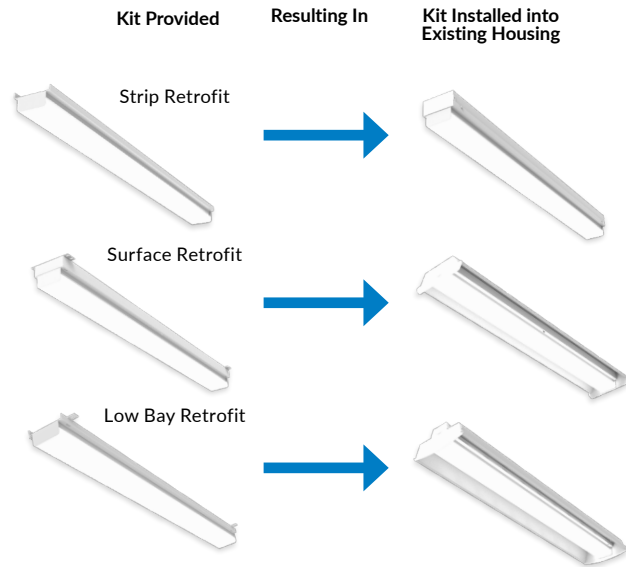


LINEAR RETROFIT

FEATURES

- Highly Configurable & Adaptable BAA Linear Retrofit
- Three Mounting Types – Strip, Surface, and Low Bay
- Strip Mounting Type Available with Fixed 4.3" & 5.0", Adjustable 2.8" to 5.5", and Custom Width Channel Options
- 4ft & 8ft Lengths Available
- 8 Lumen Packages Ranging 2,000 – 12,000
- 3500K, 4000K, 5000K CCT options
- Exceptionally High Efficiency up to 180 lm/W
- Precision Designed Curved & Flat Frosted Acrylic Lens Options
- Pair with Integrated Wireless Grouping Controls Options to Maximize Energy Savings
- 120-277V 0-10V, Bi-Level, and Line Voltage Driver Options
- Calculated L70 > 100,000 Hours
- -40°F up to 123°F Ambient Temperature Range
- ETL Listed for Dry and Damp Locations
- 5 Year Warranty (Standard); 10 Year Warranty Optional
- DesignLights Consortium® Premium Qualified Luminaire



SUITABLE APPLICATIONS

- Education • Healthcare • Offices • Grocery Store

• Retail • Storage Facility • Residential • Stairwell



ORDERING GUIDE:

SERIES	LUMENS	LIGHT ENGINE	DRIVER	CCT	LENS OPTIONS	MOUNTING TYPE ²	WARRANTY
VLR4	2L	HE High Efficacy	U 120-277V	35	(BLANK) No Lens	43ST Fixed 4.3" Strip Channel Width	(BLANK) 5 YR Std.
	3L			40	FFLGR Frosted Flat Glare Reducing Lens	50ST Fixed 5.0" Strip Channel Width	10YR 10 YR
	4L			50	FCLGR Frosted Round Glare Reducing Lens	ADJST Adjustable Width Bracket Strip Channel (2.8" / 3.6 / 4.3" / 5.0" / 5.5")	
	6L					xxST ^{3,4} Custom Width Strip Channel	
VLR8	5L					SF Surface	
	6L					LB Low Bay	
	8L						
	10L						
	12L						

OPTIONS		CONTROLS OPTIONS	
Factory Installed		Basic	
SR	Sensor Ready Driver	FIOS ⁵	On/Off Occupancy Sensor
DR	DALI Ready Driver	FIOSPC ⁵	On/Off Occupancy Sensor w/ Photocell
DIM1 ¹²	1% Dimming Driver	FIOSPC/DLH ⁵	On/Off Occupancy Sensor w/ Daylight Harvesting
BLD ^{12, 14}	Bi-Level Dimming Driver w/ Two Hot Leads (100%/50%)	USBD ^{5, 11}	User Selectable Bi-Level Dimming Occupancy Sensor
LVD120 ^{12, 14}	Mark X Phase Dimming 120V	BDxx ^{5, 11}	Preset Bi-Level Dimming Occupancy Sensor (xx=% eg. 20,30)
RW/3W ⁶	3 Wire Raceway Wiring Harness for continuous wiring through fixtures (non-dim function)	BDxxPC ^{5, 11}	Preset Bi-Level Dimming Occupancy Sensor (xx=% eg. 20,30) w/ Photocell
RW/5W ⁶	5 Wire Raceway Wiring Harness for continuous wiring through fixture (dimming)		
EM7	7W Factory Installed Battery Backup		
EM7/HE	7W Factory Installed Battery Backup - CEC Title 20 Compliant		
EM10	10W Factory Installed Battery Backup		
EM10/HE	10W Factory Installed Battery Backup - CEC Title 20 Compliant		
EM12	12W Factory Installed Battery Backup		
GTD	Generator Transfer Device		
UL924	UL 924 Emergency Device		
SD480 ¹³	480V Step Down Transformer		
SD347 ¹³	347V Step Down Transformer		
Ship With Accessories		Advanced	
WC ¹	11ga Unpainted Galvanized Finish Wire Cage	ESMC ^{5, 7}	EasySense Grouping Sensor for Mounting Heights < 10ft
ESMC/WWS/DR	EasySense Dual Rocker Wireless Wall Switch	5E/5W/CL ⁵	Enlighted 5E Connected Lighting (CL) Sensor w/ Aux Driver / 5 Wire Connection
RS ⁹	Reflector Kit, Symmetrical, White	5E/5W/IOT ⁵	Enlighted 5E Internet of Things (IOT) Sensor w/ Aux Driver / 5 Wire Connection
RA ⁹	Reflector Kit, Asymmetrical, White	VDO ^{5, 10}	Lutron Vive DFCSJ-OEM-OCC (Daylight & Occupancy)
		VRF ^{5, 10}	Lutron Vive DFCSJ-OEM-RF (RF Only)
		AWN ⁹	Lutron Athena Wireless Node
		AWN ⁵	Lutron Athena Wireless Node with Sensor

¹ Only to be used with 43ST mounting type

² See pages 5-7 for line drawings

³ Minimum width is 2.8"

⁴ Contact factory for more information

⁵ Mounted Integral within Fixture Length

⁶ Used only when mounting fixtures in continuous rows. One needed between each fixture.

⁷ Easily Controlled via Mobile Phone with Bluetooth App

⁸ Mounted to End Cap of existing fixture

⁹ Only available with 43ST and 50ST Mounting Type

¹⁰ Must be used with SR Sensor Ready Driver

¹¹ Modified coverage area (see page 3 for details)

¹² Not compatible with sensor options

¹³ Cannot be combined with EM for VLR4

¹⁴ Not compatible with SD347 or SD480

LED SYSTEMS INFORMATION

LED SYSTEMS INFO ²	LENS	3500K		4000K		5000K		WATTAGE ³	REPLACES	DLC ¹
Part Numbers		Lumens	Efficacy	Lumens	Efficacy	Lumens	Efficacy			
VLR4-2LHE	No Lens	2820	168.0	2881	171.8	2962	175.8	16.8	1T8	Standard
	FCLGR	2668	159.1	2743	162.8	2802	166.6			Standard
	FFLGR	2681	160.0	2740	163.6	2816	167.3			Standard
VLR4-3LHE	No Lens	3788	162.1	3865	165.9	3958	169.7	23.3	2T8	Standard
	FCLGR	3584	153.6	3656	157.2	3745	160.9			Standard
	FFLGR	3602	154.3	3675	158.0	3763	161.6			Standard
VLR4-4LHE	No Lens	4499	159.0	4586	162.3	4708	166.1	28.3	2T8	Standard
	FCLGR	4257	150.3	4355	153.8	4454	157.4			Standard
	FFLGR	4278	151.0	4377	154.5	4476	158.1			Standard
VLR4-6LHE	No Lens	6581	147.0	6744	150.6	6911	154.1	44.8	3T8	Premium ⁴
	FCLGR	6254	139.5	6396	142.8	6539	146.0			Premium ⁴
	FFLGR	6271	140.0	6427	143.4	6571	146.7			Premium ⁴
VLR8-5LHE	No Lens	5179	172.9	5286	176.5	5411	180.7	30.0	2T8	Standard
	FCLGR	4892	163.3	5009	167.2	5119	170.9			Standard
	FFLGR	4916	164.1	5034	168.1	5145	171.8			Standard
VLR8-6LHE	No Lens	6553	168.9	6699	172.7	6854	176.6	38.8	4T8	Standard
	FCLGR	6207	160.0	6349	163.6	6496	167.4			Standard
	FFLGR	6227	160.5	6382	164.5	6528	168.3			Standard
VLR8-8LHE	No Lens	9796	157.0	9998	160.2	10236	163.9	62.4	2T5HO	Standard
	FCLGR	9253	148.3	9475	151.8	9684	155.3			Standard
	FFLGR	9299	149.0	9522	152.5	9732	156.0			Standard
VLR8-10LHE	No Lens	10638	152.0	10899	155.8	11148	159.3	70.0	2T5HO	Standard
	FCLGR	10094	144.2	10327	147.6	10563	151.0			Standard
	FFLGR	10145	145.0	10378	148.3	10616	151.7			Standard
VLR8-12LHE	No Lens	13107	148.0	13404	151.3	13721	154.8	88.6	6T8	Standard
	FCLGR	12415	140.1	12711	143.4	12997	146.7			Standard
	FFLGR	12491	141.0	12760	144.1	13062	147.4			Standard

¹ Please check DLC website for updates and current listing ² Values are nominal, check IES file for more detail ³ 2 Electrical data at 25C (77F). Actual wattage may differ by +/-10%

⁴ Only VLR4-6LHE-LB is DLC Premium Listed. All other configurations are DLC Standard Listed

ELECTRICAL DATA (AMPS)

Lumen Package	Wattage ¹	120V	208V	240V	277V	347V	480V
VLR4-2LHE	16.8	0.14	0.08	0.07	0.06	0.05	0.04
VLR4-3LHE	23.3	0.19	0.11	0.10	0.08	0.06	0.05
VLR4-4LHE	28.3	0.24	0.14	0.12	0.10	0.08	0.06
VLR4-6LHE	44.8	0.37	0.22	0.19	0.16	0.13	0.09
VLR8-5LHE	30.0	0.25	0.14	0.13	0.11	0.08	0.06
VLR8-6LHE	38.8	0.32	0.19	0.16	0.14	0.11	0.08
VLR8-8LHE	62.4	0.52	0.3	0.26	0.23	0.18	0.13
VLR8-10LHE	70.0	0.58	0.34	0.29	0.25	0.20	0.15
VLR8-12LHE	88.6	0.74	0.43	0.37	0.32	0.26	0.18

¹ Electrical data at 25C (77F). Actual wattage may differ by +/-10%

SPECIFICATIONS

CONSTRUCTION

Steel housing channel for rigidity, durability, and ease of installation. Designed to achieve maximum performance and improved aesthetics. Designed to retrofit existing fluorescent strip, surface, and low bay fixtures. Product proudly assembled in the United States of America.

ELECTRICAL

Class 2 LED light engine for high efficacy and long life. Calculated L70 > 100,000 hrs and L90 > 54,000hrs. LED Lumen Maintenance Estimates based on TM-21 projections for the light source at 25°C ambient. Power Factor > 0.90. THD < 20%. Standard 120-277 Vac 0-10V dimmable (10%-100%) with optional 347 Vac High Voltage, Bi-Level, 1% Dimming, and 120V Line Voltage Dimming Options. Optional emergency battery backups, generator transfer device, and UL924 devices available to meet critical life safety lighting requirements.

INSTALLATION

Designed to retrofit existing fluorescent strip, surface, and low bay fixtures. Strip mounting type offers fixed 4.3", 5.0", and Adjustable 2.8"/4.3"/5.0"/5.5" channel width options to mount to existing housings. Custom width options available as well; contact factory for more information. Surface mounting type standard with 5.6" width channel. Low Bay mounting type standard with 6.3" width channel. ILP recommends a trial installation prior to ordering project quantities.

OPTICS

Standard without lens. Optional high impact resistant Curved and Flat Frosted Glare Reducing Acrylic lens available for durability and LED Glare reduction. Field removable lens section for easy access to driver channel for installation and maintenance.

CONTROLS

Factory installed Advanced and Basic sensor options available to maximize energy savings. Please see more information below on Pages 4 & 5. Inquire with manufacturer for additional controls options, including customer supplied items.

CERTIFICATIONS

ETL Listed to US and Canadian safety standards. Suitable for damp locations. Title 24 Compliant with sensor option; see local ordinance for qualification information. DLC (DesignLights Consortium) Premium and Standard Qualified. Please refer to the DLC Qualified Products List at www.Designlights.org/QPL to confirm specific product qualifications.

WARRANTY

5 Year Warranty Standard; 10 Year Warranty Optional ([Terms and Conditions](#) apply).

BASIC CONTROLS

FIOS

Standard on/off motion sensor. Comes with 360 degree high bay lens, 360 degree low bay lens & aisle lens. 360 degree high bay lens factory installed, unless notified otherwise.

FIOSPC

Motion sensor with the addition of photocell control. When installed, fixture will not activate unless 1. motion is detected and 2. light levels are below the preset level. When activated, fixture will turn on to 100% light output & will only shut off when one of the two levels mentioned above are met. If no motion is detected & light levels fall below preset level the fixture remains off.

FIOSPC/DLH

Factory installed motion sensor with the addition of photocell control that will allow for daylight harvesting. When installed, fixture will not activate unless 1. motion is detected & 2. light levels are below the preset level. When activated, fixture will turn on only enough to meet the preset light levels and will adjust as the amount of light in the space adjusts between 100%-10%. If light levels are adequate the fixture will remain off.

DHPC

Daylight Harvesting off photocell. Fixtures will continually dim up/down throughout the day based on light level readings taken from the photocell control.

USBD

User Selectable Bi-Level Dimming. Allows the end user to manually select the unoccupied dimming level. Once motion is detected, the fixture will return to 100% light output.

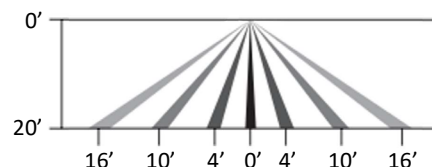
BDxx

Factory set Bi-Level Dimming. Sensor is set to dim level, as indicated in the "xx" portion of the part number, when the area is unoccupied. Example: BD20 sets the fixture to dim down to 20% lumen output when the area is unoccupied. Once motion is detected, the fixture will return to 100% light output.

BDxxPC

Factory set Bi-Level Dimming with motion and photocell. Sensor is set to dim level, as indicated in the "xx" portion of the part number, when the area is unoccupied and will not return to 100% light output unless 1. motion is detected and 2. the light level is below the preset level. Example: BD20PC sets the fixture to dim down to 20% lumen output when the area is unoccupied and will not return to 100% light output unless the above conditions are met for both motion and light level readings.

USBD, BDxx, BDxxPC - Modified Coverage



ADVANCED CONTROLS OPTIONS

EASYSense

ESMC

EasySense sensor combines occupancy sensing, daylight harvesting and institutional tuning in one compact solution. This is an ideal control for any Commercial application. Each device allows you to turn on/off occupancy and/or daylight harvesting functions as well as set the full light output, background light level, occupancy prolong time, occupancy grace fading time & occupancy time out/hold time. It can be easily controlled via the Philips MasterConnect Bluetooth App on a mobile phone.



ESMC/WWS/DR

Optional Wireless / Batteryless Dual Rocker Wall Switch. Up to 100ft range. Functions include: On/Off, dimming and setting of (2) scenes for full room control.

Specifications:

- Wireless
- ZigBee®
- Batteryless
- 30-100ft Range
- Dual Rocker

Functions:

1. On (Hold to brighten up)
2. Off (Hold to dim down)
3. Scene 1
4. Scene 2



ENLIGHTENED

5E/5W/CL

Bundled System with Enlighted 5E sensor (SU-5E-CL), Control Unit (CU-4E-FM) and Cable (CBL-5E-CU4-30N). Fixtures are controlled based on occupancy and ambient light. Includes individual lighting control plus connection to Enlighted Energy Manager. The Energy Manager provides data analysis for all data collected by the Enlighted Smart Sensors for energy, occupancy and environment. Provided with factory installed components only. Enlighted system provided by others. Contact factory for more information. (see image above)

5E/5W/IOT

Bundled System with Enlighted 5E sensor (SU-5E-IOT), Control Unit (CU-4E-FM) and Cable (CBL-5E-CU4-30N). Fixtures are controlled based on occupancy and ambient light. Includes individual lighting control plus connection to Enlighted Energy Manager. Energy Manager provides data analysis for all data collected by Enlighted Smart Sensors for energy, occupancy & environment. Additionally, the IOT functionality takes the data access and function beyond just lighting to a wide range of applications beyond the standard connected lighting controls. Provided with factory installed components only. Enlighted system provided by others. Contact factory for more information. (see image above)

LUTRON

VDO

Vive DFCSJ-OEM-OCC integral fixture control sensor with daylight & occupancy. Vive provides intuitive programming allowing for maximum flexibility with wireless communication & sensing as desired. Provided with factory installed components only. Lutron system provided by others. Sensor must be used in conjunction with Pico Switch/Dimmer. Cannot be used in conjunction with mechanical on/off power switch. Contact factory for more information.



VRF

Vive DFCSJ-OEM-RF integral fixture control with Radio Frequency (RF) communication. Vive provides intuitive programming allowing for maximum flexibility with wireless communication as desired. Provided with factory installed components only. Lutron system provided by others. Sensor must be used in conjunction with Pico Switch/Dimmer. Cannot be used in conjunction with mechanical on/off power switch. Contact factory for more information.



AWNR

Athena wireless node is a radio frequency (RF) device that enables simple, digital control of individual light fixtures in an Athena control system. Enables individual wireless control of each fixture in an Athena control system. Accommodates zone and control changes without rewiring. All drivers on the link are controlled as a single zone. Provided with factory installed components only. Lutron Athena system provided by others.



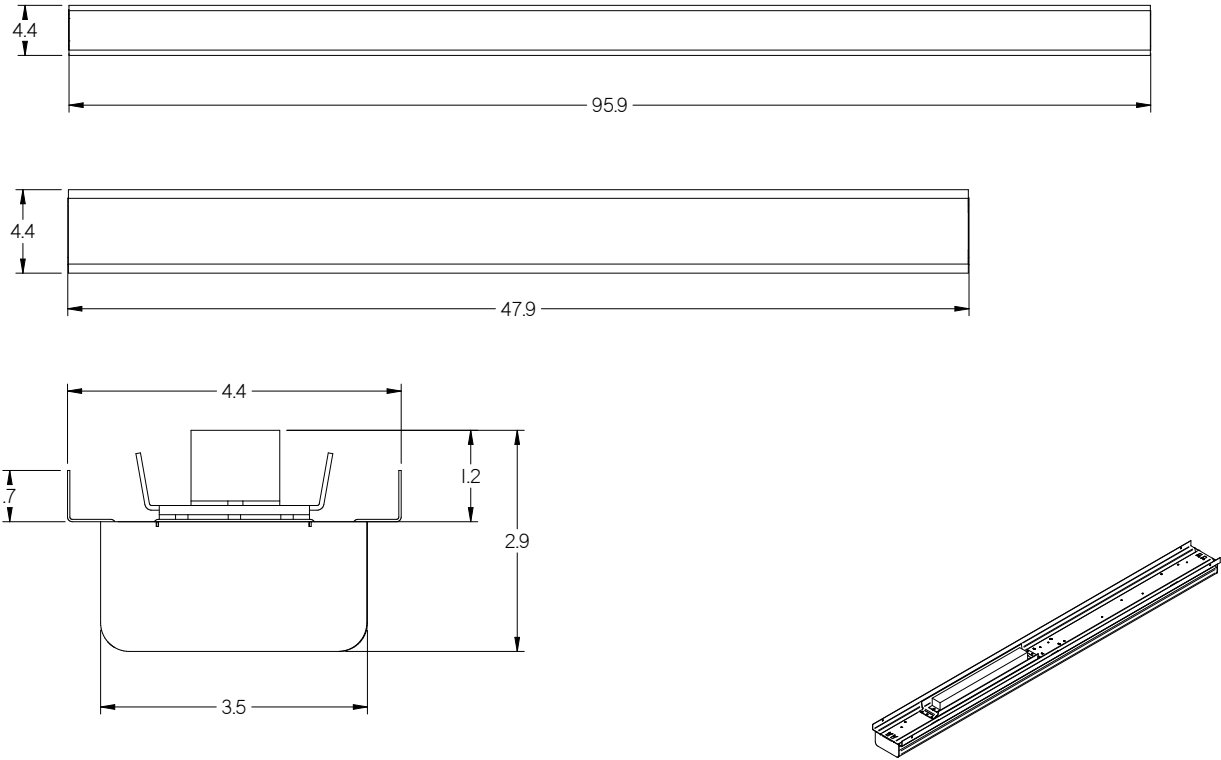
AWNS

Athena wireless node with a sensor that enables simple, digital control of individual light fixtures in an Athena control system. Provides wireless control of the fixture and includes a passive infrared (PIR) sensor for occupancy and a daylight sensor. Enables individual wireless control of each fixture in an Athena control system. Accommodates zone and control changes without rewiring. All drivers on the link are controlled as a single zone. Provided with factory installed components only. Lutron Athena system provided by others.

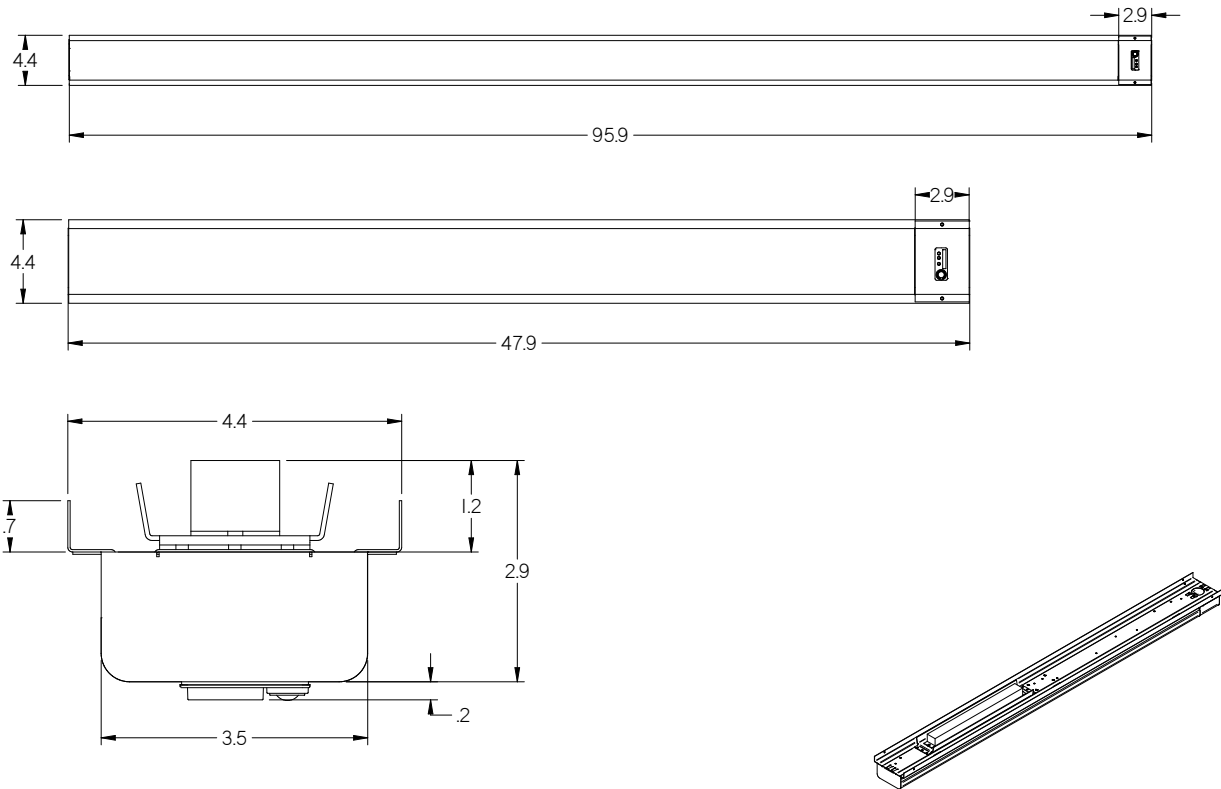


LINE DRAWINGS

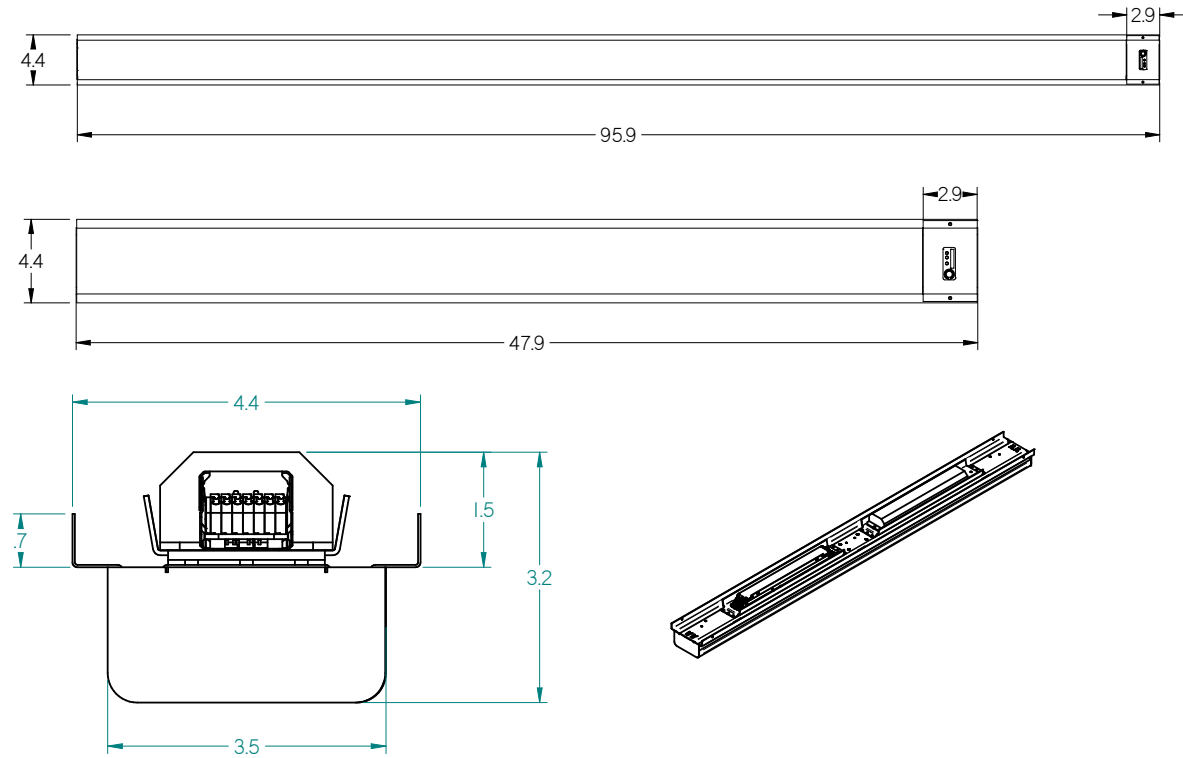
FIXED 4.3" WIDE STRIP RETROFIT 43ST MOUNTING TYPE



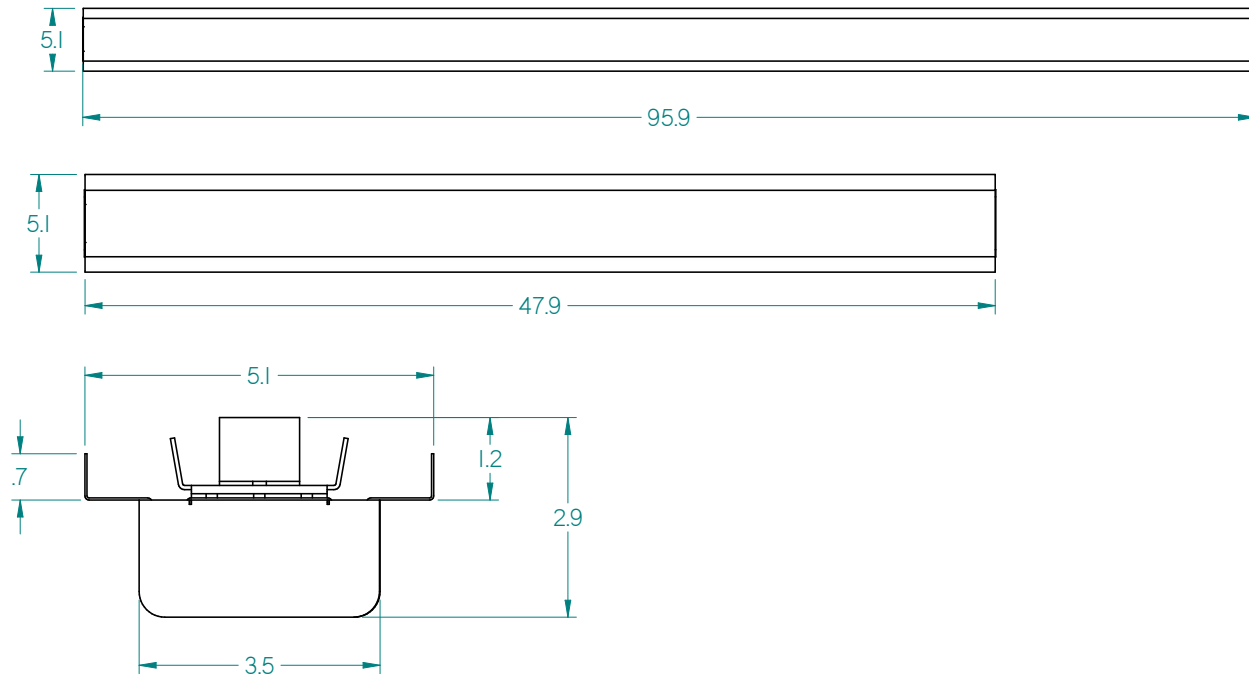
FIXED 4.3" WIDE STRIP RETROFIT WITH SENSOR - 43ST MOUNTING TYPE



FIXED 4.3" WIDE STRIP RETROFIT - 43ST MOUNTING TYPE - with EM10



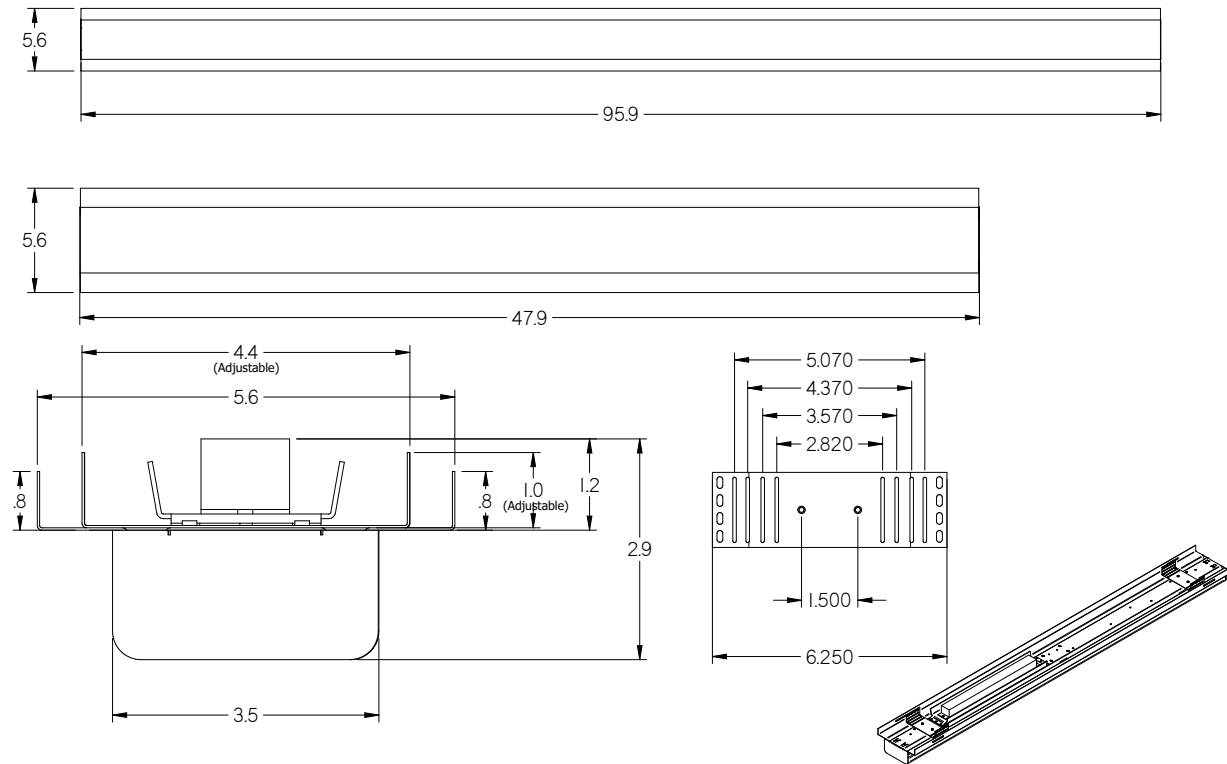
FIXED 5.0" WIDE STRIP RETROFIT 50ST MOUNTING TYPE



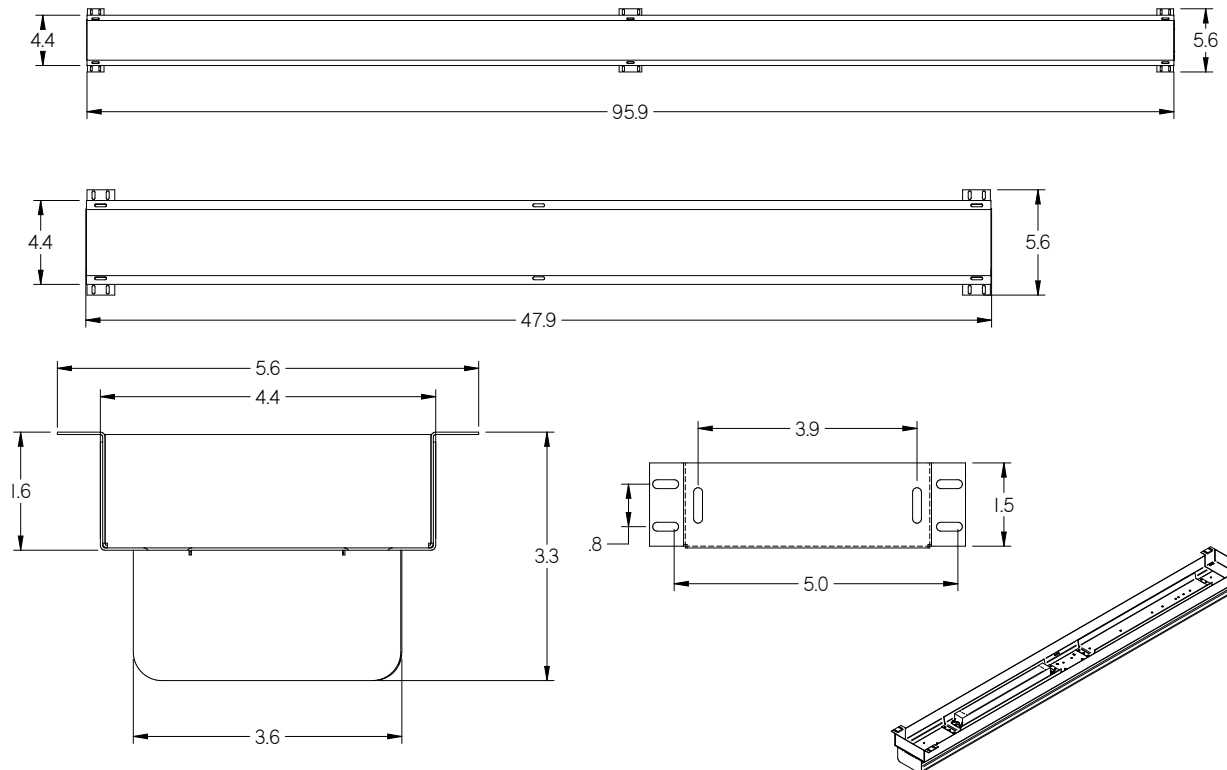
LINEAR RETROFIT

LINE DRAWINGS

ADJUSTABLE STRIP RETROFIT - ADJST MOUNTING TYPE



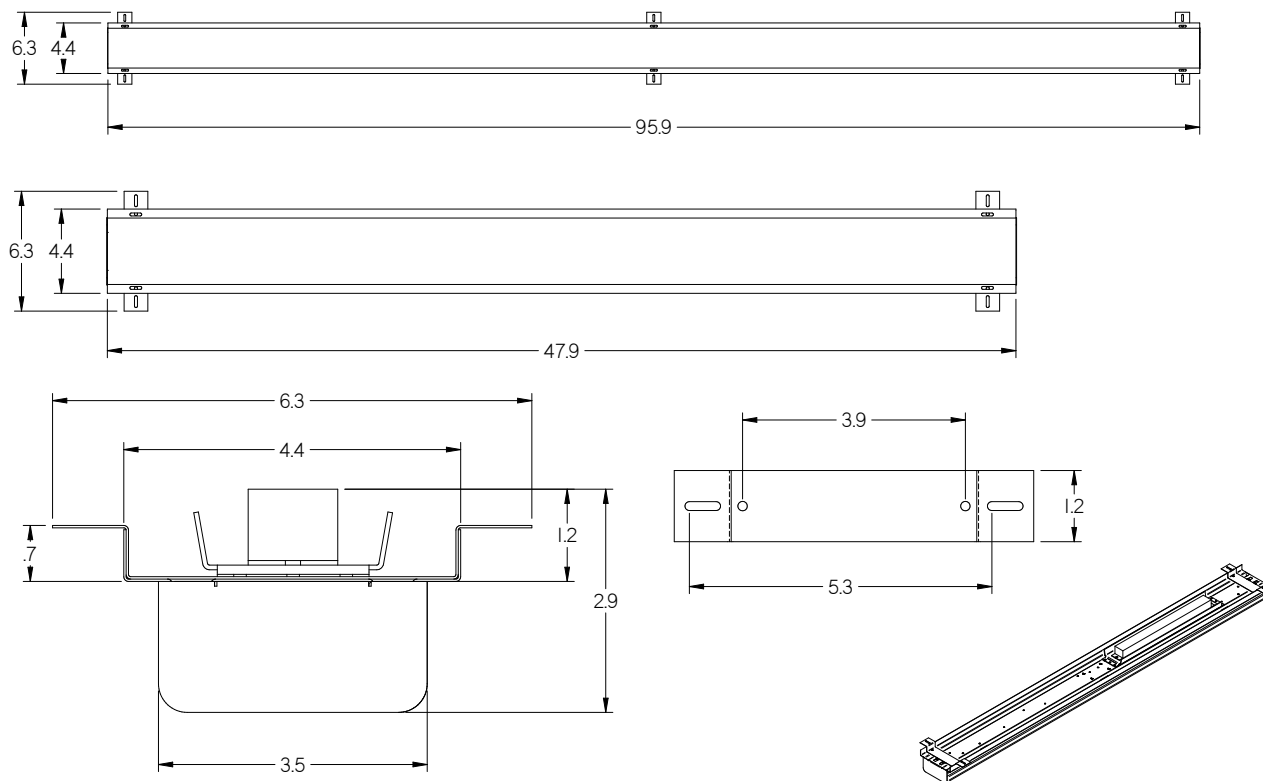
SURFACE RETROFIT - SF MOUNTING TYPE



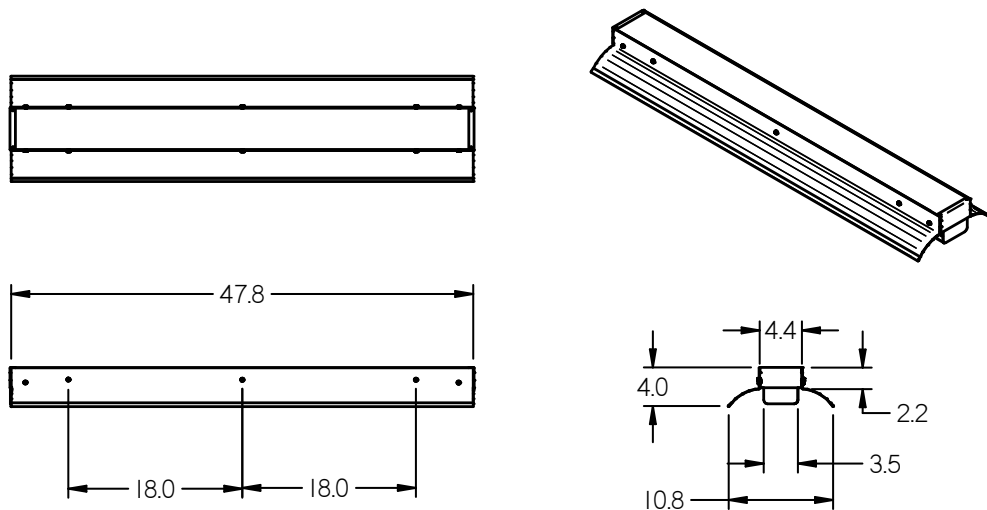
LINEAR RETROFIT

LINE DRAWINGS

LOWBAY RETROFIT - LB MOUNTING TYPE

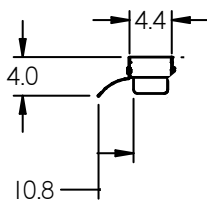
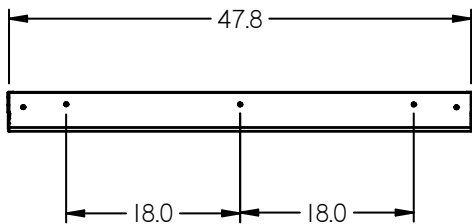
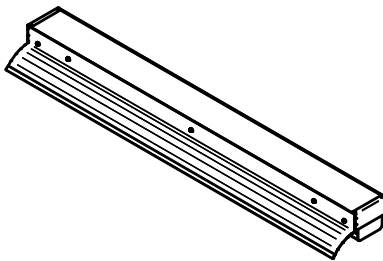


SYMMETRICAL REFLECTOR OPTION - RS¹

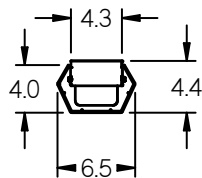
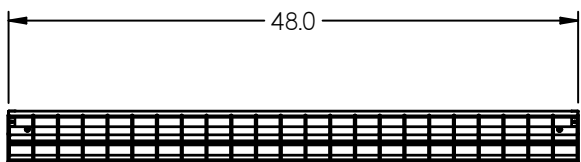
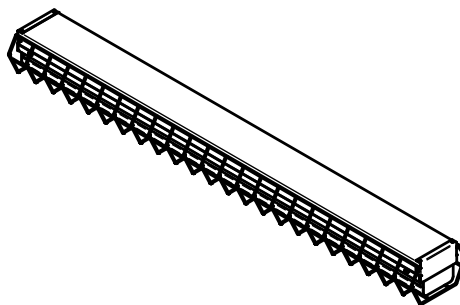
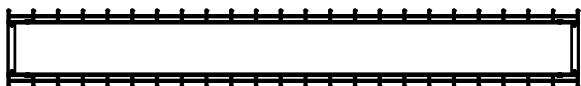


¹ Exact dimensions may differ based on type of housing used.
Use for general dimension estimation only.

ASYMMETRICAL REFLECTOR OPTION - RA¹



VLR4 WIRE CAGE¹



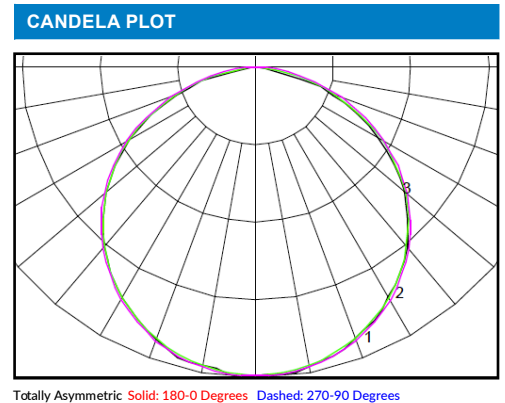
¹ Exact dimensions may differ based on type of housing used.
Use for general dimension estimation only.

LINEAR RETROFIT

PHOTOMETRIC DATA

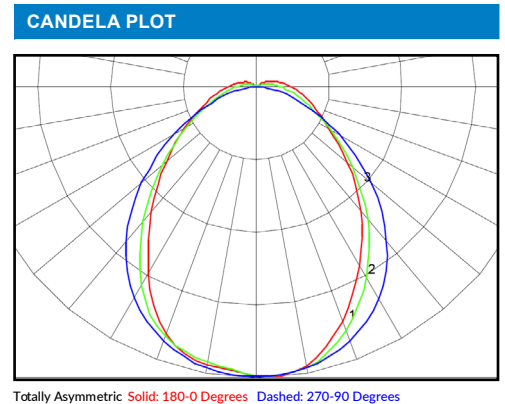
LUMINAIRE DATA	
Part Number	VLR4-3LHE-U-40
Description	VARI 4ft High Efficacy Linear Retrofit, 3,000 Lumens, No Lens.
Fixture Lumens (lm)	3865
Wattage (W)	23.3
Efficacy (lm/W)	165.9
Mounting	Fixed Strip, Adjustable Strip, or Surface
Spacing Criteria	0° = 1.3, 90° = 1.3

ZONAL LUMEN SUMMARY		
Zone	Lumens (lm)	% Fixture
0° - 40°	1720	44.50%
0° - 60°	3096	80.10%
0° - 90°	3865	100.00%
90° - 180°	0	0.00%
0° - 180°	3865	100.00%



LUMINAIRE DATA	
Part Number	VLR4-3LHE-U-40-FCLGR
Description	VARI 4ft High Efficacy Linear Retrofit, 3,000 Lumens, Frosted Glare-Reducing Curved Lens.
Fixture Lumens (lm)	3656
Wattage (W)	23.3
Efficacy (lm/W)	157.2
Mounting	Fixed Strip, Adjustable Strip, or Surface
Spacing Criteria	0° = 1.1, 90° = 1.26

ZONAL LUMEN SUMMARY		
Zone	Lumens (lm)	% Fixture
0° - 40°	1733	47.40%
0° - 60°	2800	76.60%
0° - 90°	3499	95.70%
90° - 180°	157	4.30%
0° - 180°	3656	100.00%



LUMINAIRE DATA	
Part Number	VLR4-3LHE-U-40-FFLGR
Description	VARI 4ft High Efficacy Linear Retrofit, 3,000 Lumens, Frosted Glare-Reducing Flat Lens.
Fixture Lumens (lm)	3675
Wattage (W)	23.3
Efficacy (lm/W)	158.0
Mounting	Fixed Strip, Adjustable Strip, or Surface
Spacing Criteria	0° = 1.16, 90° = 1.26

ZONAL LUMEN SUMMARY		
Zone	Lumens (lm)	% Fixture
0° - 40°	1694	46.10%
0° - 60°	2815	76.60%
0° - 90°	3502	95.30%
90° - 180°	173	4.70%
0° - 180°	3675	100.00%

