



# Laser Cavity Mirrors

## High reflective mirrors for gas laser tubes

The stabilized laser beam nature makes the HeNe- and Argon-Laser well suited for metrology and interferometric applications. A pair of laser cavity mirrors, a High-Reflective (HR) mirror and an Out-Coupling (OC) mirror, are an essential part of all gas laser tubes.

Materion Balzers Optics is specialised in designing and manufacturing high-performance laser cavity mirrors with different sizes and different curvatures. Beside the ultra-accurate surface polishing in the range of 1.5Å, the coating designs offers side line suppression and a spectral accuracy in the transmission band of <0,05%. But the key feature is the mode hopping control by finding of the dominated polarization. For this, these mirrors have to be designed and coated as a customized pair. Please ask for your own specialised configuration.



### Benefits

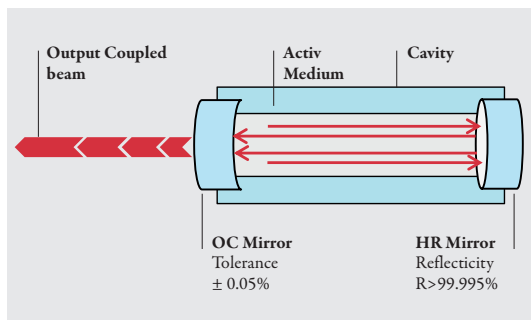
- Low loss Cavity-Mirrors
- Ultra-High reflective mirrors (HR)
- Output-Coupler (OC) with defined transmittance
- Mode-Hopping suppression\*
- Convex/Concave substrate curvature
- Side-Line suppression

\*valid for customized pairs of cavity mirrors

### Applications

- Stabilized Laser Systems
- Laser Interferometers
- Test & Measurement
- Metrology
- Spectroscopy

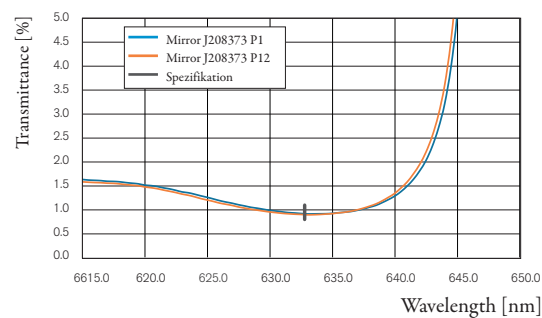
### System schematic – LED projector system with Lightgate™



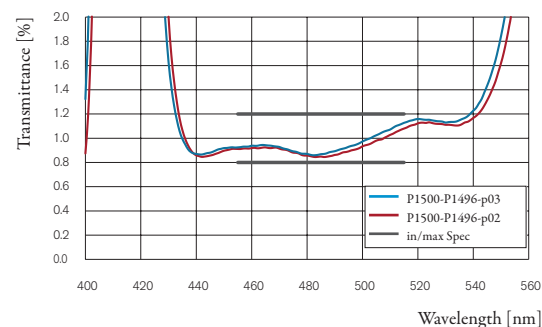
### Technical Data

|                                   |                              |
|-----------------------------------|------------------------------|
| Wavelength range                  | 250 nm – 2000 nm             |
| Reflectance                       | R > 99.995 %                 |
| Outcoupler transmittance accuracy | ± 0.05 %                     |
| Losses                            | < 50 ppm @ 633 nm            |
| Substrate dimensions              | Ø6 x 4 mm<br>or Ø7.75 x 4 mm |
| Surface roughness                 | RMS < 0.15 nm                |
| Surface accuracy                  | λ / 10                       |
| Curvature accuracy                | ± 1%                         |
| Wedge                             | < 15'                        |

### Mirror OC633 T=0.8-1,1%



### Mirror OC450-530nm T=0.8-1.2%



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