



High Intensity Through Beam Sensor





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SMARTEYE® Light Sources and Receivers have been designed to perform Beam Break or thru-beam sensing tasks where the material or container is dense, the lens is subject to contamination buildup, or for long range sensing in harsh environments. A complete system includes a Dual LED High-Intensity Light Source and a Complementary Receiver.

The Model **HSLS-12** Super High Intensity Light Source has been added to the **SLS** Series product line. The Light Source emits 10 times the optical power, enabling it to easily penetrate cardboard or plastic containers. Applications include verification of container contents, proper fill levels or overlap splice detection of dense materials.

The **SMARTEYE®**, High Intensity, Through Beam sensors can be used with or without optical blocks, or in combination with fiber optic light guides. The fiber optic light guides help narrow the focus of the detector or light source, providing for a more precise concentration of light in applications requiring more pinpoint targeting.



Features

- n 2 or 10 LED infrared light source
- n 10-LED contrast indicator
- n Screwdriver adjustable Offset
- n Fiber optic or lensed models
- n Asynchronous light source

Benefits

- n Penetrates through many opaque objects and cartons
- n Easy to align and adjust
- n Flexible available configurations
- n Uses standard fiber optic mounting and tip configurations

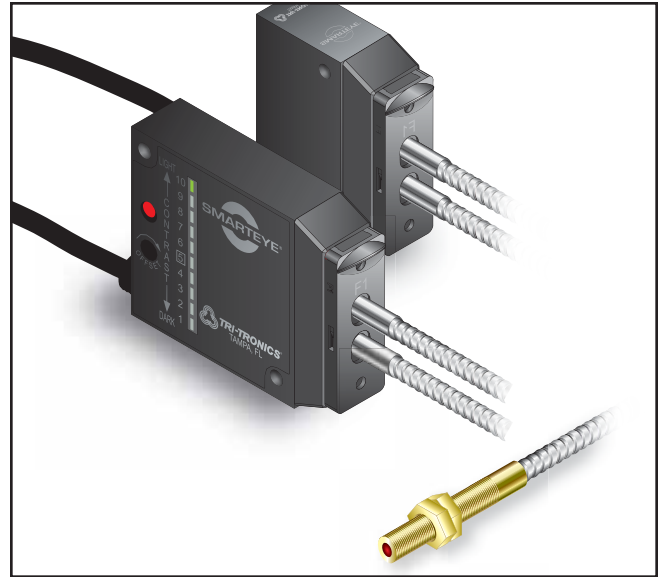
Applications

- n Paper box contents verification/inspection
- n Opaque liquid level detection
- n Paper insert/instruction verification/inspection
- n Paper box contents orientation
- n Able to penetrate easily through dirty and dusty environments

FIBEROPTIC BEAM BREAK DETECTION

Dual LED Light Source Model SLS-2F1 and Dual Detector Receiver Model SR-2F1.

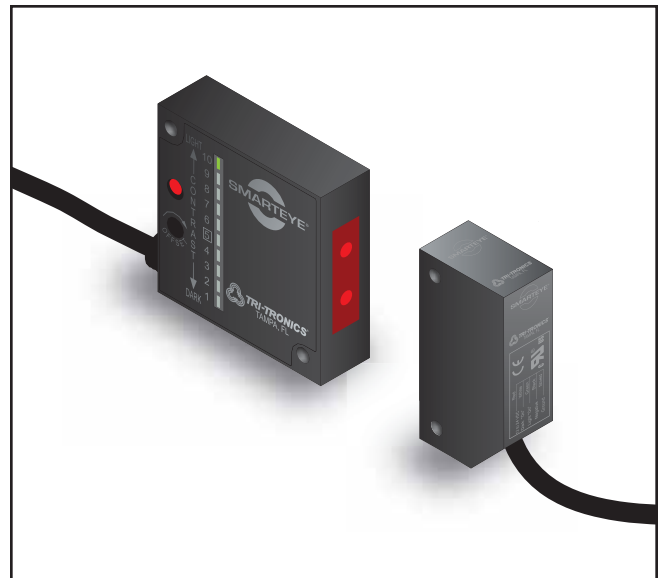
Type F1 allows the use of our fiberoptic light guides. Utilizing a bifurcated light guide, the light energy available from the two LED light sources is used to create a very high intensity light beam. The Dual Detector receiver can be used with one bifurcated light guide and one or two straight light guides.



CONTAINER CONTENTS DETECTION

Dual LED Light Source Model SLS-1 and Dual Detector Receiver Model SR-1.

This basic system is used without optical blocks. It was designed for closeup thru-beam sensing through dense containers and materials. Applications include detecting the presence or absence of contents in plastic containers or cardboard boxes, detecting overlap splices in dense materials, etc.



LONG RANGE HARSH ENVIRONMENT PENETRATION

Dual LED Light Source Model SLS-2R1 and Dual Detector Receiver Model SR-2R1.

Type R1 Optical Block which allows the light source and receiver to be placed as far apart as 100'. This system is capable of penetrating severe contamination buildup on the lenses. Applications include detecting opaque objects under the most adverse conditions found in the lumber, paper, and steel industries.



How to Specify

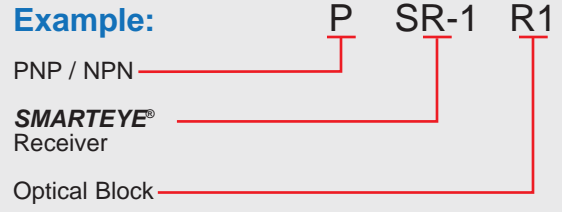
Light sources and receivers are not furnished in pairs, and they must be ordered separately.



Receiver

1. Select NPN or PNP Transistor Output:
Blank = NPN
P = PNP
2. Select sensor model number required:
SR-1 = Use with no optical block
SR-2 = Use with F1 or R1 optical block
3. Select Block:
Blank = No block
F1 = Fiber Optic
R1 = Long Range Lens

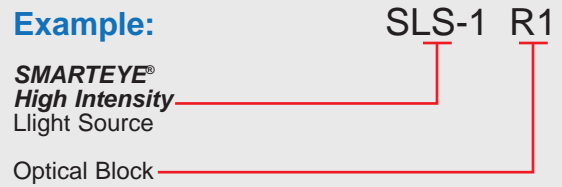
Example:



Light Source

1. Select sensor model:
SLS-1 = Use with no optical block
SLS-2 = Use with F1 or R1 optical block
HSL-12 = Use with no optical block
2. Select Block:
Blank = no block
F1 = Fiber Optic block
R1 = Long Range block

Example:



Sensing Range Guidelines

1 in. = 25.4mm / 1 ft. = 0.3048 meters

Light Source Model #	Receiver NPN Model #	Receiver PNP Model #	Range Guidelines	Applications
High Intensity				
SLS-1	SR-1	PSR-1	Up to 12 in.	Short range, high power opacity sensing. Use in shortest range possible for maximum penetration.
SLS-2R1	SR-2R1	PSR-2R1	Up to 100 ft.	Long range, Beam Break object sensing.
SLS-2F1	SR-2F1	PSR-2F1	Up to 3 ft. without lens	Short range fiberoptic Beam Break sensing.
(with fiberoptic light guide)			Up to 18 ft. with lens	Long range fiberoptic Beam Break sensing. Using 2 UAC-15 lenses.
Super High Intensity				
HSL-12	SR-1	PSR-1	35 ft.	10X Optical power. Verification of container contents, proper fill levels, or overlap splice detection of dense materials.



Sees through many packages

Accessories

Model #	Description
F1	Fiberoptic Optical Block
R1	Thru-Beam Optical Block
DCB-1	Light Source Mounting Bracket
SEB-1	Receiver Mounting Bracket; S.S.
CA-1	Conduit Adapter
FSR-1	Flexible Strain Relief
UAC-15	Threaded Long Range Lens



Receiver Specifications

SUPPLY VOLTAGE

- 12 to 24 VDC
- Polarity protected

CURRENT REQUIREMENTS

- 50mA (exclusive of load)

OUTPUTS

- Complementary NPN or PNP output transistors sink/source up to 100mA

RESPONSE TIME

- 800 microseconds – Beam Make or Beam Break

HYSTERESIS

- 400 millivolts – maximum sensitivity and resolution

LIGHT IMMUNITY

- Extremely high immunity to ambient light – sensor responds to pulse modulated light only

LED INDICATOR

- When the light level reaching the photodetector exceeds “5” on the Contrast Indicator, the output switch, and the output LED indicator illuminates

CONTRAST INDICATOR

- Displays the receiver’s full and complete response to contrasting light levels (lightest state vs. darkest state) on the LED bar graph

AMBIENT TEMPERATURE/RH

- -40°C to 70°C (-40°F to 158°F)
- 95% relative humidity

RUGGED CONSTRUCTION

- High-impact plastic case is dirt and moisture sealed
- Epoxy encapsulated for mechanical stability

High Power Light Source Specifications

SUPPLY VOLTAGE

- 12 to 24 VDC
- Polarity protected

CURRENT REQUIREMENTS

- Dual LED light source 65mA
- HSLS-12 light source 70mA

LED LIGHT SOURCE

- Infrared = 880nm wavelength
- Model SLS, 2 LEs; D Model HSLS-12, 10 LED's

AMBIENT TEMPERATURE/RH

- -40°C to 70°C (-40°F to 158°F)
- 95% relative humidity

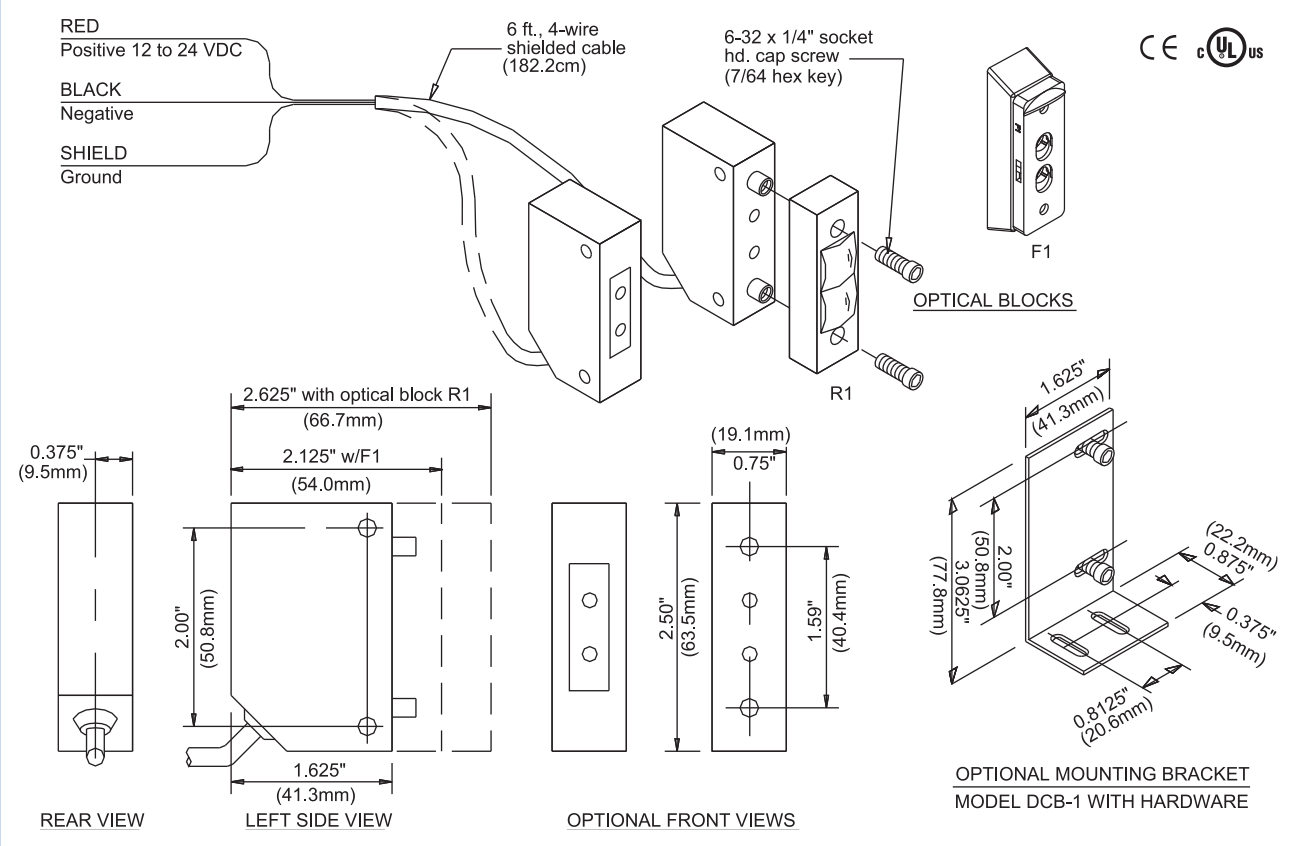
RUGGED CONSTRUCTION

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See drawings on the next page.

RoHS Compliant
Product subject to change without notice

High Intensity Light Source/Receiver Models



Dual Detector Receivers

