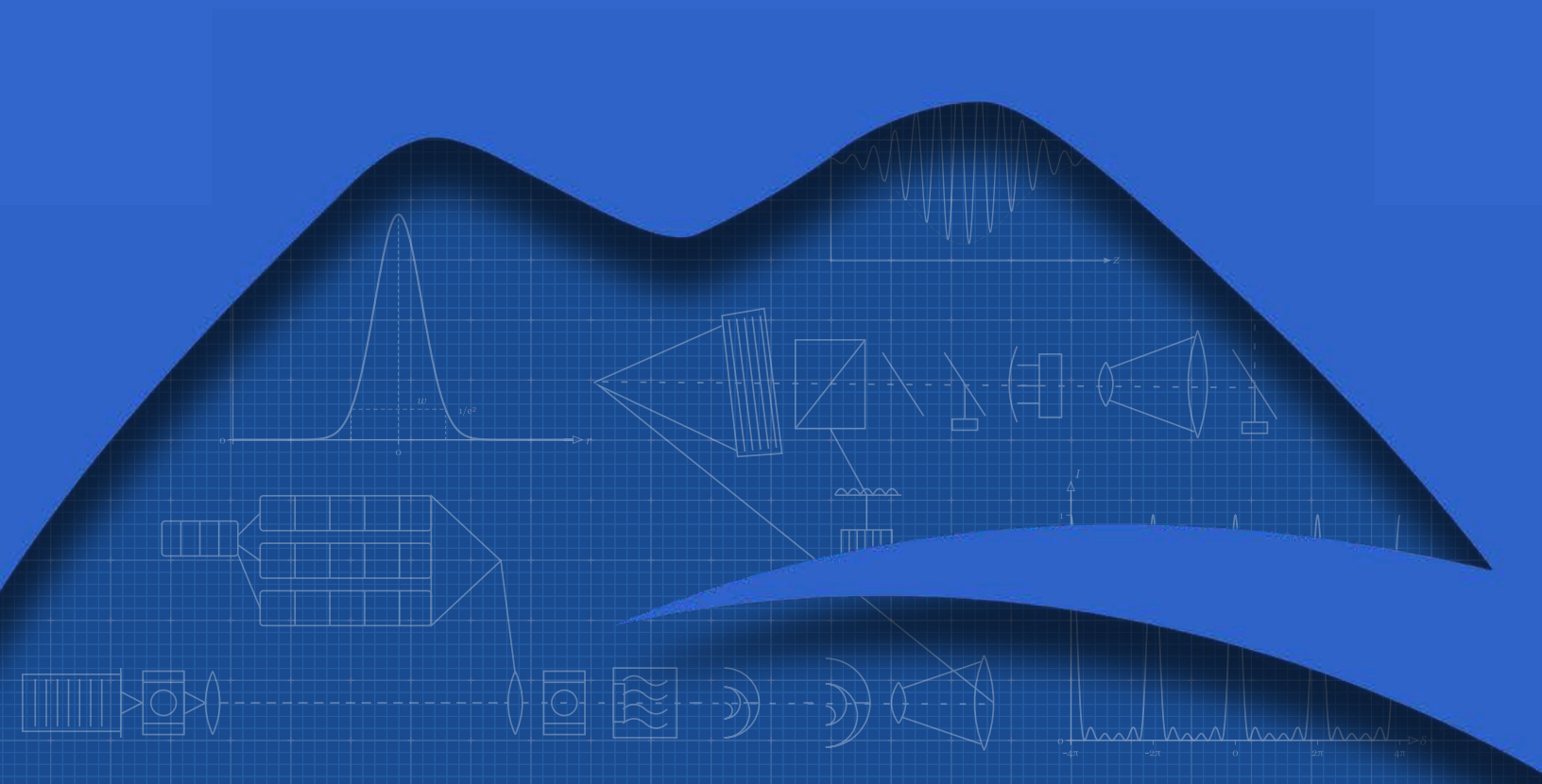
BLUERIDGE OPTICS

Engineering Light
Empowering Innovation



PRECISION OPTICS

High-Precision Laser Optics and Custom Thin Film Coatings Engineered for the Most Demanding Applications

"We built Blue Ridge Optics to help customers push boundaries and solve hard problems. They come to us with challenges, and I usually tell them the same thing: 'It's doable.'"

WALTER SIEHIEN
Founder & CTO

OPTICS

Optical manufacturing, polishing, finishing, and opto-mechanical assembly. Extensive range of materials and geometries.

THIN FILM COATINGS

Custom coating design and development, as well as standard coatings across the full DUV–FIR spectrum (170 nm – 20 µm).

TESTING

Metrology, profilometry, spectophotometry, interferometry, environmental spectral analysis, surface and damage mapping.

blueridgeoptics.com | 1.540.586.8526 | sales@blueridgeoptics.com

ABOUT BLUE RIDGE OPTICS

Blue Ridge Optics is a fully integrated, US-based manufacturer of precision optics and thin film coatings, designed for advanced laser systems.

We specialize in high-power, low-absorption coatings, superpolished optics, optical assemblies, and custom optics solutions – from blanking to sub-assembly, and rapid prototyping to scaled production.

For more than 20 years, we have been a trusted single-source supplier of premium optics for the aerospace, defense, medical, OEM, and scientific research industries.

Our expertise, manufacturing capabilities, and technical resources enable us to achieve exacting specifications in support of highly demanding applications.

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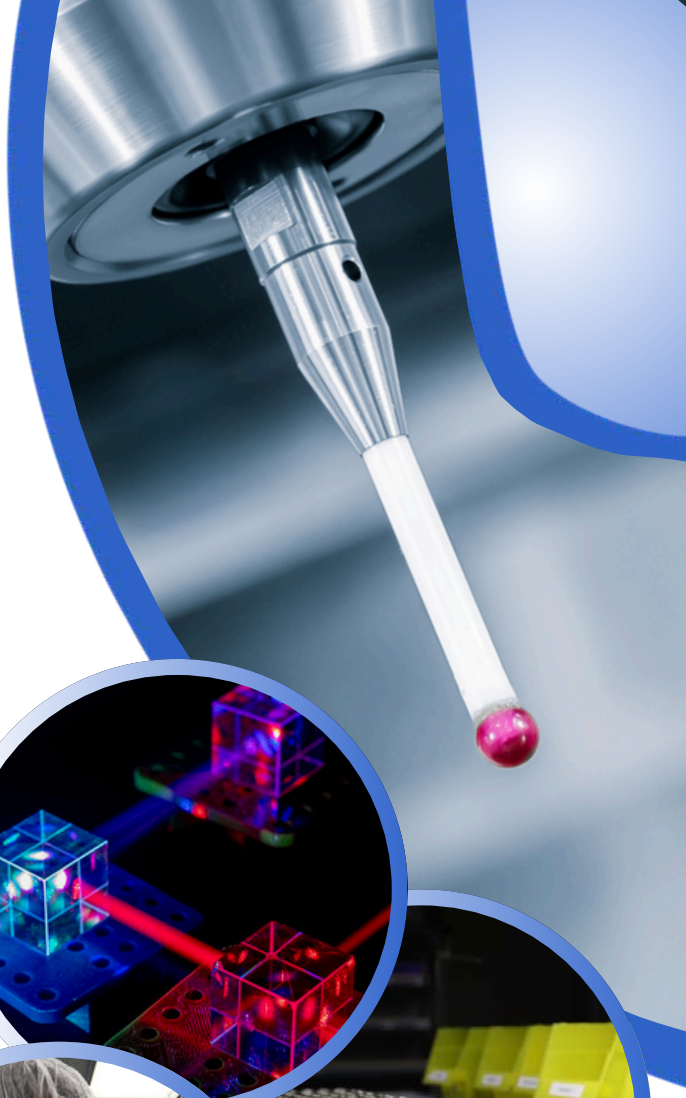
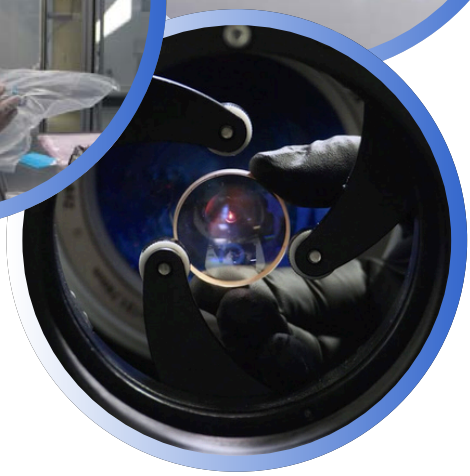
HIGH ENERGY
HIGH POWER
LOW RMS

Blue Ridge Optics specializes in the design and development of custom built-to-print solutions.





PRODUCT LINES

- High-Energy Laser (HEL) Optics
- Deep Ultraviolet (DUV) Optics
- Ultraviolet to Near-Infrared (UV–NIR) Optics
- Infrared (IR) Optics
- Opto-Mechanical Assemblies
- Single-Point Diamond Turning
- Aspheres
- Beamsplitters
- Crystals & Laser Rods
- Debris Shields
- Filters
- Mirrors
- Sphericals
- Windows

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OPTICAL MANUFACTURING

MATERIALS USED (PARTIAL LIST)

- Fused Silica (7980, 7979, 8655)
- Schott High Index Glasses
- Chalcogenides
- Doped Glass
- Sapphire
- N-BK7
- CaF_2
- YAG
- ZnS
- ZnSe
- Si

TOLERANCES

- Dimensions (Plano / Wedge): 0.25–508 mm
- Dimensions (Lens): 10–152.4 mm
- Wavefront Error (RWE/TWE): λ/20
- Roughness: 1 Å RMS Superpolish
- Surface Quality: < 10/5 SD
- Shape: Plano | OAP | Wedge | Asphere | Lens

OPTO-MECHANICAL

- Hermetic Sealing via Vacuum Brazing
- Fused Silica & Sapphire to Metal
- UHV-Rated Fabrication
- Full Optical Assemblies

TESTING

- Optical Metrology
- Spectral Analysis
- Environmental & Durability Testing
- Surface & Damage Mapping
- First Article Inspection (FAI)
- Helium Leak Testing: < 1 x 10^{-9} atm cc/sec

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THIN FILM COATINGS

TECHNOLOGIES

- Electron Beam (E-Beam)
- Ion Beam Sputtering (IBS)
- Ion-Assisted Deposition (IAD)
- Plasma-Assisted Deposition (PAD)
- Thermal Resistance Deposition (TRD)

CAPABILITIES

- Standard Coatings
- Custom Coating Design & Development
- Dimensions (Plano / Wedge): 0.1–450 mm
- Absorption: +5 ppm
- Stress Reduction
  - Compensation | Pre-Polish
- Wavelengths: 170 nm – 20 µm
  - Single & Multiband
- LDT Certification, Threshold, Raster Testing

OFFERINGS

- Antireflection (AR)
- High-Reflection
- High Laser Damage Threshold
- High Power (Petawatt)
- Enhanced Metal
- Ultraviolet
- Indium Tin Oxide (ITO)
- Other Conductive
- Beam Splitters
- Filters
- Output Couplers
- Polarizers

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ISO Class 5

Clean Room

OUR COMMITMENT TO QUALITY

By maintaining strict limits on airborne particulate contamination, we ensure that every optical component we fabricate, coat, and assemble is completely free of microscopic impurities that can scatter light, degrade performance, or initiate laser-induced damage.

INSPECTION

Assembly and inspection of finished components occurs under controlled conditions to protect surface quality and ensure that the products we ship perform exactly as our metrology confirmed.

COMPLIANCE

Our operations are built to support rigorous compliance and performance standards required by the aerospace, defense, medical, OEM, and scientific industries – with documentation to back it up.

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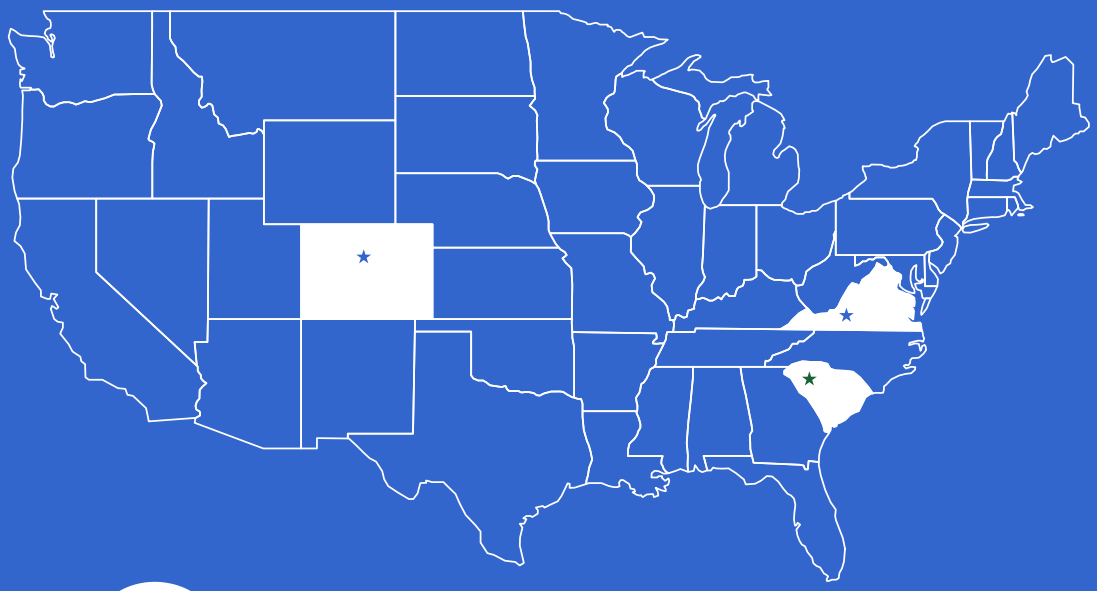

BLUERIDGE OPTICS

PRECISION OPTICS
40,000 ft^2 Facility

1617 Longwood Ave
Bedford, VA 24523

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sales@blueridgeoptics.com

MPF PRODUCTS, INC.

HERMETIC SEALING
20,000 ft^2 Facility

3046 Bramlett Church Rd
Gray Court, SC 29645

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