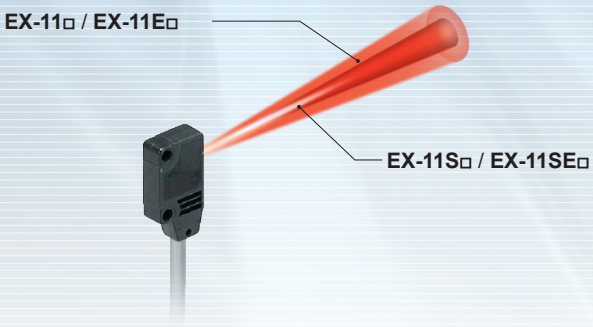
About half the light diffusion of previous models
Three advantages of narrow-beam sensors

Advantage 1

Alleviates interference without slits, allowing close-spaced installation

With about half the light diffusion of previous models, narrow-beam models can be placed twice as closely together-without the added cost of purchasing and installing slits.

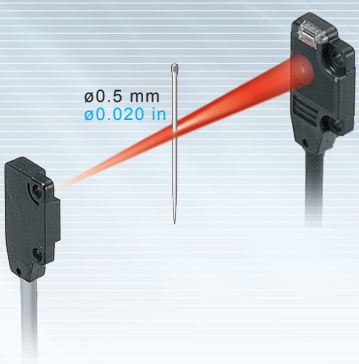


Advantage 2

Detects minute objects with a diameter of just 0.5 mm 0.020 in, without slits

EX-11S□

With about half the light diffusion of previous models, narrow-beam models can detect minute objects with a diameter of just 0.5 mm 0.020 in, without slits. These models provide a reasonably-priced solution for applications requiring detection of minute objects.

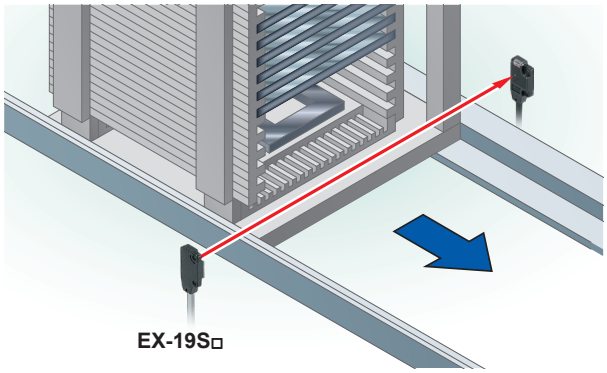


Advantage 3

Long-range sensing at 1 m 3.281 ft with a narrow-beam

EX-19S□

Narrow-beam models deliver long-range sensing at 1 m 3.281ft.



Smallest body, just 3.5 mm 0.138 in thick

It can be mounted in a very small space as its size is just W10 × H14.5 × D3.5 mm W0.394 × H0.571 × D0.138 in (front sensing type).

Wide variation

Available in a total of five types, including flat sensing and side sensing types. Choose the model that best suits the available installation space.

EX-11S□ / EX-11SE□

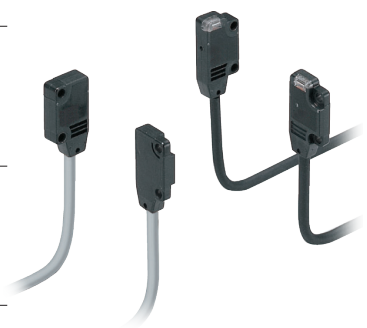
- Sensing range : 150 mm 5.906 in
- Min. sensing object
  Front sensing : ø0.5 mm ø0.020 in
  Side sensing : ø1.0 mm ø0.039 in

EX-13S□ / EX-13SE□

- Sensing range : 500 mm 19.685 in
- Min. sensing object
  Front sensing : ø1.0 mm ø0.039 in
  Side sensing : ø2.0 mm ø0.079 in

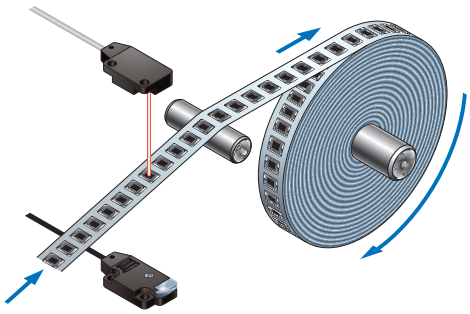
EX-19S□

- Sensing range : 1 m 3.281 ft
- Min. sensing object
  Front sensing : ø2.0 mm ø0.079 in



High-speed response time: 0.5 ms

The sensor is suitable for detecting small and high-speed traveling objects.



SPECIFICATIONS

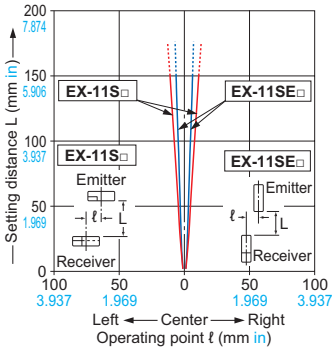
Item	Type	Thru-beam · Narrow-beam				
		Front sensing	Side sensing	Front sensing	Side sensing	Front sensing
Model No. (Note 2)	Light-ON	**EX-11SA(-PN)**	**EX-11SEA(-PN)**	**EX-13SA(-PN)**	**EX-13SEA(-PN)**	**EX-19SA(-PN)**
	Dark-ON	**EX-11SB(-PN)**	**EX-11SEB(-PN)**	**EX-13SB(-PN)**	**EX-13SEB(-PN)**	**EX-19SB(-PN)**
Sensing range		150 mm 5.906 in		500 mm 19.685 in		1 m 3.281 ft
Min. sensing object		ø0.5 mm ø0.020 in opaque object	ø1.0 mm ø0.039 in opaque object	ø1.0 mm ø0.039 in opaque object	ø2.0 mm ø0.079 in opaque object	ø2.0 mm ø0.079 in opaque object
Repeatability (perpendicular to sensing axis)		0.05 mm 0.002 in or less				
Supply voltage		12 to 24 V DC ±10 % Ripple P-P 10 % or less				
Current consumption		Emitter: 10 mA or less, Receiver: 10 mA or less				
Output		<NPN output type> NPN open-collector transistor • Maximum sink current: 50 mA		<PNP output type> PNP open-collector transistor • Maximum source current: 50 mA		
Response time		0.5 ms or less				
Operation indicator		Orange LED (lights up when the output is ON)				
Stability indicator		Green LED (lights up under stable light received condition or stable dark condition)				
Protection		IP67 (IEC)				
Ambient temperature		−25 to +55 °C −13 to +131 °F (No dew condensation or icing allowed), Storage: −30 to +70 °C −22 to +158 °F				
Cable		0.1 mm² 3-core (thru-beam type emitter: 2-core) cabtyre cable, 2 m 6.562 ft long				
Weight		Net weight (each emitter and receiver): 20 g approx.,Gross weight: 50 g approx.				
Accessories		Mounting screws: 1 set				

NOTE: Please note that **MS-EX10-□** sensor mounting brackets designed for standard-beam models cannot be used with narrow-beam models.

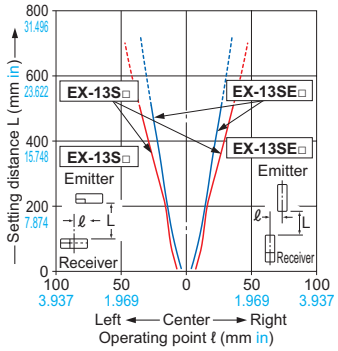
Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +23 °C +73.4 °F.
2) Model Nos. having the suffix "**-PN**" are PNP output type.
3) Standard-beam type **EX-11**(**E**)□ / **EX-13**(**E**)□ / **EX-19**(**E**)□ are also available.

PARALLEL DEVIATIONS (TYPICAL)

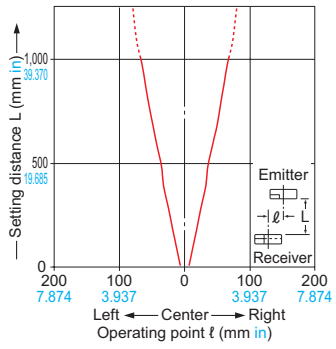
EX-11S□ / EX-11SE□



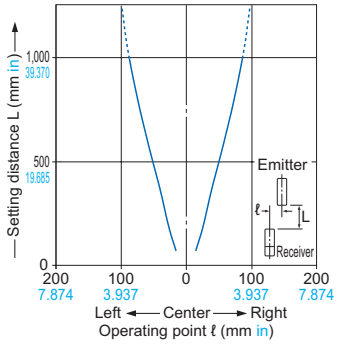
EX-13S□ / EX-13SE□



EX-19S□



EX-19E□ (Additional standard-beam type model)



Sensing range : 1 m 3.281 ft
Min. sensing object : ø2.0 mm ø0.079 in opaque object