

LumiWheel™

The Challenge

As part of the solution to your total light management challenge, Materion Precision Optics offers our reliable, high performance LumiWheel™. This design offers superb flexibility for color splitting in field sequential light management in digital projection, video production and photo imaging.

As the world's largest manufacturer of optical components, we provide an array of products to support your light management requirements 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, and light engine procurement assemblies.

BENEFITS

The LumiWheel™ 2x, 3x and 4x. Speed design offers a high degree of flexibility and can be customized for:

- Diameter
- Phosphor type
- Number of phosphor segments
- Reflection type or transmissive type
- Coating
- Motor speed
- Integrated timing index sensor available

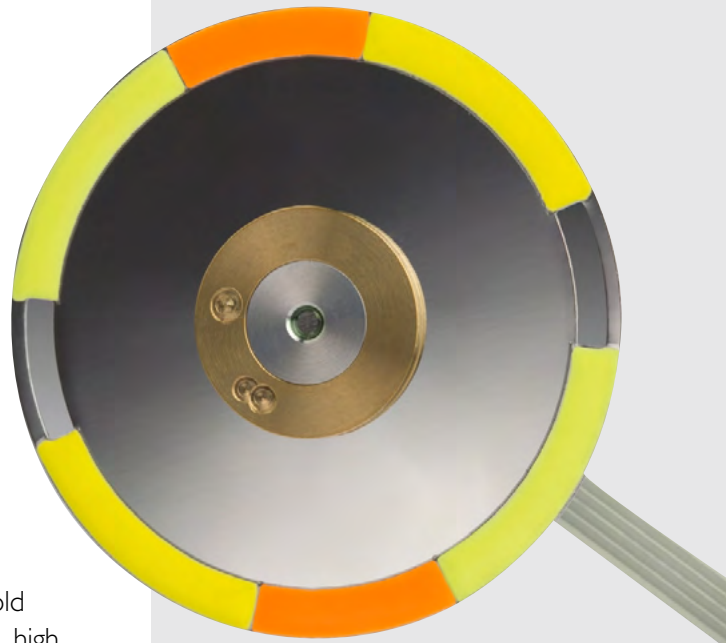
Reliability and performance is assured with proven:

- Excellent efficiency performance for laser converting
- Excellent thermal conductivity
- Enhanced optical performance by coating
- Stable colors
- Motor technology
- Individual precision balancing
- Low noise characteristics

APPLICATIONS

We offer various custom-configured LumiWheel™ designs for different applications including projectors, solid state illumination, head-up displays, professional lighting, etc.

- The small size LumiWheel™ meets the requirements of the new pico laser portable DLP™ brand projectors or laser phosphor illumination system
- The large size LumiWheel™ meets the requirements of the large venue and cinema DLP™ brand projectors
- Optimized for high brightness and enhanced color, the LumiWheel™ is also designed to produce high efficiency and good thermal conductivity



SPECIFICATIONS

Diameter and disc structure

- From 18 to 100mm (other sizes available)
- Phosphor disc – different segment designs available on request

Coating

- Integrated coating available as options

Operating speed

- 2x – 7200 rpm, 3x – 10800 rpm, 4x – 14400 rpm

Phosphor performance

- According to material specifications
- Multiple color phosphor type available as options
- Color coordination +/-2%

Balancing

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

Timing index mark

- Integrated optical sensor available as option

Mass approximation

- 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 (According to motor)

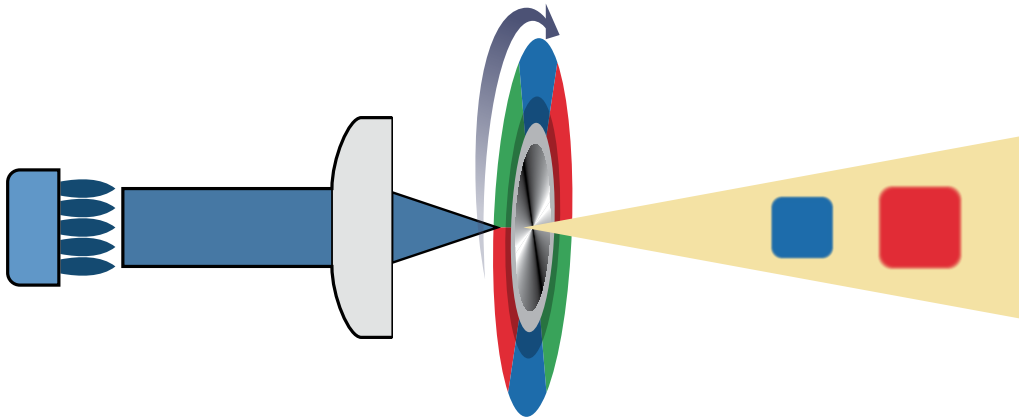
Storage temperature

- 20°C to 85°C (According to motor)

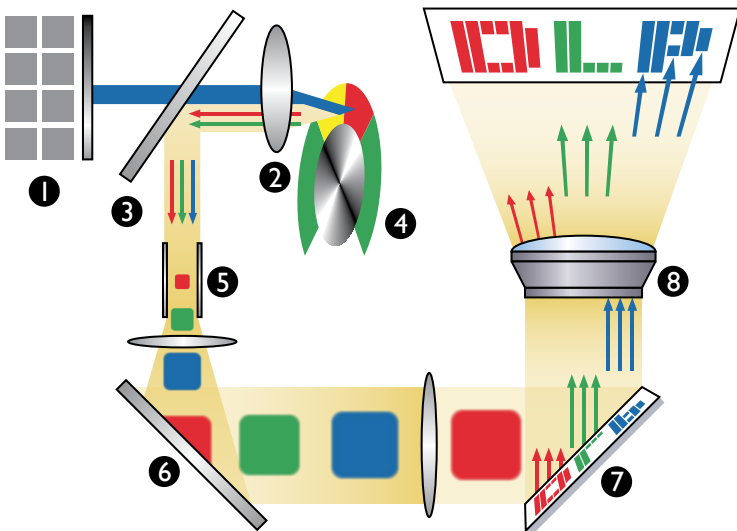


MATERION

SCHEMATIC OF LUMIWHEEL™

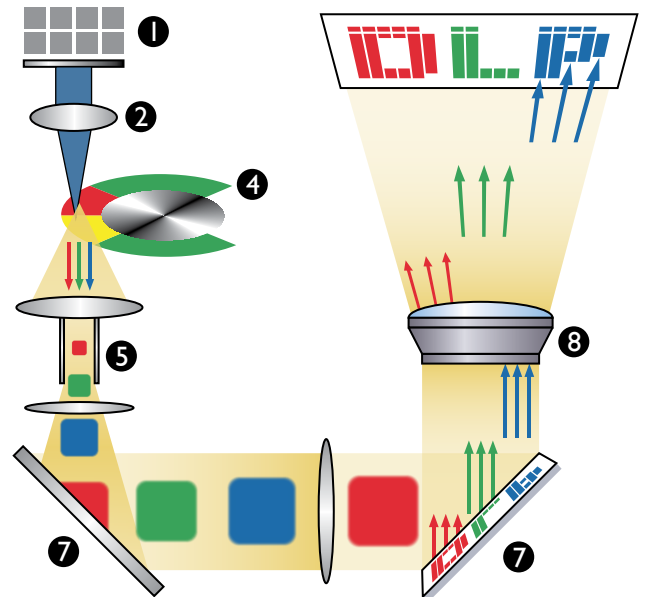


REFLECTION TYPE LUMIWHEEL™



- 1 Laser
- 2 Collection lens
- 3 Dichroic Filter

TRANSMISSION TYPE LUMIWHEEL™



- 4 LumiWheel™
- 5 LightTunnel™
- 6 Silflex™ /Deflex™ Mirror

- 7 DMD™ (Digital Micromirror Device™)
- 8 Projection lens



MATERION PRECISION OPTICS

2 Liberty Way
Westford, MA 01886
Phone: +1.978.692.7513
www.materion.com/precisionoptics

MATERION CORPORATION
www.materion.com



MATERION PRECISION OPTICS is the world's leading provider of precision optical filters and custom thin film coating services. We employ innovative process technologies to produce a broad array of products including complex optical filters, filter arrays, wafer level coatings, thin film getters, mirrors, color wheels, and complex optical sub assemblies. We offer solutions for diverse markets and applications including consumer electronics, image sensing, smart sensing, projection display, defense, space, life sciences, medical, infrared flame & gas detection, astronomy, 3D Sensing, LIDAR and thermal Imaging.