

# Interference Filters

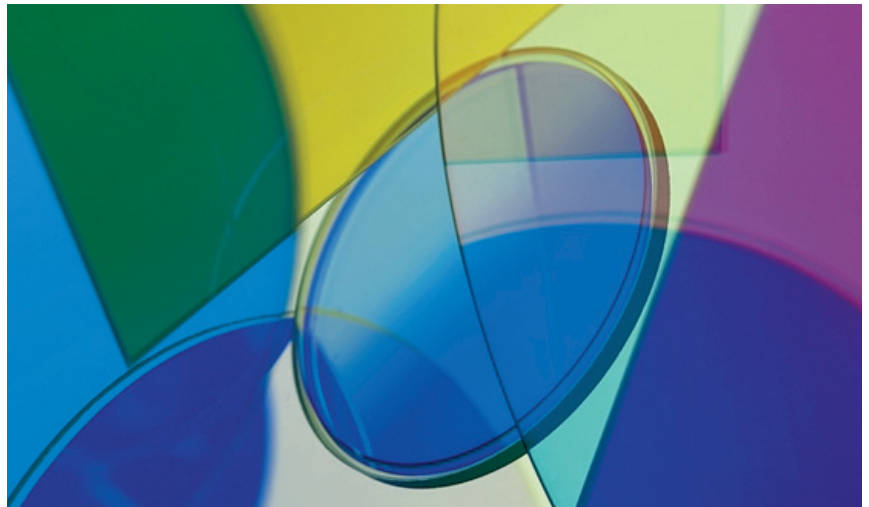
## Product Information

Interference filters use the interference effect to transmit or reflect certain spectral ranges of electromagnetic radiation. Hereto, numerous thin layers with differing refractive indices are brought up to a substrate.

SCHOTT supplies standard and custom-made interference filters within the spectral range from 200 nm to 2000 nm. Development and production according to customers' specifications comprise the greatest part of our business. The coatings of the interference filters (hard and soft) are manufactured by the process of vapor-deposition (PVD) under high vacuum. The processes, ion assisted evaporation and reactive ion plating, lead to very hard and compact thin films. As a consequence, these interference filters exhibit excellent climatic resistance and have very stable spectral characteristics with respect to temperature and humidity changes.

Our complete production range comprises different interference **filter types**, whose choice depends on the individual filtering problem to be solved. They are listed below:

- Bandpass filters (line, band, and broadband filters)
- Edge filters (longpass and shortpass filters)
- Hard bandpass filters
- i-line filters



- VERIL linear variable filters
- Low-fluorescing, sharp cut-on, glass-plastic laminated filters of the type KV

## Applications

The subsequent list only represents a small part of the entire range of applications possible:

- Analytical measurements/ instruments
- LCD projector
- Photo finishing
- Medical diagnostics (blood and urine analysis)
- Immuno diagnostics
- Ophthalmology
- Dentistry
- Environmental analytics
- Fluorescence spectroscopy
- Fluorescence microscopy
- Semiconductor microlithography
- Measuring, testing, and control engineering
- Optoelectronics
- Sensors (industry, automotive (rain sensors), safety and monitoring systems)
- Bar code reader
- Telecommunication



## Materials

Evaporation materials:

We select the most suitable from the wide range of available evaporative materials to provide the best possible interference filter solution.

Substrates:

Almost all inorganic glasses and glass ceramics are suitable for use as substrates for interference filters. The choice of substrate is highly dependent on the specific requirements placed upon the finished interference filter.

For example, we can coat:

- Optical glass
- Borosilicate glasses (Borofloat® 33)
- Fused silica (LITHOSIL®)
- Optical filter glass (color filter glass)
- Glass ceramics (ZERODUR®)
- Technical glass

## Specifications

The specifications listed in our catalog Interference Filters and Special Filters apply to standard interference filters.

The 95% of filters are produced on customers' own specifications.

We can 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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## Quality Assurance

From the uncoated substrate to the finished interference filter, which may consist of several different individual filters, we continuously monitor both optical and non-optical properties with a wide range of high quality equipment. We select the most suitable instrumentation, in many cases after detailed consultation with the customer.