

MATERION BARR PRECISION OPTICS & THIN FILM COATINGS is the new name for Barr Associates, Inc., Thin Film Technology, Inc. and EIS Optics Ltd.

- Barr Associates, Inc.
- Thin Film Technology, Inc.
- EIS Optics

MATERION



BARR PRECISION OPTICS & THIN FILM COATINGS

United States
 Buellton, California
 Tyngsboro, Massachusetts
 Westford, Massachusetts

Europe
 London, England

Asia
 Seoul, South Korea
 Shanghai, China
 Taipei, Taiwan
 Tokyo, Japan

ABOUT MATERION

Materion is among the world's premier providers of advanced materials solutions and services and is listed on the New York Stock exchange under the symbol MTRN. Under the Materion brand, Barr Precision Optics & Thin Film Coatings is aligned to deliver a broader scope of products and services with the technical expertise necessary to drive our customers' growth and profitability. Our goal is to become your first choice in a partner.

MATERION BUSINESSES

- | | |
|---------------------------------------|-----------------------------|
| Advanced Chemicals | Electrofusion |
| Precision Optics & Thin Film Coatings | Large Area Coatings |
| Brush Beryllium & Composites | Microelectronics & Services |
| Brush Performance Alloys | Natural Resources |
| Ceramics | Technical Materials |



MATERION BARR PRECISION OPTICS & THIN FILM COATINGS

2 Lyberty Way
 Westford, MA 01886
 Phone: +1 978.692.7513
www.materion.com/barroptics

153 Industrial Way
 Buellton, CA 93427
 Phone: +1 805.688.4949
www.materion.com/barroptics

No. 76 Fu Te Dong San Rd.
 WGQ Free Trade Zone, Pudong
 Shanghai 200131, P.R.C.
 Phone: +86 21 5057 4646
www.eisoptics.com

30 Buckingham Gate
 London SW1E 6NN.
 T +44 (0) 7789 078 648
www.eisoptics.com

BARR PRECISION OPTICS & THIN FILM COATINGS

Solutions for Projection Display



Materion Barr Precision Optics & Thin Film Coatings sees our customers as partners and allows them to tap into our global network of technical knowledge. As the world's largest manufacturer of precision thin film coatings, optical filters and opto-mechanical systems, we produce superior quality products at our strategically located facilities. For high-technology projection display applications, we deliver innovative products to meet your needs. In addition, we service a wide range of industries from thermal imaging, automotive, defense, commercial, space, astronomy and science markets, with the goal of being our Customers' First Choice™.

Our state-of-the-art design capability and vertical process integration enable us to offer you innovative optical solutions and provide you high volume consumable products.

UNMATCHED EXPERTISE AND HERITAGE

We combine more than 125 years of experience and accumulated expertise in metallurgy, chemistry, thin film deposition, precision optical coatings and optical assembly. Our comprehensive technical competencies are applied in a broad range of highly specialized and high volume applications, including projection display, high-energy lasers, night vision, environmental sensing, medical, mobile phones, cameras, gas and fire detection and space-based astronomy.

BREADTH OF TECHNOLOGY SOLUTIONS

Whether its optical coating, specialized thin film deposition or optical assembly, we take technology to a whole new level. To meet your most challenging applications, we provide a number of deposition technologies including IBS, IAD, magnetron sputtering and thermal evaporation, as well as state-of-the-art process controls and thin film design methodology. Our core competencies include advanced micro lithography, ultra-low defect coating, and opto-mechanical assembly, allowing us to deliver a breadth of innovative options and integrated solutions.

INDUSTRY LEADER

We are proud to offer unparalleled levels of products, applications and services. Our customers benefit from our strategically located global facilities that provide regional manufacturing and technical support. We deliver innovative designs and prototype solutions fully supported by a volume manufacturing environment. This contributes to reduced cost and creates a competitive market advantage. We have a passion for how we serve our customers and strive to be your partner of choice.

SUPERIOR QUALITY AND FAST TURN-AROUND

Our facilities are fully ISO 9001:2008 certified and our technologies carry all relevant industry quality and safety certifications. We offer state-of-the-art spectral and film properties testing to ensure high quality. To meet diverse customer requirements, we have the flexibility to manufacture in prototype or high-volume quantities. With our quick-turn around and rapid-prototyping capabilities, we can bring groundbreaking products to market faster.

PRODUCTS, SERVICES, TECHNOLOGY, INNOVATION

We offer customers unique expertise in coating design and deposition, combined with an unmatched range of products, services, technology and innovation.

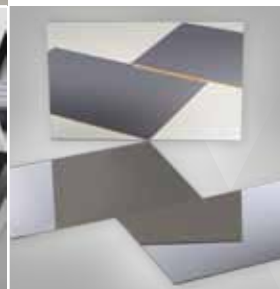
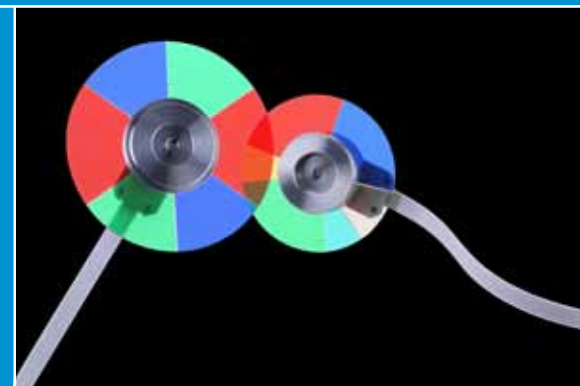
125 YEARS of combined thin film experience.

5 MANUFACTURING FACILITIES strategically located in the United States with support located throughout the world.

100 COATING CHAMBERS to meet your most demanding coating applications needs and for quick turnaround.

40+ SCIENTISTS AND ENGINEERS provide technical assistance. Call to talk directly to an applications engineer.

THE NUMBER 1 "GO-TO" PRECISION COATER for sophisticated high-value components.



SOLUTIONS DELIVERED

Our worldwide team of engineers and scientists can develop innovative solutions for demanding thin film optical coating applications and opto-mechanical devices. Visit www.materion.com/barroptics

Projection Displays

APPLICATIONS

- DLP Projection Display
- 3LCD Projection Display
- LCoS Projection Display
- Scanning Mirror System
- Pico Projector
- Solid State Illumination System
- Hybrid System

KEY PRODUCTS

- Color Wheel
- Light Tunnel
- Phosphor Wheel
- TIR Prism
- Dichroic Color Filter
- Prism
- Mirror (Dielectric, Silver, Aluminum type)

- PBS
- Dynamic Black Module
- Optical-Mechanical Assembly
- X-Plate
- Mini-TIR
- Mini-Light Tunnel

CORE TECHNOLOGIES

- Magnetron Sputtering
- Ion Beam Sputtering
- Thermal Evaporation
- Ion Assisted Deposition
- Low Defect Coating
- Microlithography
- Glass Processing
- Wafer-level Bonding
- Opto-mechanical Assembly
- High Volume Manufacturing