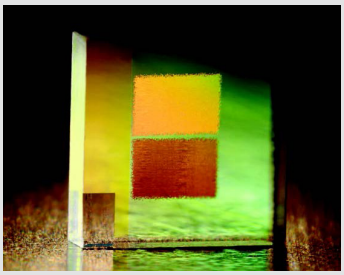
BROADCOM®

Product Brief

Micro Optics

Defense and Security Applications



Optical Solutions

- Beam shapers
- Diffusers
- Beam splitters
- Beam homogenizers
- Pattern generators
- Planar lightguide circuits (PLCs)
- Multi-function optics
- Gratings
- Refractive lenses (available in LWIR)
- Micro-lens arrays
- Aspheric lenses

Features

- Made in the USA
- ISO 9001 and 14001 certified
- RoHS compliant

Overview

Broadcom is a leader in the design and manufacture of high-precision diffractive and refractive optical elements for mission critical applications. Everyday military aircraft, satellites, and ground-based warfighters depend on micro optics from Broadcom to enable some of the most advanced laser-based optical systems, including heads-up mounted displays (HUD, HMD), missile guidance systems, target acquisition systems, and data communication systems.

With over 20 years of industry experience, Broadcom offers unmatched design-to-fabrication correlation, consistently delivering products optimized for the highest optical performance. Broadcom's world-class manufacturing facility is equipped with state-of-the-art photolithographic equipment, enabling the fabrication of optics with precise patterning and alignment of optical features. In addition, wafer-based processing provides excellent repeatability and economy of scale for high volume applications.

Broadcom offers a wide selection of substrate materials, including crystal-quartz, fused-silica, glass, and silicon.

Specifications

Diffractive Optics	Key Performance Characteristics
Feature Control	Features as small as 100 nm, with 15 nm overlay control and ~100 nm corner rounding
Wavelength	193 nm to 14 µm
Materials	Crystal-quartz, fused-silica, silicon, germanium, or advanced synthetic substrates
Dimensions	0.5 mm to 125.0 mm
Projection Angles	Wide: up to 120° (full angle)
Coatings	Anti-reflective coating and metallization capabilities
Zero Order	Typically < 1.5%
Efficiency	Varies by design
Refractive Optics	**Key Performance Characteristics**
Wavelengths	Materials and applications from 193 nm to 14 µm
Lens Materials	Fused-silica, silicon, IR materials, polymers
Lens Diameters	0.01 mm up to 10 mm
Lens Sags	<10 µm up to 750 µm
Wafer Sizes	150 mm and 200 mm
Coatings	Anti-reflective coating and metallization capabilities

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For more product information: broadcom.com

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