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3.0" x 3.0", FL 2.2", IR Fresnel Lens

Infrared (IR) Fresnel Lenses

Stock **#43-796** **20+ In Stock**

- 1 + **A$63**.20

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Volume Pricing	
Qty 1-10	**A$63.20** each
Qty 11-49	**A$56.00** each
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Product Downloads

General

Type:
Fresnel Lens

Physical & Mechanical Properties

Center Thickness CT (inches):
0.02

Dimensions (inches):
3.0 x 3.0

Dimensions (mm):

76.2 x 76.2

Effective Diameter (inches):
2.5

Young's Modulus (GPa):
0.40 - 1.24

Optical Properties

Effective Focal Length EFL (mm):
55.88

Substrate:
Poly IR

Coating:
Uncoated

Wavelength Range (nm):
8000 - 14000

Effective Focal Length EFL (inches):
2.20

Groove Density (grooves/inch):
125.00

Index of Refraction (n_d):
Visible (Sodium D Line): 1.52
8-14µm: 1.53
15µm+: 1.48

Wavelength Range (µm):
8 - 14

Material Properties

Coefficient of Thermal Expansion CTE (10^{-6}/°C):
11 - 13

Flexural Modulus (psi):
(100-260) x 10^3

Shore Hardness:
D60-70

Environmental & Durability Factors

Operating Temperature (°C):
100.00

Regulatory Compliance

RoHS 2015:
Compliant

Certificate of Conformance:
View

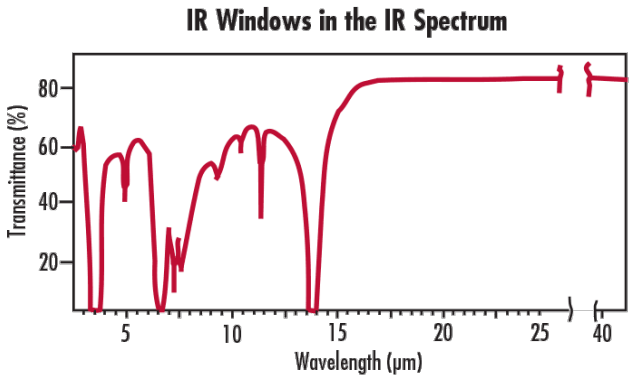
Reach 242:
Compliant

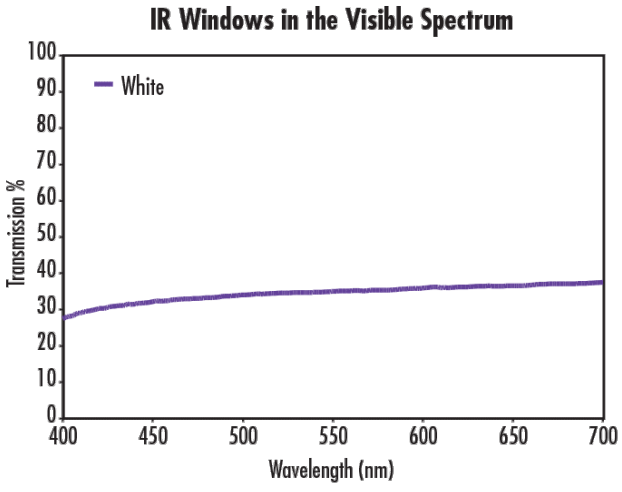
Product Details

- Excellent Collecting Optics for Infrared Detectors
- Minimal 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)

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