

# 1.0" x 1.0", FL 0.37", IR Fresnel Lens



Infrared (IR) Fresnel Lenses

Stock **#43-794** **9 In Stock**

-

1

+

S\$55<sup>30</sup>

ADD TO CART

| Volume Pricing |                               |
|----------------|-------------------------------|
| Qty 1-10       | <b>S\$55.30</b> each          |
| Qty 11-49      | <b>S\$49.00</b> each          |
| Need More?     | <a href="#">Request Quote</a> |

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General

Fresnel Lens

Type:

Physical & Mechanical Properties

0.02

Center Thickness CT (inches):

1.0 x 1.0

Dimensions (inches):

Dimensions (mm):

|                                                              |                                        |
|--------------------------------------------------------------|----------------------------------------|
| 25.4 x 25.4                                                  |                                        |
| 0.5                                                          | Effective Diameter (inches):           |
| 0.40 - 1.24                                                  | Young's Modulus (GPa):                 |
| Optical Properties                                           |                                        |
| 9.40                                                         | Effective Focal Length EFL (mm):       |
| PolyIR                                                       | Substrate: <input type="checkbox"/>    |
| Uncoated                                                     | Coating:                               |
| 8000 - 14000                                                 | Wavelength Range (nm):                 |
| 0.37                                                         | Effective Focal Length EFL (inches):   |
| 250.00                                                       | Groove Density (grooves/inch):         |
| Visible (Sodium D Line): 1.52<br>8-14µm: 1.53<br>15µm+: 1.48 | Index of Refraction (n <sub>d</sub> ): |
| 8 - 14                                                       | Wavelength Range (µm):                 |

|                             |                                                              |
|-----------------------------|--------------------------------------------------------------|
| Material Properties         |                                                              |
| 11 - 13                     | Coefficient of Thermal Expansion CTE (10 <sup>-6</sup> /°C): |
| (100-260) x 10 <sup>3</sup> | Flexural Modulus (psi):                                      |
| D60-70                      | Shore Hardness:                                              |

|                                    |                             |
|------------------------------------|-----------------------------|
| Environmental & Durability Factors |                             |
| 100.00                             | Operating Temperature (°C): |

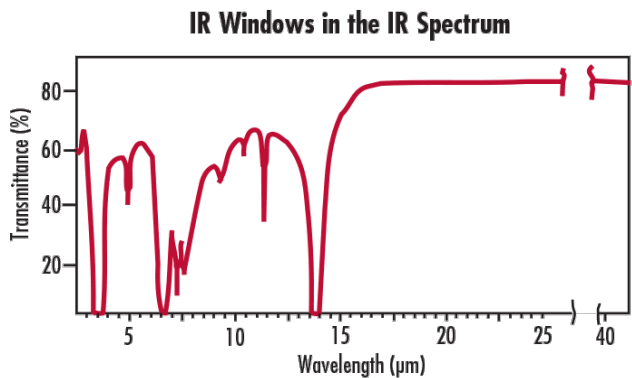
|                           |                             |
|---------------------------|-----------------------------|
| Regulatory Compliance     |                             |
| <a href="#">Compliant</a> | RoHS 2015:                  |
| <a href="#">View</a>      | Certificate of Conformance: |
| <a href="#">Compliant</a> | Reach 242:                  |

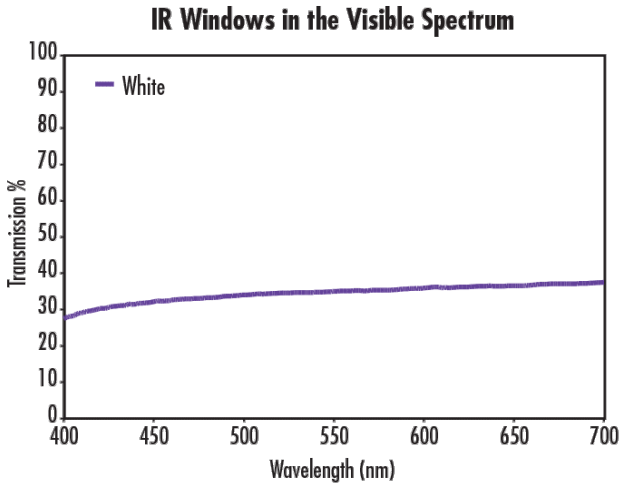
## Product Details

- Excellent Collecting Optics for Infrared Detectors
- Mnimal Absorption Loss in the 8-14µm Region

IR Fresnel lenses are molded in a flexible, 0.015" (0.457mm) thick, milky white plastic. Advantages of this product are: least absorption loss in the 8-14µm region, extremely thin with consistent thickness across the lens, large apertures and minimal thermal expansion. The design of an infrared-transmitting Fresnel lens involves many complex considerations. The grooved side of a Fresnel lens should face the longer conjugate (away from the detector when used to collect radiation). If the smooth side needs to face the longer conjugate for some nonoptical reason, the maximum aperture of the lens should be f/1.0. In this case, total internal reflection keeps all radiation from the area of the lens past f/1.0 from reaching the image. Even when the grooves face the longer conjugate, the portion of the lens past f/1.0 contributes a diminished amount and there is no significant contribution past f/0.5.

## Technical Information





|                            |                             |
|----------------------------|-----------------------------|
| Effect of Sunlight         | None to Slight              |
| Effect of Ultraviolet      | UV Stabilized               |
| Effect of Weak Acids       | Very Little                 |
| Effect of Strong Acids     | Attacked by Oxidizing Acids |
| Effect of Weak Alkalies    | Very Little                 |
| Effect of Strong Alkalies  | Very Little                 |
| Effect of Organic Solvents | Little below 60°C (140°F)   |