Materion Barr Precision Optics & Thin Film Coatings provides a broad array of technologies including complex optical filters, filter arrays, lens coatings and optical thin film component assemblies. Diverse markets are composed of: commercial, defense, life sciences & medical, thermal imaging, and space, science & astronomy industries.

**ColorWheel™**

**The Challenge**
When you require enhanced resolution and high brightness, with very low noise level, our flexible ColorWheel™ will meet your digital projection, video production and photo imaging needs.

As the world's largest manufacturer of color wheels, we have an unmatched heritage in offering a variety of total light management solutions including dichroic color separation filters, hot and cold mirrors, UV/IR blocking filters, solid and hollow light integrators, high reflectivity folding mirrors, cold light reflectors, AR-coatings, light engine procurement assembly and testing.

**Benefits**
Our ColorWheel™ design offers a high degree of flexibility and can be customized for:
- Diameter
- Number of filter segments
- Motor speed
- Timing index mark
- Integrated timing index sensor available
- Expert spectral tuning
- High transmission

Reliability and performance is assured with proven:
- Motor technology
- Individual precision balancing
- Stable colors from sputter deposition coating
- Patented construction (U.S. Patent #5,868,482)
- Integrated pre-assembled flexible cables
- Low noise characteristics

**Applications**
The small size ColorWheel™ will meet the needs of the new family of ultra-ultra portable DLP™ brand projectors. Materion Barr Precision Optics & Thin Film Coatings also offers various custom configured ColorWheel™ designs for different applications.

Optimized for enhanced resolution and high brightness the ColorWheel™ is also designed for very low noise.

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**Technical Data**

**Diameter**
- from 35 to 140mm (other sizes available)

**Operating speed**
- 2x –7200 rpm, 3x –10,800 rpm, 4x –14,400 rpm

**Filter segments**
- Special designs available on request

**Spectral temperature stability**
- <0.3%, typical from 20°C to 100°C

**Spectral performance**
- According to customer specifications (cut-on/cut-off wavelength ± 1% typical)

**Balancing**
- To better than G6.3 quality grade per ISO 1940-1986

**Timing index mark**
- Integrated optical sensor available as option

**Mass**
- Approx. 45 grams (for diameter 50 mm)
- 80 grams (for diameter 80 mm)
- 100 grams (for diameter 120 mm)

**Operating temperature**
- 0°C to 85°C

**Storage temperature**
- –20°C to 85°C
Example for spectral performance of blue/green/red/white filters

Schematic of DLP™ front projector

Materion is a global advanced materials company, dedicated to providing solutions that enable our customers’ technologies and drive their growth. Our products include precious and non-precious specialty metals, precision optical filters, inorganic chemicals and powders, specialty coatings, specialty-engineered beryllium alloys, beryllium and beryllium composites, and engineered clad and plated metal systems. The Materion business is structured to enhance our ability to provide customers with innovative, best total-cost solutions.