

Magnetron Sputtering extends range of Interference filters

Magnetron sputtering

Applying an additional magnetic field in a sputtering machine generates a higher ion density at the sputtering target. Thus denser coatings and a higher deposition rate result in steeper filter slopes allowing extreme wavelength selection. With the customized sputtering tool different dielectric and metal coating materials can be applied without the need to open the chamber between coating runs resulting in higher design freedom for steep optical filters, consistent spectral performance for hard filter coatings, low-defect surfaces and excellent process stability.

Applications

Steep filter curves can be used for long-, short-, and bandpass filters to be applied in:

- Raman spectroscopy
- Fluorescence excitation and emission in bio-photonic, medical, analytical and pharmaceutical applications
- And many more ...

An additional hard coating can be applied for protection to be used in:

- Displays with AR coating
- Protective windows
- Additional protection for (steep) interference filters

Advantages

- High signal to noise ratios
- Steep filter edges resulting in e.g. high discrimination between close spaced emission and excitation wavelengths
- High long time stability and durability

Quality Assurance

Quality control is based on statistical process control, as well as on rigorous final inspection. Measurement instruments include a broad choice of spectrophotometers, vision systems, beam deflection, etc.

For more information please contact:

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Application Support

Please contact us with your requested filter specifications. Our experienced application team is specifically trained to find the right solution for your application and any spectral filter type.

Materials

All types of materials can be coated:

- Optical glass
- Fused silica (LITHOSIL®)
- Sapphire
- Glass ceramic (ZERODUR®)
- Borosilicate glass (Borofloat® 33, AF33, B270, etc.)
- Filter glass
- Contrast enhancement glass types
- etc.

Specifications

- Dimensions between 1 mm and 200 mm (diameter) and thickness <40 mm
- Spectral range between 200 nm and 3000 nm, according to ISO 10110
- Example specs:

Bandpass Filter: diameter: 25.0 mm +/- 0.1 mm, a.o.i. 0°, center wavelength: 525 nm +/- 3 nm, FWHM: 50.0 nm +/- 4 nm, T-max >90%, T(505 nm–545 nm) >90% average, T(200 nm–300 nm, 400 nm–495 nm) <10⁻⁵, T(300 nm–400 nm) <10⁻², T(560 nm–1000 nm) <10⁻⁵

