 10W Emergency Battery Pack (CEC Title 20 Compliant), Installed Self Test [5,6,7,8] **ELL14H2** 9W Emergency Battery Pack (CEC Title 20 Compliant), Installed 2-Hour Run Time [5,6,7,8,9] **DTS** Dimming Bypass Module [5,7,8,10] **C388** 3-wire Flex **C488** 4-wire Flex **C588** 5-wire Flex **GLR** Fast Blow Fuse **CP** Chicago Plenum [11] **WL** Wet Location [11,12] **BAA** Buy American Act (FAR 52.225-9) Compliant **IK10** IK10 rated [12] **ISO5** ISO5 Certified [12] **LVC** Low Voltage Controller [16]	**NX Lighting Controls** *Networked Wireless* **NXW** NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor [14,15,16] **NXWSM** NX Networked Wireless Enabled Integral NXSMP2-SMI PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [14,16] *Networked Wired* **NXE** NX Wired Dual RJ45 SmartPORTS , without Sensor [14,15,16] **NXESM** NX Wired Dual RJ45 SmartPORTS and Integral NXSMP2-SMI PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [14,15,16] *Independent Control* **NXCS** NX Connect NXC-WIZ20 Wireless Indoor Occupancy and Photocell Sensor [5,17,18,19,20] **Other Lighting Controls** *Networked Wireless* **LVR** Lutron Vive Integral Fixture Control DFCSJ-OEM-RF (RF only) [5,19,20,21] **LVS** Lutron Vive Integral Fixture Control DFCSJ-OEM-OCC with Daylight and Occupancy Sensing [5,19,20,21] **AWNR** Lutron Athena Integral Fixture Control A-WN-D01-RF-WH (RF only) [5,19,20,22,23] **AWNS** Lutron Athena Integral Fixture Control A-WN-D01-OCC-WH with Daylight and Occupancy Sensing [5,19,20,22] *Independent Control* **ODPG** Occupancy and Daylight Sensors w/ Grouping, Philips SNS200 [5,19,20]

Accessories

☐ **FK24**	2' × 4' Single Flange Kit (Shipped separately)
☐ **CM48YSC5F-KIT**	48" Cable Mount Kit for Cable Mount fixtures, 5-wire

Notes:
1 Available with ED and 80 CRI only
2 Not available with L097 and higher lumen packages
3 Refer to performance tables for exact values and available lumen outputs for fixture size
4 For drywall, order G with flange kit accessory
5 Not available in 347V
6 To determine lumen output in emergency mode, multiply the battery pack wattage by the fixture lumens per watt (LPW)
7 Not available with L130 and higher lumen packages
8 For compatibility with Dual-Lite Litegear inverters, contact lighting representative
9 Not available for use in Canada
10 For emergency circuit control loads including sensors and wireless systems CSA certified to UL 924. Only available with 0-10V drivers. See wiring diagram.
11 Not available with CM or SM ceiling types
12 Not available with Emergency Battery Pack or Control Options

All Controls
13 Minimum ambient temperature: 0℃ (32°F)
NX Lighting Controls
14 NX combined with SpectraSync is not available in 347V
15 Not compatible with SM ceiling type or 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 Only available with DALIP driver option
21 Vive is a trademark of Lutron Electronics Co., Inc.
22 Not available with L140 and higher lumen packages
23 When installing in a hard ceiling application room side mounting is suggested, please consult factory

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DELIVERED LUMENS

Lumen Package	Color	Lumens	Input Watts	LPW
L032	3000K	3185	21.1	151
	3500K	3240		153
	4000K	3295		156
	5000K	3295		156
L036	3000K	3594	24.1	149
	3500K	3656		152
	4000K	3718		154
	5000K	3718		154
L042	3000K	4177	28.1	149
	3500K	4249		151
	4000K	4321		154
	5000K	4321		154
L048	3000K	4748	32.2	147
	3500K	4830		150
	4000K	4912		152
	5000K	4912		152
L058	3000K	5779	38.5	150
	3500K	5879		153
	4000K	5979		155
	5000K	5979		155
L070	3000K	6957	47.6	146
	3500K	7077		149
	4000K	7197		151
	5000K	7197		151

Lumen Package	Color	Lumens	Input Watts	LPW
L085	3000K	8436	56.4	150
	3500K	8582		152
	4000K	8727		155
	5000K	8727		155
L097	3000K	9588	65.2	147
	3500K	9754		150
	4000K	9919		152
	5000K	9919		152
L120	3000K	11861	77.1	154
	3500K	12066		157
	4000K	12270		159
	5000K	12270		159
L130	3000K	12852	84.7	152
	3500K	13074		154
	4000K	13295		157
	5000K	13295		157
L140	3000K	13822	92.6	149
	3500K	14060		152
	4000K	14298		154
	5000K	14298		154
L160	3000K	15824	108.1	147
	3500K	16097		149
	4000K	16370		152
	5000K	16370		152

PROJECTED LUMEN MAINTENANCE

Calculation Method	Ambient Temp	25,000 hrs	50,000 hrs	60,000 hrs *
TM-21-11	25C/77F	0.93	0.87	0.85
TM-21-22	25C/77F	0.93	0.86	0.83

* 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

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.
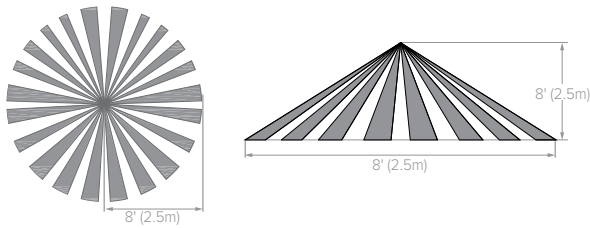
Apple iOS

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COVERAGE PATTERNS

NXWSM/NXESM (NXSMP2-SMI SENSOR)

8' (2.5m)

8' (2.5m)

8' (2.5m)

NXCS (NXC-WIZ20 SENSOR)

10' (3m)

18' (5.5m)

24' (7.3m)

Dark: Minor motion

White: Major motion
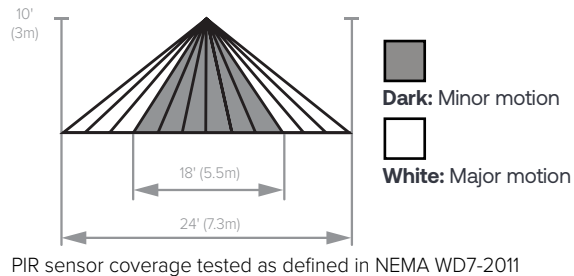
PIR sensor coverage tested as defined in NEMA WD7-2011

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
	AWNR	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
	AWNS		✓	✓	✓	✓	✓	✓	✓	–		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 option) & Accessories:

- Occupancy sensing, daylight harvesting, task tuning and grouping in one device
- Standalone control or grouping to wireless switches[1]
- Uses Philips field apps for on site commissioning[2]
- Ability to create scenes for various room configurations
- Cost-effective solution for energy-savings and code-compliancy strategies
- DLC® Qualified: Listed on the QPL 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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All values are design or typical values when measured under laboratory conditions.

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Current

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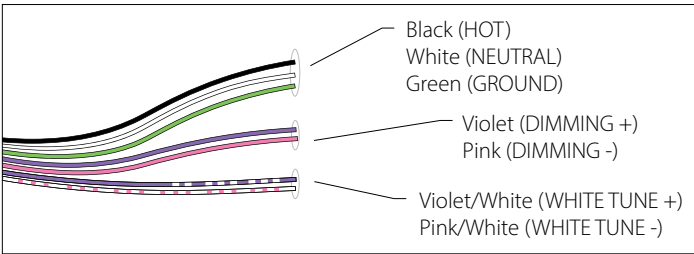
SPECTRASYNC™ COLOR TUNING TECHNOLOGY:

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.

SpectraSync
Color Tuning Technology

SPECTRASYNC 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.

Black (HOT)
White (NEUTRAL)
Green (GROUND)
Violet (DIMMING +)
Pink (DIMMING -)
Violet/White (WHITE TUNE +)
Pink/White (WHITE TUNE -)

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: DVTV, DVSTV, and NFTV dimmers
- Wattstopper: ADF120277 and CD4BL (Titan) dimmers

Color Tuning Profile
— Channel 1
---- Channel 2
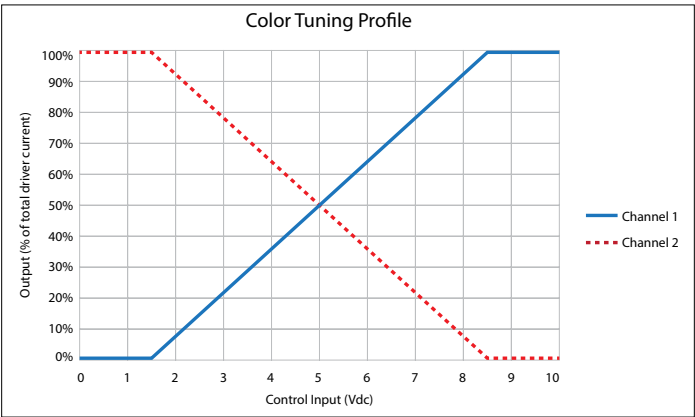
To enable scheduling and for use with NX wall control preset stations please refer to NX SpectraSync technical sheet.

Current ◉

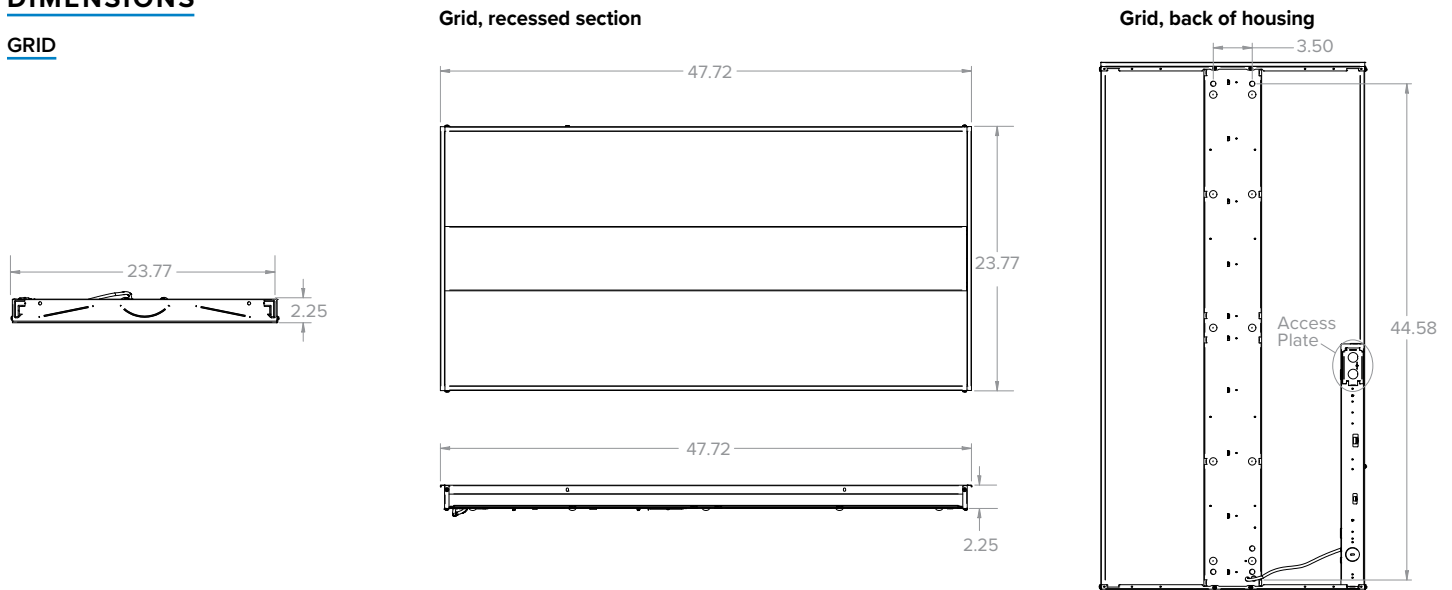**currentlighting.com/columbialighting**

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DIMENSIONS

GRID

23.77

2.25

Grid, recessed section

47.72

23.77

47.72

2.25

Grid, back of housing

3.50

Access Plate

44.58

CEILING COMPATIBILITY

Type G

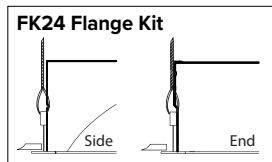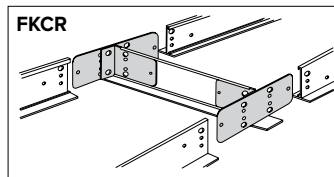Side End

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

FK24 Flange Kit

Side End

For hard ceiling applications, order FK24 flange kit. Flange kit wires directly into concealed ceiling opening for a clean, finished appearance.

FKCR

For flanged fixtures in row configurations, the FKCR adapter bracket kit is required in addition to the FK24 kit. Order one less FKCR than the total number of fixtures in row. (Example: Row of two, order (2) FK24 & (1) FKCR)

Row cut out dimensions using FK24s & FKCR adapters:
Width 24⅜", Length [48" × (# in row)] + ⅜".
Example: (48" × 2) + ⅜" = 96⅜"

**Flange kit cut out dimension for
single unit only: 24⅜" × 48⅜"**

SURFACE MOUNT OR CABLE MOUNT

3.5

A

13.0

B

1.6

43.9
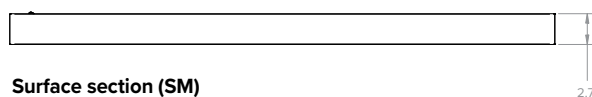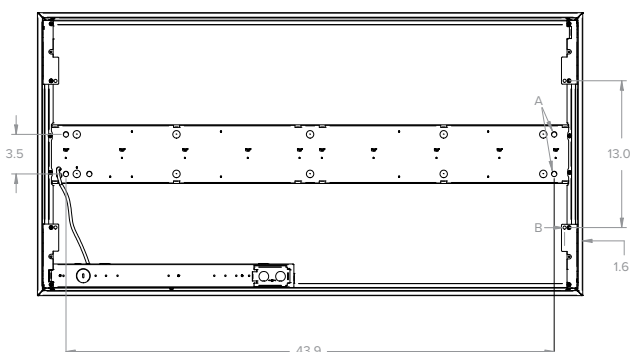
Surface section (SM)

2.7

Surface Mount:
Order SM ceiling type. Mounting collar required for surface mounting. (4) Mounting knock-outs, ¼", 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, marked B.

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

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PHOTOMETRY

LCAT24-S-40L085G

LUMINAIRE DATA

Test No.	P22.00373
Description	2' x 4' LED architectural troffer with frosted linear prismed lens
Delivered Lumens	8717
Watts	64
Efficacy	136.2
Mounting	Recessed/Ceiling
Spacing Criterion	0° = 1.22 90° = 1.30

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0–30	2156	24.7
0–40	3528	40.5
0–60	6316	72.5
0–90	8711	99.9
0–180	8717	100

POLAR GRAPH

LEGEND
0–deg
45–deg
90–deg
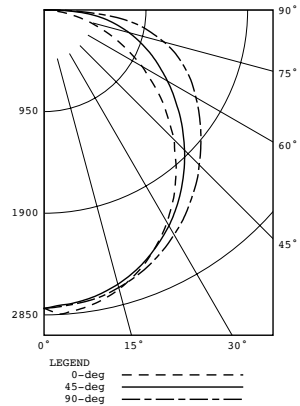
DTS WIRING DIAGRAM (0–10V DIMMING DRIVER SHOWN)

WHITE/BLUE	Emergency Neutral
BLUE	Emergency Line
BLACK	Utility Line (Unswitched Hot)
WHITE	Utility Neutral
RED	Switched Hot
VIOLET	Dimming
PINK	Dimming
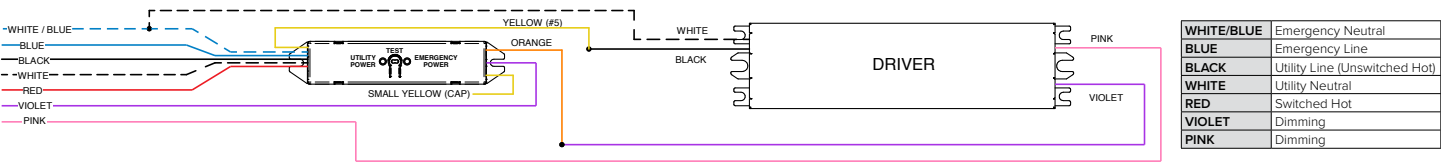
NOTE: All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.