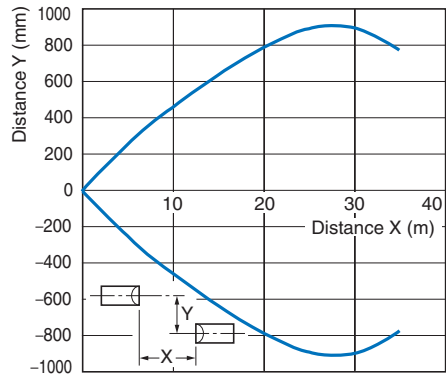
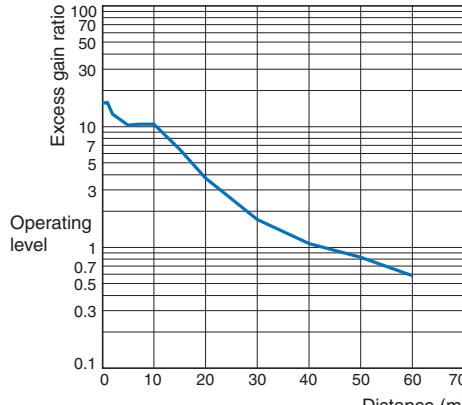


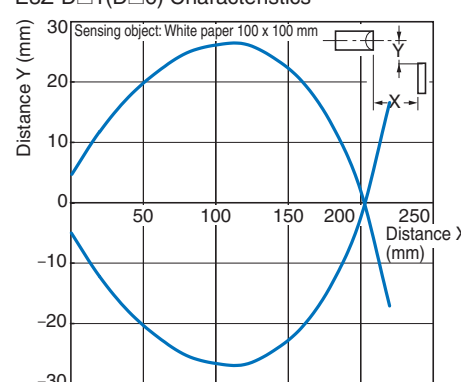
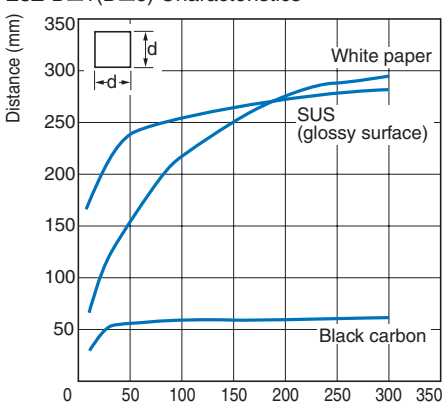
Photoelectric Sensors Technical Guide

Interpreting Engineering Data

Through-beam Sensors and Retro-reflective Sensors

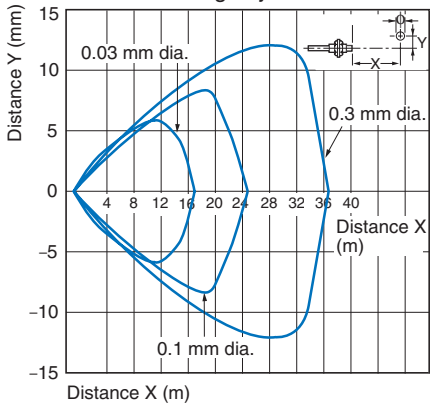
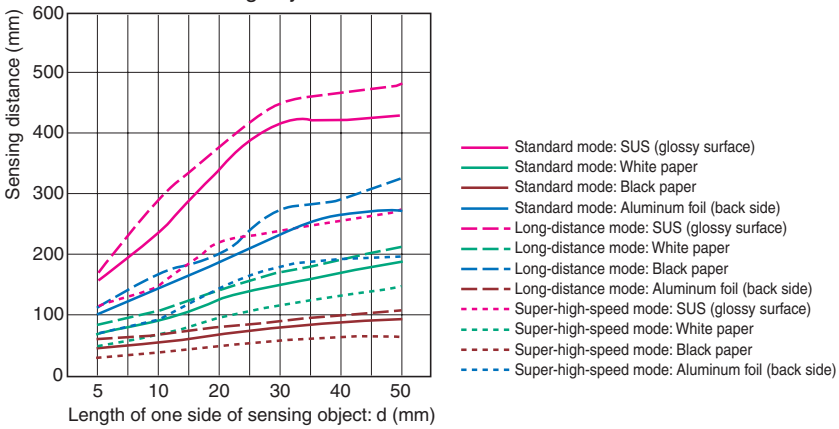
Parallel Operating Range	Excess Gain Ratio vs. Set Distance
<p>E3Z-T□1(T□6) Characteristics</p> 	<p>E3Z-T□1(T□6) Characteristics</p> 
<ul style="list-style-type: none"> Through-beam Sensors: Indicates the sensing position limit for the Receiver with the Emitter at a fixed position. Retro-reflective Sensors: Indicates the sensing position limit for the Retroreflector when the Sensor is at a fixed position. Sensitivity is set to the maximum value in both cases and the area between the top and bottom lines is the detectable area. An area 1.5 times the area shown in the diagram is required to prevent mutual interference with more than one Through-beam Sensor installed. 	<ul style="list-style-type: none"> The excess gain ratio shown here is the value with the sensitivity set to the maximum value. The rated sensing distance above is for a 15-m model. The graph shows that the excess gain ratio is approximately 6 at the rated sensing distance.

Diffuse-reflective Sensors

Operating Range	Size of Sensing Object vs. Sensing Distance
<p>E3Z-D□1(D□6) Characteristics</p> <p>Sensing object: White paper 100 x 100 mm</p> 	<p>E3Z-D□1(D□6) Characteristics</p> 
<ul style="list-style-type: none"> Indicates the sensing start position when a standard sensing object is moved in the Y direction (vertically along the optical axis). The bottom curve in the diagram is for when the sensing object is moved from the bottom. 	<ul style="list-style-type: none"> Indicates how the sensing distance varies with the size and surface color of the sensing object.

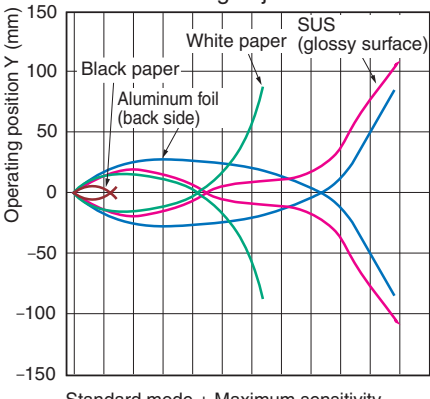
Note: These values are for the standard sensing object. The operating area and sensing distance will change for a different object.

Diffuse-reflective and Retro-reflective Sensors

Size of Sensing Object vs. Operating Range	Object Surface Color vs. Sensing Distance
<p>The width and the operating range of E3X-DA-S+E32-DC200 (example) sensing object</p> 	<p>The surface color and the sensing distance of E3X-DA-S+E32-DC200 (example) sensing object</p> 
<ul style="list-style-type: none"> Indicates how the operating range of the Sensor varies with the width of the sensing object. Each enclosed area indicates the operating area of the respective sensing object width. 	<ul style="list-style-type: none"> When using a Reflective Photoelectric Sensor, the surface color and gloss of the object will affect the sensing distance and the operating area. Indicates that the sensing distance lengthens as the reflectance of the object surface increases.

Surface Color of Object, Gloss, and Operating Range

The surface color and the operating range of E3X-DA-S+E32-DC200 (example) sensing object



Standard mode + Maximum sensitivity

- Indicates that a black object with the lowest reflectance has the smallest operating (sensing) area.
- SUS and aluminum foil are glossy and will enable a longer sensing distance. The reflection of the light by the surface, however, will only be regular reflection, not diffuse reflection, and thus the operating area will be smaller than with white paper.