Project	
Notes	
Type	Date
Cat. No.	

LLS™ XE Series — LED Linear Strip Luminaire

DESCRIPTION

The Aleo LLS™ XE Series Linear Strip Luminaire delivers industry-leading performance with deep energy savings and continuous dimming. Low profile design offers easy handling and storage. This versatile luminaire produces energy-efficient, comfortable illumination for a myriad of applications.

APPLICATIONS

Excellent for general utility applications: Parking garage, warehouse, offices, restrooms, storage units, stairwell.

LLS Series

2' 20W
4' 26W, 41W
8' 52W, 68W, 78W

Rated Life 75,000 hours
Limited Warranty 7-years
Efficacy Up to 130 LPW
Continuous Dimming

CONTINUOUS DIMMING 0-10V Continuous

Specification Features

Construction
Integral LED gear tray and reflector with driver on board allows for easy installation and handling. Luminaire features matte white durable finish. Diffuser requires no additional frame or fastener for easy installation.

Optical System
Reflector systems features highly reflective coating and delivers balanced, comfortable luminance for productive spaces. Diffuser lens reduces glare and improves occupant comfort while maintaining high efficiency emission.

Certification
UL Listed. All components have UL certification. UL Class 2. Driver: SCP, OTP, OVP protection, FCC Part 15 Class B, UL8750 Class 2. DLC Premium

Warranty
7-year Limited Warranty. See warranty documentation for more information.

Electrical
Luminaire utilizes high-efficacy LED packages maintained at cool temperatures for long life, high efficacy. Reliable driver features continuous dimming. Universal voltage (120-277V) for convenient installation. Comes equipped with luminaire quick-disconnect.

Installation / Mounting
Luminaire back housing includes holes and slots for various mounting methods.

Controls / Dimming
Continuous dimming (0-10V) comes standard. Suitable for use with dimmers, sensors, daylight harvesting and other control strategies to achieve deeper energy-savings and code compliance. Sensor accessory available: occupancy sensing with daylight cut-off.

Quick Ship

LLS-2HE-20/850 XE G3
LLS-4HE-26/840 XE G4
LLS-4HE-26/850 XE G4
LLS-4VHE-41/840 XE G4
LLS-8HE-52/840 XE G3
LLS-8HE-52/850 XE G3
LLS-8H-68/840 XE G4

Ordering Information

Example: LLS-4HE-26/840 XE G4

LLS	2	HE	26	8	40	[Blank]	Options
Series **LLS** LED Linear Strip Luminaire	**Form Factor** **2** 2' **4** 4' **8** 8'	**Lumen Package** **HE** High Lumen **VHE** Very High Lumen	**Nom. Wattage** **20** 20W (2') **26** 26W (4') **41** 40W (4') **52** 52W (8') **68** 68W (8') **78** 78W (8')	**CRI** **8** 83+	**Color Temp** **40** 4000K **50** 5000K	**Dimming** **Blank** 0-10V Continuous Dimming	**Emergency Backup** **EM700** 700lm **EM1400** 1400lm **EM2000** 2000lm

Controls*

OS	Occupancy Sensor
OSDL	Occ. Sensor w/ Daylight
OSDL/IR	Multi-Level Occ. Sensor w/ wireless config.
OSDL/BT	Wireless Bluetooth Occupancy Sensor
WLC/BT	Wireless Bluetooth Lighting Control Node
SB	Integrated Sensor Box

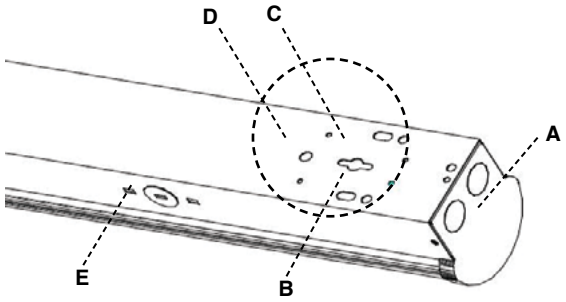
* Will be supplied with side fixture-mount sensor, unless SB is specified

Specifications and Dimensions subject to change without notice.

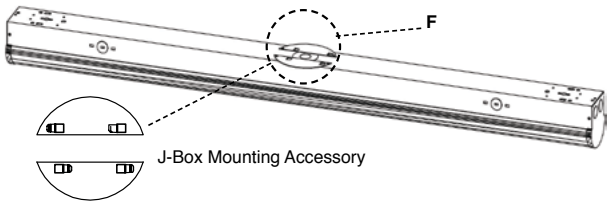
Performance Summary

Input Voltage	120V-277V
Input Frequency	50/60 Hz
Rated Wattage	See Performance Table
Delivered Lumens	See Performance Table
Efficacy	> 130 LPW (typ.)
CRI	84+, R9 > 0
Available CCT[1]	4000K, 5000K
Color Consistency[2]	5-step MacAdam Ellipse
Rated Life	75,000 hours
L70[3]	> 72,000 hours
Power Factor	> 0.9
THD	< 20%
Dimming	0-10V Continuous (10-100%)
Operating Temp.	-20°C to 40°C
Environment	Suitable for Damp Location

Mounting Information



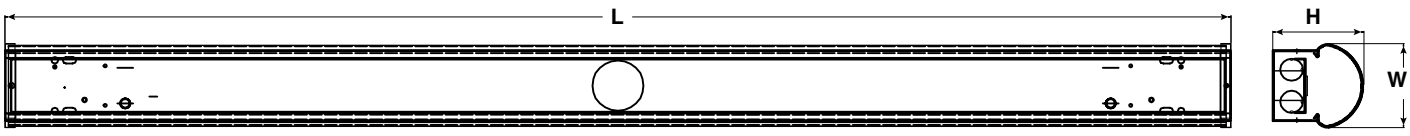
A: End Cap
B: Suspension-mount with air craft cable
C: Surface Mount
D: T-Bar Clip Mounting hole
E: Wiring Knockout



Performance Data

Form Factor	Catalog No.	Rated Wattage (W)	Tested Wattage (W)	4000K Delivered Lumens (lm)	4000K Efficacy (lm/W)	5000K Delivered Lumens (lm)	5000K Efficacy (lm/W)
2’	LLS-2HE-20 XE G4	20	19.1	2600	130	2620	131
4’	LLS-4HE-26 XE G4	25	25.04	3275	131	3300	132
	LLS-4VHE-41 XE G4	40	39.44	5200	130	5240	131
8’	LLS-8HE-52 XE G4	52	55.04	7128	132	7182	133
	LLS-8H-68 XE G4	65	-	8515	131	8580	132
	LLS-8VHE-78 XE G4	75	74.88	9750	130	9825	131

Product Dimensions



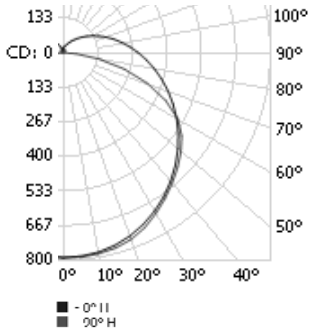
Model No.	L	W	H
LLS-2	25.87” (657.2mm)	3.56” (90.5mm)	3.35” (85.2mm)
LLS-4	47.99” (1219mm)	3.56” (90.5mm)	3.35” (85.2mm)
LLS-8	95.98” (2438mm)	3.56” (90.5mm)	3.35” (85.2mm)

Specifications and Dimensions subject to change without notice.

Photometric Data

LLS-4HE-26/840 Tested in accordance to IESNA LM-79

Polar Graph



Zonal Lumen Summary

ZONE	LUMENS	% LUMINAIRE
0-30	626.9	17.5%
0-40	1,047.9	29.3%
0-60	1,997.0	55.7%
60-90	1,064.4	29.7%
70-100	795.7	22.2%
90-120	394.2	11.0%
0-90	3,061.4	85.5%
90-180	521.1	14.5%
0-180	3,582.5	100.0%

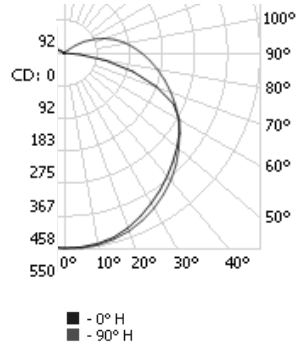
Coefficients of Utilization

EFFECTIVE FLOOR CAVITY REFLECTANCE: 20%

RCC%	80				70				50		
RW%	70	50	30	0	70	50	30	0	50	30	20
RCR											
0	1.16	1.16	1.16	1.16	1.11	1.11	1.11	0.85	1.03	1.03	1.11
1	1.02	0.96	0.91	0.86	0.98	0.93	0.88	0.66	0.86	0.82	0.9
2	0.92	0.82	0.74	0.68	0.88	0.79	0.72	0.53	0.73	0.67	0.73
3	0.83	0.71	0.62	0.55	0.79	0.68	0.6	0.44	0.63	0.56	0.61
4	0.75	0.62	0.53	0.45	0.72	0.6	0.51	0.37	0.56	0.48	0.52
5	0.69	0.55	0.46	0.39	0.66	0.53	0.44	0.32	0.49	0.42	0.44
6	0.64	0.49	0.4	0.33	0.61	0.48	0.39	0.27	0.44	0.37	0.39
7	0.59	0.45	0.35	0.29	0.56	0.43	0.34	0.24	0.4	0.33	0.34
8	0.55	0.4	0.32	0.26	0.52	0.39	0.31	0.22	0.37	0.29	0.3
9	0.51	0.37	0.29	0.23	0.49	0.36	0.28	0.19	0.34	0.26	0.27
10	0.48	0.34	0.26	0.2	0.46	0.33	0.25	0.17	0.31	0.24	0.25

LLS-4VHE-41/840 Tested in accordance to IESNA LM-79

Polar Graph



Zonal Lumen Summary

ZONE	LUMENS	% LUMINAIRE
0-30	860	19.8%
0-40	1,415	32.6%
0-60	2,577	59.4%
60-90	1,225	28.3%
70-100	942	21.7%
90-120	421	9.7%
0-90	3,803	87.7%
90-180	533	12.3%
0-180	4,336	100.0%

Coefficients of Utilization

EFFECTIVE FLOOR CAVITY REFLECTANCE: 20%

RCC%	80				70				50		
RW%	70	50	30	0	70	50	30	0	50	30	20
RCR											
0	1.16	1.16	1.16	1.16	1.12	1.12	1.12	0.88	1.04	1.04	1.11
1	1.03	0.97	0.92	0.87	0.99	0.94	0.89	0.69	0.87	0.83	0.9
2	0.93	0.83	0.76	0.69	0.89	0.8	0.73	0.56	0.75	0.69	0.73
3	0.84	0.73	0.64	0.56	0.8	0.7	0.62	0.47	0.65	0.58	0.61
4	0.77	0.64	0.54	0.47	0.73	0.62	0.53	0.4	0.58	0.5	0.52
5	0.7	0.57	0.47	0.4	0.67	0.55	0.46	0.34	0.51	0.44	0.44
6	0.65	0.51	0.42	0.35	0.62	0.49	0.41	0.3	0.46	0.39	0.39
7	0.6	0.46	0.37	0.31	0.57	0.45	0.36	0.26	0.42	0.34	0.34
8	0.56	0.42	0.33	0.27	0.54	0.41	0.32	0.24	0.38	0.31	0.3
9	0.52	0.38	0.3	0.24	0.5	0.37	0.29	0.21	0.35	0.28	0.27
10	0.49	0.35	0.27	0.22	0.47	0.34	0.27	0.19	0.33	0.26	0.25

Control Pre-Commissioning

Example: LLS-4HE-25/840 XE G3-**OSDL/IR** **L2-10H-3L-10M-30M-5S-30S**

L2	10H	3L	10M	30M	5S	30S
Lens / Coverage **L2** 8' height (60' dia.) **L3** 20' height (40' dia.) **L7** 40' height (100' dia.)	**High Level** **10H** 100% **9H** 90% **8H** 80% **7H** 70% **6H** 60% **5H** 50%	**Low Level** **1L** 10% **2L** 20% **3L** 30% **4L** 40% **5L** 50% **6L** 60% **7L** 70%	**Time Delay** **30S** 30 sec. **#M** 1-30 min. # = enter no. of minutes from 1 to 30 min.	**Cut-Off** **#M** 1-59 min. **#H** 1-5 hrs. **0** Disabled # = enter no. of minutes or hours	**Ramp Up** **#S** 1-60 sec. **0** Disabled	**Fade Down** **#S** 1-60 sec. **0** Disabled

High Level When the sensor detects motion the dimming control output ramps up to the selected HIGH light level.

Low Level After the sensor stops detecting motion and the time delay expires the dimming control output fades down to the selected LOW light level.

Time Delay The selected time period that must elapse after the last time the sensor detects motion for the electric lights to fade to LOW mode

Cut-Off The time period that must elapse after the lights fade to Low mode and the sensor detects no motion for the electric lights to turn OFF.

Ramp Up Time period for light level to increase from LOW to HIGH.

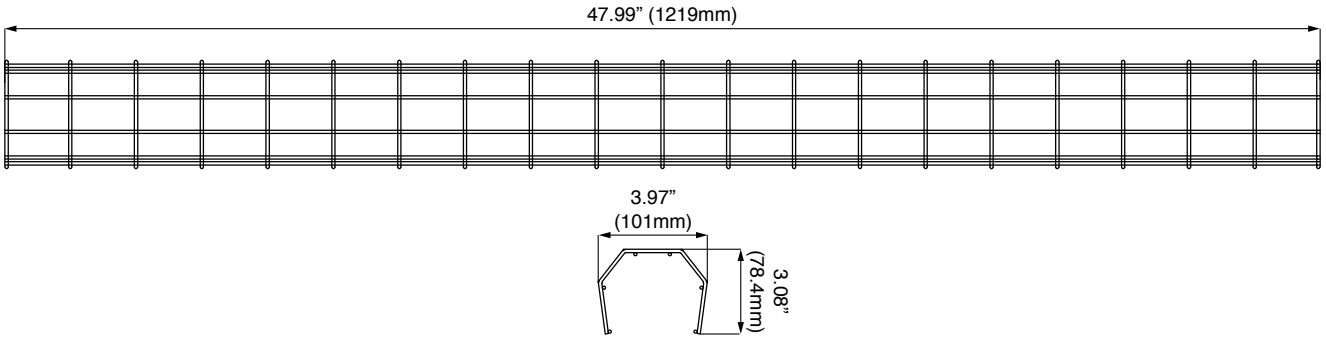
Fade Down Time period for light level to decrease from HIGH to LOW.

Specifications and Dimensions subject to change without notice.

Accessory Options

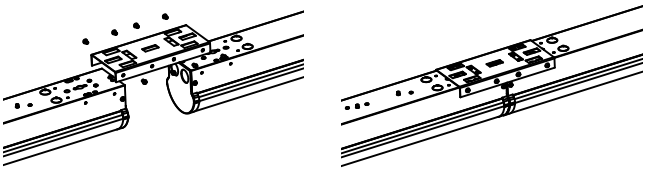
Item No.: **LLS-WG-4**

Wire Guard for LLS-4



Item No.: **LLS-DC-BRK**

Daisy Chain Bracket for LLS Luminaire, including 8 screws



DLC QPL Data

QPL Model No.	Product ID	Technical Req.	Classification	Primary Use
LLS-2HE-20/835 XE G4	PLBAK8CEJ4T5	5.0	Premium	Direct Linear Ambient Luminaires
LLS-2HE-20/840 XE G4	PL05RF33K1GE	5.0	Premium	Direct Linear Ambient Luminaires
LLS-2HE-20/850 XE G4	PLKBAE2A41A1	5.0	Premium	Direct Linear Ambient Luminaires
LLS-4HE-26/835 XE G4	PLA0DE9A9UL4	5.0	Premium	Direct Linear Ambient Luminaires
LLS-4HE-26/840 XE G4	PLZNS5K4BVH3	5.0	Premium	Direct Linear Ambient Luminaires
LLS-4HE-26/850 XE G4	PLZH0CHXLSKF	5.0	Premium	Direct Linear Ambient Luminaires
LLS-4VHE-41/835 XE G4	PW39T5JS	5.0	Premium	Direct Linear Ambient Luminaires
LLS-4VHE-41/840 XE G4	PRJZ9MNH	5.0	Premium	Direct Linear Ambient Luminaires
LLS-4VHE-41/850 XE G4	P56BM45G	5.0	Premium	Direct Linear Ambient Luminaires
LLS-4VHE-41/835 XE G4	PL1QO35SR3OS	5.0	Premium	Low-Bay Luminaires for Commercial and Industrial Buildings
LLS-4VHE-41/840 XE G4	PLS7KT217GI1	5.0	Premium	Low-Bay Luminaires for Commercial and Industrial Buildings
LLS-4VHE-41/850 XE G4	PL9K228VZOY1	5.0	Premium	Low-Bay Luminaires for Commercial and Industrial Buildings
LLS-8HE-52/835 XE G4	PL6SECVTUUUQ	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8HE-52/840 XE G4	PLOG0Q9NMR5Y	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8HE-52/850 XE G4	PLW8G3DCYWD2	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8H-68/835 XE G4	PLR8S7UI2SA1	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8H-68/840 XE G4	PLGZTVX94F67	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8H-68/850 XE G4	PL5K0OWA4P1M	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8VHE-78/835 XE G4	PYU7VZ14	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8VHE-78/840 XE G4	P04CLTBA	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8VHE-78/850 XE G4	POXI7LOX	5.0	Premium	Direct Linear Ambient Luminaires
LLS-8VHE-78/835 XE G4	PNXKSPNN	5.0	Premium	Low-Bay Luminaires for Commercial and Industrial Buildings
LLS-8VHE-78/840 XE G4	PQNVGCH9	5.0	Premium	Low-Bay Luminaires for Commercial and Industrial Buildings
LLS-8VHE-78/850 XE G4	PL5GKA8K	5.0	Premium	Low-Bay Luminaires for Commercial and Industrial Buildings

Specifications and Dimensions subject to change without notice.

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Learn More

AleoBlue Wireless Bluetooth Controls

The AleoBlue is a complete solution for managing connected lighting systems using a Bluetooth Mesh lighting network. This enables seamless implementation of simple to complex lighting control scenarios without specialized training or lighting control engineering expertise.

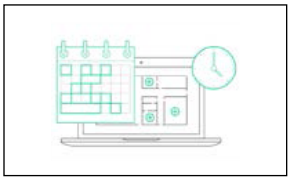
DLC NLC Qualified.

Features and Benefits

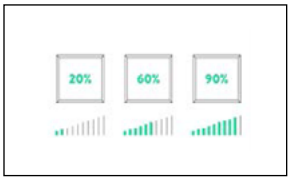
- Lighting Zones / Grouping
- Manual control of individual lights
- On Power up Behavior
- Zone Linking
- Vacancy Sensing
- Per fixture Daylight Control
- Per zone Daylight Control

- Optimized Energy Consumption
- Less Hassle with On-Site Adjustments
- More Savings
- Increased Safety
- More Flexibility

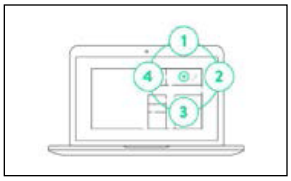
Scheduling



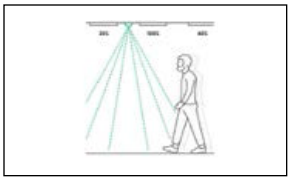
High and Low End Trim



Scenes



Occupancy Sensing



- Intuitive and user-friendly web and iOS apps
- No specialized training or lighting control expertize required
- Optimized for commercial spaces of any size
- No additional wiring or central control box
- Customizable lighting control parameters
- Future proof with Software Updates
- Multiple Zone Configurable
- Built-In Scenarios + Customization

Bluetooth Mesh Technology Advantages

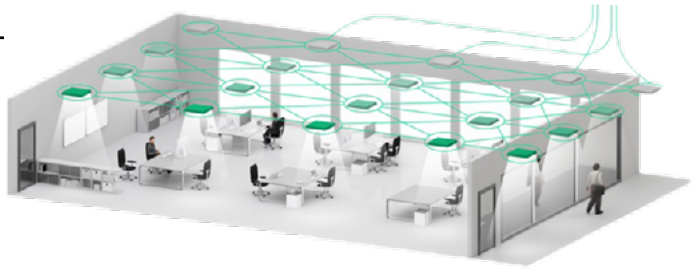
The fastest low-power communication

Scalability to thousands of devices

The most advanced encryption standards as well as the cutting-edge device authentication

No single point of failure (no central device)

Compatibility with a widely available devices (smart phones & tablets – both with Bluetooth 4.0 and Bluetooth 5)



Specifications and Dimensions subject to change without notice.

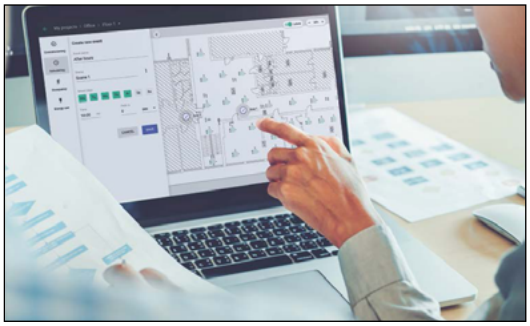
aleoblue™

Learn More

Planning

Remote preparation of a retrofit project with the use of our web app. Uploading floor plans, defining individual lighting zones and choosing lighting control scenarios.

1. Import Floor Plans
2. Define Individual Lighting Zones
3. Specify Desired Lighting Control Scenarios



Implementation

Adding lighting devices to the Bluetooth mesh network on-site with the use of an iOS app.

Customization and calibration of lighting control parameters during and after the commissioning process. Defining scenes for specific working activities.

1. Add Devices to Your Connected Lighting Network
2. Implement Predefined Zones and Scenarios
3. Optimize Configuration Settings if Needed

Provisioning / Configurations

The Bluetooth mesh Node is in the Unprovisioned Mode until it is provisioned by a “Provisioner”, which typically is a smart phone with a Bluetooth mesh compatible app.

Ordering Information

Wireless Bluetooth Occupancy Sensor
Model: -OSDL/BT

Wireless Bluetooth Lighting Control Node
Model: -WLC/BT

EnOcean BLE Single-Rocker Switch
Model: ESRPB

EnOcean BLE Double-Rocker Switch
Model: EDRPB

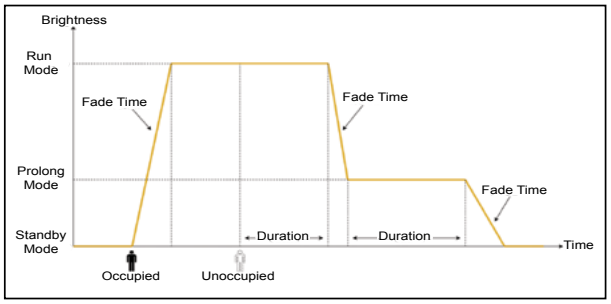
Specifications and Dimensions subject to change without notice.

Lighting Control Scenarios

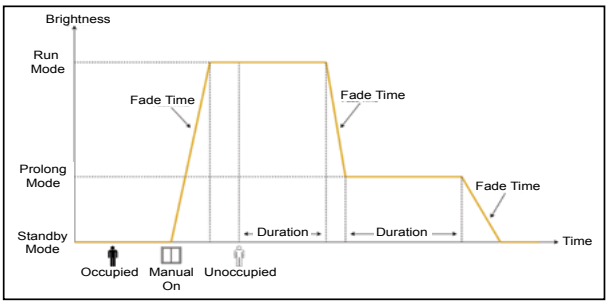
Multiple lighting control scenarios are available once the Bluetooth mesh Node is provisioned. At each scenario, duration, fade time and target brightness can be configured at any time with the iOS app.

Mode / Scenario	Wireless Switch	Occupancy Sensor	Ambient Light Sensor
Unprovisioned Mode	-	-	-
Switch	On / Off / Scenes	-	-
Occupancy	On / Off / Scenes	Auto On / Off	-
Vacancy	On / Off / Scenes	Auto Off	-
Occupancy with Daylight Harvesting	On / Off / Scenes	Auto On / Off	Enabled
Vacancy with Daylight Harvesting	On / Off / Scenes	Auto Off	Enabled

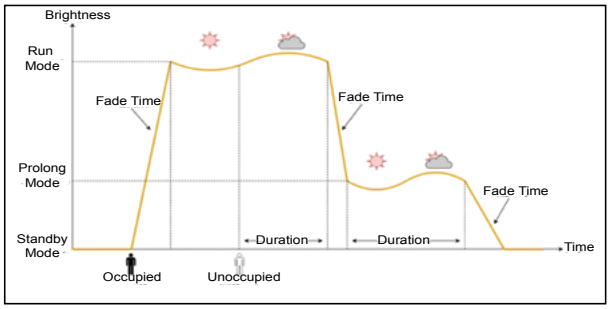
Occupancy Scenario



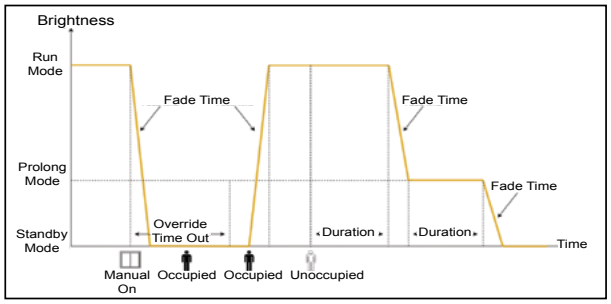
Vacancy Scenario



Occupancy Scenario - with Daylight Harvesting



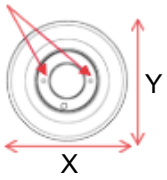
Occupancy Scenario with Manual Override

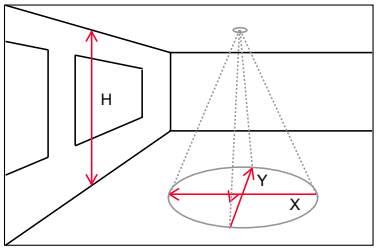


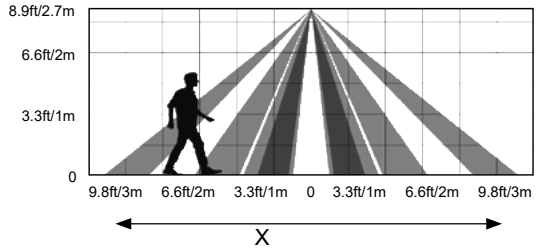
Occupancy Detection Pattern

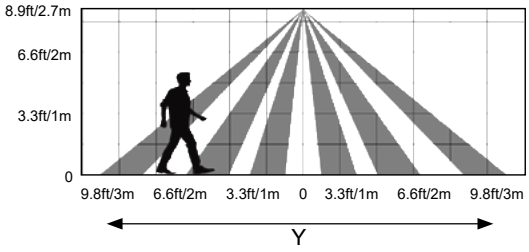
H	X	Y
7.9' (2.4m)	16.4' (5.0m)	16.4' (5.0m)
8.9' (2.7m)	18.4' (5.6m)	18.4' (5.6m)
9.8' (3.0m)	20.3' (6.2m)	20.3' (6.2m)

Orientation Indicators









Aleo Lighting, Inc.
www.aleolighting.com
10988 Bloomfield Ave.
Santa Fe Springs, CA 90670
Ph: 877-358-8825