

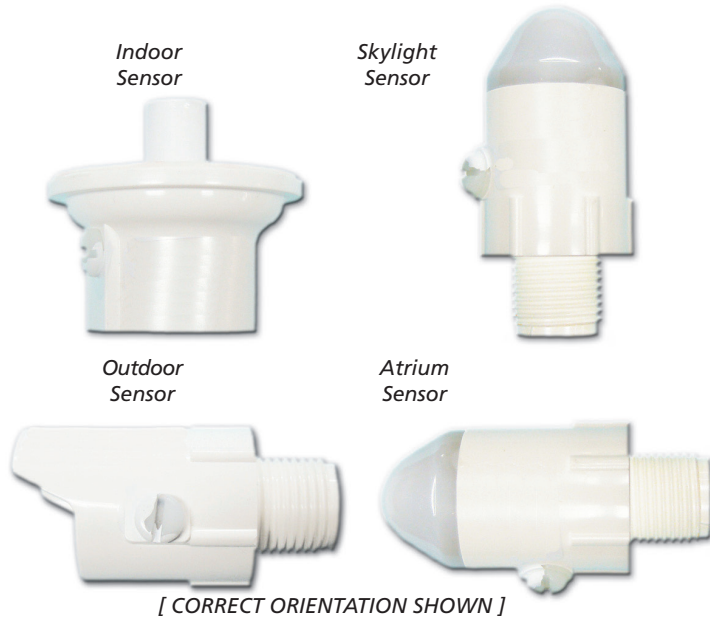
## CES

**PHOTODIODE SENSOR  
WITH MULTIPLE VOLTAGE OUTPUT  
3 Wire, External Power, Multiple Voltage Output**

PROJECT	
LOCATION	

### FEATURES

- Compatible with many lighting and building automation controllers
- Measuring range 0-7,500fc
- Output 5 or 10V
- Fixed response time
- Indoor sensor adhesive ceiling mount
- All others 1/2" NPT mount
- UL 916 Listed
- NIST traceable factory calibration available
- Compliant with Title 24
- RoHS compliant
- 2 year warranty



### DESCRIPTION

The CES is a three wire, analog photosensor which provides a light level input into lighting control and building automation systems. The CES has four models which are used in different locations in and around a building. Indoor sensors are used in offices and classrooms. Outdoor sensors detect light for sign and site illumination control. Atrium sensors measure light in lobbies. Skylight sensors read the ambient light available in warehouse skylights. Other sensors include a low range indoor model for museum wall monitoring and a high range outdoor sensor for daytime contrast lighting control. Each sensor has a different range and focus of the light being measured.

CES sensors are powered by a variety of voltages, which includes 5, 10, 12 and 24VDC. There are four output ranges, 0-5VDC, 0-10VDC, 1-5VDC and 1-10VDC. The 1V offset is calibrated to 0fc and detects short circuits or a disconnected sensor at 0VDC. Each sensor's 5 or 10VDC output is calibrated to a factory standard footcandle setting using NIST traceable equipment. These standard ranges are based on 20 years experience in the lighting controls industry and are the most suitable for many applications. All CES sensors are Class 2 wiring devices and are listed as UL916 accessory equipment. Custom wire lengths, lens and housing modifications, and multi-point NIST calibration services are also available.

## TECHNICAL DATA - CES SERIES

**Input Voltage:** 5, 10, 12, 24VDC  
**Power Consumption:** 113mW  
**Low Output:** SEE TABLE 1 0 or 1VDC  
**High Output:** SEE TABLE 2 5 or 10VDC  
**Photodiode:** Blue Enhanced  
**Fixed Signal Range:** 0-5, 1-5, 0-10, 1-10  
**Gain Adjustment:** 25 Turn Potentiometer  
**Time Response:** Fixed 10 second Full Range  
**Tolerance:** 12%  
     **Repeatability** +/- 0.5%  
     **Linearity** 2%  
     **Temperature** +/- 10%  
**Temperature:** -4° to 167°F (-20° to 75°C)  
**Wiring:** Red: Input Voltage  
     Yellow: Signal Voltage  
     Black: Return

Fixed Corresponding fc

Sensor	Minimum
CES/I	0fc
CES/IIL	0fc
CES/IILD2	0fc
CES/IILF	0fc
CES/O	0fc
CES/OD	0fc
CES/A	0fc
CES/S	0fc

TABLE 1

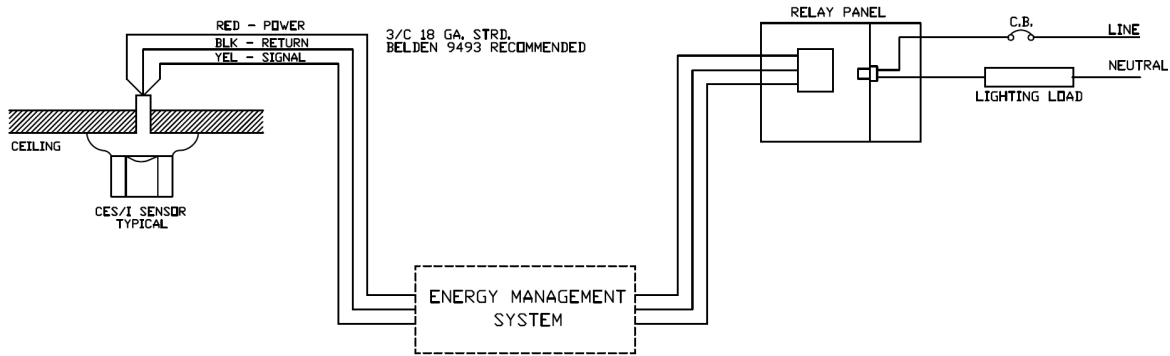
Adjustable Corresponding fc Ranges

Sensor	Maximum
CES/I	70-750fc
CES/IIL	40-60fc
CES/IILD2	50-75fc
CES/IILF	40-65fc
CES/O	50-750fc
CES/OD	500-7,500fc
CES/A	200-2,500fc
CES/S	1,000-7,500fc

TABLE 2

**Compliance:** NEC Class 2 ; ETL / UL 916 ; RoHS ; California Title 24

### ONE-LINE DIAGRAM



### CES SENSOR SELECTION

Sensor	Style	Lens	Filter	Mounting	Orientation	Factory Set Max. Calibration *	Cut Loop Wire
CES/I	Indoor	Fresnel	Clear	Ceiling	Down	100fc	N/A
CES/IIL	Indoor	Dome	Clear	Ceiling	Down	40fc	20
CES/IILD2	Indoor	Dome	Opaque	Ceiling	Down	50fc	25
CES/IILF	Indoor	Fresnel	Clear	Ceiling	Down	60fc	25
CES/O	Outdoor	Flat	Clear	1/2" NPT	Horizontal	250fc	N/A
CES/OD	Outdoor	Flat	Dark	1/2" NPT	Horizontal	1,000fc	N/A
CES/A	Atrium	Dome	Opaque	1/2" NPT	Horizontal	1,000fc	N/A
CES/S	Skylight	Dome	Dark	1/2" NPT	Up	2,000fc	N/A

\* Charge applies if non-standard calibration is requested

### ORDERING INFORMATION

NOTE: Input voltage chosen must be equal to or greater than maximum output voltage. Maximum voltage output is set at factory and is specified on the order. Consult factory for special calibrations.

