

Interference Filters

Product Information

Interference filters, using the interference effect to transmit or reflect certain spectral ranges of electromagnetic radiation, are produced by applying thin layers with different refractive indices on a substrate.

SCHOTT supplies standard and customized interference filters within the spectral range from 200 nm to 3000 nm. Development, design and production are realized according to customers' specifications. The coatings of the interference filters are manufactured by deposition process in high vacuum or using a Magnetron-Sputtering-Tool. The processes, ion assisted evaporation and reactive ion plating, lead to very hard and compact thin films. As a consequence, these interference filters have an excellent climatic resistance and a very stable spectral characteristics with respect to temperature and humidity changes.

Our product range comprises different **interference filter types:**

- Bandpass filters (line, band, and broadband filters)
- Edge filters (long- & shortpass filters)
- Notch filters (single to tripple notch)
- DUG 11: UV transmissive filters without passband at 700 nm
- Hard bandpass filters
- i-line filters
- VERIL linear variable filters
- KV-filters: low-fluorescence, sharp cut-on, glass-plastic laminated filters

Specifications

The specifications listed in our catalog apply to standard interference filters, while 95% of filters are customized. We supply filters smaller than 1 x 1 mm to about 400 mm in diameter, depending on the interference filter specifications.

For more information please contact:

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Applications

Interference filters are used in various applications such as:

- Fluorescence microscopy & Raman spectroscopy
- Analytics: measurement, environmental, biotech, chemical, medical, etc.
- Semiconductor microlithography
- Measuring, testing, and control engineering
- Optoelectronics & telecommunication (e.g. LCD projector, bar code reader)
- Sensors (industry, automotive (rain sensors), safety and monitoring systems)
- Ophthalmology & dentistry
- Photo finishing

Substrates

Almost all inorganic glasses and glass ceramics are suitable as substrate material for interference filters. The choice of substrate is depending on the specific requirements of the finished interference filter. Coatable materials are:

- Optical glass
- Borosilicate glasses (e.g. Borofloat®33)
- Optical filter glasses
- Glass ceramics (ZERODUR®)
- Technical glass
- Fused Silica

Quality Assurance

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