LightPath 390037 | 5.5mm Dia., 0.85 NA, BBAR (1800-3000nm), Molded IR Aspheric Lens

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General

Lightpath Lens Code:	390037	**Type:**	Aspheric Lens

Physical & Mechanical Properties

Diameter (mm):	5.50 ±0.015	**Clear Aperture CA (mm):**	4.00
Edge Thickness ET (mm):	2.24	**Center Thickness CT (mm):**	3.00
Bevel:	Protective as needed		

Optical Properties

Effective Focal Length EFL (mm):	1.87 @ 9500nm	**Numerical Aperture NA:**	0.85
Substrate: ⓘ	Black Diamond™ BD-2 ($Ge_{28}Sb_{12}Se_{60}$)	**Aspheric Design Wavelength (nm):**	9500
Coating:	BBAR (1800-3000nm)	**Coating Specification:**	R_{avg} <1.0% @ 1.8 - 3.0µm
Surface Quality:	80-50	**f/#:**	0.58
Index of Refraction (n_d) @ 10µm:	2.6023	**Index of Refraction (n_d) @ 14µm:**	2.5843
Index of Refraction (n_d) @ 4µm:	2.6210	**Index of Refraction (n_d) @ 5µm:**	2.6173

Wavelength Range (nm):	1800 - 3000	**Working Distance (mm):**	0.72
Conjugate Distance:	Infinite	**Focal Length Specification Wavelength (nm):**	9500

Material Properties

Coefficient of Thermal Expansion CTE (10^{-6}/°C):	14.00	**Density (g/cm^3):**	4.68
Thermo-optic coefficient dn/dT:	70 x 10^{-6}/°C from -40° to +80°C (5 - 14 µm)	**Transformation Temperature (°C):**	285.00

Regulatory Compliance

RoHS 2015:	**Compliant**	**Certificate of Conformance:**	**View**
Reach 233:	**Compliant**		

Product Details

- Wavelength Range of 1.8 - 12µm
- Variety of Coating Options
- Mounted and Unmounted Versions

LightPath® Mid-Wave and Long-Wave Infrared (IR) Aspheric Lenses feature a low-cost, molded design and offer several key benefits over Germanium substrate aspheres. With a dn/dT and CTE significantly less than that of Germanium, the lenses feature a smaller change in focal length as a function of temperature change. Featuring a higher operating temperature than Germanium (which suffers 20 – 30% transmission loss at 100°C), the lenses can be used in applications including collimators for QCL lasers and as components within thermal imaging assemblies. LightPath Mid-Wave and Long-Wave Infrared (IR) Aspheric Lenses have a wavelength range of 1.8 - 12µm. These lenses are available mounted or unmounted, in a variety of coating options.

Technical Information

Resources

Media Type

- Application Note
- Scientific Paper
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- Trending in Optics
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