

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.



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

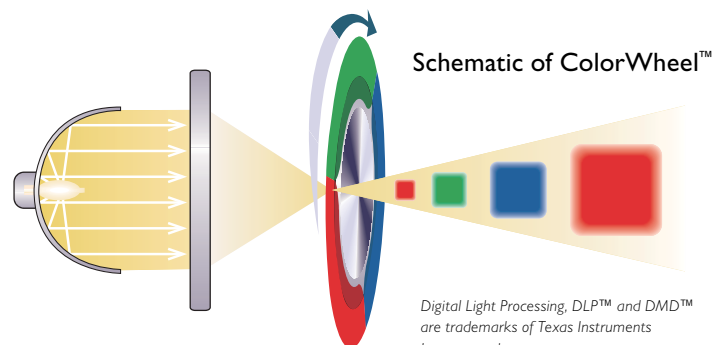
- Integrated optical sensor available as option

Mass

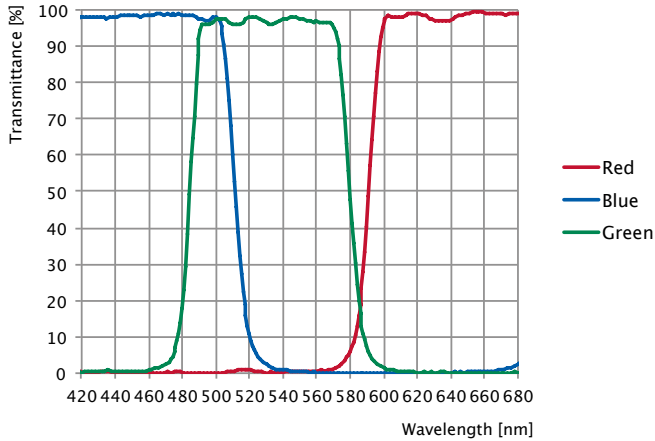
- Approx. 45 grams (for diameter 50 mm)
- 80 grams (for diameter 80 mm)
- 100 grams (for diameter 120 mm)

Operating temperature 0°C to 85°C

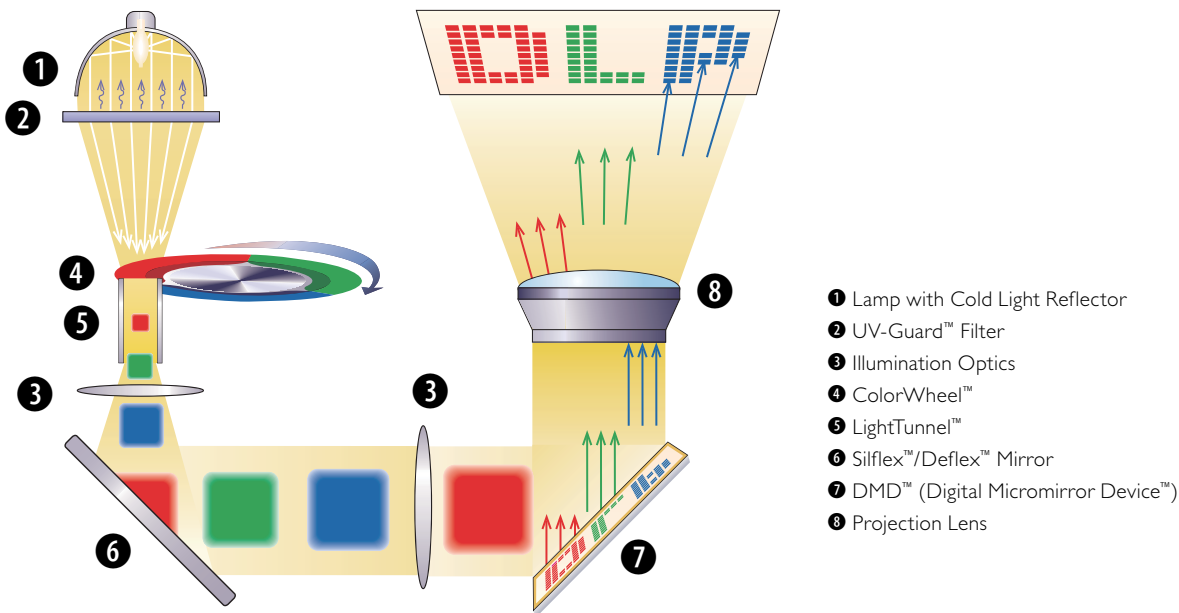
Storage temperature –20°C to 85°C



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.

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