ADNS-3120-001
Solid-State Optical Mouse Lens

Data Sheet

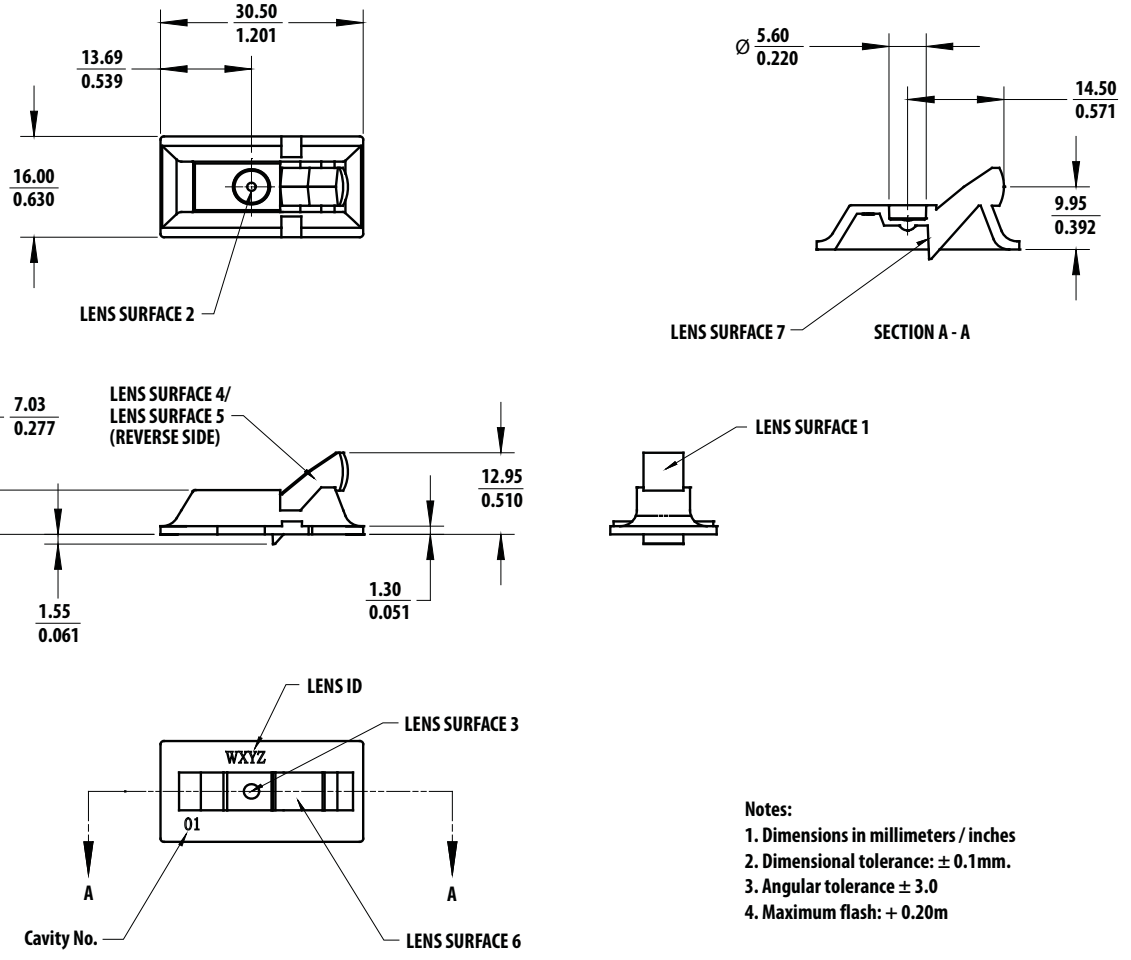
Description

The ADNS-3120-001 Solid-State Optical Mouse Lens is designed for use with Avago Technologies Optical Mouse Sensors ADNS-3040 and the illumination subsystem provided by the ADNS-2220 LED Assembly Clip and the HLMP-EG3E-xxxxx LED. Together with the LED, ADNS-3120-001 provides the directed illumination and optical imaging necessary for proper operation of the Optical Mouse Sensor. The lens is a precision molded optical component and should be handled with care to avoid scratching of the optical surfaces.

Ordering Information

Specify Part Number as follows:

Flange	Part Number	Material
Trim	ADNS-3120-001	Polycarbonate



Notes:
1. Dimensions in millimeters / inches
2. Dimensional tolerance: ± 0.1mm.
3. Angular tolerance ± 3.0
4. Maximum flash: + 0.20m

Figure 1. ADNS-3120-001 Outline Drawing

Mechanical Assemble Requirements

All specifications reference Figure 2, Optical System Assembly Diagram.

Parameter	Symbol	Min.	Typical	Max.	Units	Conditions
Distance from Object Surface to Lens Reference Plane	A	2.45	2.55	2.65	mm	
Distance from Mouse Sensor Lid contact with lens Surface to Object Surface	B		9.43		mm	Sensor lid must be in contact with lens housing surface

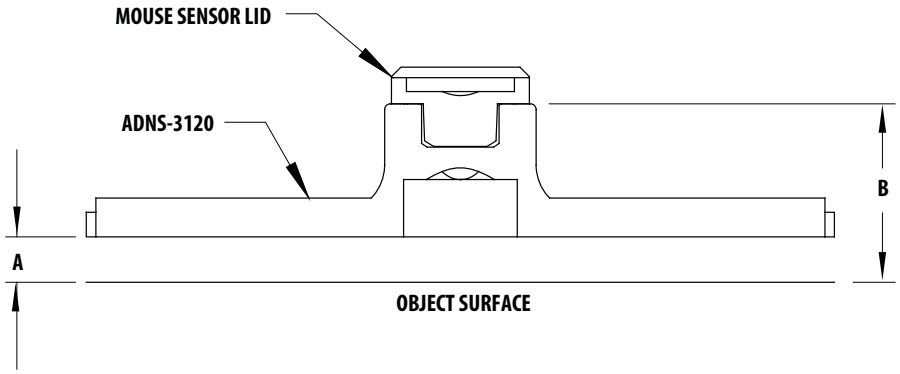
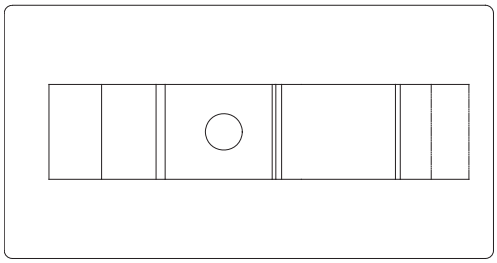


Figure 2. Optical System Assembly Diagram



NOTES:
1. **TOPSIDE LOGO EXTENDS 0.2 mm ABOVE THE FLANGE SURFACE.**
2. **BOTTOMSIDE LOGO EXTENDS 0.1 mm BELOW THE SURFACE.**
3. **BOTTOMSIDE LOGO IS EITHER LEFT SIDE, AS SHOWN AS ABOVE, OR PRISM SIDE OF THE LENS**

Figure 3. Logo Locations.

Lens Design Optical Performance Specifications

All specifications are based on the Mechanical Assembly Requirements.

Parameter	Symbol	Min.	Typical	Max.	Units	Conditions
Numerical Aperture	NA	0.1	0.13	0.16		
Magnification		0.85	1.00	1.15		Image at nominal location
Design Wavelength	λ		639		nm	
Object to Image Distance			11.00		mm	
Lens Material*Index of Refraction	N	1.580	1.5818	1.5840		λ = 639nm
Depth of Field	DOF		±0.5		mm	
Field Coverage Radius			1.8		mm	

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

Mounting Instructions for the ADNS-3120-001 Lens to the Base Plate.

An IGES format drawing file with design specifications for mouse base plate features is available.

These features are useful in maintaining proper positioning and alignment of the ADNS-3120-001 when used with the Avago Technologies Optical Mouse Sensor. This file can be obtained by contacting your local Avago Technologies sales representative.

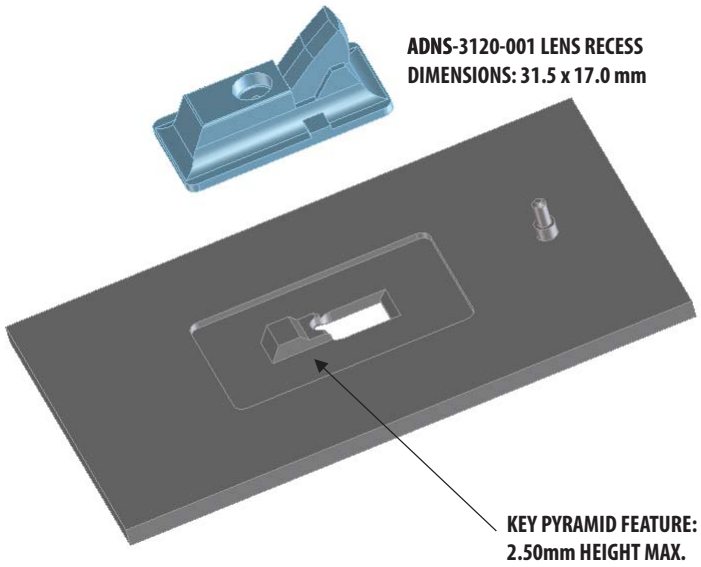


Figure 4. Illustration of base plate mounting features.

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

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