

# ADNS-5100-002

## Solid-State Optical Mouse Lens



### Data Sheet



Lead (Pb) Free  
RoHS 6 fully  
compliant



#### Description

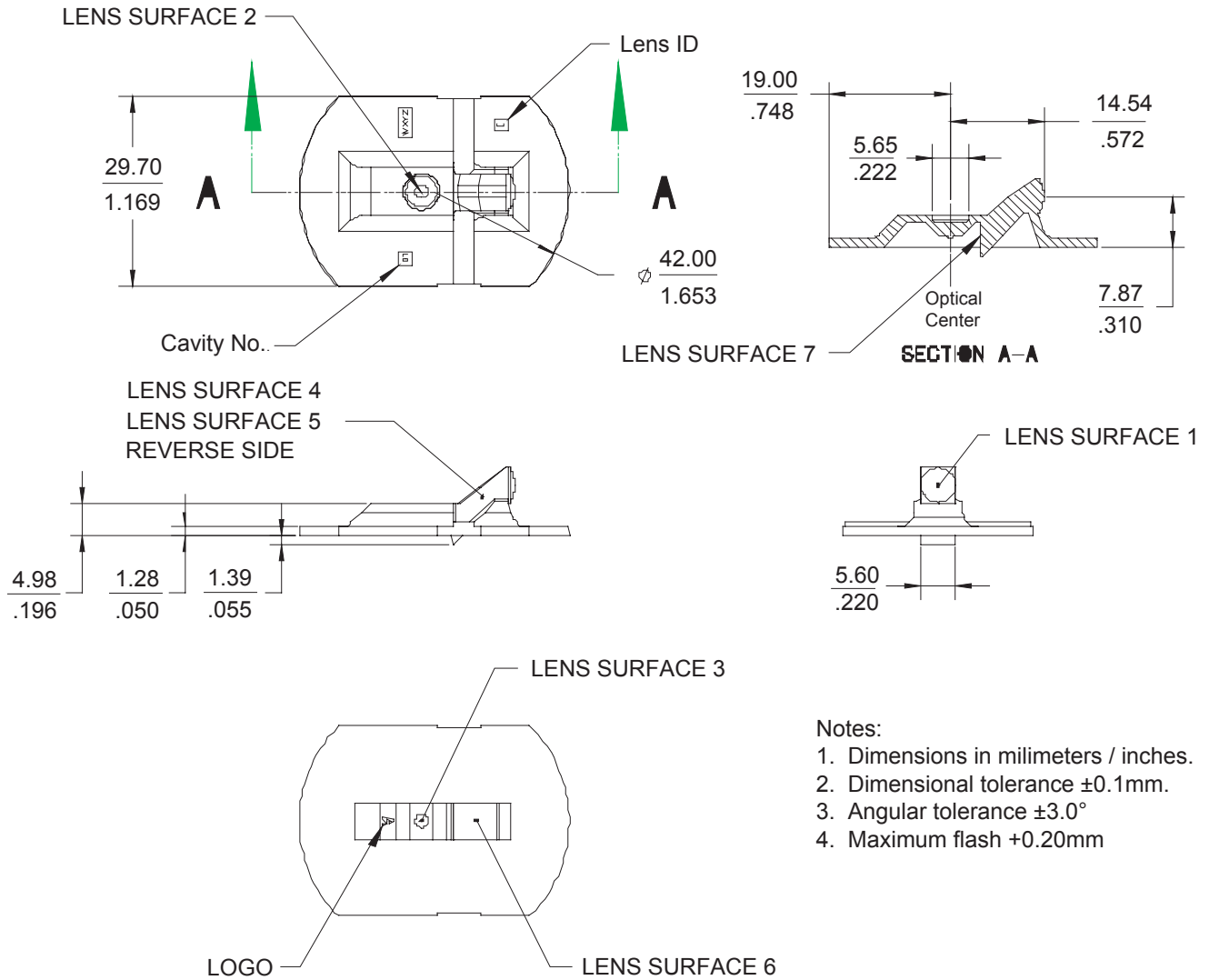
The ADNS-5100-002 Solid-State Optical Mouse Truncated Round Lens is designed for use with the ADNS-50xx and SDNS-50xx series of Avago Technologies Optical Mouse Sensors. The optical system is completed with the illumination subsystem provided by the ADNS-5200 LED Assembly Clip and the HLMP-ED80-XX000 LED. Together with the LED, the ADNS-5100-002 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

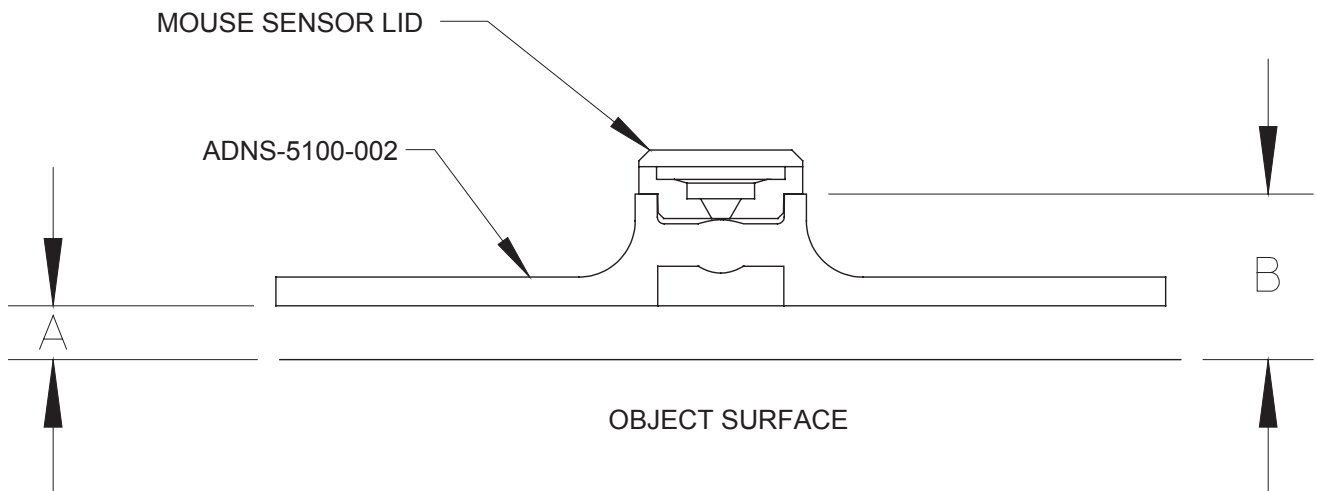
Specify Part Number as follows:

Flange	Part Number	Material
Truncated Round Lens	ADNS-5100-002	Polycarbonate or Polystyrene HH30

**Outline Drawings Including Markings and Logos**



**Figure 1. ADNS-5100-002 Solid State Optical Mouse Truncated Round Lens outline drawing and detail**



**Figure 2. Optical System Assembly Diagram**

## Mechanical Assembly Requirements

All specifications reference Figure 2, Optical System Assembly Diagram

	Symbol	Min.	Typical	Max.	Units	Conditions
Distance from Object Surface to Lens Reference Plane	A	2.3	2.4	2.5	mm	
Distance from Mouse Sensor Lid contact with lens Surface to Object Surface	B		7.38		mm	Sensor lid must be in contact with lens housing surface

## Lens Design Optical Performance Specifications

All specifications are based on the Mechanical Assembly Requirements.

	Symbol	Min.	Typical	Max.	Units	Conditions
Numerical Aperture	NA	0.1	0.13	0.16		
Magnification			1.25			Image at nominal location
Design Wavelength	$\lambda$		639		nm	
Object to Image Distance			8.83		mm	
Lens Material <sup>[1]</sup> Index of Refraction	N	1.580	1.582	1.5840		$\lambda=639\text{nm}$
Depth of Field	DOF		$\pm 0.5$		mm	
Die Coverage Radius			0.6		mm	

Notes:

1. Lens material is polycarbonate or polystyrene HH30, therefore, cyanoacrylate based adhesives should not be used as they will cause lens material deformation.

## Mounting Instructions for the ADNS-5100-002 Lens to the Base Plate

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

Note : Stand-off of the base plate shall not be larger than 5mm as lens surface 7 size is 5.60mm.

These features are useful in maintaining proper positioning and alignment of the ADNS-5100-002 when used with the Avago Optical Mouse Sensor. This file can be obtained by contacting your local Avago sales representative.

For product information and a complete list of distributors, please go to our web site: [www.avagotech.com](http://www.avagotech.com)

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