

High Reflection Efficiency

Dual-band Mirrors for CO₂ Lasers and Pilot Lasers

LASER COMPONENTS introduces dual-band mirrors: A novel dual-band coating on silicon substrates creates mirrors that offer high reflection values for the processing wavelength 10.6 µm and simultaneously reflects the light of red pilot lasers with a high yield.

Pilot lasers are used in systems with invisible CO₂ processing lasers to determine the beam's point of impact. The beam guidance of both lasers is the same, which leads to problems: If the beam-guiding components are not optimized for the wavelengths used, they "swallow" light. In silicon mirrors, the light of the pilot laser was almost not visible anymore.

At an angle of incidence (AOI) of 45°, the following values can be achieved R > 99.8% (CO₂ laser) and R > 90.0% for the pilot laser (600-700 nm). The low phase shift of approximately ±2° is also noteworthy.

In addition to silicon mirrors, copper mirrors are also used for light of the wavelength 10.6 µm. However, silicon substrates have major advantages: Unlike pure metal mirrors, they are significantly lighter. Furthermore, silicon mirrors are free of thorium and have a surface resistance that does not scratch as quickly during cleaning.

More Information

<http://www.lasercomponents.com/lc/optics/laser-optics/coated-laser-optics/>

Trade Shows

JSOL - Journées Sécurité Optique et Laser 2017, March 28-29, Bordeaux, France

Automate 2017, April 3-6, 2017, Chicago, IL, USA, **Booth 2661**

DCS 2017, April 11-13, 2017, Anaheim, CA, USA, **Booth 628**

Breko 2017, April 25-26, 2017, Messe Frankfurt, **Booth 53**

Optics & Photonics Days 2017, May 29-31, 2017, Oulu, Finland

ANGACOM, May 30 - June 01, 2017, Cologne, Germany, **Booth 7-B09**

Sensor+Test, May 30 - June 01, 2017, Nürnberg, Germany, **Booth 1-256**

Photonex Scotland Roadshow, June 14, 2017, University of Strathclyde, UK, **Booth S2**

LASER World of Photonics, June 26-29 2017, Messe Munich, **Booth B3.303**

The Company

LASER COMPONENTS specializes in the development, manufacture, and sale of components and services in the laser and optoelectronics industry. At LASER COMPONENTS, we have been serving customers since 1982 with sales branches in five different countries. We have been producing in house since 1986 with production facilities in Germany, Canada, and the United States. In-house production makes up approximately half of our sales revenue. A family-run business, we have more than 200 employees worldwide.