ILL-400 series

Line Voltage Occupancy Sensor

OVERVIEW

The ILL-400 series member of the TRANS family is a line voltage switching occupancy sensor designed for all-purposes energy efficient lighting control.

This occupancy sensor employs a cutting edge quad element pyroelectric infrared sensor to provide omni-directional sensing capability of occupant's presence and movements. The Accu-Set digital potentiometer makes the sensor setting easier, faster and more accurate than the conventional analog potentiometer. An exclusive Hybrid Switching technology makes ILL-400 series ideal to control the lighting with exceptionally high inrush current (HIC) while switching on, such as multiple LED or CFL lightings connected in parallel.

ILL-400 series is available with various mounting options and interchangeable lenses. This provides a second-to-none design and complete installation flexibility. The sensor is designed to operate in the coldest of environments, down to -40°C/°F.

The ILL-400 series comes with an ambient light sensor (ALS) to inhibit the lighting if ambient light levels are higher than required. The ILL-400 is designed to provide complete occupancy sensing for automatic lighting control, ease of use, and the simplest installation possible.

FEATURES

- Omni-directional infrared sensor
- 100/120/240/277VAC multiple line voltage operation
- Hybrid switching for controlling loads with HIC
- Accu-Set potentiometer for quick and easy setting
- Walk test and sensor operation LED indicator
- Direct lead wires for easy wiring connection
- Available with a variety of mounting options
- Available with interchangeable lens options

APPLICATION

☑ Light Control

The ILL-400 series occupancy sensor can be used to directly control the connected light, or other loads, by sensing the presence and movements of the occupant. Various control modes can be achieved by different wiring connections.

ILL-400 series

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MOUNTING OPTIONS

The ILL-400 S **X**x series provides multiple mounting options for versatile applications. The bracket will be shipped with the sensor when ordered with the respective code. Codes F and W allow the ILL-400S **X**x to be directly integrated with OEM light fixtures in any environment

Code	Mounting Option	Mounting Bracket
F	Fixture Integrated	---
W	IP-66 Fixture Integrated	---
E	Fixture External	EMB-500
P	IP-66 Fixture External	PMB-500
S	Ceiling Surface	SMB-500
C	Junction Box	CMB-500
L	Ceiling Recess	LMB-500

LENS OPTIONS

The ILL-400 Sx **X** series is available with following lens options which provide different coverage at different mounting height (H). When adding the lens code the lens is then automatically shipped with the sensor.

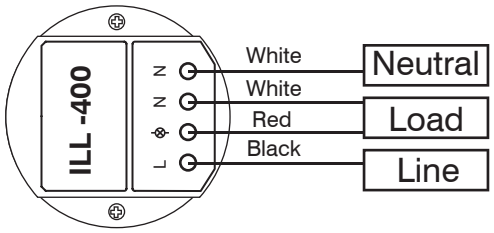
Lens		Shape	Mounting Height		Coverage
A	Standard	Cone	8~15 ft.	2.4~4.5m	2X height
B	Extra wide	Cone	8~10 ft.	2.4~3.0m	6X height
C	High bay	Cone	15~30 ft.	4.5~9.0m	3X height
D	Standard	Round	8~20 ft.	2.4~6.0m	2X height
F	Extra wide	Dome	8~20 ft.	2.4~6.0m	4X height
G	Aisle way	Arch	8~40 ft.	2.4~12.0m	3X height
H	High bay	Dome	30~50 ft.	9.0~15.0m	1X height
L	Long aisle	Arch	8~10 ft.	2.4~3.0 m	6X height

Example: ILL-400SWB

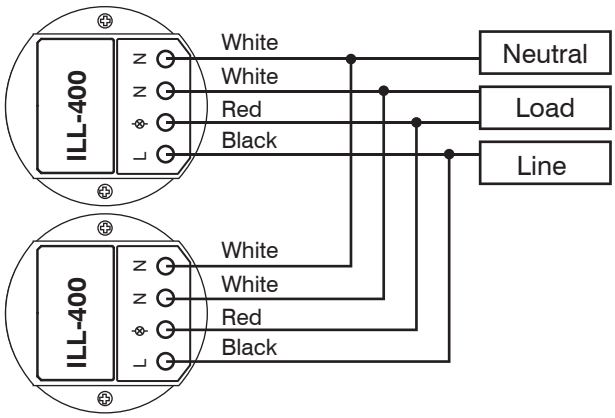
This sensor would come with ambient light sensor built-in and lens with extra wide detection for wet location control. Specific mounting bracket or lens may be order separately if needed. For help selecting sensors with proper mounting and lens options

WIRING DIAGRAM

A. Single sensor control



B. Multiple sensors control



SPECIFICATIONS

Power supply	100/120/240/277VAC, 50/60 Hz		
Maximum load	100-120VAC	240VAC	277VAC
-Incandescent/Halogen	800/*500W(VA)	5A	1200/*750W(VA)
-Fluorescent Ballast/CFL	800/*500W(VA)	5A	1200/*750W(VA)
-Ballast Electronic (LED)	540/*500VA	5A	1200/*750VA
Infrared sensor	Omni-directional pyroelectric		
Load switching	Zero-cross Hybrid-Switching		
HIC protection	Max. 80A for 16.7msec.		
Detectable speed	0.3~3 m/sec (1~10 ft./sec.)		
Mounting height	Subject to the lens type applied.		
Detection range	Subject to the lens applied and height		
Ambient light level	7 levels Accu-Set digital potentiometer		
Delay time setting	10"/1'/3'/5'/10'/20'/30' selectable		
Op. humidity	Max. 95% RH		
Op. temperature	-40°C~70°C (-40°F~158°F)		
Dimensions	Ø60 x H37mm (Ø2.36"x H1.45")		

*Max load for operating temperature at 55°C~70°C (131°F~158°F)

PIR Occupancy Sensor LENS DATASHEET

ILite PIR based Occupancy Sensors feature with interchangeable lens options. Each lens provides different sensing coverage which varies with the actual mounting height.

The specified detection coverage and mounting height of each lens are based on the test result of human motion walking across the detection zones. The actual coverage may be reduced if the motion is moving toward or away the sensor. High ambient temperature (above 28°C/82°F) could reduce the coverage of PIR sensor. If ambient temperature at the covered area are expected to be high sometimes, consider adding more sensors or reduce the mounting height, if possible.

LENS OPTIONS

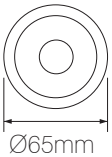
Lens			Shape	Recommended Mounting Height		Coverage
A		Standard	Cone	2.4~4.5m	8~15 ft.	2X height
B		Extra wide	Cone	2.4~3.0m	8~10 ft.	6X height
C		High bay	Cone	4.5~9.0m	15~30 ft.	3X height
D		Standard	Round flat	2.4~6.0m	8~20 ft.	2X height
F		Extra wide	Dome	2.4~6.0m	8~20 ft.	4X height
G		Aisle way	Arch	2.4~12.0m	8~40 ft.	3X height
H		High bay	Dome	9.0~15.0m	30~50 ft.	1X height
L		Long aisle	Arch	2.4~3.0 m	8~10 ft.	6X height

NOTE:

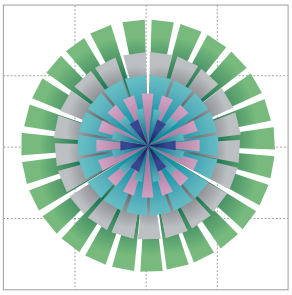
- Lens G/L can be rotated to change the direction of coverage. Its 3X/6X height coverage refers only to the total length, the width of coverage will vary with the mounting height (see table of Lens G/L section). This lens is not IP-66 rated.
- Lens C/G may be mounted up to 40/50 ft. (12/15m) or higher at the area, providing with large moving object such as forklift trucks. Before installing all sensors, please ensure that the sensor can have optimal detection at desired height.
- All dimensions are for reference only.

LENS DATASHEET

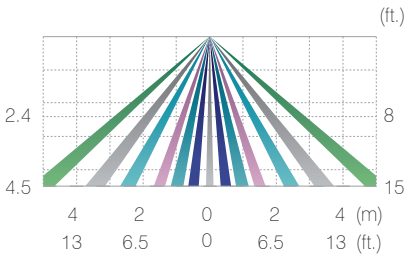
LENS A — 2X Standard



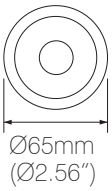
Top View



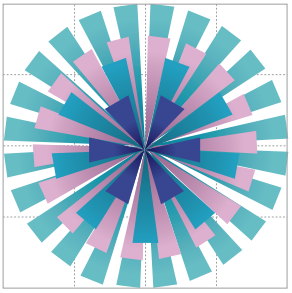
Mounting Height	m (ft.)	2.4 (8)	3.0 (10)	3.6 (12)	4.5 (15)
Max. Coverage Ø	m (ft.)	4.8 (16)	6.0 (20)	7.2 (24)	9.0 (30)
Minor Motion Ø	m (ft.)	3.0 (10)	1.8 (6)	1.8 (6)	--



LENS B — 6X Extra wide

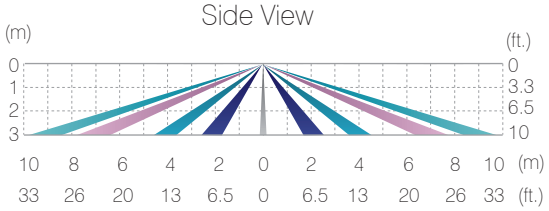


Top View

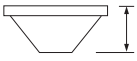


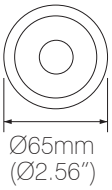
Mounting Height	m (ft.)	2.4 (8)	2.6 (8.5)	2.8 (9)	3.0 (10)
Max. Coverage Ø	m (ft.)	14.4 (48)	15.6 (51)	16.8 (54)	18.0 (60)

Side View

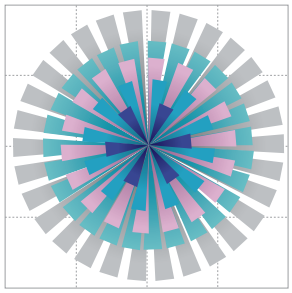


LENS C — 3X High bay



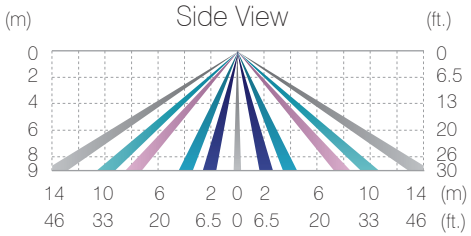


Top View

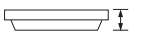


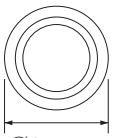
Mounting Height	m (ft.)	4.5 (15)	6.0 (20)	8.0 (26)	9.0 (30)
Max. Coverage Ø	m (ft.)	13.5 (45)	18.0 (60)	24.0 (78)	27.0 (90)

Side View

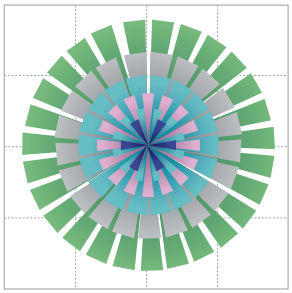


LENS D — 2X Standard



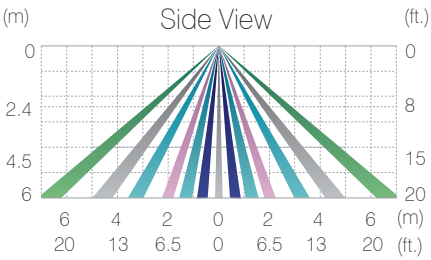


Top View



Mounting Height	m (ft.)	2.4 (8)	3.0 (10)	4.5 (15)	6.0 (20)
Max. Coverage Ø	m (ft.)	4.8 (16)	6.0 (20)	9.0 (30)	12.0 (40)
Minor Motion Ø	m (ft.)	1.8 (6)	3.0 (10)	--	--

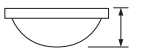
Side View

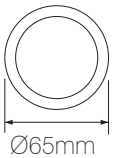


LENS DATASHEET

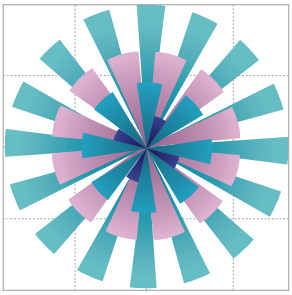
LENS F — 4X Extra wide

Mounting Height	m (ft.)	2.4 (8)	3.0 (10)	4.5 (15)	6.0 (20)
Max. Coverage Ø	m (ft.)	9.6 (32)	12.0 (40)	18.0(60)	24.0 (80)
Minor Motion Ø	m (ft.)	1.8 (6)	4.0 (13)	--	--

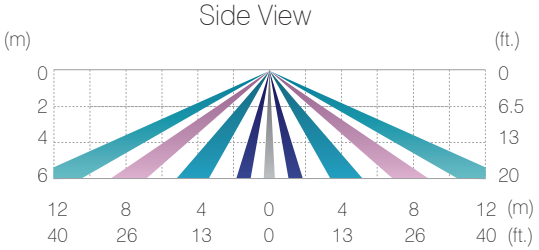




Top View

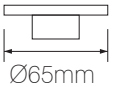


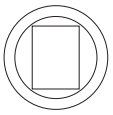
Side View



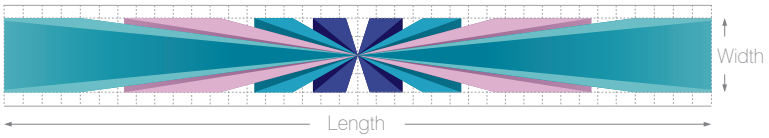
LENS G — 3X Aisle way

Mounting Height	m (ft.)	3.0 (10)	6.0 (20)	9.0 (30)	12.0 (40)
Max. Coverage Ø	m (ft.)	9.0 x 4 (30 x 13)	18.0 x 4 (60 x 13)	27.0 x 4 (90 x 13)	36.0 x 4 (120 x 13)

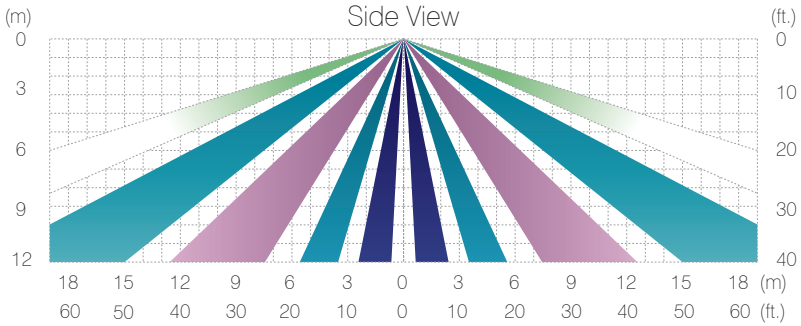




Top View

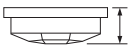


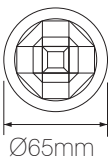
Side View



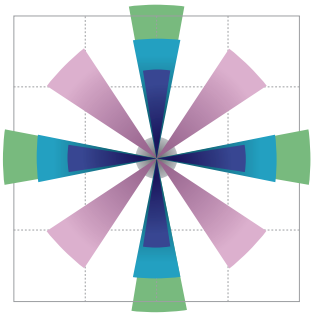
LENS H — 1X High bay

Mounting Height	m (ft.)	9.0 (30)	11.0 (36)	13.0 (43)	15.0 (49)
Max. Coverage Ø	m (ft.)	9.0 (20)	11.0 (36)	13.0 (43)	15.0 (49)

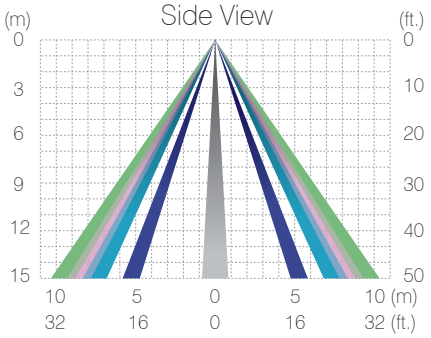




Top View



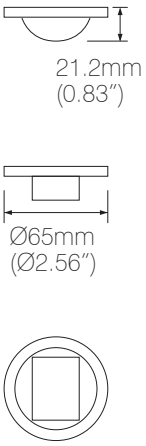
Side View

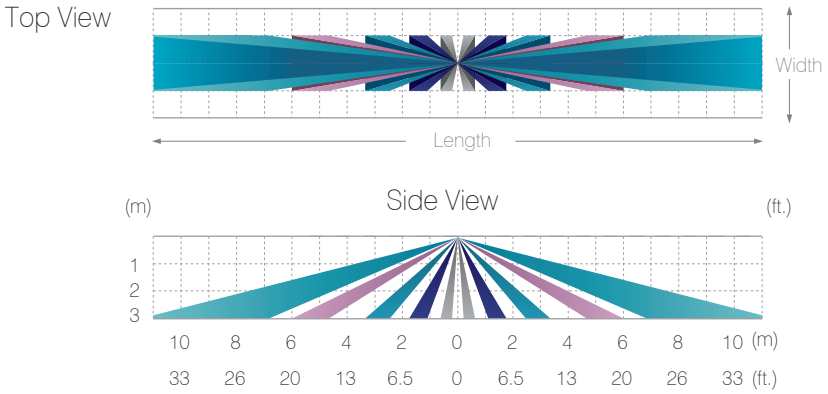


LENS DATASHEET

LENS L 6X Long aisle

Mounting Height	m (ft.)	2.4 (8)	2.6 (8.5)	2.8 (9)	3.0 (10)
Max. Coverage Ø	m (ft.)	14.4 x 2 (48 x 6.5)	15.6 x 2 (51 x 6.5)	16.8 x 2 (54 x 6.5)	18.0 x 2 (60 x 6.5)

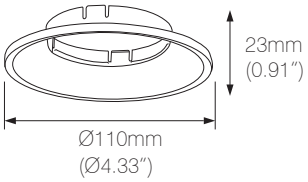


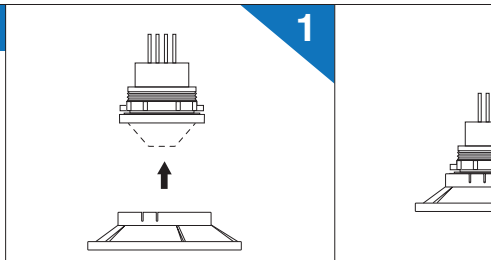


ACCESSORIES

LENS HOOD LH-110

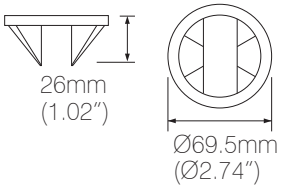
The LH-110 is designed for bi-level control sensors to prevent its ambient light sensor from being saturated by the excessive lighting nearby.



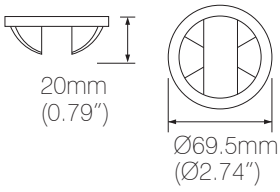


LENS MASK

LM-12C For Lens A/B/C



LM-12D For Lens F



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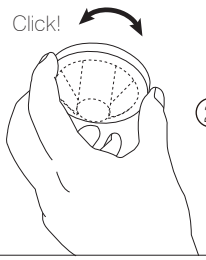
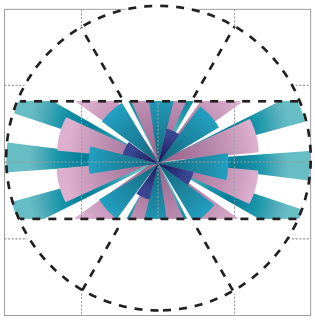
① Push the mask onto the installed lens



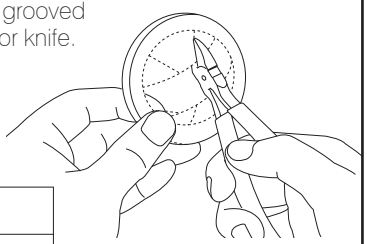
② Masked area can be changed by rotating the mask

Example: Lens F with LM-12D

Top View



If necessary, the masked area can be altered by cutting off the respective grooved segments with a wire cutter or knife.



Coverage Area with Lens F and Mask					
Mounting Height	m (ft.)	2.4 (8)	3.0 (10)	4.5 (15)	6.0 (20)
Max. Coverage Length x Width	m (ft.)	9.6 x 2 (32 x 6.5)	12.0 x 2 (40 x 6.5)	18.0 x 2 (60 x 6.5)	24.0 x 2 (80 x 6.5)