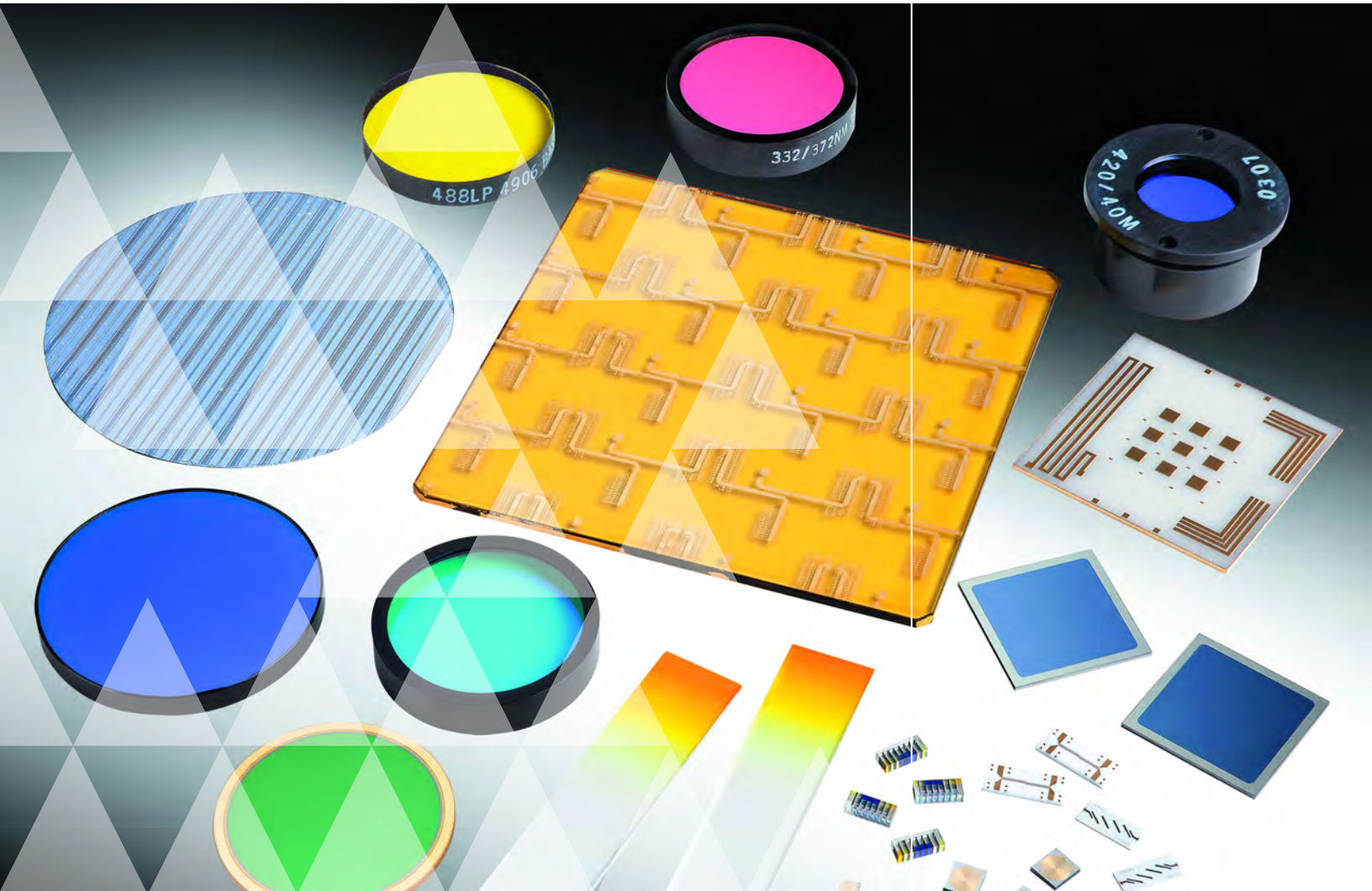
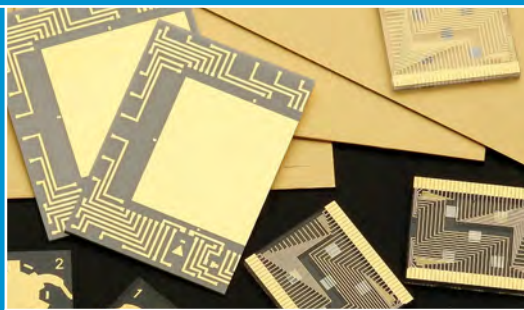




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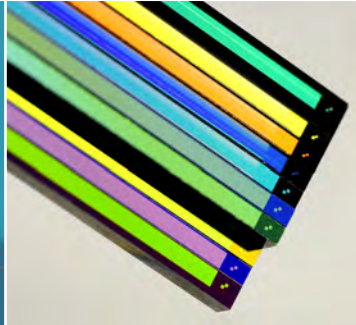
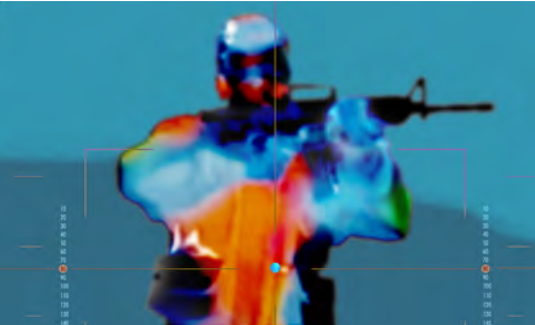
**BARR PRECISION OPTICS
& THIN FILM COATINGS**



SOLUTIONS DELIVERED

Our worldwide team of thin film engineers, deposition specialists and material scientists can develop innovative solutions to your most demanding thin film and precision optical coating applications in the most effective manner.

Visit www.materion.com/barroptics to learn more.



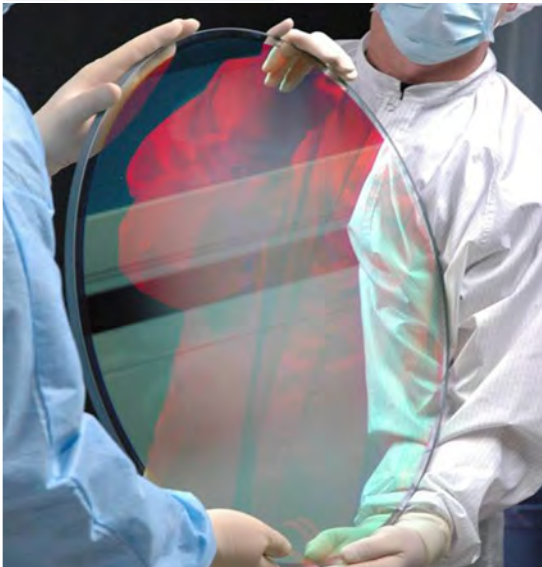
MATERION

MATERION BARR PRECISION OPTICS & THIN FILM COATINGS is the new name for Barr Associates, Inc. and Thin Film Technology, Inc., the precision optics and thin film coatings businesses of Williams Advanced Materials Inc.

- Williams Advanced Materials Inc.
- Barr Associates, Inc.
- Thin Film Technology, Inc.

MATERION

Materion Barr Precision Optics & Thin Film Coatings brings together Williams Advanced Materials, Barr Associates and Thin Film Technology to create one of the world's largest manufacturers of precision thin film coatings and optical filters. For high-technology manufacturers in the defense, commercial, space, science, astronomy and thermal imaging markets, we are positioned as our Customers' First Choice™ solution for high-performance thin film depositions and thin film products.



Barr Precision Optics & T

APPLICATIONS

- ISR
- Weapons
- Laser Protection
- Laser Communication
- Aerospace
- Thermal Imaging
- Space-based Instrumentation
- Bio Medical Instrumentation
- Clinical & Analytical Instrumentation
- Medical
- Consumer Electronics
- Flame & Gas Detection
- Ground-based Astronomy
- LIDAR

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.

75 YEARS of combined thin film experience across our combined businesses.

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

100 COATING CHAMBERS to coat your most demanding applications and meet your need for quick turnaround.

40+ SCIENTISTS AND ENGINEERS at your service. You can always call and talk directly to an applications engineer.

THE NO. 1 "GO-TO" PRECISION COATER of sophisticated high-value components.

DEEP EXPERTISE, DISTINGUISHED HERITAGE

Barr Associates was founded in 1971 by Edgar Barr, a pioneer in the thin film industry since the 1940s. The integration of Barr Associates, Williams Advanced Materials and Thin Film Technology combines more than 75 years of experience and accumulated expertise in metallurgy, chemistry, thin film deposition and precision optical coatings. Over the years, our build-to-order, high-performance technologies have enabled a wide variety of technically demanding applications, including terrestrial and space-based astronomy, high-energy lasers, night vision, environmental sensing, blood analysis, DNA sequencing, surveillance, targeting, and gas and fire detection.

WIDE BREADTH OF TECHNOLOGY SOLUTIONS

We design innovative solutions for the toughest problems and most demanding applications. Our industry-leading technologies include magnetron sputtering, ion beam sputtering, thermal evaporation, ion-assisted deposition and precision microlithography. Because of our technical expertise and access to broad resources throughout Materion, we are uniquely positioned to identify, evaluate and respond to rapidly changing market needs. We offer solutions your end customers can rely on – whether the product is used in industry, to explore space, protect health or safeguard public security.

CUSTOMER EXPERIENCE AND ENGINEERING EXCELLENCE

We are proud to be one of the only suppliers in our industry to offer a full range of innovative products, services and support technology. Our capabilities are grounded in thin film optical design engineering and modeling. As our customer, you have direct access to an applications engineer. And, you benefit from our extended supply chain, designed to make sourcing easier, more technically reliable and more cost-competitive.

QUALITY, FLEXIBILITY AND SPEED

As you would expect, our facilities are fully ISO 9001:2008 certified, and our technologies carry all relevant industry quality and safety certifications. We also offer state-of-the-art spectral and film properties testing to ensure quality. To meet diverse customer requirements, we have the flexibility to manufacture in prototype or high-volume quantities. And our quick-turn and rapid-prototyping capabilities help bring groundbreaking products to market faster. Call us about your most challenging applications.

Thin Film Coatings

KEY PRODUCTS & SERVICES

- Precision Optical Filters
- Specialty Thin Films
- Hybrid Microelectronic Circuits
- Flexible Circuits & Sensors
- Large Area Deposition
- Transparent Conductive Oxides

CORE TECHNOLOGIES

- Magnetron Sputtering
- Ion Beam Sputtering
- Thermal Evaporation
- Ion Assisted Deposition
- Precision Microlithography

- Dicing & Coring
- Optical Sub-assembly
- Solder Assembly
- Thin Film Modeling & Design
- Volume Manufacturing



MATERION

BARR PRECISION OPTICS & THIN FILM COATINGS LOCATIONS

United States

Buellton, California
Buffalo, New York
Tyngsboro, Massachusetts
Westford, Massachusetts

Europe

Hungerford, England

Asia

Singapore

ABOUT MATERION

Materion is the new name for Brush Engineered Materials Inc., its Williams Advanced Materials Inc. subsidiary and all of the company's businesses worldwide. Materion is among the world's premier providers of advanced materials solutions and services. Now under the one Materion brand, we are better aligned to deliver a broader scope of products, services and expertise needed to drive our customers' growth and profitability and become their first choice in a partner. Materion Corporation common stock trades on the New York Stock Exchange under the symbol MTRN.

MATERION BUSINESSES

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

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