



INFRARED PRODUCTS FOR DEFENSE

Wavelengths from 2 microns to > 30 microns

Applications include the following

- Precision Strike
- I2R
- FLIR
- IRCM
- Space/Aerospace
- Targeting
- Heat Seeker
- Surveillance

Optics Coated

- Customer supplied optics
- Diamond point turned (DPT) optics
- Flats (plano-plano) up to 10 inch diameter
- Lenses up to 10 inch diameter
- Patterned optics using mechanical or photolithographic masking
- Specialty optics
- Standard semiconductor wafers, dicing and grinding to order

Coating Types

- Antireflective coatings – broad band, dual band, single band and V-coat
- Band Pass Filters – dual band, multi-band, narrow band and wide band
- Edge Filters – Long pass, short pass, suppressed short pass and non-polarizing
- Miscellaneous – Beam splitter, gain flattener, dark mirror, neutral density, notch and rugate
- Reflectors – Dielectric, enhanced metal and protected metal
- Solderable coating for hermetic sealing and mounting and special requirements on request

Substrate Material

- Aluminum
- AMTIR
- Barium Fluoride
- Borosilicate glass
- Cadmium Telluride
- Calcium Fluoride
- Cleartran
- Color glass
- Copper
- Gallium Arsenide
- Germanium
- Magnesium Fluoride
- Nickel plated metal
- Pyrex
- Quartz (fused and crystal)
- Sapphire
- Silicon
- Soda lime glass
- Stainless steel
- Zerodur
- Zinc Selenide
- Zinc sulfide
- Other material could be coated on request

Coating Attributes Available

Environmental durability, extended block ranges, flat transmission, high blocking density, high wavelength precision, high reflectance, large area capacity, low angle shift, low polarization splitting, low reflectance, low scatter, low surface defect, low thermal drift, precision stress control, severe abrasion resistance, square band shape, steep slopes, wavelength range: 1-40um

Coating Chambers

- 6 mid-wavelength (MWIR) deposition systems operating
- 7 long wavelength (LWIR) deposition systems operating
- 3 systems available for depositing metallic films such as reflectors and solderable coatings

Performance

Narrow band pass – center wavelength tolerance of +/- 1% standard, +/- .25% typical, and band width tolerance of +/- 20% standard, +/- 10% typical; tighter available upon request.

Edge filters – half power tolerance of +/- 1% standard, +/- 0.5% typical, tighter available upon request.

Out of band blocking - <0.1% from x-ray to detector limit standard, <0.01% typical, tighter available upon request.

Surface quality – 80/50 scratch, dig standard, 60/40 typical, tighter available upon request and is dependent on the size of the substrate.

Uniformity - +/-0.5% standard, +/-0.25% typical, tighter available upon request and is dependent on the size of the substrate.

Test Capability

.3 to 55um, reflection or transmission, normal or at angle, 373K to 10K, digital data.

Temperature chamber: 475K to 10K, cycled, digital record

Salt fog/spray chamber – cycled

Other – stress measurement and modeling, interferometric testing, FilmStar theoretical design modeling software, FTIR spectrophotometer, special needs upon request.



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