

Prosens Technology

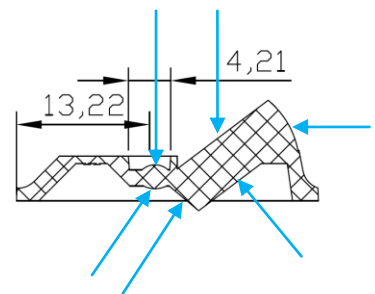
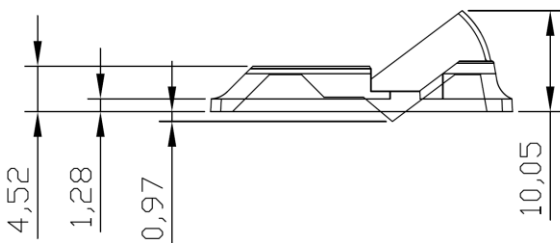
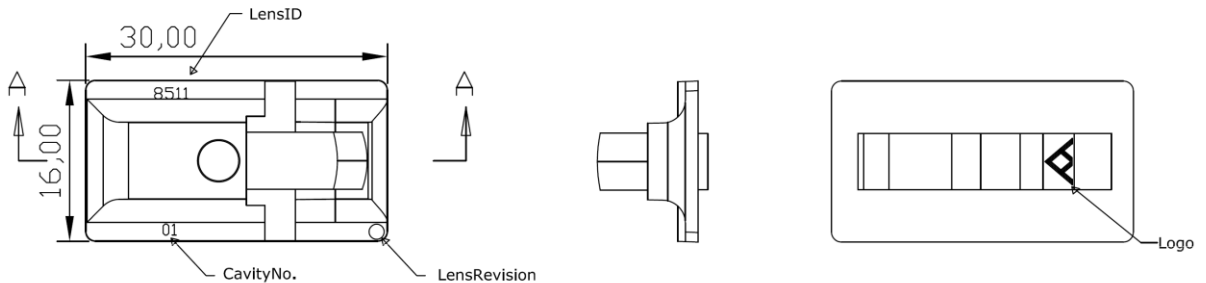
WT-8511

The 3'rd Generation Optical Mouse Lens



Description

The WT-8511 square lens is designed for use with Prosens Technology WT-8XXXX series of LED mouse sensors. Together with the HLMP-EG3E-xxxxx LED and the sensor, the WT-8511 square lens completes the optical navigation system to provide the directed illumination for the optical imaging process necessary for the operation of the optical sensor. The WT-8511 square lens adopts the 3'rd generation, or specula, optical architecture providing the high performance on the surface coverage as well as power consumption. It is a precision molded optical component and should be handled with care to avoid scratching and contamination of the optical surfaces.



- ⊙ Dimensions are in Millimeters
- ⊙ Dimensional Tolerance is $\pm 0.1\text{mm}$
- ⊙ Angular Tolerance is ± 3 degrees
- ⊙ Blue arrows point out the optical surfaces

Figure1. WT-8511 Lens Outline Drawings

Mechanical Assembly Requirement

All specifications reference Figure 2, Optical System Assembly Diagram

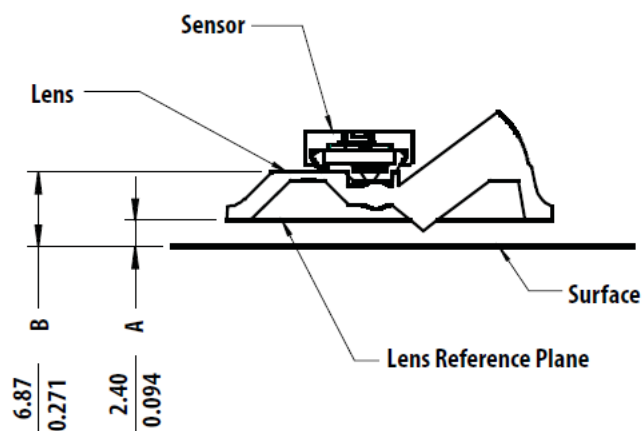
Parameters	Symbol	Min	Typical	Max	Unit	Conditions
Distance from Object Surface to Lens Reference Plane	A	2.30	2.40	2.50	mm	
Distance from Object Surface to Sensor Reference Plane	B	6.77	6.87	6.97	mm	

Lens Design Optical Performance Specifications

All specifications are based on the Mechanical Assembly Requirements.

Parameters	Symbol	Min	Typical	Max	Unit	Conditions
Magnification		0.72	0.8	0.88		At nominal plane.
Design Wavelength	λ		639		nm	Design value
Object to Image Distance		8.34	8.84	9.34	mm	
Lens Material Index of Refraction	N	1.580	1.582	1.584		At 639nm
Optical Depth of Field	DOF		± 0.3		mm	
Field Coverage Radius			0.6		mm	Design value

* Lens material is polycarbonate or Polystyrene HH30. Cyanoacrylate based adhesives should not be used as they will cause lens material deformation.



Note:

A – Distance from object surface to lens reference plane

B – Distance from object surface to sensor reference plane

Figure2. Distance from Lens Reference Plane to Tracking Surface (Z)

Prosens Technology and the W logo are trademarks of Prosens Technology Co., Ltd., Republic of China, and other countries. Data is subjected to be changed. All rights reserved.

