SinoCeramics

Optical Components:

Coatings

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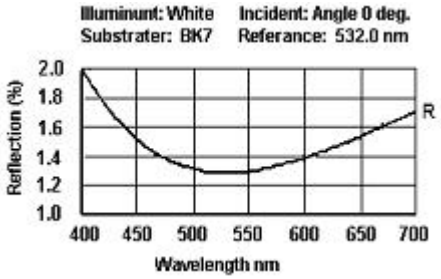
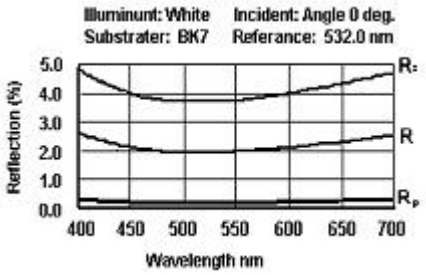
Single Layer MgF_2 Antireflection Coating

Magnesium fluoride is the most widely used thin film material for optical coatings. Its performance is not outstanding but represents significant improvement compared with an uncoated surface. Because of the wide transmission range, MgF_2 is an excellent coating material in UV wavelengths.



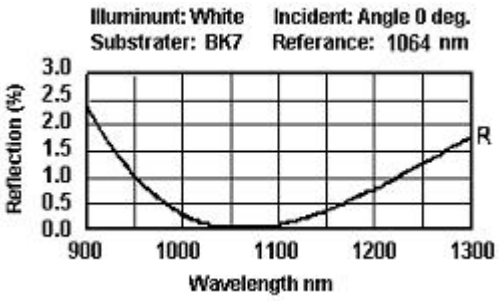
Ro < 1.5% @ 540nm
R < 2.0% @ 400 - 700nm



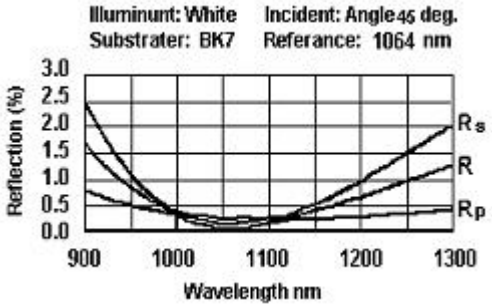
Ro < 2.0% @ 540nm
R < 3.0% @ 400 - 700nm

Multilayer Antireflective Coating:

These multilayer antireflective coatings can reach the lowest reflectivity at center wavelength. It is often applied to a single laser wavelength or multiple, closed-space wavelength system to guarantee the lowest loss at center wavelength. Sinoceramics can provide such coating with center wavelength from 250nm to 2200nm. When selecting a suitable multilayer antireflection coating, the center wavelength and damage threshold must be considered.



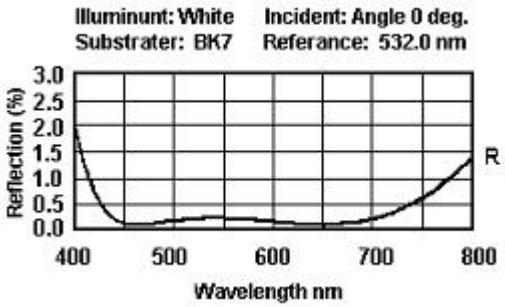
Ro < 0.25% @ 1064nm



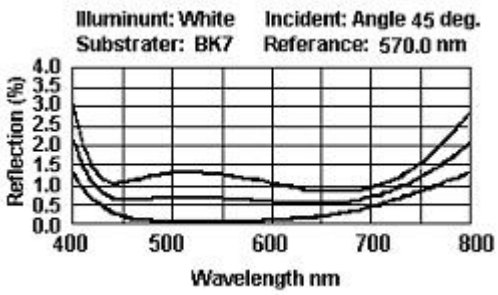
Ro < 0.5% @ 1064nm

Multilayer Broadband Antireflection Coating:

Different from the single layer MgF_2 broadband antireflection coating, the multilayer coating can reach higher transmission for broadband wavelength. Therefore, it is ideal for a wide range of multi-wavelength laser and white light applications. Please note that the wavelength range and reflectivity of the coating change with the incident angle.



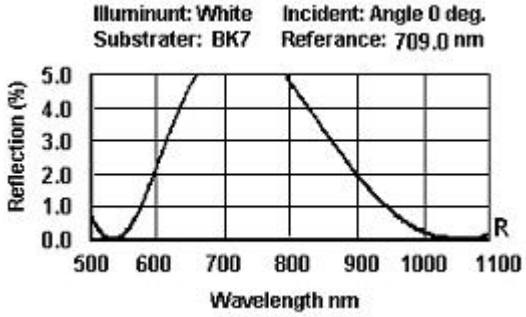
R < 1.0% @ 420- 700nm
R < 0.5% @ 450 - 650nm



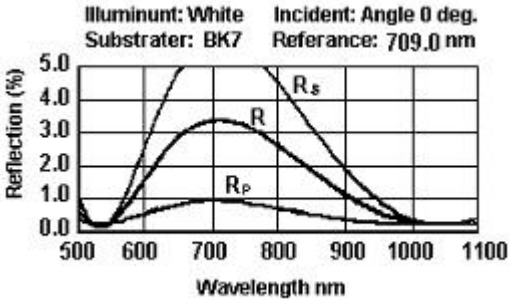
R_{avg} < 1.0% @ 450 - 650nm

Dual Wavelength Band Antireflective Coating:

This coating allows two center wavelengths radiation pass through the substrate with high transmission. This coating is often used in frequency doubling systems or the other multi-laser output systems, such as the Nd:YVO_4 laser (1064nm) and its second harmonic generation (532nm) green laser.



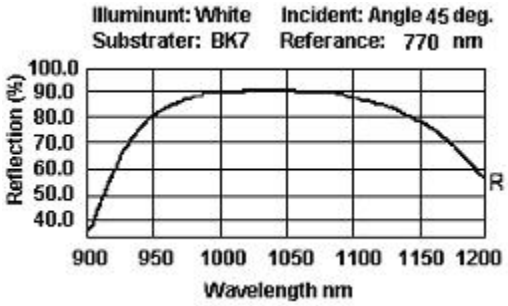
R < 0.25% @ 1064nm
R< 0.5% @ 532nm



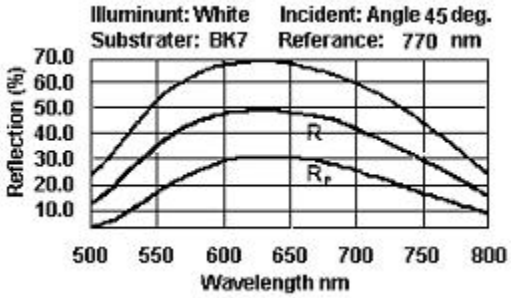
R < 0.5% @ 1064nm
R < 0.25% @ 532nm

Partial Reflective Coating:

When a narrow wavelength light is incident to this interface, part of the light is reflected and part is transmitted. Such coatings always have high reflection for S-polarization radiation and high transmission for P-polarization radiation. The main application this coating is used for is beamsplitters. It is also widely used in inspection systems, so that we can get radiation in measurements of datum light.

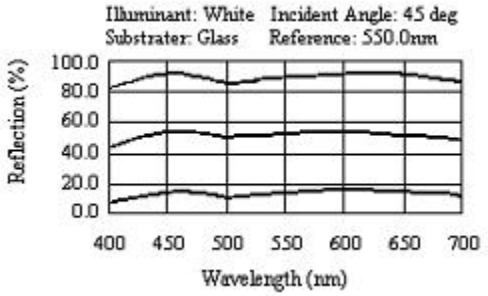


R = 90.0% ± 1.0% @ 1064nm



R = 50.0% ± 2.0% @ 632.8nm

$R = (R_1 + R_2)/2$

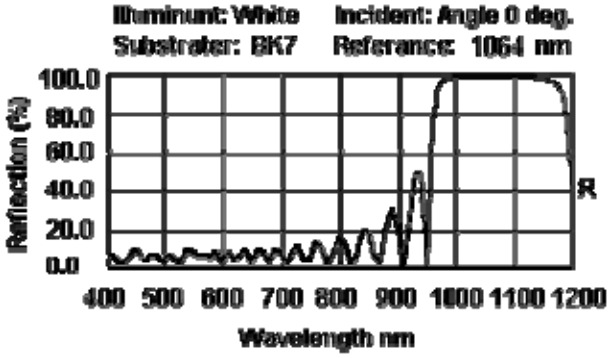


R = 50.0% ± 5.0% @ 450 - 650nm

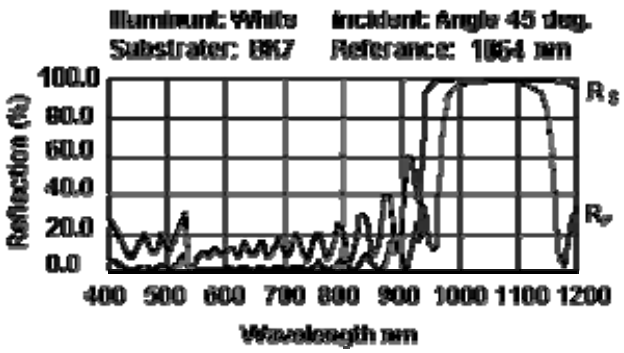
$R = (R_1 + R_2)/2$

Dielectric High Reflective Coating:

It is well know that dielectric coating can produce very high reflection (more than 99.8% at designed wavelength). This coating is generally used in a single wavelength laser cavity, where the lowest cavity loss at center wavelength is essential. Sinoceramics can provide such coatings with center wavelengths from 350nm to 2000nm according to customer's requirement. When selecting a suitable dielectric high reflection coating, the damage threshold requirement must be considered.



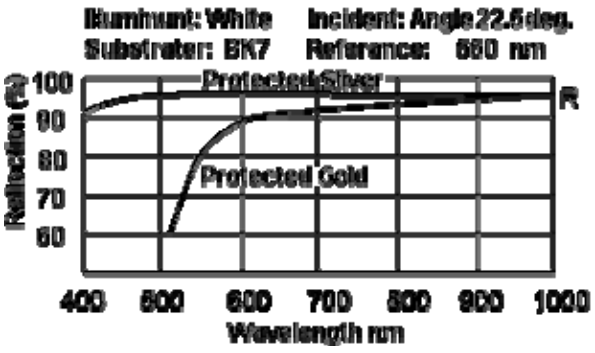
R > 99.8% @ 1064nm



R > 99.5% @ 1064nm (R_s > 99.5% , R_p > 99.2%)

Metallic High Reflective Coating:

Sinoceramics provides a high reflective metallic coating that is made from Au, Ag, and Al. These coatings which have a consistent high reflection over a wide spectral range are necessary. Their reflectivity is not higher than that of the dielectrics high reflection coating, but the spectrum of the metallic coating can cover the near UV, visible and near-IR. In order to prevent this coating from oxidizing, a dielectric overcoat is used.



R > 95% @ 450 - 11000nm for protected Ag
R > 98% @ 2000 - 12000nm for protected Au

R > 87% @ 400 - 1200nm for protected Al
R > 93% @ 400 - 1200nm for enhanced Al

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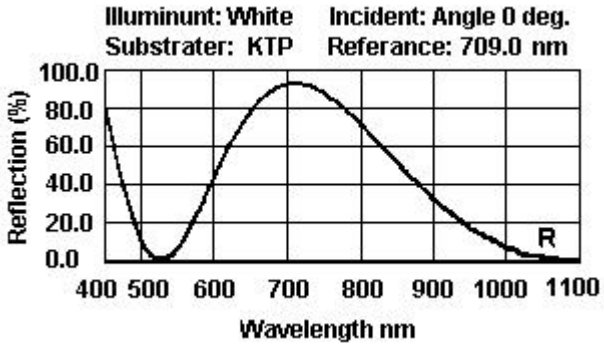
Diode Laser Pumped Coating:

Sinoceramics provides this diode laser pumped solid state lasers, such as the Nd:YAG or Nd:YVO_4 laser, along with its frequency doubling crystals KTP, BBO, Wave Plates, and other glass mirrors.



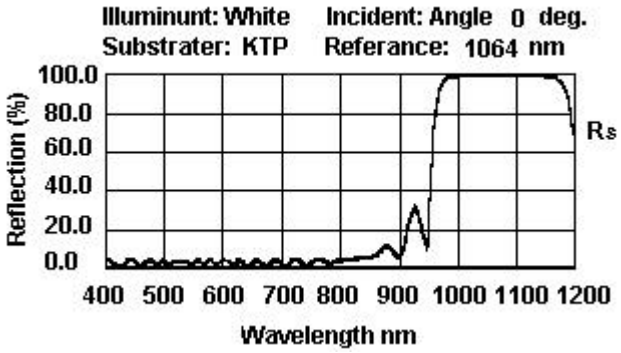
R < 0.1% @ 1064nm
R < 0.5% @ 532nm

AR/AR @ 1064 & 532nm on KTP

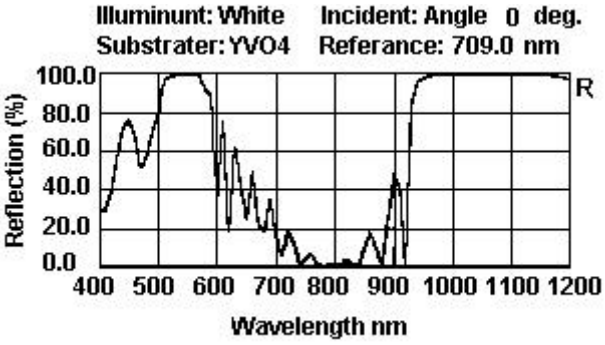
Part No. DPO-DAR

HR @ 1064 & HT @ 532nm on KTP

Part No. DPO-HAR



R > 99.8% @ 1064nm
R < 5.0% @ 532nm



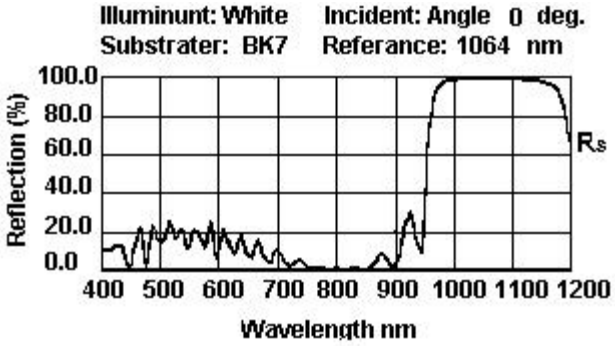
R > 99.8% @ 1064nm
R > 99.0% @ 532nm
R < 5.0% @ 808nm

HR @ 1064 & 532nm, HT @ 808nm on YVO_4

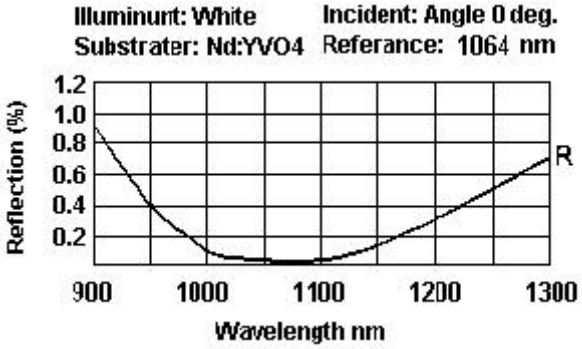
Part No. KPO-VD

HR @ 1064nm & HT @ 808nm on YVO_4

Part No. DPO-GC



R > 99.8% @ 1064nm
R < 5.0% @ 532nm



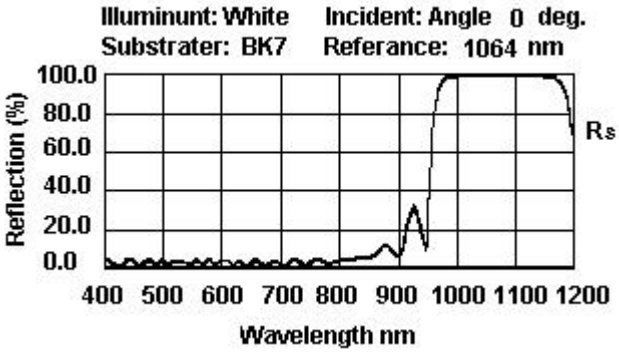
R < 0.1% @ 1064nm

AR @ 1064nm on Nd:YVO_4

Part No. DPO-VA

HR @ 1064 & HT @ 532nm on BK7

Part No. DPO-GC



R > 99.8% @ 1064 nm
R < 5.0% @ 532nm