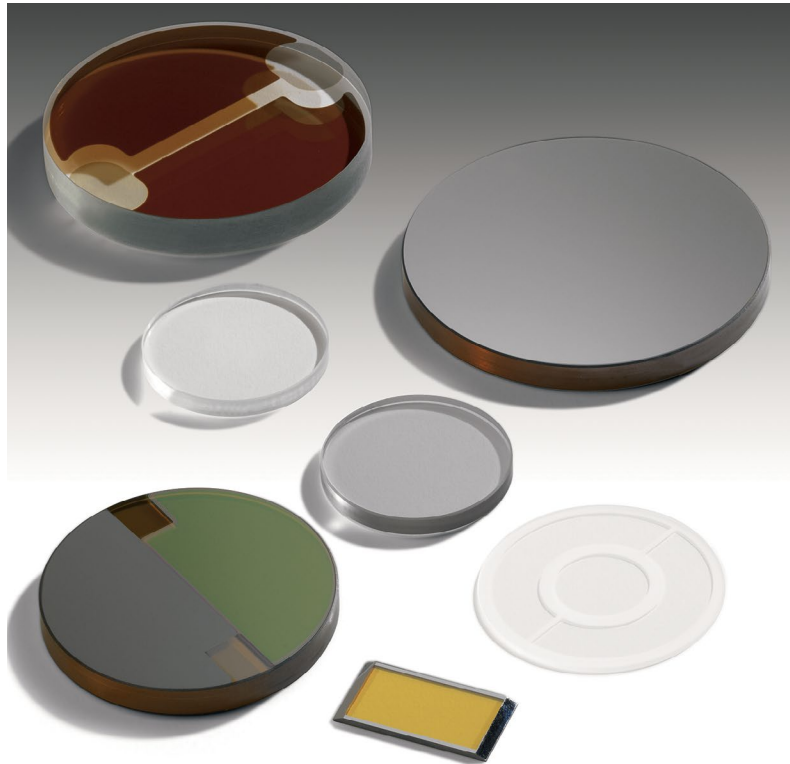


Enhancing Performance of Infrared Optical Elements

- Comprehensive coatings for the infrared optical industry
- Widest infrared spectral range and highest throughput
- Protective and solderable options
- Designed specifically for infrared optical performance



Spectral Systems is the technical and commercial leader in the field of infrared optical coatings for spectroscopy. Our coating products and services provide a complete offering of performance enhancement for refractive and reflective infrared optical elements. Our proprietary coatings have been developed and enhanced over the 30 plus years of our existence. We continue to offer the highest performance coatings in the infrared optical industry.

All of Spectral Systems' optical coatings are designed specifically for the infrared spectral region of choice. This provides you with maximum throughput, durability and highest spectral integrity free of material artifacts.

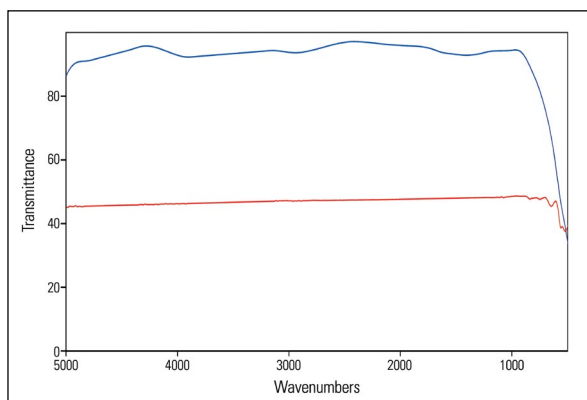
Our infrared optical coatings are exceptional. Spectral Systems have developed the XP-BBAR™ (broad-band anti-reflective) and XP-NBAR™ (narrow-band anti-reflective) coatings to provide the highest IR throughput over the widest infrared spectral range available in the infrared optical industry. This spectral range provides you with the widest and most complete infrared information and performance.

Spectral Systems is the largest and most comprehensive supplier of infrared beamsplitters world-wide. Our Photon Pro™ beamsplitter coatings are uniquely developed for highest throughput, flat frequency response and highest spectral purity while providing the desired transmission/reflection split of the infrared beam.

Generally our coatings can be grouped into six categories

| | |
|---------------------------------|--|
| Beamsplitter Coatings | Provide transmission and reflection of the incident IR beam. |
| Anti-Reflective Coatings | Improve throughput especially for higher refractive index materials such as zinc selenide and germanium. |
| Bandpass Coatings | Provide a specific spectral range of transmission for optimum performance in a defined spectral region. |
| Reflective Coatings | Improve reflectivity of optical elements such as bare aluminum within a selected spectral region. |
| Protective Coatings | Prevent or reduce degradation of optical elements from exposure to elevated humidity or abrasive contact. |
| Connective Coatings | Improve or enable melding of optical elements such as making a refractive optical element solderable to a metal plate. |

Working closely with our customers over our long history has enabled us to develop and optimize protective coatings exceptional for use with infrared optical elements. Our XP-Halide™ and XP-Polymer™ coatings provide high performance and superior protection from high humidity environments. Our CERAMSpec™ coating is designed to minimize abrasion from physical contact.



Transmission spectra of a germanium (Ge) window with and without Spectral Systems XP-BBAR coating

Often it is desirable to use two different optical coatings on one optical element. An example of this combined use would be layering our XP-BBAR coating with our abrasion coating on the faces of an ATR crystal to maximize throughput and to minimize the expected wear from sample contact.

Many companies can offer coatings for products. Spectral Systems offers the highest performance coatings for the infrared optical industry.

The following list of part numbers includes many of the unique coatings we offer our customers. Many of our offerings are not listed here since they require specific design for your application. If your requirement is not described here, please call us for additional and/or customized offerings.

ORDERING INFORMATION

Anti-Reflective Coatings

| DESCRIPTION | PART NO. |
|--|----------|
| Al ₂ O ₃ XP-NBAR, 0.8–2.5 μm | 999-5398 |
| AMTIR™ XP-BBAR, 2–20 μm | 999-0002 |
| CdTe XP-BBAR, 1.8–20 μm | 999-1113 |
| Diamond XP-BBAR, 2.6–20 μm | 999-1814 |
| Quartz XP-NBAR, 0.8–1.1 μm | 999-2706 |
| Ge XP-NBAR, 3.8–10 μm | 999-0208 |
| Ge XP-NBAR, 2–5 μm | 999-0900 |
| Ge XP-NBAR, 7–14 μm | 999-9101 |
| Ge XP-BBAR, 2.5–20 μm | 999-9017 |
| Si XP-NBAR, 2–5 μm | 999-0869 |
| ZnS (Cleartran™) XP-BBAR, 2–14 μm | 999-0212 |
| ZnSe XP-BBAR, 1.1–20 μm | 999-0110 |
| ZnSe XP-BBAR, 1.6–20 μm | 999-0160 |
| ZnSe XP-BBAR, 2–14 μm | 999-0100 |
| ZnSe XP-NBAR, 7–14 μm | 999-9147 |
| ZnSe XP-NBAR, 8–12 μm | 999-9174 |
| ZnSe XP-NBAR, 0.6–1 μm | 999-9046 |

Beamsplitter Coatings

| DESCRIPTION | PART NO. |
|---------------------------------------|----------|
| BaF ₂ Photon Pro 2–12 μm | 999-9434 |
| CaF ₂ Photon Pro 0.8–10 μm | 999-9050 |
| CaF ₂ Photon Pro 0.6–8 μm | 999-9004 |
| CsI Photon Pro 2–50 μm | 999-9012 |
| CsI Photon Pro 2–40 μm | 999-9018 |
| KBr Photon Pro, 1–25 μm | 999-0157 |
| KBr Photon Pro, 2–25 μm | 999-1378 |
| KBr Photon Pro, 1–28 μm | 999-6571 |
| KBr Photon Pro, 1.5–25 μm | 999-9045 |
| KBr Photon Pro, 2–28 μm | 999-8379 |
| KBr Photon Pro, 2–28 μm | 999-9066 |
| KBr Photon Pro, 0.6–1.0 μm | 999-6790 |
| Quartz Photon Pro, 0.6–3.6 μm | 999-9130 |
| ZnSe Photon Pro, 2–20 μm | 999-9016 |
| ZnSe Photon Pro, 0.6–1 μm | 999-9048 |

Protective Coatings

| DESCRIPTION | PART NO. |
|--------------------------|-----------|
| CERAMSpec | 999-0400 |
| KBr XP-Halide, 0.4–28 μm | 999-0200B |
| XP-Polymer | 999-1360 |

Reflective Mirror Coatings

| DESCRIPTION | PART NO. |
|-------------------------------|----------|
| Aluminum Front Face Reflector | 999-0300 |
| Gold Front Face Reflector | 999-9010 |

For options not shown here, please contact Spectral Systems.