

Data Sheet



Description

The ADNS-5110-001 trim lens is designed for use with Avago Technologies ADNS-5xxx series of LED mouse sensors. Together with the HLMP-EG3E-xxxxx LED and the sensor, the ADNS-5110-001 trim 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 ADNS-5110-001 lens is a precision molded optical component and should be handled with care to avoid scratching and contamination of the optical surfaces.

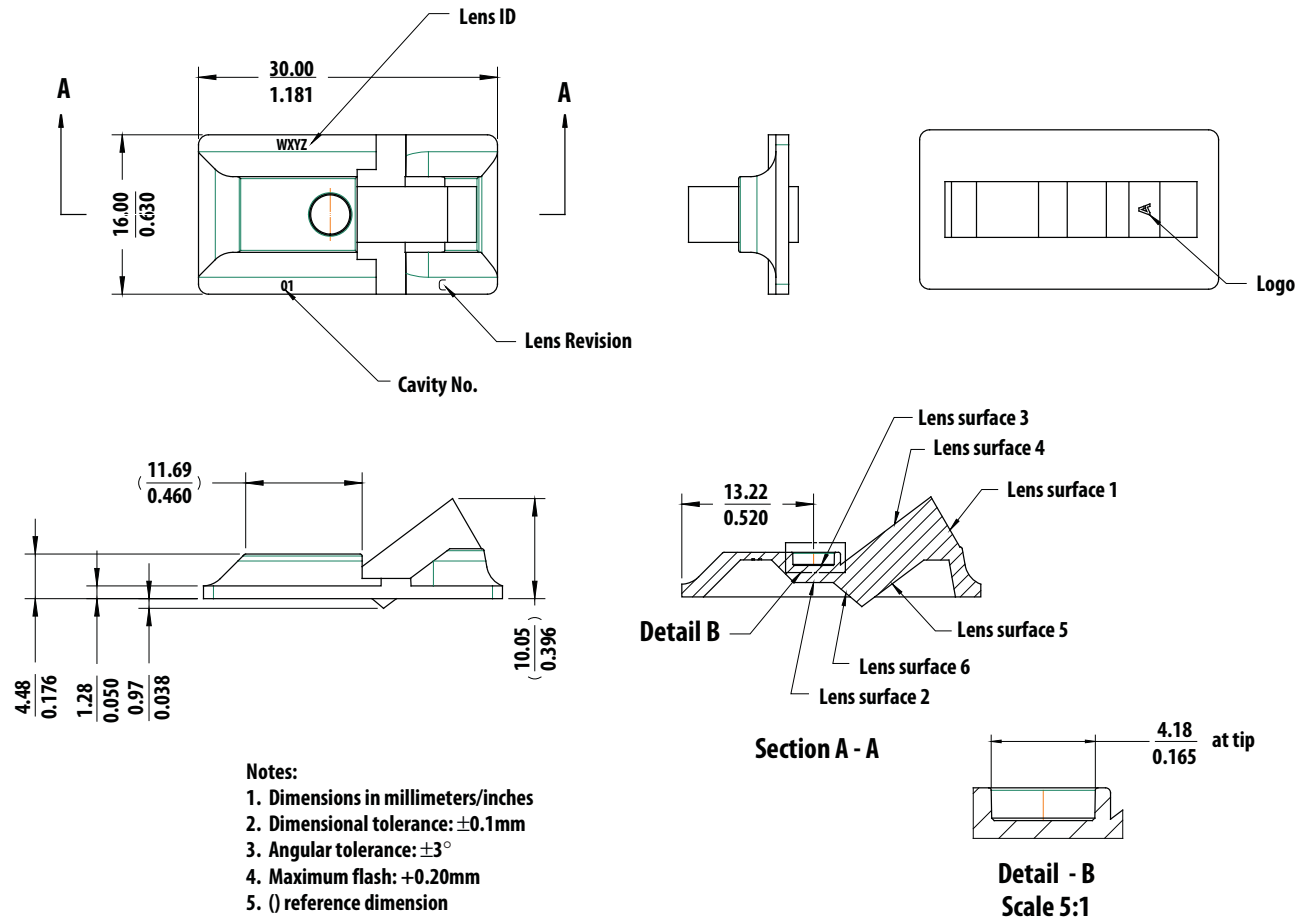


Figure1. ADNS-5110-001 trim lens outline drawings and details

Mechanical Assembly Requirements

All specifications reference Figure 2, Optical System Assembly Diagram

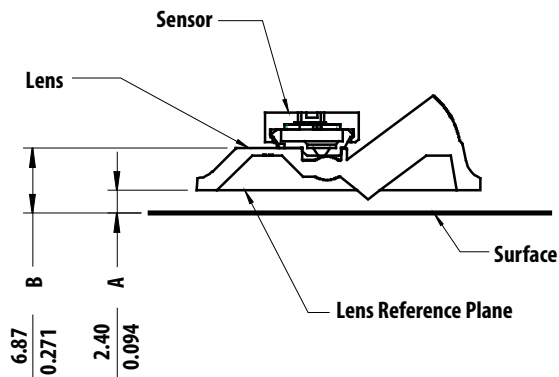
Parameters	Symbol	Min	Typical	Max	Unit	Conditions
Distance from Object Surface to Lens Reference Plane	A	2.30	2.40	2.50	mm	
Distance from Object Surface to Sensor Reference Plane	B	6.77	6.87	6.97	mm	

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

Figure 2. Distance from lens reference plane to tracking surface (Z)

Mounting Illustration for the ADNS-5110-001 LED Mouse Trim Lens

The STEP or IGES format drawing file with design specifications for the LED mouse base plate features and lens are available. These features are useful in maintaining proper positioning and alignment of the ADNS-5110-001 trim lens in the optical system assembly of the mouse. These file can be obtained by downloading from Avago Technologies website or by contacting your local Avago Technologies sales representative.

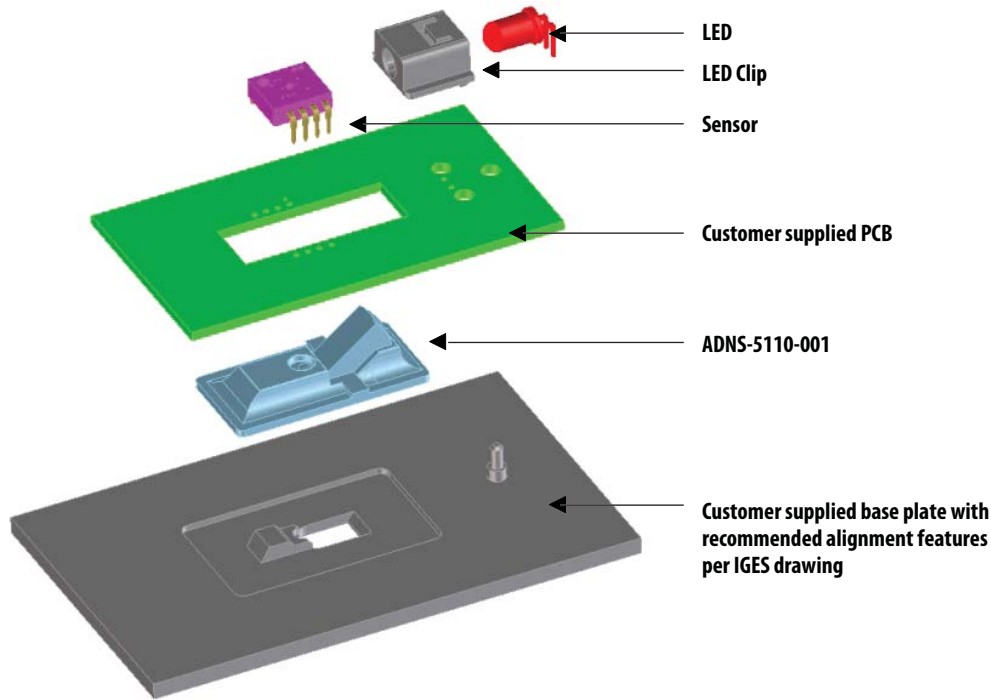


Figure 3. Exploded View of the Optical System Assembly and Mounting

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