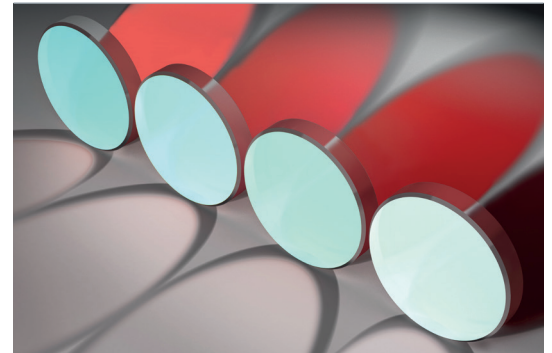


Red-Bandpassfilter RTR SP for 600–750 nm

Dielectrical narrowband red Bandpassfilter for elimination of undesired radiation on receiver photodiodes

Red-Bandpassfilters SP are used in various optical sensor applications for blocking both ambient visible and NIR wavelength range while selectively transmitting signal light of a specified visible spectral range (e.g. red) for sensing application. Bandpassfilters are key components to achieve very high signal to noise ratios in optical sensing or distance measurements. Materion Balzers Optics Red-Bandpassfilter SP based on proven sputtering technology do not use colored glass substrates but clear glass substrates, which allow components to fulfill EU RoHS directive demands.



Benefits

- High-transmissive and durable dielectrical filter
- Spectral design flexibility for center wavelength, transmission bandwidth (VIS), blocking ranges and levels
- Enabling superior signal-to-noise ratio in sensing applications
- Various, customer specific sizes and shapes on standard low loss flat glass substrates
- Excellent environmental stability thus long lifetime
- EU RoHS directive compliant

Applications

- Optical sensors and instruments
- Optical ranging systems
- Factory automation
- Safety and security

Technical Data

Red-Bandpassfilter SP

Optical filter specification (CWL 660nm) e.g.:

Tavg. $\leq 0.5\%$ at 300 – 625 nm

Tabs. = 50% at 640 ± 5 nm

Tavg. $> 88\%$ at 650 – 670 nm

Tabs. = 50% at 680 ± 5 nm

Tavg. $\leq 0.5\%$ at 695 – 1150 nm

AOI = 0°

AOI = 0°–20° around 12 nm guidance value

r-pol.

Passband wavelength

Customized CWL filter solutions on request. Other selected center wavelengths for customer specific filters in wavelength-range 300–1100 nm (e.g.) 633 nm, 640 nm, 650 nm, 670 nm

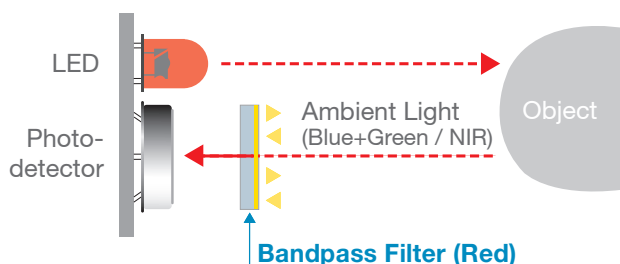
Transmittance

$> 85\text{--}95\%$ avg. in passband (typical)

Blocking

Depending on customer requirements

Visualized application of Red-Bandpassfilter RTR SP





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Angle of incidence

Spectral tolerance for filter edge position 0.5%–1% (typically) for fixed AOI. Different AOI on request

Temperature shift

≤ 0.01 nm of CWL per °C

Environmental resistance and durability

The coating withstands the following tests on glass substrates

Temperature

(MIL-M-13508C, para. 4.4.4.)

5 hrs each at -62 °C and +71 °C

(ISO 9022-2)

16 hrs at -62 °C and 2 hrs at +71 °C

Abrasion

(MIL-M-13508C, para. 4.4.5.)

50 strokes/cheesecloth

(ISO 9211-4-01)

50 strokes/cheesecloth

Adhesion

(MIL-M-13508C, para. 4.4.6.)

Scotch tape test, quick

(ISO 9211-4-02-02)

1 s/25 mm, tape 3M

Humidity

(MIL-M-13508C, para. 4.4.7.)

24 hrs. at 49 °C r.h. 95%

(ISO 9022-2)

Transmission spectrum of dielectric Red-Bandpassfilter SP

