Purchasing Division
Finance Department

Room 120
411 West First Street
Duluth, Minnesota 55802

218-730-5340

purchasing@duluthmn.gov

Addendum 1
Solicitation 21-99519
City Center West Emergency Ops Center (EOC) HVAC

This addendum serves to notify all bidders of the following changes to the solicitation documents:

1. The following listed individuals were in attendance at the pre-bid meeting: Alex Jackson (City of Duluth), Luke Zupan (TKDA), Jacob Kavajecz (The Jamar Company), and Cody Shykes (A.G. O'Brien Plumbing & Heating).

2. Do the radiation panels have to be 4-foot long panels? ***No, as long as the total heat output remains the same. This could be most helpful in the Emergency Operations Center, where the heating panel was called out in linear feet. As long as the linear foot meets specification, the length of each section does not matter to the City.***

3. Can we have an electrician come look at the space for the lighting upgrade? ***Yes. Please coordinate with Alex Jackson at ajackson@duluthmn.gov to make arrangements for your electrician to stop by.***

4. How is the server room cooled? ***A mini split cooling system is dedicated to the server room. This area and it's HVAC system is outside the scope of the project and should not impact bids.***

5. Are there places where we have to go through walls above the drop ceiling? ***Yes, there will be at least one location where you will have to go through a wall. Those penetrations must meet the specified core and sleeve requirements. The vast majority of piping will not require any wall penetration as the open rooms share a common open plenum space.***

6. Will there be police department staff in the space when we are working? ***At this point, there will likely be staff onsite and officers coming and going. However, if it is helpful to timelines and/or costs, we can explore the option of possibly closing the building for construction.***

7. Is there a lighting schedule that will be supplied for the project? ***Lighting fixtures to be installed have not yet been identified, but will be selected from the attached spec sheets.***

8. Specifications for the Ops Center HVAC project call for a JCI FX mid-level JACE controller. For this project is it possible to add other manufacturers of open protocol controllers to the list? ***Other manufactures will be acceptable for this level of the control system as long as open source protocol is maintained and Tridium/Niagra compatibility is maintained per the specifications. All lower level controllers (field controllers) are to be maintained as JCI devices.***

Please acknowledge receipt of this Addendum by checking the acknowledgment box within the www.bidexpress.com solicitation.

Posted: **June 22, 2021**

ZR Series
ZR LED Troffer

Rev. Date: V705/26/2021

Product Description

The ZR LED troffer provides energy productivity and code compliance – all with installation that's so intuitive and simple. The ZR Series delivers from 2,000 to 10,000 lumens and 80 CRI quality light and is perfect for both new construction and renovation. Multiple control options including 0-10V, SmartCast® Technology, Lutron Vive, and Lutron EcoSystem products incorporate integrated ambient and occupancy sensing and wireless communication resulting in lower electricity bills, reduced maintenance and an improved total cost of ownership over traditional lighting control systems. The ZR LED troffer embodies a breakthrough in balancing energy savings, visual comfort and project budgets.

Performance Summary

Efficacy: Up to 144 LPW

Initial Delivered Lumens: 2,030 to 10,125 (see table below)

Input Power: 15W-75W

CRI: 85*

CCT: 3000K, 3500K, 4000K, 5000K

Input Voltage: 120-277 VAC, 347VAC

Limited Warranty†: 5 years on luminaire; 5 years on SmartCast® and Lutron controls; up to 5 years for SmartCast® accessories; 1 year for luminaire accessories

Limited Warranty Emergency Back Up (EB) Battery: 4 years on Battery Back Up. Test regularly in accordance with local code

Controls: 0-10V, SmartCast Wireless, Lutron Vive, Lutron EcoSystem

Mounting: Recessed (Designed for use in most ceiling grids including standard 1 ½", 9/16", 15/16", hard ceiling, and surface mounting)
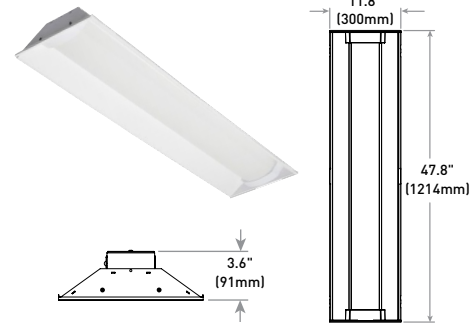
* CRI can vary +/-5% depending on CCT.
† See http://creelighting.com/warranty for warranty terms. For SmartCast accessories, consult SmartCast spec sheets for details on warranty terms.
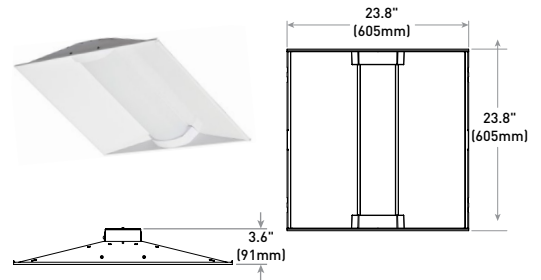
Accessories

Field-Installed

Drywall Grid Adapter
DGA14-WHT
DGA22-WHT
DGA24-WHT

SmartCast® Technology Configuration Tool
CCT-CWC-1
- One required per project when SC1 control is selected

Surface Mount Kits
SMK-ZR22
- Not for use with EB
SMK-ZR14
- Not for use with EB
SMK-ZR24
- Not for use with EB

SmartCast® Technology Face Plates
CFP-1-WH
- Matching face plate, 1-gang, white
CFP-2-WH
- Matching face plate, 2-gang, white
CFP-3-WH
- Matching face plate, 3-gang, white

SmartCast® Technology Wireless Dimmer
CWD-CWC-WH

SmartCast® Technology Wireless Switch
CSC-CWS-UNVN-WH (neutral wire required)
CSC-CWS-UNV-WH (no neutral required)

SmartCast® 5-Button Wireless Scene Controller
CSC-SC-5B-CWC-WH (w/o text)
CSC-SC-5S-CWC-WH (w/scene text)
CSC-SC-5C-CWC-WH (w/CCT text)
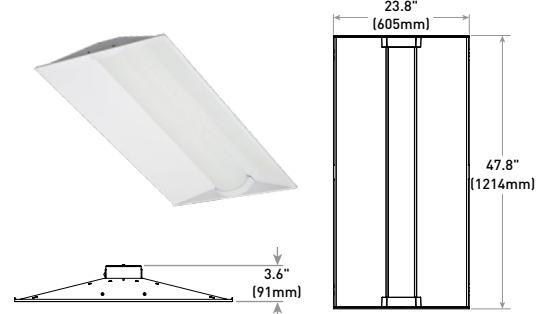CSC-SC-5X-CWC-WH (w/custom text)

SmartCast® Technology Wireless Plug Load Controller
CPLC-JB-CWC

SmartCast® Touchscreen Control
CSC-TS-A-BK

SmartCast® Wireless Gateway with Wi-Fi
CSC-GW-CWC-W
- Required with SmartCast Touchscreen Control

SmartCast® Wall Plug Power Supply
CSC-WPS-120V
- For use with SmartCast Wireless Gateway with Wi-Fi

SmartCast® Ceiling Plug Power Supply
CSC-CPS-120V
- For use with SmartCast Wireless Gateway with Wi-Fi

SmartCast® 10V Zone Controller
CSC-ZC-10V-CWC
- Intelligent sensing and control of 0-10V luminaires

ZR14™

ZR22™

ZR24™

11.8" (300mm)
47.8" (1214mm)
3.6" (91mm)

23.8" (605mm)
23.8" (605mm)
3.6" (91mm)

23.8" (605mm)
47.8" (1214mm)
3.6" (91mm)

Ordering Information

Example: ZR24-60L-835-SC1-UNV

ZR							
Series	Size	Lumen Package		CRI/CCT	Lens	Control	Voltage	Factory Installed Options*
ZR	14	**30L** 3,490 Lumens **40L** 4,040 Lumens	**50L** 4,940 Lumens **60L** 6,150 Lumens	**830** 80 CRI, 3000K **835** 80 CRI, 3500K **840** 80 CRI, 4000K **850** 80 CRI, 5000K	Blank ZR Curve	**10V5** - 0-10V 5% Dimming **SC1** - SmartCast Wireless Technology with 1% Dimming, Integral motion and ambient sensors **VDO†** - Lutron Vive Wireless Integral Fixture Control with Occupancy and Daylight Sensing **VRF†** - Lutron Vive Wireless Integral Fixture Control (RF only) **LDE1†** - Lutron HiLume 1% EcoSystem LED Driver with Soft-on, Fade to Black dimming technology	**UNV** - Universal 120-277V **34** - 347V (120-347V only when ordered with 10V5) - Available only with 10V5 control	**EB Emergency Backup** - Available with UNV voltage only - Provides 90 minutes of emergency operation
	22	**20L** 2,030 Lumens **30L** 3,490 Lumens	**40L** 4,040 Lumens **50L** 4,940 Lumens					
	24	**30L** 3,490 Lumens **40L** 4,040 Lumens **50L** 5,600 Lumens **60L** 6,150 Lumens	**70L** 6,750 Lumens **80L** 8,275 Lumens **100L** 10,125 Lumens					

*Consult factory for other options.
†More information on Lutron controls can be found at lutron.com.

OPTION 1 FIXTURE

Product Specifications

SMARTCAST® TECHNOLOGY

SmartCast® Technology is the most intuitive and easiest to install intelligent light solution on the market. SmartCast Technology delivers up to 70% energy savings at up to half the cost of other solutions. Luminaires combine best-in-class light with onboard sensors and intelligence to deliver a better light experience. Extreme energy productivity, code compliance and a better light experience without any extra design, installation or setup work.

CONSTRUCTION & MATERIALS

- Durable 22 ga. cold rolled steel housing provides strength and uniformity
- Ultra-thin 3.6" (91mm) fixture height and lightweight design effectively target a broad range of plenum spaces and allow for easy installations
- Luminaire is post-painted for enhanced smooth matte finish
- Includes integrated hooks for mounting to t-bar, and cable slots for suspended mounting
- Luminaire sides and ends are hemmed in for safe, easy handling
- Room-side accessible/removable lens snaps and locks into end caps for tool-less entry
- Not for installation within 3" (76mm) of insulation
- **Weight: Standard:** 1x4 - 6.6 lbs. (3.0kg); 2x2 - 6.4 lbs. (2.9kg); 2x4 - 11.2 lbs. (5.1kg); **EB:** 1x4 - 10.1 lbs. (4.6kg); 2x2 - 9.2 lbs. (4.2kg); 2x4 - 14.1 lbs. (6.4kg)

OPTICAL SYSTEM

- Unique luminaire design creates perfect balance of both horizontal and vertical illumination
- Optimized smooth acrylic lens eliminates pixelation and delivers a low-glare, diffused light distribution

ELECTRICAL SYSTEM

- **Power Factor:** = 0.9 nominal
- **Input Power:** Stays constant over life
- **Input Voltage:** 120-277V, 347V, 60Hz
- **Operating Temperature Range:** 0˚C - + 35˚C (32˚F - + 95˚F)
- **Total Harmonic Distortion:** <20%
- **Dimming:** 1%-100% (Varies by control)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed (UL1598 & UL8750)
- Meets NEMA C82.77 standards
- Suitable for damp locations
- Designed for indoor use only
- Requires minimum 90˚C supply conductors
- UL924 (EB & GTD Option) Maximum mounting height: 15.0' (4.6m)
- EB14 option meets CA Title 20 Appliance Regulations
- CCEA approved when ordered with CP option
- RoHS compliant. Consult factory for additional details
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- DLC Premium qualified. Please refer to www.designlights.org/QPL for most current information
- ⚠ **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

SmartCast® Technology

INTEGRAL MOTION SENSOR

- Passive infrared (PIR)
- **Coverage area:** Please refer to the PIR motion sensor coverage table
- Not intended to be mounted higher than 20 ft.
- **Operation:**
  - Grouped with a wall control: Luminaire will operate in vacancy mode (manual-on/auto-off)
  - Not grouped with a wall control: Luminaire will operate in occupancy mode (auto-on/auto-off)
- Luminaires operate at full intensity until OneButton™ Setup is initiated by the Cree Configuration Tool

AMBIENT LIGHT SENSOR

- Sensor response matches response of human eye
- Not intended to be mounted higher than 20 ft. (6.1m)
- Luminaires operate at full intensity until OneButton™ Setup is initiated by the Cree Configuration Tool
- Daylight harvesting calibration performed automatically during OneButton™ Setup

INTEGRAL WIRELESS COMMUNICATION

- 2.4GHz wireless mesh technology with AES 128-bit encryption
- Self assigns to quietest channel during OneButton™ Setup
- **Range:**
  - 30 ft. (9.1m) in typical commercial applications
  - 300 ft. (91.4m) open air without obstructions
- **Network:** 250 devices max.
- **Space:** 100 devices max. per group
- FCC and IC certifications

LUMINAIRE

- Energy metering with 4% accuracy
- Luminaires operate at full intensity until OneButton™ Setup is initiated by the Cree Configuration Tool
- 10 year power fail memory of settings

DEPLOYMENT

- Please refer to the SmartCast® Deployment Guide at https://www.creelink.com/exLink.asp?23613564OH88E44I39771048

PIR Motion Sensor Coverage
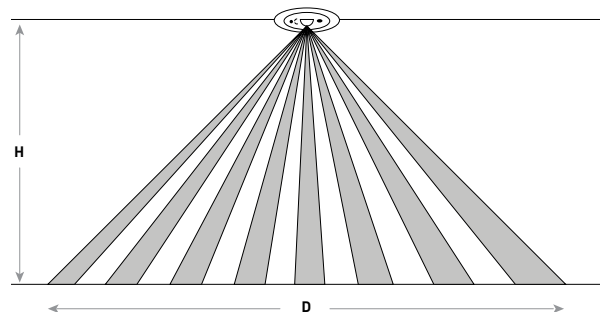
Mounting Height - H (Feet)	Motion Sensor Coverage Diameter - D (Feet)		
	Sensitivity - High (Default)	Sensitivity - Medium	Sensitivity - Low
10	20	10	8
12	26	14	12
14	28	15	13
20	38	Not Recommended	Not Recommended

US: creelighting.com   T (800) 236-6800   F (262) 504-5415
Canada: creelighting-canada.com   T (800) 473-1234   F (800) 890-7507

CREE ⇕ LIGHTING®

OPTION 1 FIXTURE

Delivered Lumens & Electrical Data*

Size	Lumen Package	Delivered Lumens	Delivered Lumens	System Watts 120-277V/347V	Total Current (A)				
					120V	208V	240V	277V	347V
2X2	20L	10V5	2,030	15	0.12	0.07	0.06	0.06	0.05
		10V5 w/EB			0.13	0.09	0.08	0.06	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.20	0.08	0.07	0.06	N/A
1X4/2X2/2X4	30L	10V5	3,490	26	0.21	0.12	0.11	0.10	0.08
		10V5 w/EB			0.25	0.14	0.13	0.12	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.30	0.13	0.11	0.10	N/A
1X4/2X2/2X4	40L	10V5	4,040	29	0.25	0.14	0.12	0.11	0.09
		10V5 w/EB			0.29	0.16	0.14	0.13	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.34	0.14	0.13	0.11	N/A
1X4/2X2	50L	10V5	4,940	36	0.31	0.17	0.15	0.13	0.11
		10V5 w/EB			0.35	0.19	0.17	0.15	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.40	0.18	0.16	0.14	N/A
2X4	50L	10V5	5,600	41	0.35	0.20	0.17	0.15	0.12
		10V5 w/EB			0.39	0.22	0.19	0.17	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.45	0.19	0.17	0.15	N/A
1X4/2X4	60L	10V5	6,150	44	0.38	0.21	0.19	0.16	0.13
		10V5 w/EB			0.41	0.23	0.20	0.18	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.49	0.22	0.19	0.17	N/A
2X4	70L	10V5	6,750	47	0.40	0.23	0.20	0.17	0.16
		10V5 w/EB			0.45	0.26	0.23	0.20	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.49	0.24	0.21	0.18	N/A
2X4	80L	10V5	8,275	62	0.52	0.30	0.26	0.23	0.19
		10V5 w/EB			0.57	0.31	0.27	0.25	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.66	0.29	0.26	0.23	N/A
2X4	100L	10V5	10,125	74	0.63	0.36	0.31	0.27	0.22
		10V5 w/EB			0.63	0.36	0.32	0.27	N/A
		SC1, VDO, VRF, LDE1, LDE5			0.72	0.35	0.30	0.27	N/A

* Electrical data at 25°C (77°F). Actual wattage and lumens may differ by +/- 10% when operating between 120-277V or 347V +/- 10%.

Delivered Emergency Lumens

Size	Lumen Package	Approximate Delivered Emergency Lumens
2X2	20L	1,620
1X4/2X2/2X4	30L	1,400
1X4/2X2/2X4	40L	1,430
1X4/2X2	50L	1,410
2X4	50L	1,490
1X4/2X4	60L	1,480
2X4	70L	1,470
2X4	80L	1,460
2X4	100L	1,620

ZR Series Ambient Adjusted Lumen Maintenance[1]

	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Estimated[3] LMF	100K hr Estimated[3] LMF
25°C (77°F)	1.00	0.95	0.90	0.85	0.81

[1] Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.
[3] Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

Photometry

ZR14-40L-830-10V5-UNV BASED ON TEST REPORT #: STD200105NB-AB

Luminaire photometry has been conducted in accordance with IES LM-79-08. IES LM-79-08 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.
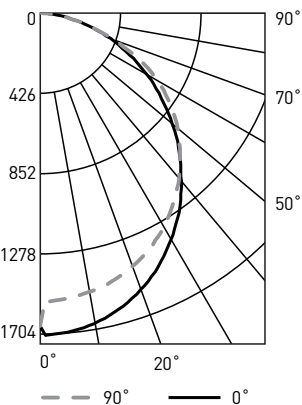
Coefficients Of Utilization – Zonal Cavity Method

RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	109	104	100	96
2	99	90	83	78
3	90	79	71	64
4	82	70	61	54
5	76	63	54	47
6	70	56	47	41
7	65	51	42	36
8	60	47	38	32
9	56	43	34	29
10	53	39	31	26

Effective Floor Cavity Reflectance: 20%

Application Reference

Open Space

Spacing	Lumen Package	Initial Delivered Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	30L	3,490	26	134	0.39	51
	40L	4,040	29	139	0.44	59
	50L	4,940	36	137	0.54	72
	60L	6,150	44	140	0.66	89
8 x 10	30L	3,490	26	134	0.33	42
	40L	4,040	29	139	0.37	48
	50L	4,940	36	137	0.46	59
	60L	6,150	44	140	0.56	74
10 x 10	30L	3,490	26	134	0.26	33
	40L	4,040	29	139	0.29	38
	50L	4,940	36	137	0.36	47
	60L	6,150	44	140	0.44	58
10 x 12	30L	3,490	26	134	0.21	26
	40L	4,040	29	139	0.24	30
	50L	4,940	36	137	0.29	37
	60L	6,150	44	140	0.36	46

10' ceiling: 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial
Open Space: 50' x 40' x 10

Average Luminance Table (cd/m²)

		Horizontal Angle		
		0°	45°	90°
Vertical Angle	45°	3,471	3,912	4,154
	55°	3,187	3,750	4,114
	65°	2,844	3,583	3,980
	75°	2,311	3,235	3,296
	85°	1,306	2,021	1,965

Zonal Lumen Summary

Zone	Lumens	% Lamp	Luminaire
0-30	1,078	N/A	27.1%
0-40	1,766	N/A	44.4%
0-60	3,120	N/A	78.5%
0-90	3,973	N/A	99.9%
0-180	3976	N/A	100%

Reference https://www.creelighting.com/products/indoor/troffers/zr-series for detailed photometric data.

US: creelighting.com   T (800) 236-6800   F (262) 504-5415
Canada: creelighting-canada.com   T (800) 473-1234   F (800) 890-7507

CREE ⇕ LIGHTING®
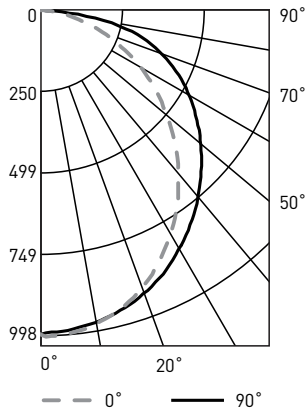
ZR LED Troffer

Photometry

ZR22-30L-830-10V5-UNV BASED ON TEST REPORT #: STD200105NB-BB

Luminaire photometry has been conducted in accordance with IES LM-79-08. IES LM-79-08 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.

Coefficients Of Utilization – Zonal Cavity Method

RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	108	103	99	95
2	98	89	82	76
3	89	78	70	63
4	82	69	60	53
5	75	62	53	46
6	69	56	46	40
7	64	50	41	35
8	60	46	37	31
9	56	42	34	28
10	52	39	31	26

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)

Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	2,892	3,214	3,484
55°	2,640	3,142	3,570
65°	2,335	3,150	3,821
75°	1,880	3,273	4,203
85°	971	2,631	3,113

Zonal Lumen Summary

Zone	Lumens	% Lamp	Luminaire
0-30	905	N/A	26.4%
0-40	1,476	N/A	43.2%
0-60	2,609	N/A	76.3%
0-90	3,419	N/A	100%
0-180	3,420	N/A	100%

Reference https://www.creelighting.com/products/indoor/troffers/zr-series for detailed photometric data.

Application Reference

| Open Space						
Spacing	Lumen Package	Initial Delivered Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	20L	2,030	15	135	0.23	29
	30L	3,490	26	134	0.39	50
	40L	4,040	29	139	0.44	58
	50L	4,940	36	137	0.54	71
8 x 10	20L	2,030	15	135	0.19	24
	30L	3,490	26	134	0.33	41
	40L	4,040	29	139	0.37	48
	50L	4,940	36	137	0.46	59
10 x 10	20L	2,030	15	135	0.15	19
	30L	3,490	26	134	0.26	33
	40L	4,040	29	139	0.29	38
	50L	4,940	36	137	0.36	46
10 x 12	20L	2,030	15	135	0.12	15
	30L	3,490	26	134	0.21	26
	40L	4,040	29	139	0.23	30
	50L	4,940	36	137	0.29	37

10' ceiling: 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial
Open Space: 50' x 40' x 10

Photometry

ZR24-40L-830-10V5-UNV BASED ON TEST REPORT #: STD200105NB-CB

Luminaire photometry has been conducted in accordance with IES LM-79-08. IES LM-79-08 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.
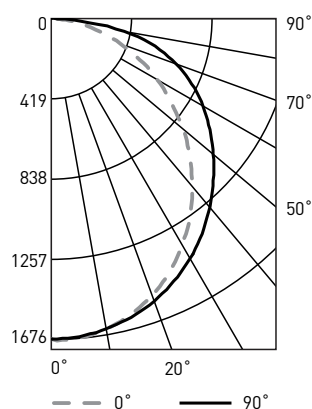
Coefficients Of Utilization – Zonal Cavity Method

RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	108	103	98	94
2	98	89	82	76
3	89	78	70	63
4	81	69	60	53
5	75	61	52	45
6	69	55	46	40
7	64	50	41	35
8	59	46	37	31
9	56	42	34	28
10	52	39	31	25

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)

		Horizontal Angle		
		0°	45°	90°
Vertical Angle	45°	1,620	1,850	1,995
	55°	1,480	1,807	2,042
	65°	1,311	1,818	2,180
	75°	1,061	1,903	2,374
	85°	626	1,595	1,583

Zonal Lumen Summary

Zone	Lumens	% Lamp	Luminaire
0-30	1,039	N/A	26.1%
0-40	1,700	N/A	42.7%
0-60	3,018	N/A	75.8%
0-90	3,980	N/A	100%
0-180	3,982	N/A	100%

Reference https://www.creelighting.com/products/indoor/troffers/zr-series for detailed photometric data.

Application Reference

Open Space

Spacing	Lumen Package	Initial Delivered Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	30L	3,490	26	134	0.39	51
	40L	4,040	29	139	0.44	59
	50L	5,600	41	137	0.62	81
	60L	6,150	44	140	0.66	89
	70L	6,750	47	144	0.71	98
	80L	8,275	62	133	0.93	120
	100L	10,125	74	137	1.11	147
8 x 10	30L	3,490	26	134	0.33	41
	40L	4,040	29	139	0.37	47
	50L	5,600	41	137	0.53	66
	60L	6,150	44	140	0.56	72
	70L	6,750	47	144	0.60	79
	80L	8,275	62	133	0.79	97
	100L	10,125	74	137	0.95	119
10 x 10	30L	3,490	26	134	0.26	33
	40L	4,040	29	139	0.29	38
	50L	5,600	41	137	0.41	53
	60L	6,150	44	140	0.44	58
	70L	6,750	47	144	0.47	64
	80L	8,275	62	133	0.62	79
	100L	10,125	74	137	0.74	96
10 x 12	30L	3,490	26	134	0.21	26
	40L	4,040	29	139	0.24	30
	50L	5,600	41	137	0.33	42
	60L	6,150	44	140	0.36	46
	70L	6,750	47	144	0.38	51
	80L	8,275	62	133	0.50	62
	100L	10,125	74	137	0.60	76

10' ceiling: 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial
Open Space: 50' x 40' x 10

CREE ⬩ LIGHTING®

A COMPANY OF *IDEAL INDUSTRIES, INC.*

US: creelighting.com   T (800) 236-6800   F (262) 504-5415
Canada: creelighting-canada.com   T (800) 473-1234   F (800) 890-7507

Columbia LIGHTING

LCAT24
2' × 4' LED CONTEMPORARY ARCHITECTURAL TROFFER

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
- HE lumen packages available
- 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

DLC QPL LISTED · **DLC QPL LISTED PREMIUM** · **c CSA US** · **Built to UL 924 Standards** · **CP Chicago Plenum** · **BUY AMERICAN SOLUTIONS**

See Certification Specifications

RELATED PRODUCTS
LCAT12   LCAT14   LCAT22

CONTROL TECHNOLOGY

SpectraSync Color Tuning Technology · NX DISTRIBUTED INTELLIGENCE · SPECTRASAFE

23.77"
(604mm)

3.98"
(101mm)

Grid, recessed section

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 NEC compliant T-bar clips 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
- 60,000 hour LEDs at L80 for reduced maintenance

ELECTRICAL (CONTINUED)
- 83 CRI standard or optional 90 CRI for color sensitive applications

CONTROLS
- Optional SpectraSync™ offers two modes of Tunable White solutions and integrates seamlessly into a variety of control systems
- NX Distributed Intelligence™ provides options for standalone and networked integrated sensor with wired or wireless connectivity for NX system deployments

TECHNOLOGY
- SpectraSAFE™ is a scalable, cloud-enabled and lighting-based wireless video security solution for interior commercial and industrial applications

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 and 2108 standards, and bear appropriate cCSAus labels
- CSA certified to UL 924 standards with battery pack or DTS (Dimming Bypass Module) options
- Damp Location label standard
- Adheres to LM79, LM80, and TM21 industry standards
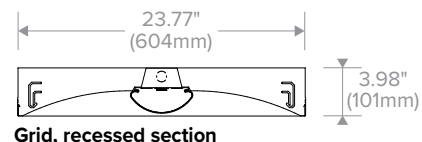
CERTIFICATIONS (CONTINUED)
- DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at www.designlights.org
- NX is available in U.S., Canada and Mexico. For other locations consult factory
- The DTS, Dimming Bypass Module, is for emergency circuit control loads including sensors and wireless systems CSA certified to UL 924. See page 8 for wiring diagram. Link to Dimming Bypass Module Specification sheet
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy American-Construction Materials under Trade Agreements effective 04/03/2020. See Buy American Solutions

WARRANTY
- 5 year warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	2142–9304
Wattage Range	19–75
Efficacy Range (LPW)	92–141
Reported Life (Hours)	L80/60,000

HUBBELL **HUBBELL Lighting**

Columbia LIGHTING

OPTION 2 FIXTURE

LCAT24

2' × 4' LED CONTEMPORARY ARCHITECTURAL TROFFER

CATALOG #:

ORDERING GUIDE

Example: LCAT24–35MLG–ESDU

CATALOG #

LCAT24								
Model	**CRI**	**Color Temp**		**Delivered Lumens [3]**	**Ceiling Type**	**Shielding**	**Air Function**	**Driver**
LCAT24 2' x 4' LED Contemporary Architectural Troffer	Blank >80 9 >90 [1]	30 35 40 50 2750T 2765T	3000K 3500K 4000K 5000K 2700K–5000K SpectraSync™ Tunable White [2] 2700K–6500K SpectraSync™ Tunable White [2]	XW 2341–2524 XWHE 2458–2650 VW 3124–3558 VWHE 3310–3770 MW 3363–3831 MWHE 3717–4234 LW 4268–4861 ML 4771–5434 HL 5443–6200 VL 6999–7972 XL 8168–9304	G Grid Lay-in [4] SM Surface Mount [5,12] CM Cable Suspended Mount [5,6]	Blank Curve R Rectangular	Blank Static A Air Return Side Slots	E Fixed Output ED 0–10V Dimming ED1 0–10V 1% Dimming EDD 0–10V Dim-to-Dark ESD Step Dimming [7,9,13] LUTH Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology [7,9,13] LUT5 5-Series EcoSystem LED driver [7,9,13] DALIP DALI Power Bus [9,16]

Voltage	**Options**		**Control Options**
U 120–277V **347** 347V [14]	**ELL14** Emergency Battery Pack Installed, 1400 Lumens [8,9] **ELL14ST** Emergency Battery Pack, 1400 Lumens, Self Test [8,9] **ELL14H2** Emergency Battery Pack, 2-Hour Run Time [8,9] **DTS** Dimming Bypass Module [9,10] **C388** 3-wire Flex [15] **C488** 4-wire Flex [15] **C588** 5-wire Flex [15] **GLR** Fast Blow Fuse **EOR** End of Row (SM and CM only. Provides end wiring access for continuous row mounting.) [5] **INT** Intermediate (SM and CM only. Provides ends with wiring access for continuous row mounting.) [5] **CP** Chicago Plenum **SAF** SpectraSAFE™ Integrated Surveillance Lighting System [11]		**NX Standalone** **NXS** NX, PIR BT Occupancy/Daylight Sensor, Slide Mount [13,14] **NX Networked – Wired** **NXE** NX, Dual SmartPORTs [13,14] **NXES** NX, PIR BT Occupancy/Daylight Sensor, Slide Mount, Dual SmartPORTs [13,14] **NX Networked – Wireless** **NXSW** NX Wireless, PIR BT Occupancy/Daylight Sensor [12,13,14] **NXWE** NX Wireless Enabled [12,13,14] **NX Networked – Wired/Wireless Hybrid** **NXSWD** NX Wireless, PIR BT Occupancy/Daylight Sensor, Dual SmartPORTs [13,14] **NXWD** NX Wireless, Dual SmartPORTs [13,14] **Third-Party Control Options** **ODPG** Occupancy and Daylight Sensors w/ Grouping, Philips SNS200 [9,16,20] **LV** Lutron Vive Attached FCJS POWPAK Fixture Control (RF only for 0–10V drivers) [9,17,18,19,20] **LVR** Lutron Vive Integral Fixture Control DFCSJ-OEM-RF (RF only) [9,16,18,20] **LVS** Lutron Vive Integral Fixture Control DFCSJ-OEM-OCC (RF with daylight and occupancy sensing) [9,16,18,20] **ZRE** ControlScope® compatible [9,20,21]

Accessories		
☐ **FK24**		2' × 4' Single Flange Kit (Shipped separately)
☐ **CM48Y2SC3F-KIT**		48" Cable Mount Kit for 2' wide Cable Mount fixtures, 3-wire

Notes:

1. Not available with HE lumen output
2. Available with ED driver and 80 CRI only. Not available with HE, VL or XL lumen outputs
3. High efficacy versions designated with "HE"
4. For drywall, order G with Flange Kit Accessory
5. Not available with Air Return (A) air function
6. Order hanger accessories separately
7. Limitations apply based on lumen packages (see Product Exceptions & Details)
8. For compatibility with Dual-Lite LiteGear® inverters, contact Hubbell Lighting Representative
9. Not available in 347V
10. 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 page 8 for wiring diagram
11. SpectraSync+NX+SAF can not be configured. Only available with NXE, NXWE or NXWD. Not available in 347V

NX In-Fixture Control Options:

12. NXSW, NXWE, NXSWD and NXWD cannot be used with surface mount versions
13. NX is not available with ESD, LUTH, LUT5 or DALIP driver options
14. NX combined with Spectrasync is not available in 347V
15. For NX control and Flex Wire together, consult factory

Third-Party Control Options:

16. LVS, LVR and ODPG only available with DALIP driver option
17. Only available with ED driver option
18. VIVE is a trademark of Lutron Electronics Co., Inc
19. Installations controlled solely by the Lutron Pico controller require accessing the LV (Lutron FCJS) module for commissioning after the circuit has been energized
20. Not available with SpectraSync (2750T or 2765T)
21. Registered trademark of Daintree Networks, used by permission

For questions about configuration options, contact Hubbell Representative

HUBBELL Lighting

OPTION 2 FIXTURE

LCAT24
2' × 4' LED CONTEMPORARY ARCHITECTURAL TROFFER

CATALOG #:

PRODUCT EXCEPTIONS & DETAILS

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

DRIVER AVAILABILITY TABLE											
	XW	XWHE	VW	VWHE	MW	MWHE	LW	ML	HL	VL	XL
E	X	X	X	X	X	X	X	X	X	X	X
ED	X	X	X	X	X	X	X	X	X	X	X
ED1	X	X	X	X	X	X	X	X	X	X	X
EDD			X		X		X	X	X		
ESD						X	X	X	X	X	X
LUT5	X		X		X		X	X	X		
LUTH	X		X		X		X	X	X		
DALIP			X	X	X	X	X	X	X	X	X
347	X		X		X		X	X	X		X

CONTROLS

NX Distributed Intelligence™ Lighting Controls:
Supports both indoor and outdoor applications in a variety of deployment options- wired, wireless, hybrid.
Integrates with and enables a wide array of luminaires including those with SpectraSync™ Color Tuning Technology.

NX DISTRIBUTED™ INTELLIGENCE

NX INTEGRATED CONTROLS REFERENCE								
NX Option	Sensor	Networkable	Scheduling	Occupancy	Daylight Harvesting	0–10V Dimming	On/off Control	Bluetooth® App Programming
NX Standalone								
NXS	NXSMP-SMI	No	Yes	Yes	Yes	Yes	Yes	Yes
NX Networked – Wired								
NXE	N/A	Yes	Yes	No	No	Yes	Yes	Requires NXBTC/R[1]
NXES	NXSMP-SMI	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NX Networked – Wireless								
NXSW	NXSMP-SMI	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NXWE	N/A	Yes	Yes	No	No	Yes	Yes	No[2]
NX Networked – Wired/Wireless								
NXSWD	NXSMP-SMI	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NXWD	N/A	Yes	Yes	No	No	Yes	Yes	Requires NXBTC/R[1,2]

1 NXBTC/R needs to be plugged into an available NX SmartPORT™ on the fixture network
2 To program NXWE option, need to consult factory. If connected to an area controller, programming can be done from that

Philips EasySense Controls ODPG Sensor:

• 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[2,3]
• 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 See link to Philips commssioning
3 Requires android device or IR dongle. See links for phone compatiblity and IR dongle

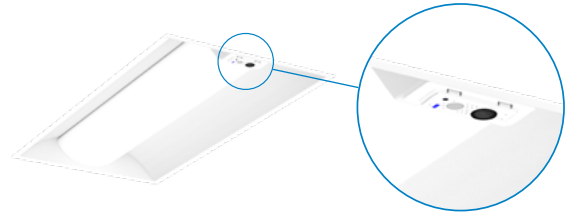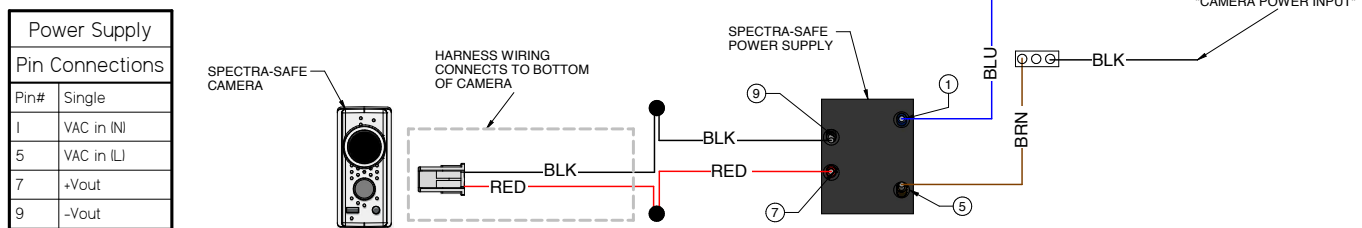| Wireless Switch Accessories[1]	
☐ PESR-WH	EasySense compatible wireless single rocker switch, white
☐ PEDR-WH	EasySense compatible wireless dual rocker switch, white

HUBBELL Lighting

⦾ NX Design & Application Guide

⦾ NX Brochure

⦾ Philips SNS200

⦾ EasySense Design-in Guide

OPTION 2 FIXTURE

CATALOG #:

CONTROLS (CONTINUED)

SpectraSAFE™ Integrated Surveillance Lighting System

SPECTRASAFE™

Technical Features
• High resolution 1080p full HD camera
• 2.8mm lens / 140° field of view
• IR emitter for low / no-light conditions
• Multiple wiring configurations available
• Supports 2-way audio communication
• Supports 2.4GHz WPA-PSK/WPA2-PSK Wi-Fi
• Data encrypted using AES 256 standard
• Low power consumption (2-5W)
• Transmissions secured using Open TLS / SSL

Software & Support
• Free Android, iOS and web-based app
• Versatile and supports multiple applications
• Multi-tenant web-based camera application
• Phone and in-app chat technical support
• Scalable cloud services and video storage
• Supported by a 5-year warranty

SPECTRASAFE WIRING DIAGRAM

Power Supply	
Pin Connections	
Pin#	Single
I	VAC in (N)
5	VAC in (L)
7	+Vout
9	–Vout

SPECTRA-SAFE CAMERA

HARNESS WIRING CONNECTS TO BOTTOM OF CAMERA

SPECTRA-SAFE POWER SUPPLY

BLK

RED

BLK

RED

9

3

7

1

5

BLU

BRN

WHT

BLK

TAG "CAMERA POWER INPUT"

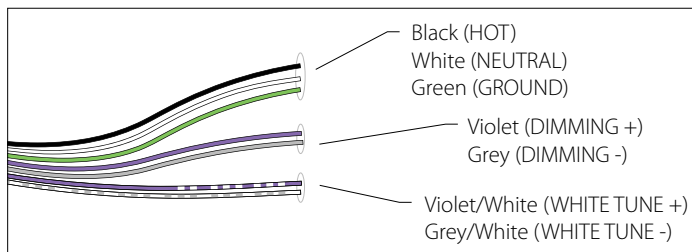### SpectraSync™ Color Tuning Technology:
Control your space based on the needs of the application, specific activities throughout the day and preferences of the occupants with distinct SpectraSync™ Color Tuning Technologies.

SpectraSync Color Tuning Technology

SPECTRASYNC COLOR TUNING TECHNOLOGY		
Mode	**Kelvin Range**	**Description**
Tunable White	2700K–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

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.

Black (HOT)
White (NEUTRAL)
Green (GROUND)

Violet (DIMMING +)
Grey (DIMMING -)

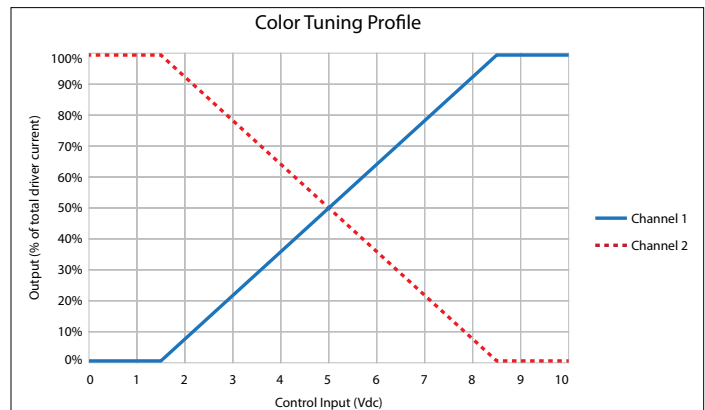Violet/White (WHITE TUNE +)
Grey/White (WHITE TUNE -)

SpectraSync Tunable White luminaires are provided with two 0–10V circuits. The violet and grey 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:
• Hubbell Control Solutions (HCS): NX Distributed Intelligence™ Room Controllers (NXRC) and In-fixture Controllers (NXFM)
• Lutron: DVTV, DVSTV, and NFTV dimmers
• Wattstopper: ADF120277 and CD4BL (Titan) dimmers

Color Tuning Profile

Output (% of total driver current): 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%

Control Input (Vdc): 0 1 2 3 4 5 6 7 8 9 10

Channel 1
Channel 2

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

⏴ SpectraSAFE Brochure

⏴ SpectraSync

⏴ NX Solutions Guide

Columbia LIGHTING

LCAT24
2' × 4' LED CONTEMPORARY ARCHITECTURAL TROFFER

DELIVERED LUMENS, SPECTRASYNC™

SpectraSync™
Color Tuning Technology

Shielding	Lumen Output	Watts	2700		3000		3500		4000		5000		6500	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
Curve	XW	19	2240	117	2341	123	2383	125	2414	126	2493	131	2456	129
	VW	28	2990	108	3124	113	3180	115	3221	117	3327	121	3277	119
	MW	30	3218	107	3363	111	3424	113	3467	115	3582	119	3528	117
	LW	36	4084	113	4268	118	4345	120	4400	122	4545	126	4477	124
	ML	39	4566	118	4771	123	4857	125	4919	127	5081	131	5005	129
	HL	44	5209	118	5443	124	5541	126	5612	128	5797	132	5710	130
Rectangle	XW	20	2489	123	2601	128	2648	130	2682	132	2770	136	2728	134
	VW	28	3085	109	3224	114	3282	116	3324	118	3434	122	3382	120
	MW	30	3323	110	3472	115	3534	117	3580	119	3698	122	3642	121
	LW	36	4230	117	4420	122	4500	125	4557	126	4707	130	4637	128
	ML	39	4711	121	4923	127	5012	129	5076	131	5243	135	5164	133
	HL	43	5295	123	5533	128	5633	131	5705	132	5893	137	5804	135

DELIVERED LUMENS

Product Availability 80 CRI				
Lumen Package	Shielding	Lumens	Input Watts	LPW
LCAT24-30XW	Curve	2341	19	123
LCAT24-30XWx-R	Rectangle	2601	20	128
LCAT24-30XWHE	Curve	2458	19	129
LCAT24-30XWHEx-R	Rectangle	2555	20	128
LCAT24-35XW	Curve	2424	19	127
LCAT24-35XWx-R	Rectangle	2690	20	133
LCAT24-35XWHE	Curve	2542	19	134
LCAT24-35XWHEx-R	Rectangle	2642	20	132
LCAT24-40XW	Curve	2458	19	129
LCAT24-40XWx-R	Rectangle	2732	20	135
LCAT24-40XWHE	Curve	2581	19	136
LCAT24-40XWHxE-R	Rectangle	2683	20	134
LCAT24-50XW	Curve	2524	19	132
LCAT24-50XWx-R	Rectangle	2805	20	138
LCAT24-50XWHE	Curve	2650	19	139
LCAT24-50XWHEx-R	Rectangle	2754	20	138
LCAT24-30VW	Curve	3124	28	113
LCAT24-30VWx-R	Rectangle	3224	28	114
LCAT24-30VWHE	Curve	3310	27	123
LCAT24-30VWHEx-R	Rectangle	3280	26	126
LCAT24-35VW	Curve	3217	28	117
LCAT24-35VWx-R	Rectangle	3334	28	118
LCAT24-35VWHE	Curve	3409	27	126
LCAT24-35VWHEx-R	Rectangle	3391	26	130
LCAT24-40VW	Curve	3267	28	118
LCAT24-40VWx-R	Rectangle	3386	28	120
LCAT24-40VWHE	Curve	3462	27	128
LCAT24-40VWHE-R	Rectangle	3443	26	132
LCAT24-50VW	Curve	3558	28	129
LCAT24-50VW-R	Rectangle	3476	28	123
LCAT24-50VWHE	Curve	3770	27	140
LCAT24-50VWHE-R	Rectangle	3535	26	136

Product Availability 90 CRI				
Lumen Package	Shielding	Lumens	Input Watts	LPW
LCAT24-930XW	Curve	2142	20	106
LCAT24-930XWx-R	Rectangle	2212	20	109
–	–	–	–	–
–	–	–	–	–
LCAT24-935XW	Curve	2187	20	108
LCAT24-935XWx-R	Rectangle	2259	20	111
–	–	–	–	–
–	–	–	–	–
LCAT24-940XW	Curve	2234	20	110
LCAT24-940XWx-R	Rectangle	2308	20	114
–	–	–	–	–
–	–	–	–	–
LCAT24-950XW	Curve	2380	20.3	117
LCAT24-950XWx-R	Rectangle	2458	20.3	121
–	–	–	–	–
–	–	–	–	–
LCAT24-930VW	Curve	2655	28	96
LCAT24-930VWx-R	Rectangle	2740	28	97
–	–	–	–	–
–	–	–	–	–
LCAT24-935VW	Curve	2717	28	98
LCAT24-935VWx-R	Rectangle	2799	28	99
–	–	–	–	–
–	–	–	–	–
LCAT24-940VW	Curve	2780	28	101
LCAT24-940VWx-R	Rectangle	2859	28	101
–	–	–	–	–
–	–	–	–	–
LCAT24-950VW	Curve	2936	28	106
LCAT24-950VWx-R	Rectangle	3045	28	108
–	–	–	–	–
–	–	–	–	–

(Tables continue on next page.)

HUBBELL
HUBBELL Lighting

Columbia LIGHTING

LCAT24

2' × 4' LED CONTEMPORARY ARCHITECTURAL TROFFER

CATALOG #:

DELIVERED LUMENS, CONT'D

Product Availability 80 CRI				
Lumen Package	Shielding	Lumens	Input Watts	LPW
LCAT24-30MW	Curve	3363	30	111
LCAT24-30MWx-R	Rectangle	3472	30	115
LCAT24-30MWHE	Curve	3717	31	120
LCAT24-30MWHE-R	Rectangle	3660	29	126
LCAT24-35MW	Curve	3464	30	115
LCAT24-35MWx-R	Rectangle	3590	30	119
LCAT24-35MWHE	Curve	3829	31	124
LCAT24-35MWHE-R	Rectangle	3785	29	131
LCAT24-40MW	Curve	3518	30	116
LCAT24-40MWx-R	Rectangle	3646	30	121
LCAT24-40MWHE	Curve	3888	31	125
LCAT24-40MWHE-R	Rectangle	3843	29	133
LCAT24-50MW	Curve	3831	30	127
LCAT24-50MWx-R	Rectangle	3744	30	124
LCAT24-50MWHE	Curve	4234	31	137
LCAT24-50MWHEx-R	Rectangle	3946	29	136
LCAT24-30LW	Curve	4268	36	118
LCAT24-30LWx-R	Rectangle	4420	36	122
LCAT24-35LW	Curve	4396	36	122
LCAT24-35LWx-R	Rectangle	4570	36	127
LCAT24-40LW	Curve	4465	36	124
LCAT24-40LWx-R	Rectangle	4642	36	129
LCAT24-50LW	Curve	4861	36	135
LCAT24-50LWx-R	Rectangle	4766	36	132
LCAT24-30ML	Curve	4771	39	123
LCAT24-30MLx-R	Rectangle	4923	39	127
LCAT24-35ML	Curve	4914	39	127
LCAT24-35MLx-R	Rectangle	5091	39	131
LCAT24-40ML	Curve	4990	39	129
LCAT24-40MLx-R	Rectangle	5170	39	133
LCAT24-50ML	Curve	5434	39	140
LCAT24-50MLx-R	Rectangle	5308	39	137
LCAT24-30HL	Curve	5443	44	124
LCAT24-30HLx-R	Rectangle	5533	43	128
LCAT24-35HL	Curve	5606	44	127
LCAT24-35HLx-R	Rectangle	5721	43	133
LCAT24-40HL	Curve	5694	44	129
LCAT24-40HLx-R	Rectangle	5810	43	135
LCAT24-50HL	Curve	6200	44	141
LCAT24-50HLx-R	Rectangle	5966	43	138
LCAT24-30VL	Curve	6999	59	119
LCAT24-30VLx-R	Rectangle	6952	58	121
LCAT24-35VL	Curve	7209	59	122
LCAT24-35VLx-R	Rectangle	7189	58	125
LCAT24-40VL	Curve	7321	59	124
LCAT24-40VLx-R	Rectangle	7301	58	127
LCAT24-50VL	Curve	7972	59	135
LCAT24-50VLx-R	Rectangle	7496	58	130
LCAT24-30XL	Curve	8168	74	111
LCAT24-30XLx-R	Rectangle	8112	75	109
LCAT24-35XL	Curve	8412	74	114
LCAT24-35XLx-R	Rectangle	8388	75	112
LCAT24-40XL	Curve	8547	74	116
LCAT24-40XLx-R	Rectangle	8519	75	114
LCAT24-50XL	Curve	9304	74	126
LCAT24-50XLx-R	Rectangle	8747	75	117

Product Availability 90 CRI				
Lumen Package	Shielding	Lumens	Input Watts	LPW
LCAT24-930MW	Curve	2859	30	95
LCAT24-930MWx-R	Rectangle	2953	30	98
–	–	–	–	–
–	–	–	–	–
LCAT24-935MW	Curve	2926	30	97
LCAT24-935MWx-R	Rectangle	3015	30	100
–	–	–	–	–
–	–	–	–	–
LCAT24-940MW	Curve	2993	30	99
LCAT24-940MWx-R	Rectangle	3080	30	102
–	–	–	–	–
–	–	–	–	–
LCAT24-950MW	Curve	3161	30	105
LCAT24-950MWx-R	Rectangle	3280	30	109
–	–	–	–	–
–	–	–	–	–
LCAT24-930LW	Curve	3628	36	100
LCAT24-930LWx-R	Rectangle	3759	36	104
LCAT24-935LW	Curve	3713	36	103
LCAT24-935LWx-R	Rectangle	3838	36	106
LCAT24-940LW	Curve	3798	36	105
LCAT24-940LWx-R	Rectangle	3920	36	109
LCAT24-950LW	Curve	4012	36	111
LCAT24-950LWx-R	Rectangle	4175	36	116
LCAT24-930ML	Curve	4055	39	105
LCAT24-930MLx-R	Rectangle	4186	39	108
LCAT24-935ML	Curve	4150	39	107
LCAT24-935MLx-R	Rectangle	4274	39	110
LCAT24-940ML	Curve	4246	39	109
LCAT24-940MLx-R	Rectangle	4366	39	113
LCAT24-950ML	Curve	4484	39	116
LCAT24-950MLx-R	Rectangle	4651	39	120
LCAT24-930HL	Curve	4810	43	112
LCAT24-930HLx-R	Rectangle	4704	43	109
LCAT24-935HL	Curve	4913	43	114
LCAT24-935HLx-R	Rectangle	4803	43	111
LCAT24-940HL	Curve	5019	43	116
LCAT24-940HLx-R	Rectangle	4907	43	114
LCAT24-950HL	Curve	5346	43	124
LCAT24-950HLx-R	Rectangle	5227	43	121
LCAT24-930VL	Curve	5883	58	102
LCAT24-930VLx-R	Rectangle	5912	58	103
LCAT24-935VL	Curve	6007	58	104
LCAT24-935VLx-R	Rectangle	6036	58	105
LCAT24-940VL	Curve	6136	58	107
LCAT24-940VLx-R	Rectangle	6166	58	107
LCAT24-950VL	Curve	6537	58	114
LCAT24-950VLx-R	Rectangle	6568	58	114
LCAT24-930XL	Curve	7058	75	95
LCAT24-930XLx-R	Rectangle	6895	75	92
LCAT24-935XL	Curve	7207	75	97
LCAT24-935XLx-R	Rectangle	7043	75	94
LCAT24-940XL	Curve	7362	75	99
LCAT24-940XLx-R	Rectangle	7194	75	96
LCAT24-950XL	Curve	7842	75	105
LCAT24-950XLx-R	Rectangle	7664	75	103

HUBBELL
HUBBELL Lighting

Columbia LIGHTING

OPTION 2 FIXTURE

LCAT24

CATALOG #:

2' × 4' LED CONTEMPORARY ARCHITECTURAL TROFFER

DIMENSIONS

GRID

23.77"
(604mm)

3.98"
(101mm)

Grid, recessed section

47.75"
(1213mm)

23.77"
(604mm)
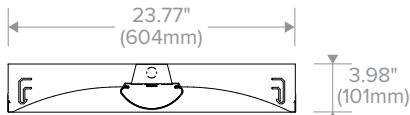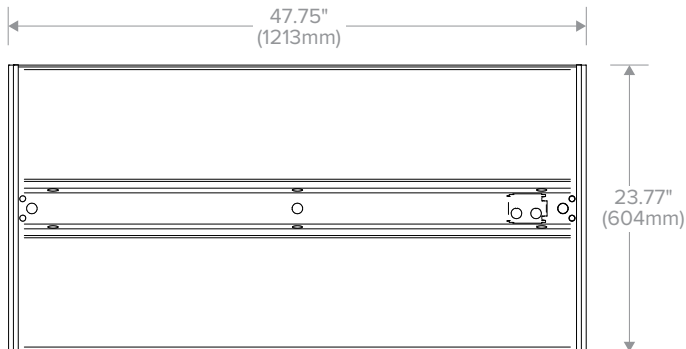
Grid, back of housing
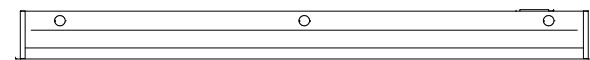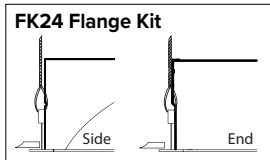
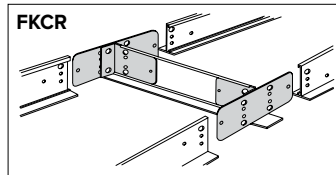### GRID, STATIC
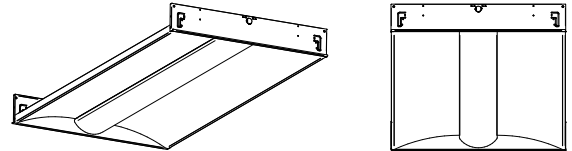
GRID, AIR RETURN
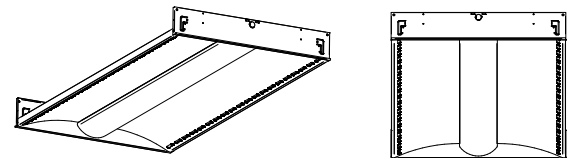
CEILING COMPATIBILITY

Type G

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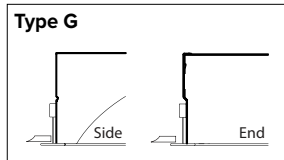
For lay-in installation in exposed grid ceilings. Maximum tee widths of 1" and maximum tee heights of 2" allowed.

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.
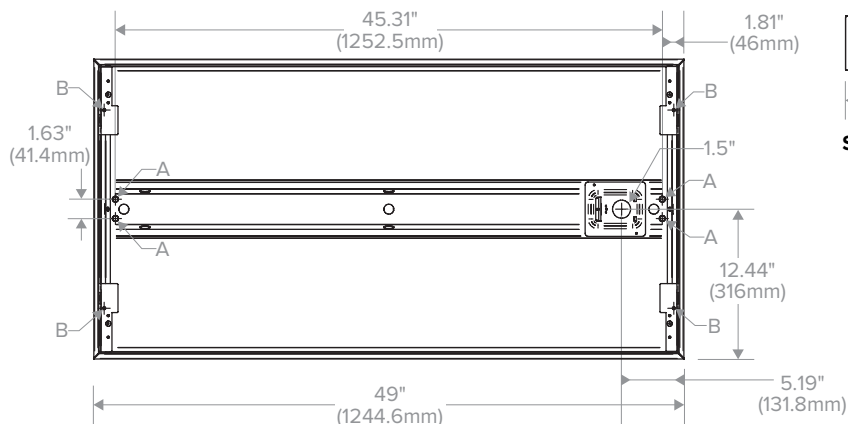
FKCR

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, STATIC ONLY

45.31"
(1252.5mm)

1.81"
(46mm)

B   B

1.63"
(41.4mm)

A   A

A   A

1.5"

B   B

12.44"
(316mm)

49"
(1244.6mm)

5.19"
(131.8mm)

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

* For Cable Mount a 2" x 3" access plate with (4) ⅞" KOs provided in place of Mounting Collar shown.

4.63"
(117.6mm)

25"
(635mm)
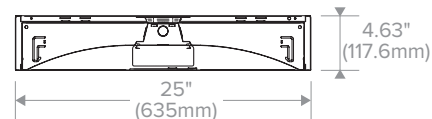
Surface section (SM)

Surface Mount:
Order SM ceiling type. Mounting collar required for surface mounting. (4) Mounting knock-outs, ⅜", 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.

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

HUBBELL
Lighting

OPTION 2 FIXTURE

LCAT24

CATALOG #:

2' × 4' LED CONTEMPORARY ARCHITECTURAL TROFFER

𝒫 PHOTOMETRY

𝒫 IES

𝒫 PDF

𝒫 IES

𝒫 PDF

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𝒫 DTS Integration Guide

PHOTOMETRY

LCAT24-35LWG-EU

LUMINAIRE DATA

Test No.	16519
Description	2' x 4' LED architectural troffer with frosted linear prismed lens
Delivered Lumens	4396
Watts	36.10
Efficacy	122
Mounting	Recessed
Spacing Criterion	0° = 1.22 90° = 1.32

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0–30	1098	25
0–40	1804	41
0–60	3240	73.7
0–90	4396	100
0–180	4396	100

POLAR GRAPH
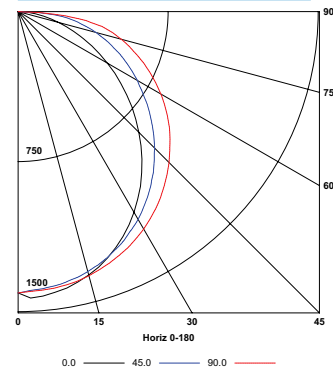
LCAT24-35MLG-EU

LUMINAIRE DATA

Test No.	16522
Description	2' x 4' LED architectural troffer with frosted linear prismed lens
Delivered Lumens	4914
Watts	38.80
Efficacy	127
Mounting	Recessed
Spacing Criterion	0° = 1.22 90° = 1.30

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0–30	1250	25.4
0–40	2049	41.7
0–60	3648	74.2
0–90	4914	100
0–180	4914	100

POLAR GRAPH
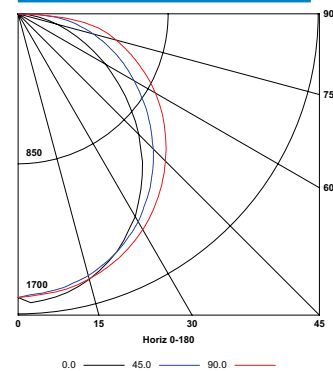
LCAT24-35HLG-EU

LUMINAIRE DATA

Test No.	16525
Description	2' x 4' LED architectural troffer with frosted linear prismed lens
Delivered Lumens	5607
Watts	44.00
Efficacy	127
Mounting	Recessed
Spacing Criterion	0° = 1.22 90° = 1.31

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
0–30	1422	25.4
0–40	2333	41.6
0–60	4161	74.2
0–90	5607	100
0–180	5607	100

POLAR GRAPH
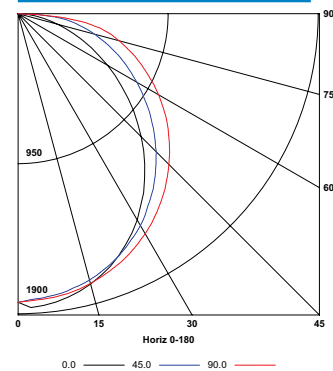
ADDITIONAL INFORMATION

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
GRAY	Dimming

HUBBELL Lighting