

TYPES of OPTICAL COATINGS

1. Anti-Reflection (AR) Coatings:

1.1. V- coatings for simple wavelengths.

Optimized for any laser or other sources wavelengths in ultraviolet UVB (280-315), UVA (315-400), visual VIS (360-78) and near infrared NIR (780-2500) nm ranges, for example:

- UV range (240-400nm) for KrF - 248nm, XeF -351nm or 353nm. Reflection $R < 0,25\%$ for optimal wavelength;
- VIS range (360-780nm), etc. 532, 546, 633 or 780nm. Reflection $R < 0,15\%$ for optimal wavelength;
- NIR range (780-2500nm) , etc. 850, 905, 940, 1064 or 1550nm with reflection $R < 0,25\%$ for optimal wavelength.

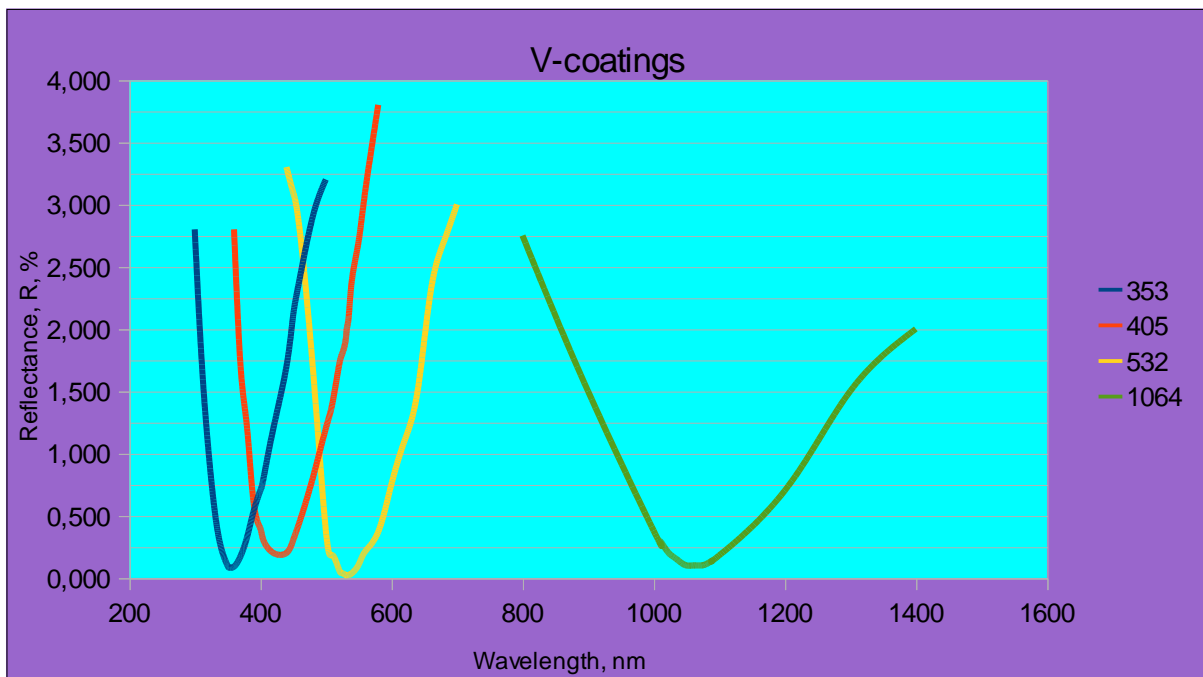


Fig.1. Nominal spectral characteristics for V – coatings.

1.2. Multilayer (MLC) or Broad Band Anti-reflection coatings (W – coatings or BBAR) for UVB, UVA, VIS and NIR spectral ranges.

- 245 - 440nm with $R_{max} < 1\%$ and $R_{av} < 0,5\%$;
- 400 -590 nm with $R_{max} < 0,3\%$ and $R_{av} < 0,15\%$;

- 450 -650 nm with $R_{max} < 0,5\%$;
- 400 -490 nm with $R_{max} < 0,1\%$;
- 900 -2500 nm with $R_{max} < 1,5\%$ and $R_{av} < 1\%$;
- 420 -1000 nm with $R_{max} < 1,7\%$ and $R_{av} < 1\%$;
- 450 -850 nm with $R_{max} < 1\%$ and $R_{av} < 0,5\%$;

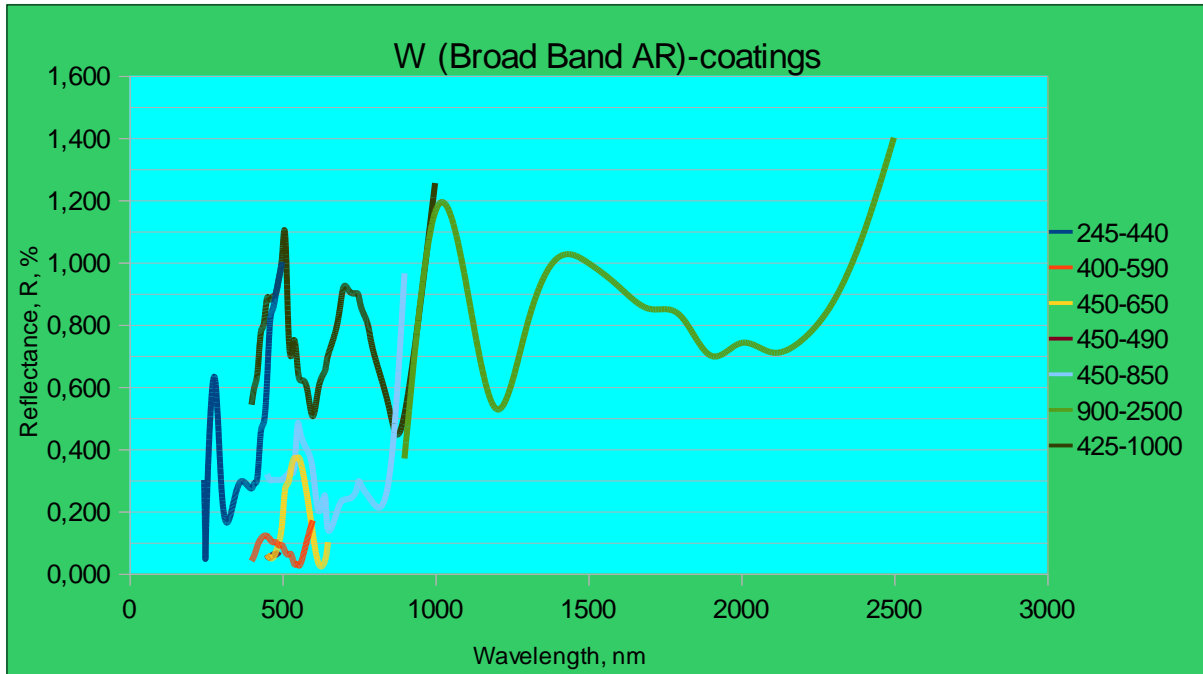


Fig.2. Nominal spectral characteristics for BBAR coatings.

1.3. Single Layer (SLC) MgF₂ coatings for simple wavelengths.

Optimized for simple wavelengths, etc. 550, 633, 1064 or 1550nm with $R < 0,2\%$ for optimal wavelength.

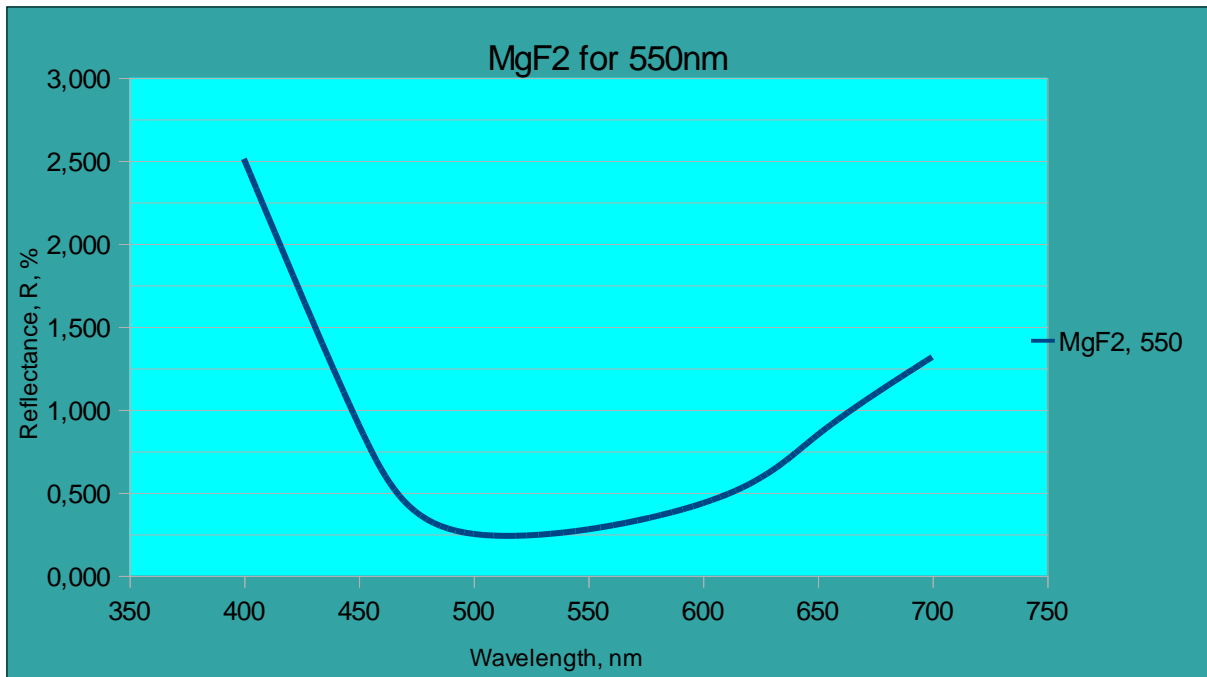


Fig.3. Nominal spectral characteristics for MgF2 coating for 550nm.

1.4. Dual- and Triple Band coatings (for 2 or 3 wavelengths).

Optimized with minimal reflection for two or three wavelengths, etc.:

- Triple Band for 532nm with $R_{max} < 0,15\%$, 633nm with $R_{max} < 0,1\%$ and 1064nm with $R_{max} < 0,15\%$.

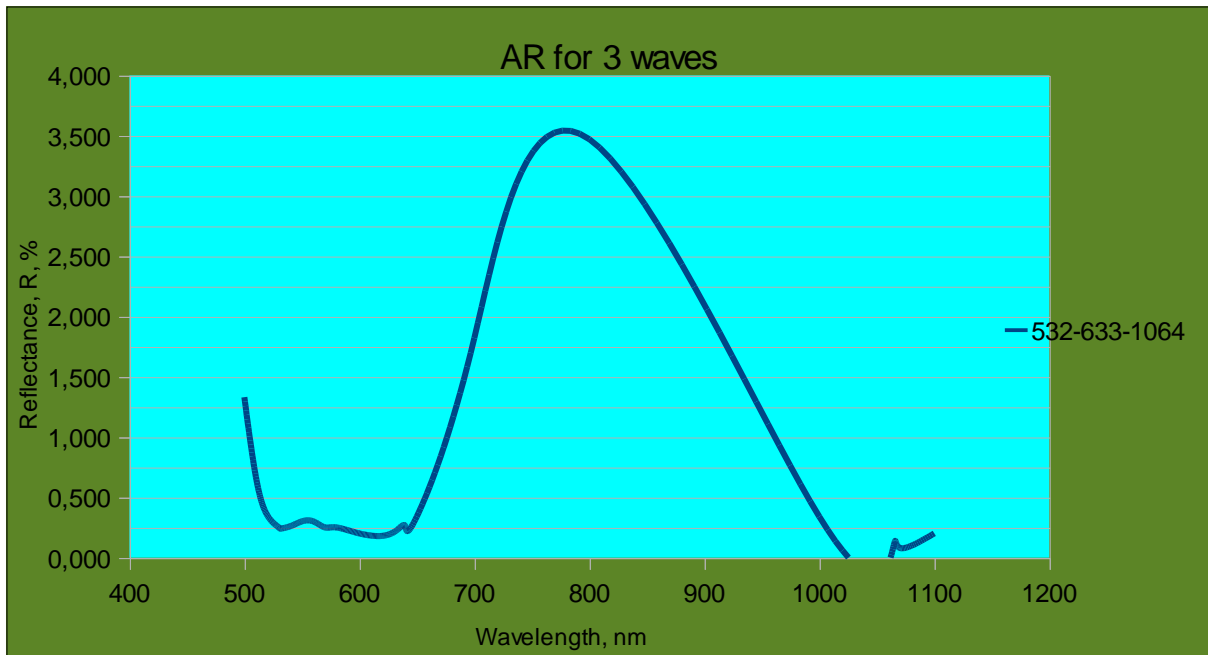


Fig.4. Nominal spectral characteristics for Triple Band coating.

1.5. Broad Band Anti-Reflection coatings BBAR for Long Wavelength Infrared LWIR spectral range (8-12 μ m).

For Long Wavelength Infrared spectral range 8-12 μ m with $R_{max} < 1\%$ and $R_{av} < 0,5\%$;

1.6. Hard Carbon Coatings (HC) or Diamond like coatings (DLC) for wavelength 10 μ m.

Durable on mechanical impacts coating with $R < 3\%$ for spectral range 8-12 μ m.

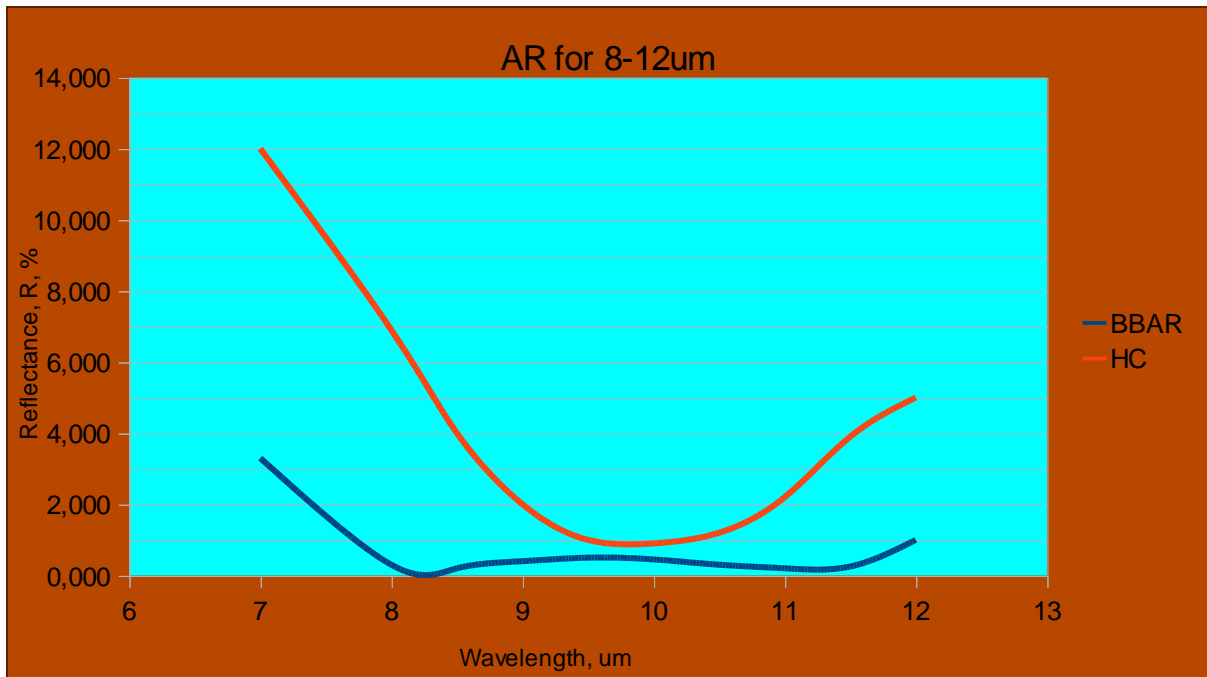


Fig.5. Nominal spectral characteristics for AR coatings for LWIR spectral range.