

LCAT22-S

2' x 2' SHALLOW LED CONTEMPORARY ARCHITECTURAL TROFFER

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

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



CONTROLS TECHNOLOGY



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 NEC compliant T-bar clips 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

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

CONTROLS

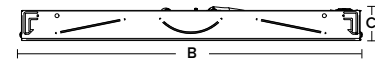
- NX Lighting Controls provides options for standalone and networked integrated sensor with wired or wireless connectivity for NX system deployments
- NX Connect is a standalone wireless deployment for room based applications using wireless enabled and battery operated devices.
- Optional SpectraSync™ 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 or for air return fixtures
- 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



Typical Dimensions and Weights				
Sizes	(A) Length Inches (mm)	(B) Width Inches (mm)	(C) Height Inches (mm)	Weight lbs (kg)
2x2	23.73 (603)	23.77 (604)	2.3 (58)	9 (4.1)



CERTIFICATIONS (CONTINUED)

- Emergency battery back options are California Energy Commission (CEC) Title 20 Compliant
- Damp Location label standard, Wet Location option available
- UL Sanitation certified to NSF standards
- Adheres to LM79, LM80, and TM21 industry standards
- Tested in accordance with ISO 14644-1; suitable for ISO Class 5-9 positive and negative pressure clean rooms
- DLC® (DesignLights Consortium) Qualified, 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

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ORDERING GUIDE

Example: LCAT22-S-40L036G-ED1U

LCAT22	S							
Model	Plenum	CRI	Color Temp	Nominal Lumens ²	Ceiling Type	Shielding	Driver	
LCAT22 2' x 2' 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	L021 2100 Lumens L026 2600 Lumens L031 3100 Lumens L036 3600 Lumens L044 4400 Lumens L054 5400 Lumens L062 6200 Lumens	G Grid Lay-in ³ 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 ⁴ LUTH Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology ⁴ DALIP Powered by DALI ⁴	

Voltage	Options	Control Options ¹¹
U 120–277V 347 347V	ELL14 Emergency Battery Pack (CEC Title 20 Compliant) Installed ^{4, 5, 6} ELL14ST Emergency Battery Pack (CEC Title 20 Compliant), 1400 ^{4, 5, 6} ELL14H2 Emergency Battery Pack (CEC Title 20 Compliant), 2-Hour ^{4, 5, 6, 7} DTS Dimming Bypass Module ^{4, 6, 8} C388 3-wire Flex C488 4-wire Flex C588 5-wire Flex GLR Fast Blow Fuse CP Chicago Plenum ⁹ WL Wet Location ^{9, 10} BAA Qualifies as a "domestic construction material" per FAR \$52.225-9 Buy American-Construction Materials and a "(COTS) item" per FAR \$2.10	<u>NX Lighting Controls</u> <u>Networked Wireless</u> NXW NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor ^{12, 13, 14} NXWSM NX Networked Wireless Enabled Integral NXSMP2-SMI PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming ^{12, 14} <u>Networked Wired</u> NXE NX Wired Dual RJ45 SmartPORTS, without Sensor ^{12, 13, 14} NXESM NX Wired Dual RJ45 SmartPORTS and Integral NXSMP2-SMI PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming ^{12, 13, 14} <u>Independent Control</u> NXCS NX Connect NXC-WIZ20 Wireless Indoor Occupancy and Photocell Sensor ^{4, 15, 16, 17, 18} <u>Other</u> <u>Networked Wireless</u> LVR Lutron Vive Integral Fixture Control DFCSJ-OEM-RF (RF only) ^{4, 17, 18, 19} LVS Lutron Vive Integral Fixture Control DFCSJ-OEM-OCC (RF with daylight and occupancy sensing) ^{4, 17, 18, 19} AWNRL Lutron Athena Integral Fixture Control A-WN-D01-RF-WH (RF only) ^{4, 14, 17} <u>Independent Control</u> ODPG Occupancy and Daylight Sensors w/ Grouping, Philips SNS200 ^{4, 17, 18}

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:

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

All Controls

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

NX Lighting Controls Options

- NX combined with SpectraSync is not available in 347V
 - Not compatible with SM ceiling type or Surface Mount Kit
 - Available with ED, ED1 or EDD drivers only
 - NX Connect devices can be configured using the NX Connect Mobile App, available in the Apple App Store
 - NX Connect devices are not compatible with NX Networked Wireless or Wired Options
- Other Lighting Controls Options**
- Not available with SpectraSync
 - Only available with DALIP driver option
 - Vive is a trademark of Lutron Electronics Co., Inc.

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DELIVERED LUMENS

Lumen Package	Color	Lumens	Input Watts	LPW
L021	3000K	2115	16.2	131
	3500K	2168		134
	4000K	2204		136
	5000K	2204		136
L026	3000K	2610	19	137
	3500K	2675		141
	4000K	2720		136
	5000K	2720		136
L031	3000K	3102	22.7	137
	3500K	3178		140
	4000K	3232		142
	5000K	3232		142
L036	3000K	3734	28	133
	3500K	3826		137
	4000K	3891		139
	5000K	3891		139

Lumen Package	Color	Lumens	Input Watts	LPW
L044	3000K	4287	33.8	127
	3500K	4394		130
	4000K	4585		136
	5000K	4585		136
L054	3000K	5219	40	131
	3500K	5219		131
	4000K	5439		136
	5000K	5439		136
L062	3000K	6261	46.4	135
	3500K	6417		138
	4000K	6255		141
	5000K	6255		141

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.

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

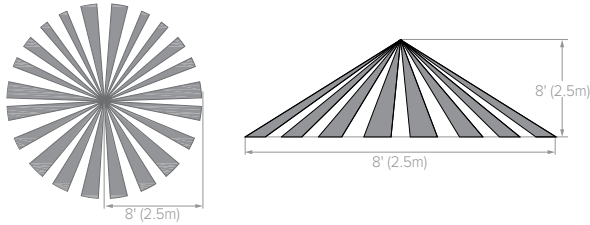
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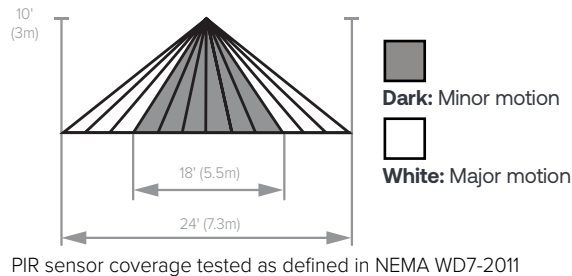
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COVERAGE PATTERNS

NXWSM/NXESM (NXSMP2-SMI SENSOR)



NXCS (NXC-WIZ20 SENSOR)



PIR sensor coverage tested as defined in NEMA WD7-2011

OTHER LIGHTING CONTROLS

Control Option Ordering Logic & Description											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	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-OCC
	AWNDR	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

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 switches¹
- Uses Philips field apps for on site commissioning²
- Ability to create scenes for various room configurations
- Cost-effective solution for energy-savings and code-compliance 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.

Wireless Switch Accessories¹

☐ PESR-WH EasySense compatible wireless single rocker switch, white

☐ PEDR-WH EasySense compatible wireless dual rocker switch, white



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SPECTRASync™ COLOR TUNING TECHNOLOGY:

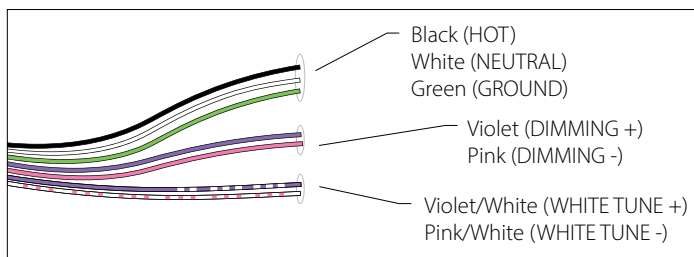
Control your space based on the needs of the application, specific activities throughout the day and preferences of the occupants with distinct SpectraSync™ Color Tuning Technologies.



SPECTRASync COLOR TUNING TECHNOLOGY		
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.

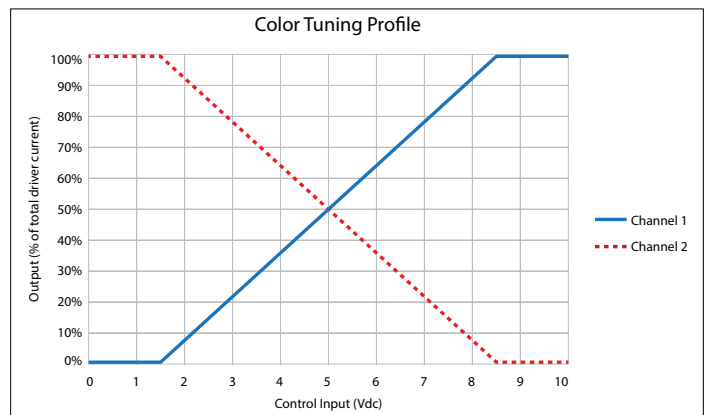


SpectraSync Tunable White luminaires are provided with two 0–10V circuits. The violet and pink circuit is for wiring to any qualified 0–10V controller for dimming. The violet/white and grey/white circuit is for wiring to any qualified 0–10V controller for Tunable White CCT control.

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.

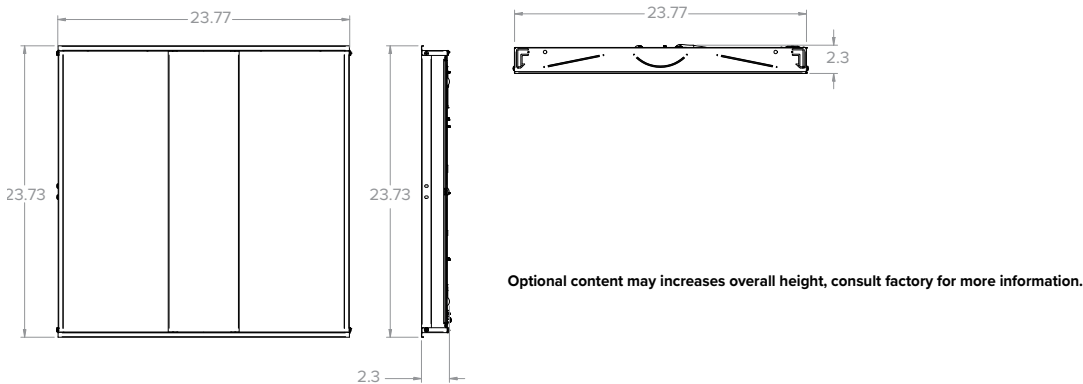
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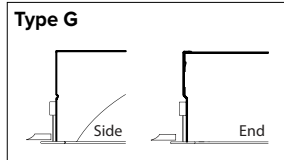
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DIMENSIONS

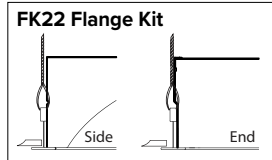
GRID



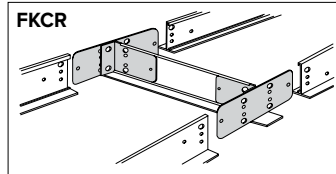
CEILING COMPATIBILITY



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.

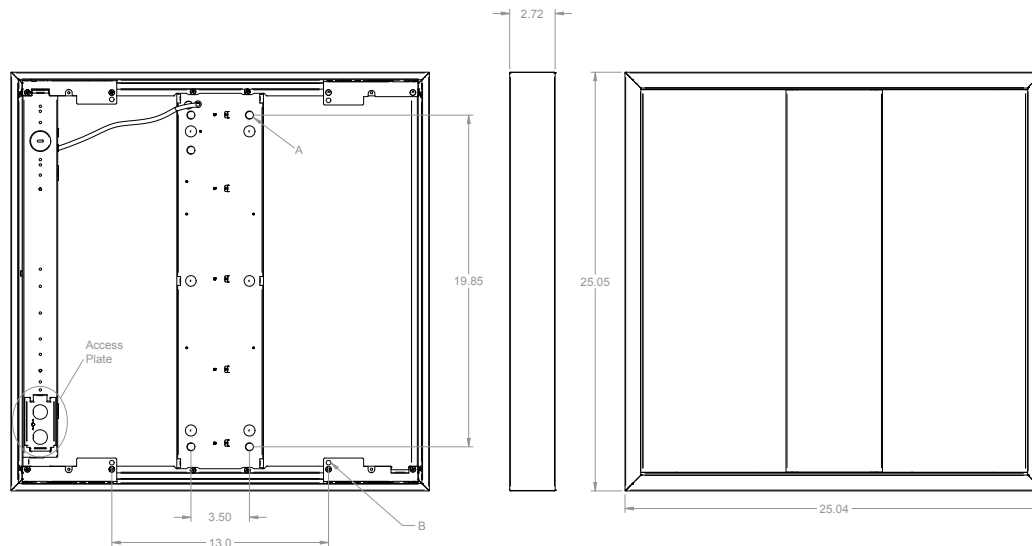


For flanged fixtures in row configurations, the FKCR adapter bracket kit is required in addition to the FK22 kit. Order one less FKCR than the total number of fixtures in row. (Example: Row of two, order (2) FK22 & (1) FKCR)

Row cut out dimensions using FK22s & FKCR adapters:
Width $24\frac{3}{8}"$, Length $[24" \times (\# \text{ in row})] + \frac{3}{8}"$.
Example: $(24" \times 2) + \frac{3}{8}" = 48\frac{3}{8}"$

Flange kit cut out dimension for single unit only: $24\frac{3}{8}" \times 24\frac{3}{8}"$

SURFACE MOUNT OR CABLE MOUNT, STATIC ONLY



Surface section (SM)

Surface Mount:

Order SM ceiling type. Mounting collar required for surface mounting. (4) Mounting knock-outs, $\frac{1}{4}"$, 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 shown at left, marked B.

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

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PHOTOMETRY

LCAT22-S-50L044G

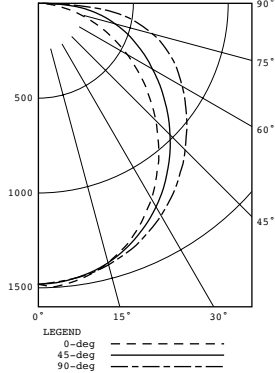
LUMINAIRE DATA

Test No.	P22.00347
Description	Shallow 2x2 Architectural Troffer
Delivered Lumens	4629
Watts	33.8
Efficacy	135.7
Mounting	Recessed
Spacing Criterion	0° = 1.20 90° = 1.30

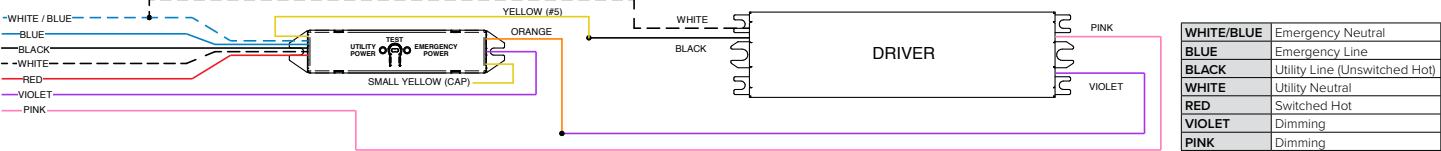
ZONAL LUMEN SUMMARY

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



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



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