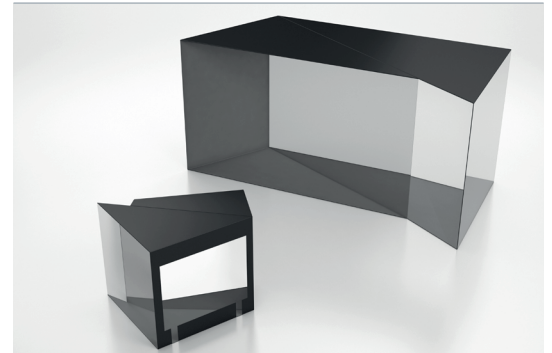


# LightGate™ for DLP Projection

## Setting higher standards for TIR- and RTIR-Prism Assemblies

New competence has enabled Materion Balzers Optics to improve the standards in LightGate™ manufacturing (a.k.a. TIR- and RTIR-Prisms). Our bonding technology reduces the air-gap height to 2 µm and provides complete air-gap sealing, resulting in less longterm image degradation by preventing dust or gas from entering the gap. Precision blackening technology allows accurate positioning and patterning of the absorptive paint. And envisioning a growing market, all processes have been automated to meet high quality standards at very large production volumes.



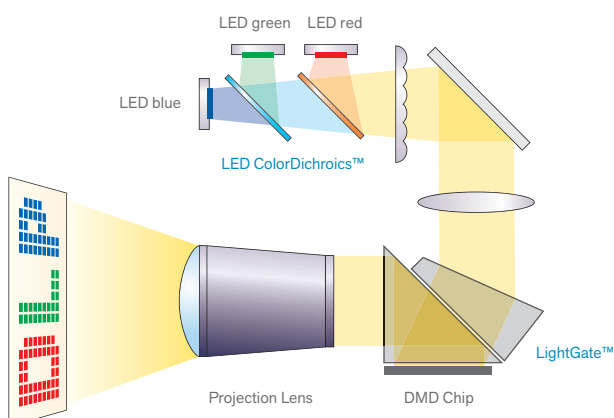
### Benefits

- Reduced air-gap height for better image contrast
- Sealed air-gap to keep out dust
- Narrow bonding line for large clear aperture
- Precision blackening with patterning capability
- Large glass selection
- Automated manufacturing for reliable high volume production
- Integration of lens or other optical or mechanical parts possible
- Customized design

### Applications

- Various projector types using DLP technology
- Pico- and Embedded Projectors
- Business-, Education- and Large Venue Projectors
- LED Projectors
- Laser Projectors
- Hybrid Phosphor Projectors
- Other DLP based applications

### System schematic – LED projector system with Lightgate™



### Technical Data

<b>Dimensions</b>	Available for DLP chip sizes from 0.2" to 0.47" (other sizes upon request)
<b>Materials</b>	Wide selection, including high-index glass
<b>Thin Film Coating</b>	High-transmissive, large angle AR coating
<b>Air-gap</b>	Minimum 2 µm ± 1 µm, partially or completely sealed
<b>Glue area</b>	Max 1.3 mm from edge
<b>Blackening</b>	Precision patterning of high absorbing black paint
<b>Black paint stability</b>	> 120°C
<b>High-volume capacity</b>	Automated manufacturing

### LightGate™ configurations

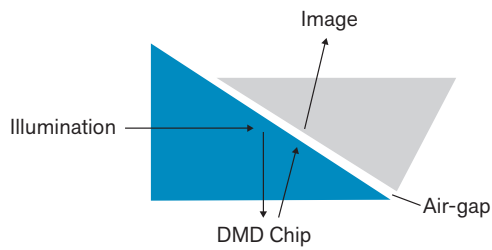


Fig. 1: TIR prism configuration

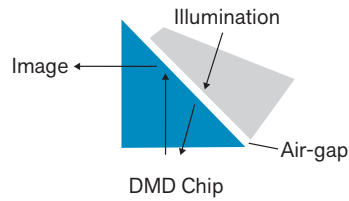


Fig. 2: RTIR prism configuration

### Sealed air-gap

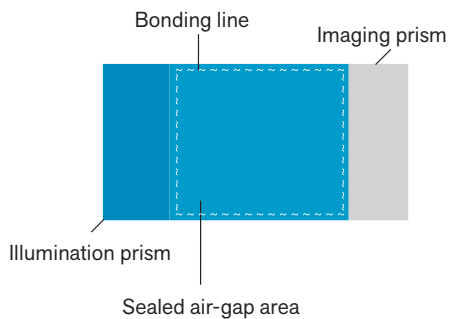
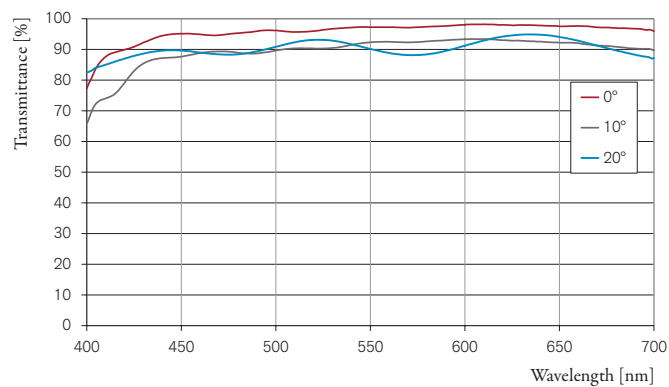


Fig. 3: LightGate™ (TIR configuration) top-view

### Transmittance – RTIR configuration, N-SF10 glass



### Reflectance – RTIR configuration, N-SF10 glass

