



MATERION

// BALZERS OPTICS

NIR Bandpass Filters SP for 800–1100 nm

Stable Thin Film Filter Coating, even in Harsh Environments

NIR Bandpass Filters SP are used in various optical sensor applications for blocking both ambient visible and the longer wavelength infrared light while selectively transmitting signal light of a specified near infrared (NIR) spectral range used for the sensing application. NIR Bandpass Filters SP are key components to achieve very high signal to noise ratios in optical sensing or distance measuring applications. This superior signal-to-noise performance can either enable accurate distance measurement with lower signal light power or higher sensitivity and more precision with standard signal light levels.



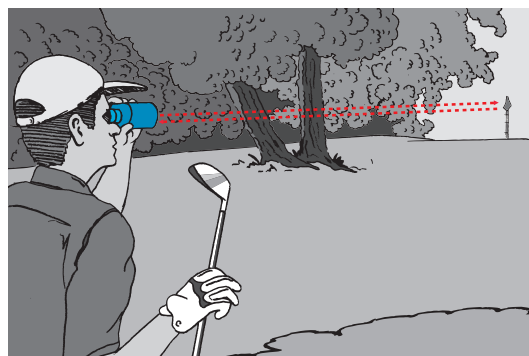
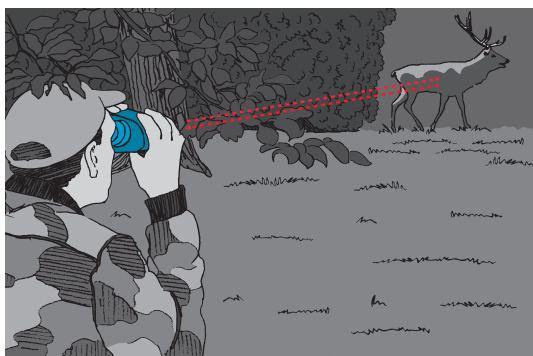
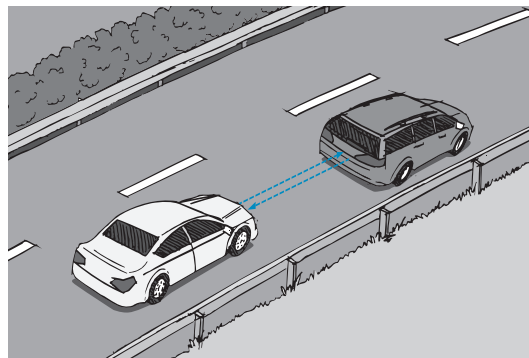
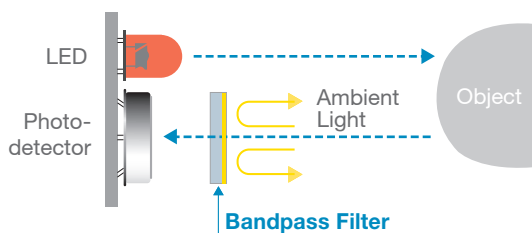
Benefits

- Excellent environmental stability
- Enabling superior signal-to-noise-ratio in NIR sensing applications
- Highly stable spectral characteristics, also under changing environment and temperature
- Spectral design flexibility for central wavelength, transmission bandwidth, blocking ranges and levels
- Various, customer specific sizes and shapes, on standard flat glass substrates
- Consistent volume production capabilities based on proven sputtering technology

- Excellent long term stability
- RoHs compliant

Applications

- Range finder for golfing and hunting
- Distance meter for building and construction
- Automotive sensor systems: Adaptive Cruise Control (ACC), Lane Departure Warning (LDW), etc.
- Industrial safety systems (e.g. safety light curtains)



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Technical Data

Typical Spectral Specification*

Tavg < 10⁻⁵ 300–600 nm

Tavg < 10⁻⁴ 600–700 nm

Tavg < 1% 700–800 nm

Tavg > 85% 865 ± 20 nm

Tavg < 1% 950–1100 nm

AOI = 0°, random-polarized

* may deviate for customer specific filters.

Center wavelengths 800–1000 nm

Transmission bandwidths 30–150 nm

Environmental stability and durability

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

5 h each at –62 °C and +71 °C

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

50 strokes with cheesecloth

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

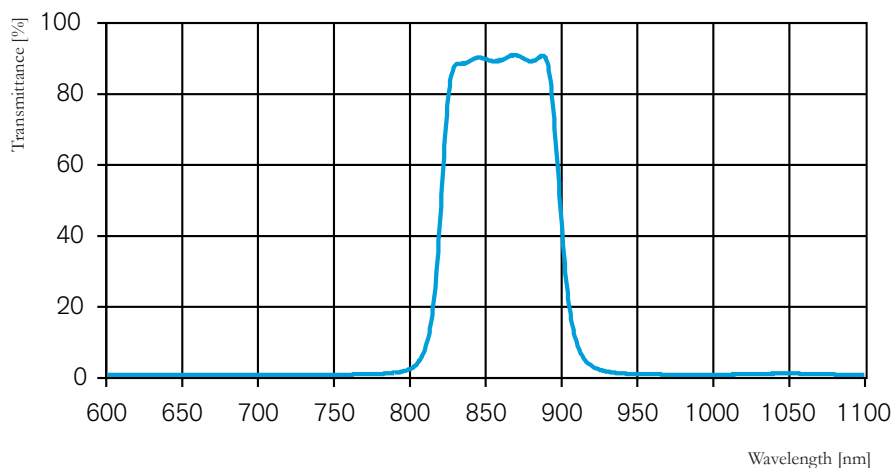
Scotch tape test

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

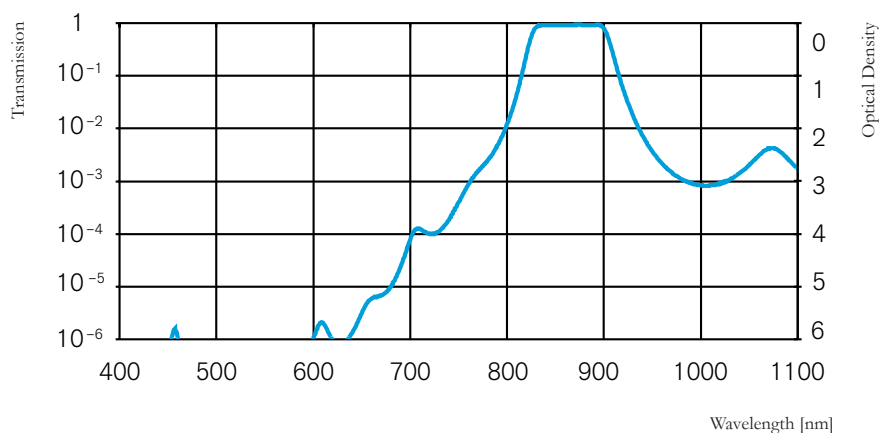
24 h at 49 °C and r.h. > 95 %

Temperature shift < 0.006 % of CWL per °C

Transmission spectrum of NIR Bandpass Filter SP, CWL @ 865nm



Blocking spectrum of NIR Bandpass Filter SP, CWL @ 865nm



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