

LINEAR^{SERIES}



DATE

PROJECT

COMMENTS

CERTIFICATIONS



3SID SUSPENDED INDIRECT / DIRECT

AN EXTENSION OF OUR 3-INCH LINEAR FAMILY SERIES

HOUSING

- 1. ARCHITECTURAL DETAILS**
Provide a clean architectural appearance with the hidden connect mounting system and seamlessly adjoin luminaires with the sure-fit alignment process.
- 2. SURE-FIT ALIGNMENT**
4-Point alignment system adjoining each luminaire section to ensure straighter rows while minimizing the appearance of seams.

OPTICAL SYSTEM

- 3. EVENLY ILLUMINATED DIRECT LENS**
High efficiency diffuser designed to minimize glare and provide uniform light distribution. Optional Wall Wash (WW) achieves a superior wall uniformity while minimizing glare.

4. INDIRECT DISTRIBUTION

Select from three indirect illumination options. Standard Lambertian can be upgraded to Batwing Up (BW) or Asymmetric Up (AU)

5. VERSATILE LIGHT ENGINE

Multiple lumen intensities provide the correct level of illumination within each space.

ELECTRICAL

OPTIONAL INTEGRAL EMERGENCY BATTERY PACK

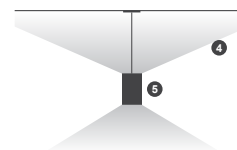
Engineered to exceed UL minimum safety standards and is CEC Listed.

0-10 VOLT DIMMING STANDARD

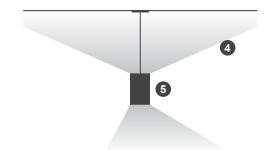
120/277VAC 0-10V dimming to 1% standard.

UP TO 159.7 LUMENS PER WATT AT 90 CRI

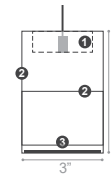
LIGHT DISTRIBUTION: LAMBERTIAN



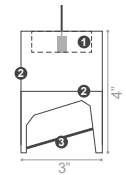
LIGHT DISTRIBUTION: WW



CROSS-SECTION: LAMBERTIAN



CROSS-SECTION: WW



SAMPLEPARTNUMBER:3SID-24-MU-MD-30-UNV-T1-WH-C90

ORDERING

SERIES	LENGTH	UPPER OUTPUT				DIRECT OUTPUT				CCT		VOLTAGE		MOUNTING		FINISH	
3SID																	
	XXX FT	VHU	1250 LM/FT	LU	500 LM/FT	VHD	1250 LM/FT	LD	500 LM/FT	30	3000K	UNV	120-277V	T1	1" T-Grid	WH	White
	1' Increments EX: 20' = 20	HU	1000 LM/FT	VLU ³	250 LM/FT	HD	1000 LM/FT	VLD	250 LM/FT	35	3500K	347 ¹	347V	T9	9/16" T-Grid	BLK	Black
ORDERING NOTES		MU	750 LM/FT	CU	Custom	MD	750 LM/FT	CD	Custom	40	4000K			SC	Screw Slot Grid		
1 EM not available with 347V.														HC	Hard Ceiling		
2 EM and sensors are not available with 2' and 3' fixtures.														JB	Junction Box		
3 VLU is not available on 2' lengths.														OPTIONS			

OPTIONS

CRI		SUSPENSION			OPTICAL			INTEGRATED CONTROLS ^{2, 4, 5}	
C90									
C90	90 CRI	BLANK = 48" CABLE	CB144	144" Cables	BLANK = LAMBERTIAN	BW	Batwing Up	DOS	Daylight Occupancy Sensor DALI DRIVER STANDARD
		CB96	96" Cables	BC	Black Canopy & Cord	WW ⁶	Wall Wash, Direct	AU	Asymmetric Up

CIRCUITING

SS-U/D Separate Switching
UPWARDS/DOWNWARDS

FOR INDIVIDUALS

EM² Emergency Battery
CEC LISTED
EC Emergency Circuit

FOR LINEAR RUNS^{7,8}

EM		
EMERGENCY BATTERY PACK	QUANTITY PER RUN ⁷	POSITION IN RUN ⁸
EC		
EMERGENCY CIRCUIT	QUANTITY PER RUN ⁷	POSITION IN RUN ⁸

OPTIONS NOTES

4 For individual fixtures, sensor located at power feed end. For runs, a sensor is installed into each fixture in run, ex. 2 sensors are installed in a 16' run (1 sensor in each 8' fixture).

5 Consult factory for component or system not listed.

6 Integrated controls not available with wall wash.

7 EM and EC quantity is not to exceed number of discrete fixture sections in a row.

8 EM and EC position refers to which fixture in the run that will be powered by the EM/EC circuit. Position Options: S=Starter, J=Joiner, E=Enders Ex: 3SID-24-HU-HD-35-UNV-T1-WH-EM2SJ



3SID SUSPENDED

INDIRECT / DIRECT



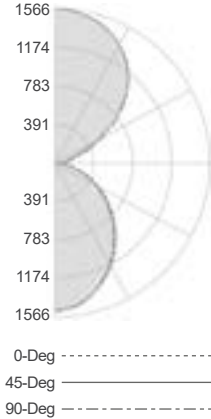
PHOTOMETRICS & ENERGY CHARTS

3SID-04-HU-HD-35-UNV-XX-C90

Total Lumens: 8,032
Ratio: 50% Up & 50% Down
Wattage: 56.1
Efficacy: 143.0 LM/W
Fixture Length: Four Feet

Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1136.0	14.1
0 - 40	1828.8	22.8
0 - 60	3145.9	39.2
0 - 90	3997.3	49.8
90 - 180	4034.9	50.2
0 - 180	8032.1	100.0



Indirect (Lambertian) / Direct (Lambertian) Light at 90 CRI, 3500K

	VHU-VHD	VHU-HD	VHU-MD	VHU-LD	VHU-VLD
Watts/ft	18.2	15.8	13.7	11.7	9.8
Lumens/ft	2543	2287	2043	1787	1556
LPW	139.7	144.7	149.1	152.7	159.4

	LU-VHD	LU-HD	LU-MD	LU-LD	LU-VLD
Watts/ft	13.5	11.1	9.0	7.0	5.1
Lumens/ft	1766	1510	1266	1010	779
LPW	130.8	136.0	140.6	144.2	153.9

	HU-VHD	HU-HD	HU-MD	HU-LD	HU-VLD
Watts/ft	16.4	14.0	11.9	9.9	8.0
Lumens/ft	2264	2007	1763	1507	1276
LPW	137.8	143.1	147.8	151.8	159.7

	VLU-VHD	VLU-HD	VLU-MD	VLU-LD	VLU-VLD
Watts/ft	12.1	9.7	7.6	5.6	3.6
Lumens/ft	1517	1261	1017	761	530
LPW	125.9	130.6	134.7	137.1	146.7

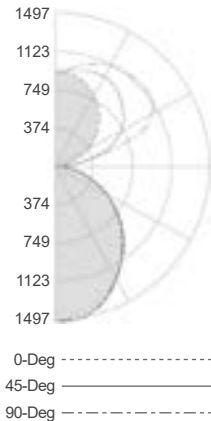
	MU-VHD	MU-HD	MU-MD	MU-LD	MU-VLD
Watts/ft	14.9	12.5	10.4	8.4	6.4
Lumens/ft	1997	1741	1497	1241	1010
LPW	134.2	139.5	144.2	148.0	156.8

3SID-04-HU-HD-35-UNV-XX-C90-BW

Total Lumens: 7,873
Ratio: 50% Up & 50% Down
Wattage: 56.1
Efficacy: 140.0 LM/W
Fixture Length: Four Feet

Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1136.0	14.4
0 - 40	1828.8	23.2
0 - 60	3145.9	40.0
0 - 90	3997.4	50.8
90 - 180	3875.4	49.2
0 - 180	7872.7	100.0



Indirect (Batwing) / Direct (Lambertian) Light at 90 CRI, 3500K

	VHU-VHD	VHU-HD	VHU-MD	VHU-LD	VHU-VLD
Watts/ft	18.2	15.8	13.7	11.7	9.7
Lumens/ft	2492	2236	1992	1736	1505
LPW	136.9	141.5	145.4	148.4	155.2

	LU-VHD	LU-HD	LU-MD	LU-LD	LU-VLD
Watts/ft	13.5	11.1	9.0	7.0	5.0
Lumens/ft	1746	1489	1245	989	758
LPW	129.3	134.2	138.4	141.3	151.7

	HU-VHD	HU-HD	HU-MD	HU-LD	HU-VLD
Watts/ft	16.4	14.0	11.9	9.9	7.9
Lumens/ft	2224	1967	1723	1467	1236
LPW	135.3	140.2	144.4	147.8	155.9

	VLU-VHD	VLU-HD	VLU-MD	VLU-LD	VLU-VLD
Watts/ft	12.1	9.7	7.6	5.6	3.6
Lumens/ft	1507	1250	1006	750	519
LPW	125.0	129.6	133.3	135.2	146.3

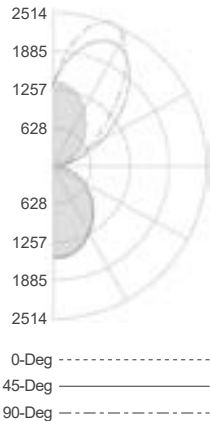
	MU-VHD	MU-HD	MU-MD	MU-LD	MU-VLD
Watts/ft	14.9	12.5	10.4	8.4	6.4
Lumens/ft	1968	1711	1467	1211	980
LPW	132.2	137.1	141.3	144.5	153.6

3SID-04-HU-HD-35-UNV-XX-C90-AU

Total Lumens: 7,883
Ratio: 50% Up & 50% Down
Wattage: 56.1
Efficacy: 140.0 LM/W
Fixture Length: Four Feet

Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1140.0	14.4
0 - 40	1828.8	23.2
0 - 60	3145.9	39.9
0 - 90	3997.3	50.7
90 - 180	3885.9	49.3
0 - 180	7883.1	100.0



Indirect (Asymmetric) / Direct (Lambertian) Light at 90 CRI, 3500K

	VHU-VHD	VHU-HD	VHU-MD	VHU-LD	VHU-VLD
Watts/ft	18.2	15.8	13.7	11.7	9.7
Lumens/ft	2496	2239	1995	1739	1508
LPW	137.1	141.7	145.6	148.7	155.5

	LU-VHD	LU-HD	LU-MD	LU-LD	LU-VLD
Watts/ft	13.5	11.1	9.0	7.0	5.0
Lumens/ft	1747	1491	1247	991	760
LPW	129.4	134.3	138.5	141.5	151.9

	HU-VHD	HU-HD	HU-MD	HU-LD	HU-VLD
Watts/ft	16.4	14.0	11.9	9.9	7.9
Lumens/ft	2226	1970	1726	1470	1239
LPW	135.5	140.4	144.7	148.0	156.2

	VLU-VHD	VLU-HD	VLU-MD	VLU-LD	VLU-VLD
Watts/ft	12.1	9.7	7.6	5.6	3.6
Lumens/ft	1507	1251	1007	751	520
LPW	125.1	129.6	133.4	135.3	146.5

	MU-VHD	MU-HD	MU-MD	MU-LD	MU-VLD
Watts/ft	14.9	12.5	10.4	8.4	6.4
Lumens/ft	1969	1713	1469	1213	982
LPW	132.4	137.3	141.5	144.8	153.9

Lumen Adjustment Calculations

LUMEN MULTIPLIERS	
3000K	0.995
3500K	1.000
4000K	1.023

Example: HU-MD Output, 3000K at 90CRI

Total Light Output: 7052 x 0.995 = 7017 lm
Total Light Output Per Foot: 1763 x 0.995 = 1754 lm/ft
Efficacy = 1754 / 11.9 = 147.4 lm/W

3SID SUSPENDED

INDIRECT / DIRECT



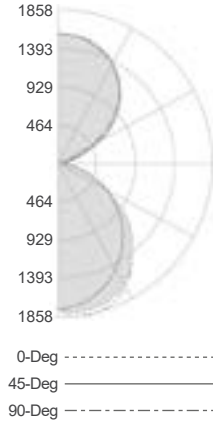
PHOTOMETRICS & ENERGY CHARTS

3SID-04-HU-HD-35-UNV-XX-C90-WW

Total Lumens: 8,089
Ratio: 50% Up & 50% Down
Wattage: 56.1
Efficacy: 144.0 LM/W
Fixture Length: Four Feet

Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1302.7	16.1
0 - 40	2069.4	25.6
0 - 60	3396.3	42.0
0 - 90	4056.4	50.1
90 - 180	4033.0	49.9
0 - 180	8089.4	100.0



Indirect (Lambertian) / Direct (Wall Wash) Light at 90 CRI, 3500K

	VHU-VHD	VHU-HD	VHU-MD	VHU-LD	VHU-VLD
Watts/ft	18.2	15.8	13.7	11.7	9.7
Lumens/ft	2562	2302	2054	1794	1560
LPW	140.8	145.7	149.9	153.4	160.8

	LU-VHD	LU-HD	LU-MD	LU-LD	LU-VLD
Watts/ft	13.5	11.1	9.0	7.0	5.0
Lumens/ft	1785	1524	1277	1017	783
LPW	132.2	137.3	141.9	145.3	156.5

	HU-VHD	HU-HD	HU-MD	HU-LD	HU-VLD
Watts/ft	16.4	14.0	11.9	9.9	7.9
Lumens/ft	2282	2022	1774	1515	1280
LPW	138.9	144.1	148.7	152.5	161.4

	VLU-VHD	VLU-HD	VLU-MD	VLU-LD	VLU-VLD
Watts/ft	12.1	9.7	7.6	5.6	3.6
Lumens/ft	1536	1276	1028	768	534
LPW	127.5	132.2	136.2	138.4	150.4

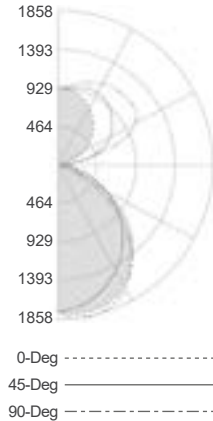
	MU-VHD	MU-HD	MU-MD	MU-LD	MU-VLD
Watts/ft	14.9	12.5	10.4	8.4	6.4
Lumens/ft	2016	1755	1508	1248	1014
LPW	135.5	140.7	145.3	148.9	158.9

3SID-04-HU-HD-35-UNV-XX-C90-WW-BW

Total Lumens: 7,930
Ratio: 50% Up & 50% Down
Wattage: 56.1
Efficacy: 141.0 LM/W
Fixture Length: Four Feet

Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1302.7	16.4
0 - 40	2069.4	26.1
0 - 60	3396.3	42.8
0 - 90	4056.4	51.2
90 - 180	3873.4	48.8
0 - 180	7929.8	100.0



Indirect (Batwing) / Direct (Wall Wash) Light at 90 CRI, 3500K

	VHU-VHD	VHU-HD	VHU-MD	VHU-LD	VHU-VLD
Watts/ft	18.2	15.8	13.7	11.7	9.7
Lumens/ft	2511	2251	2003	1743	1509
LPW	138.0	142.5	146.2	149.0	155.6

	LU-VHD	LU-HD	LU-MD	LU-LD	LU-VLD
Watts/ft	13.5	11.1	9.0	7.0	5.0
Lumens/ft	1764	1504	1257	997	762
LPW	130.7	135.5	139.6	142.4	152.5

	HU-VHD	HU-HD	HU-MD	HU-LD	HU-VLD
Watts/ft	16.4	14.0	11.9	9.9	7.9
Lumens/ft	2242	1982	1735	1475	1240
LPW	136.5	141.3	145.4	148.5	156.4

	VLU-VHD	VLU-HD	VLU-MD	VLU-LD	VLU-VLD
Watts/ft	12.1	9.7	7.6	5.6	3.6
Lumens/ft	1526	1265	1018	758	523
LPW	126.6	131.1	134.8	136.5	147.4

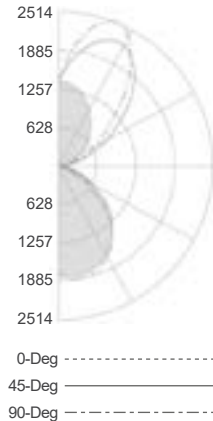
	MU-VHD	MU-HD	MU-MD	MU-LD	MU-VLD
Watts/ft	14.9	12.5	10.4	8.4	6.4
Lumens/ft	1986	1726	1478	1219	984
LPW	133.5	138.3	142.4	145.4	154.3

3SID-04-HU-HD-35-UNV-XX-C90-WW-AU

Total Lumens: 7,940
Ratio: 50% Up & 50% Down
Wattage: 56.1
Efficacy: 141.0 LM/W
Fixture Length: Four Feet

Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1302.7	16.4
0 - 40	2069.4	26.1
0 - 60	3396.3	42.8
0 - 90	4056.4	51.1
90 - 180	3884.0	48.9
0 - 180	7940.4	100.0



Indirect (Asymmetric) / Direct (Wall Wash) Light at 90 CRI, 3500K

	VHU-VHD	VHU-HD	VHU-MD	VHU-LD	VHU-VLD
Watts/ft	18.2	15.8	13.7	11.7	9.7
Lumens/ft	2515	2254	2007	1747	1512
LPW	138.2	142.7	146.5	149.3	155.9

	VHU-VHD	VHU-HD	VHU-MD	VHU-LD	VHU-VLD
Watts/ft	13.5	11.1	9.0	7.0	5.0
Lumens/ft	1766	1506	1258	998	764
LPW	130.8	135.6	139.8	142.6	152.7

	HU-VHD	HU-HD	HU-MD	HU-LD	HU-VLD
Watts/ft	16.4	14.0	11.9	9.9	7.9
Lumens/ft	2245	1985	1737	1477	1243
LPW	136.6	141.5	145.6	148.8	156.7

	VLU-VHD	VLU-HD	VLU-MD	VLU-LD	VLU-VLD
Watts/ft	12.1	9.7	7.6	5.6	3.6
Lumens/ft	1526	1266	1018	759	524
LPW	126.7	131.2	134.9	136.7	147.6

	MU-VHD	MU-HD	MU-MD	MU-LD	MU-VLD
Watts/ft	14.9	12.5	10.4	8.4	6.4
Lumens/ft	1988	1728	1480	1221	986
LPW	133.6	138.5	142.6	145.7	154.6

Lumen Adjustment Calculations

LUMEN MULTIPLIERS	
3000K	0.995
3500K	1.000
4000K	1.023

Example: Indirect Lambertian, Direct Wall WashHU-MD Output, 3000K at 90CRI

Total Light Output: $7096 \times 0.995 = 7060 \text{ lm}$
Total Light Output Per Foot: $1774 \times 0.995 = 1765 \text{ lm/ft}$
Efficacy = $1765 / 11.9 = 148.3 \text{ lm/W}$

3SID SUSPENDED

INDIRECT / DIRECT



SPECIFICATIONS

MECHANICAL

Housing Construction:

Extruded Aluminum 6063-T5 alloy outer housing and LED tray with die-formed steel internal components for strength, alignment and mounting attachment. Our high-quality die-cast end caps are engineered to conceal all fasteners and to retain the sealing gaskets on the inside of the fixture while completing the clean and minimalist look of this luminaire.

Alignment/Assembly:

The alignment system employs a four-point alignment and attachment method, designed to create straighter rows and minimize seams between sections (field assembled). Four alignment pins ensure the outer extruded aluminum rails are aligned, while a draw-screw secures housing-to-housing attachment. Additional alignment biscuits double as the light shields.

Lengths:

The 3SID is available in a minimum 2-foot (nominal) length with additional 1-foot increments available ($\pm 0.030"$). Longer fixture rows are available and will be configured with 4-foot, 5-foot, 6-foot, 7-foot, and 8-foot fixtures. Maximum run length on one power feed is 72'. Continuous runs over 72' will require a second feed.

Mounting Method/Hardware:

The Hidden-Connect design recesses all attachment hardware (hanging cable and power cord) below the top plane of the housing to enable a sleek, clean finished look. Standard hanging hardware includes 1/16" diameter, galvanized steel aircraft cable with adjustable and lockable nickel-plated cable grippers and a white 18/5 S.J.T. power cord. The standard hardware includes a 60" power cord and 54" aircraft cables to accommodate a 48" mounting distance from the ceiling. Longer hanging cables and power cords are available as an option. Ceiling type options are "T1" = T-Grid, "T9" = T-Grid, "SC" = Screw Slot Grid, "HC" = Hard Ceiling or "JB" = J-Box mount. Ceiling canopy provided. All Lumato suspension hardware is tested and listed to UL1598 requirements for loading/fixture support.

Exterior Finish:

The 3SID is available in White and Black polyester powder coat finish to ensure durability.

Suspension Components:

Fixtures are suspended by 1/16" galvanized aircraft cable. Cables are attached to the ceiling suspension point with a 1/4-20 threaded ceiling cable barrel that incorporates a threaded ring to support the feed/hanger canopy allowing access to the J-box/hanger without removal of the suspension cable allowing conductor inspection/service without having to support the fixture(s). Feed canopies are 5" O.D. and hanger canopies are 2" O.D. (JB = 5" O.D.). Cable lengths can be specified for 48", 96" and 144" suspension lengths.

Integrated Controls:

The 3SID is available with optional integrated controls. Sensors are conveniently designed to mount in aperture and are located at the power feed end of each fixture. For runs, each fixture section will be supplied with a discrete sensor that will control that specific section. Philips EasySense is standard daylight/occupancy sensor. DALI driver required. If your project requires a component or system not listed, please contact your Lumato lighting representative.

MANUFACTURER	ORDERING CODE	SENSOR	CONNECTION	DRIVER
Philips EasySense	DOS	Daylight/PIR Occupancy	Wireless	DALI (Advanced Xitanium SR, 1% Dimming)

OPERATION

Light Engine:

The 3SID is available in 3000K, 3500K and 4000K CCT all within a 3-Step MacAdam Ellipse and has a standard CRI of 90+.

Optics:

The back-lit extruded acrylic lens ensures high efficiency light output, in a minimal form factor for a clean, evenly illuminated surface with minimal glare.

Optional Direct Wall Wash:

Asymmetric extruded aluminum reflector with recessed extruded acrylic lens to achieve a superior wall uniformity while minimizing glare.

Indirect Optics:

Standard Lambertian can be upgraded to indirect batwing (BW) or Asymmetric (AU). The extruded acrylic batwing lens (BW) provides an ultra-wide distribution with even illumination across the ceiling while allowing for maximum spacing between fixtures. The Asymmetric (AU) diffused forward-throw optics properly illuminates the wall. All 3 indirect acrylic optics protect LED's from dust and debris.

Electrical:

Class 2 programmable (factory pre-set) premium power supply, 120-277VAC input. Power factor >0.9. THD <15%. Integral Surge Protection to 2KV.

Dimming:

The 3SID comes standard with 0-10V dimming to 1%. For DOS (Daylight/Occupancy Sensor) ordering code, DALI driver required. Advance Xitanium SR, 1% dimming to be utilized.

Emergency Battery Pack:

Emergency Battery Pack has been engineered to exceed UL minimum safety standards. Standard battery is CEC Listed. For most fixtures, the entire direct portion of the fixture will be illuminated by the EM Battery Pack. For 8' VHD, 10' HD and VHD, and 12' MD, HD, and VHD, only the first portion of the fixture will be illuminated by the EM battery pack. "Quantity per Run" refers to the number of fixtures in the run that will be supplied with an emergency battery pack. "Position in Run" refers to which fixture in the run that will contain the battery. Position options are Starter (S), Joiner (J), or Ender (E). For example, a 24' run needing two emergency battery packs, one in the starter and one in the joiner, would be ordered as EM2SJ. When a joiner is selected, battery packs are always supplied in 8' fixtures before 6' fixtures in that run.

Emergency Circuit:

Emergency Circuit fixtures are engineered so that the entire fixture is wired to the emergency circuit. "Quantity per Run" refers to the number of fixtures in the run that are wired to the emergency circuit. "Position in Run" refers to which fixture in the run that will be powered by the Emergency Circuit. Position options are Starter (S), Joiner (J), or Ender (E). For example, a 24' run needing two emergency sections, one in the starter and one in the joiner, would be ordered as EC2SJ. When a joiner is selected, Emergency Circuits are always supplied in 8' fixtures before 6' fixtures in that run.

GENERAL

Warranty:

Ten (10) year limited warranty from date of shipment, covers LED's, driver and luminaire. Optional accessories are covered by their individual Manufacturers' warranties.

Lumen Maintenance:

Rated for 85% initial lumen output at 90,000 Hours of operation, operated at 25°C ambient temperature; per TM-21 Guidelines published by the Illuminating Engineering Society (IES).

Certifications:

All Luminaires are UL/cUL Listed to UL 1598 Standards and approved for Indoor use in Dry/Damp Locations.

Manufactured in the USA:

All Lumato Luminaires and Components (with the exception of our LED boards and drivers) are proudly manufactured and assembled in the USA.

Shipping:

4 week lead-time for orders up to 1000 linear feet. Lead-time for orders greater than 1000 linear feet will be determined at time of order.

3SID SUSPENDED

INDIRECT / DIRECT



Manufactured in the USA



BAA Compliant



BABA Compliant



10-Year Warranty



Standard 90+ CRI



Batwing Distribution



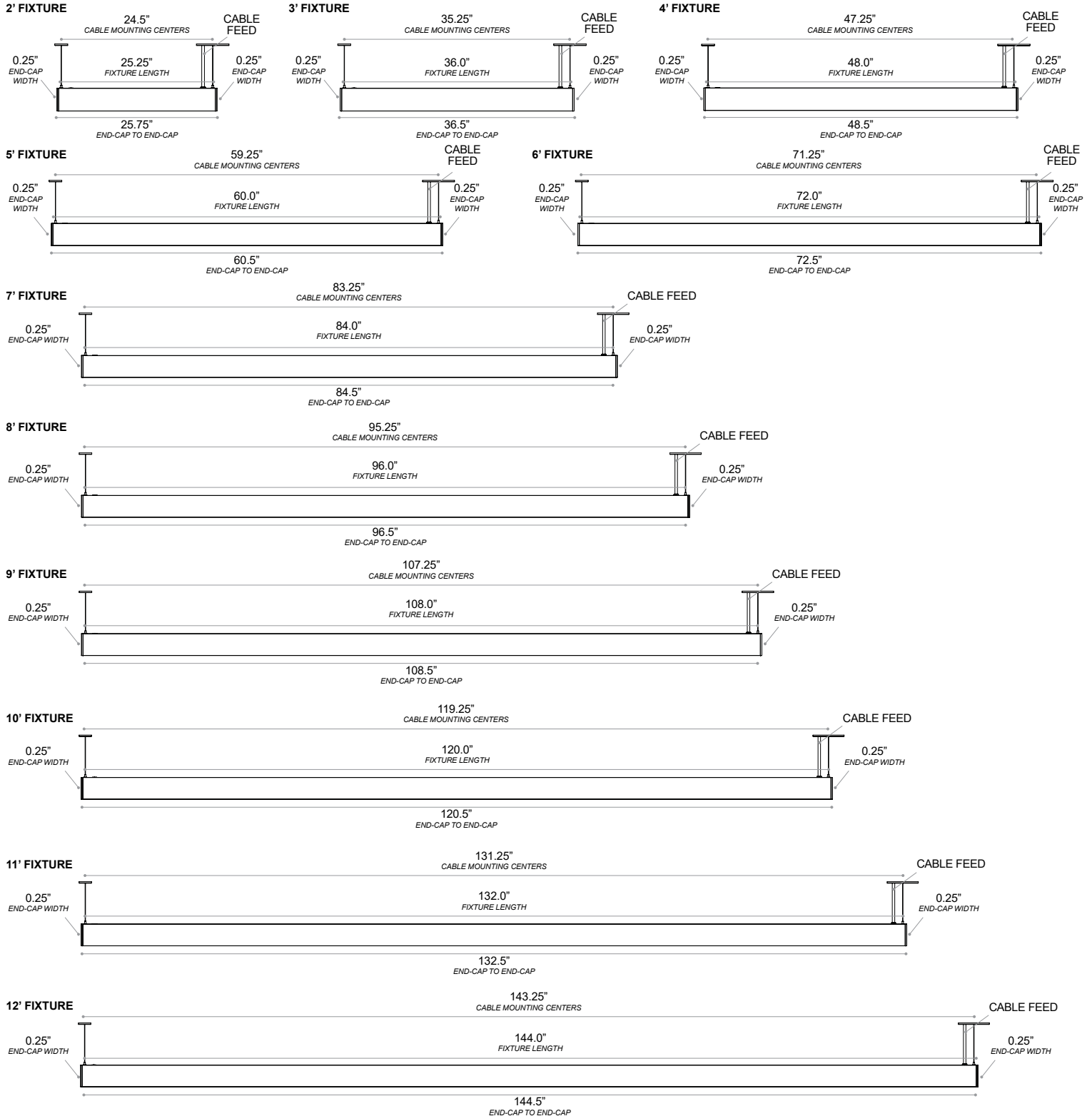
Sure-Fit Alignment



Hidden Connect

14' FIXTURE

Fixture Row Layout: Single Unit 2' - 3' - 4' - 5' - 6' - 7' - 8' - 9' - 10' - 11' - 12'

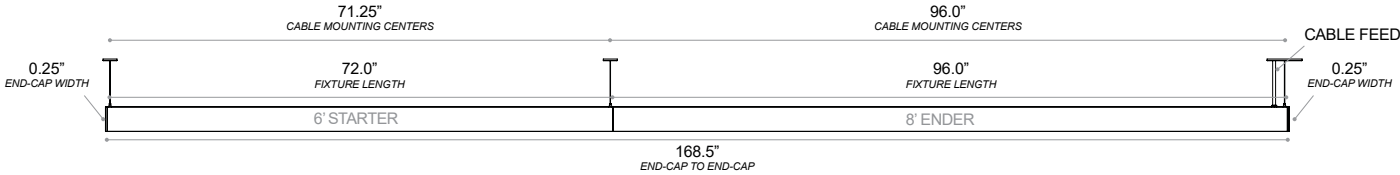


3SID SUSPENDED
INDIRECT / DIRECT

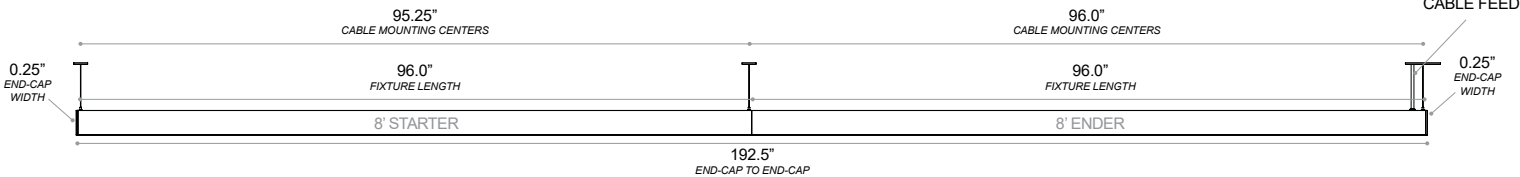


Fixture Row Layout: Two Units 14' - 16'

14' FIXTURE

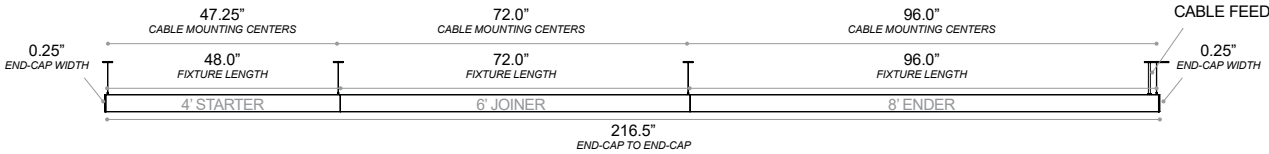


16' FIXTURE

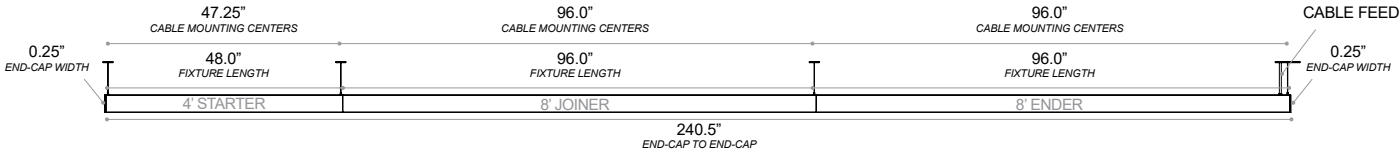


Fixture Row Layout: Three Units 18' - 20' - 22' - 24'

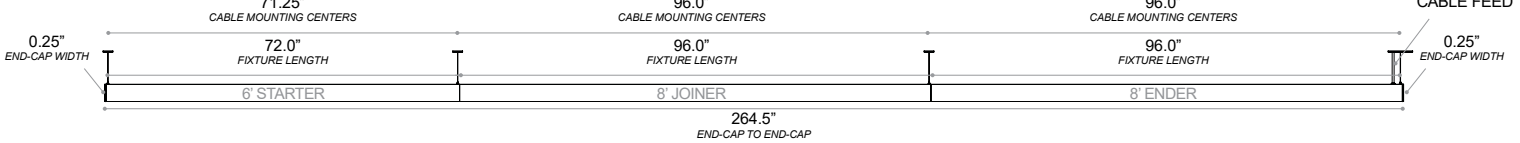
18' FIXTURE



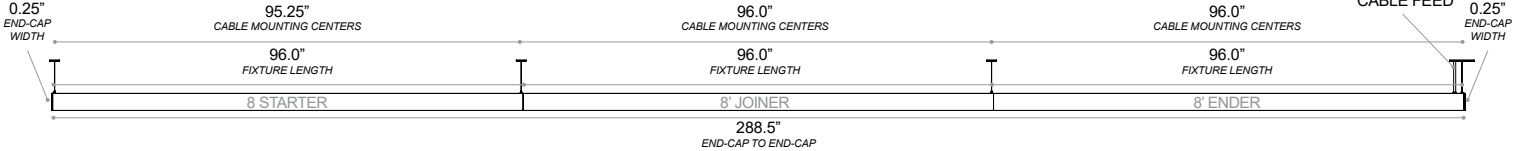
20' FIXTURE



22' FIXTURE



24' FIXTURE



3SID SUSPENDED

INDIRECT / DIRECT



Fixture Row Components

RUN LENGTH	FIXTURE LENGTHS									JOINER	FEED KITS	HANGER KITS	END-CAP TO END-CAP
	STARTER	JOINER							ENDER				
	1	2	3	4	5	6	7	8	9				
13'	5'	-	-	-	-	-	-	-	8'	1	1	2	156.5"
14'	6'	-	-	-	-	-	-	-	8'	1	1	2	168.5"
15'	7'	-	-	-	-	-	-	-	8'	1	1	2	180.5"
16'	8'	-	-	-	-	-	-	-	8'	1	1	2	192.5"
17'	3'	6'	-	-	-	-	-	-	8'	2	1	3	204.5"
18'	4'	6'	-	-	-	-	-	-	8'	2	1	3	216.5"
19'	5'	6'	-	-	-	-	-	-	8'	2	1	3	228.5"
20'	4'	8'	-	-	-	-	-	-	8'	2	1	3	240.5"
21'	5'	8'	-	-	-	-	-	-	8'	2	1	3	252.5"
22'	6'	8'	-	-	-	-	-	-	8'	2	1	3	264.5"
23'	7'	8'	-	-	-	-	-	-	8'	2	1	3	276.5"
24'	8'	8'	-	-	-	-	-	-	8'	2	1	3	288.5"
25'	5'	6'	6'	-	-	-	-	-	8'	3	1	4	300.5"
26'	4'	6'	8'	-	-	-	-	-	8'	3	1	4	312.5"
27'	5'	6'	8'	-	-	-	-	-	8'	3	1	4	324.5"
28'	4'	8'	8'	-	-	-	-	-	8'	3	1	4	336.5"
29'	5'	8'	8'	-	-	-	-	-	8'	3	1	4	348.5"
30'	6'	8'	8'	-	-	-	-	-	8'	3	1	4	360.5"
31'	7'	8'	8'	-	-	-	-	-	8'	3	1	4	372.5"
32'	8'	8'	8'	-	-	-	-	-	8'	3	1	4	384.5"
33'	5'	6'	6'	8'	-	-	-	-	8'	4	1	5	396.5"
34'	4'	6'	8'	8'	-	-	-	-	8'	4	1	5	408.5"
35'	5'	6'	8'	8'	-	-	-	-	8'	4	1	5	420.5"
36'	4'	8'	8'	8'	-	-	-	-	8'	4	1	5	432.5"
37'	5'	8'	8'	8'	-	-	-	-	8'	4	1	5	444.5"
38'	6'	8'	8'	8'	-	-	-	-	8'	4	1	5	456.5"
39'	7'	8'	8'	8'	-	-	-	-	8'	4	1	5	468.5"
40'	8'	8'	8'	8'	-	-	-	-	8'	4	1	5	480.5"
41'	5'	6'	6'	8'	8'	-	-	-	8'	5	1	6	492.5"
42'	4'	6'	8'	8'	8'	-	-	-	8'	5	1	6	504.5"
43'	5'	6'	8'	8'	8'	-	-	-	8'	5	1	6	516.5"
44'	4'	8'	8'	8'	8'	-	-	-	8'	5	1	6	528.5"
45'	5'	8'	8'	8'	8'	-	-	-	8'	5	1	6	540.5"
46'	6'	8'	8'	8'	8'	-	-	-	8'	5	1	6	552.5"
47'	7'	8'	8'	8'	8'	-	-	-	8'	5	1	6	564.5"
48'	8'	8'	8'	8'	8'	-	-	-	8'	5	1	6	576.5"
49'	5'	6'	6'	8'	8'	8'	-	-	8'	6	1	7	588.5"
50'	4'	6'	8'	8'	8'	8'	-	-	8'	6	1	7	600.5"
51'	5'	6'	8'	8'	8'	8'	-	-	8'	6	1	7	612.5"
52'	4'	8'	8'	8'	8'	8'	-	-	8'	6	1	7	624.5"
53'	5'	8'	8'	8'	8'	8'	-	-	8'	6	1	7	636.5"
54'	6'	8'	8'	8'	8'	8'	-	-	8'	6	1	7	648.5"
55'	7'	8'	8'	8'	8'	8'	-	-	8'	6	1	7	660.5"
56'	8'	8'	8'	8'	8'	8'	-	-	8'	6	1	7	672.5"
57'	5'	6'	6'	8'	8'	8'	8'	-	8'	7	1	8	684.5"
58'	4'	6'	8'	8'	8'	8'	8'	-	8'	7	1	8	696.5"
59'	5'	6'	8'	8'	8'	8'	8'	-	8'	7	1	8	708.5"
60'	4'	8'	8'	8'	8'	8'	8'	-	8'	7	1	8	720.5"

	FIXTURE LENGTH	MOUNTING CENTERS	
	STARTER	STARTER	JOINER/ENDER
3'	36.0"	35.25"	-
4'	48.0"	47.25"	-
5'	60.0"	59.25"	-
6'	72.0"	71.25"	72.0"
7'	84.0"	83.25"	-
8'	96.0"	95.25"	96.0"

