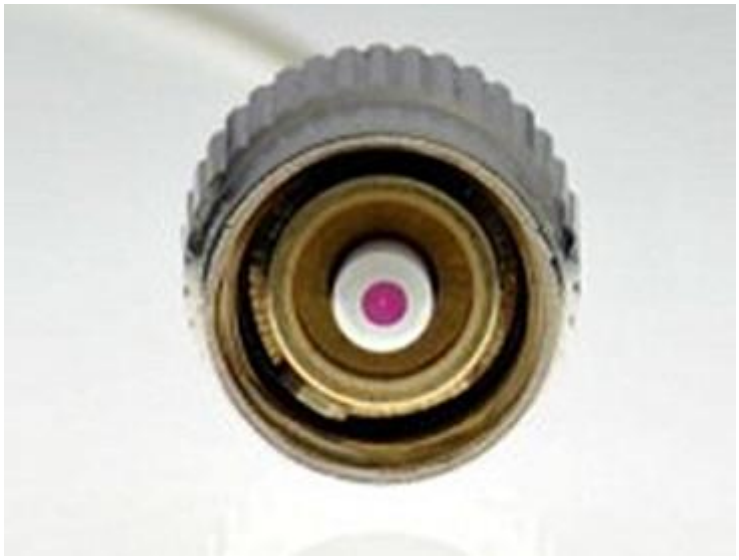
Fiber end face bandpass filter coating



Product Description

Idealphotonics' latest research and development provides a variety of coatings on the fiber head, including full/partial reflection film, long pass, short pass, band pass, and anti-reflection design. It should be understood that the performance of the interference coating depends on the angle of incidence (AOI), and the fiber presents a distribution from the AOI to the coating tip. In addition, our coating tip is hard enough to connect to other optical fibers, allowing the filter to be immersed in a glass filter configuration. The numerical aperture (NA) of the selected fiber and the way the fiber is connected in the application will affect the filter performance, so we ask customers to fill out the following checklist to help us realize the relevant coating customization services.

Part Number

BP-0760-037-60-1200

● Product features

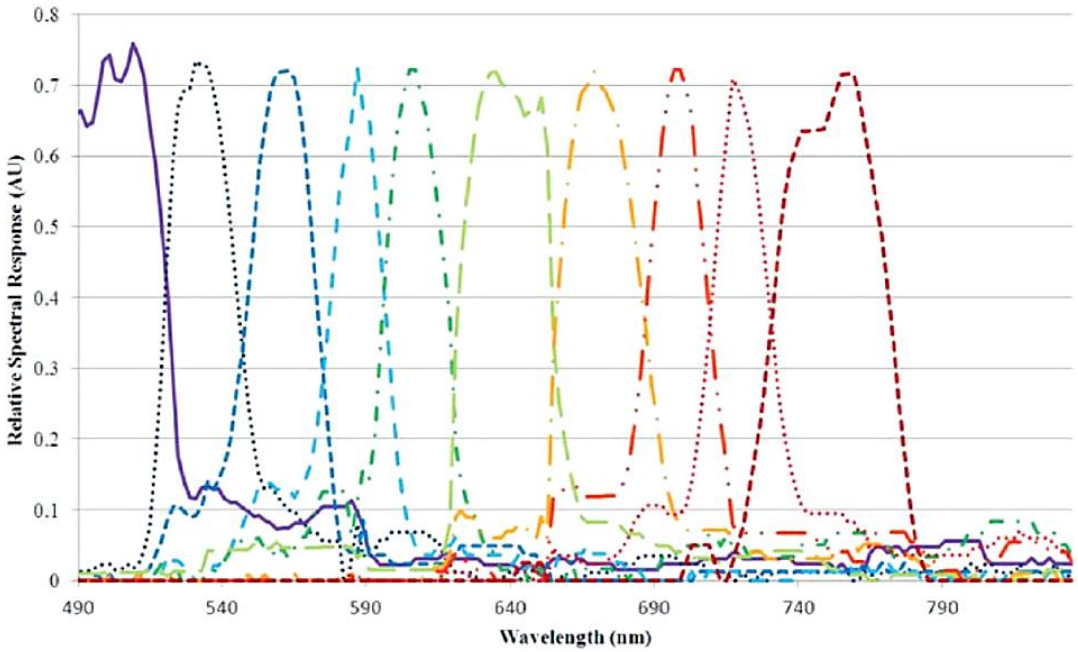
It can design and manufacture、 Large stock for rapid prototyping、 High volume production、 Selectable wavelengths

● Application area

Laser coupling、 Fiber lasers、 Fiber Raman probes、 Fiber-based flow cytometry、 Laser eye surgery、 Fiber interferometers

Parameters

Coating curve



Both single-mode and multimode fibers can be coated, although the angular distribution in multimode fiber must take into account the AOI distribution at the coating. Coatings can be designed to operate when coupled to another fiber or to air. We can offer a wide range of filter designs such as anti-reflection, bandpass, short-pass, long-pass, and partial reflectors.
Coated shorts can be connectorized, bare, tapered, or lensed fibers.

Filter film characteristics 1

- (circle one) LP SP BP Reflector (full or partial)
- Start wavelength ____ ±____
- Cut-off wavelength ____ ±____
- %T (peak)
- Attenuation wavelength range
- Attenuation OD
- %R (peak) ±
- %R wavelength range

Fiber characteristics 2

- Numerical aperture (NA)
- Core diameter
- Cladding diameter
- Fiber length
- Fiber material (glass, plastic, chalcogenide) Single mode or multimode at operating wavelength (circular)
- Mode filling degree (if known)_____
- Maximum operating temperature of the casing_____
- Others (polarization-maintaining fiber, microstructure fiber, etc.)

Fiber end face features3

- First end connector (FC, SC, LC, SMA, None)
- Second end connector (FC, SC, LC, SMA, None)
- If no connector (cleaved, lensed, bare fiber)
- Which end needs coating

Fiber Configuration4

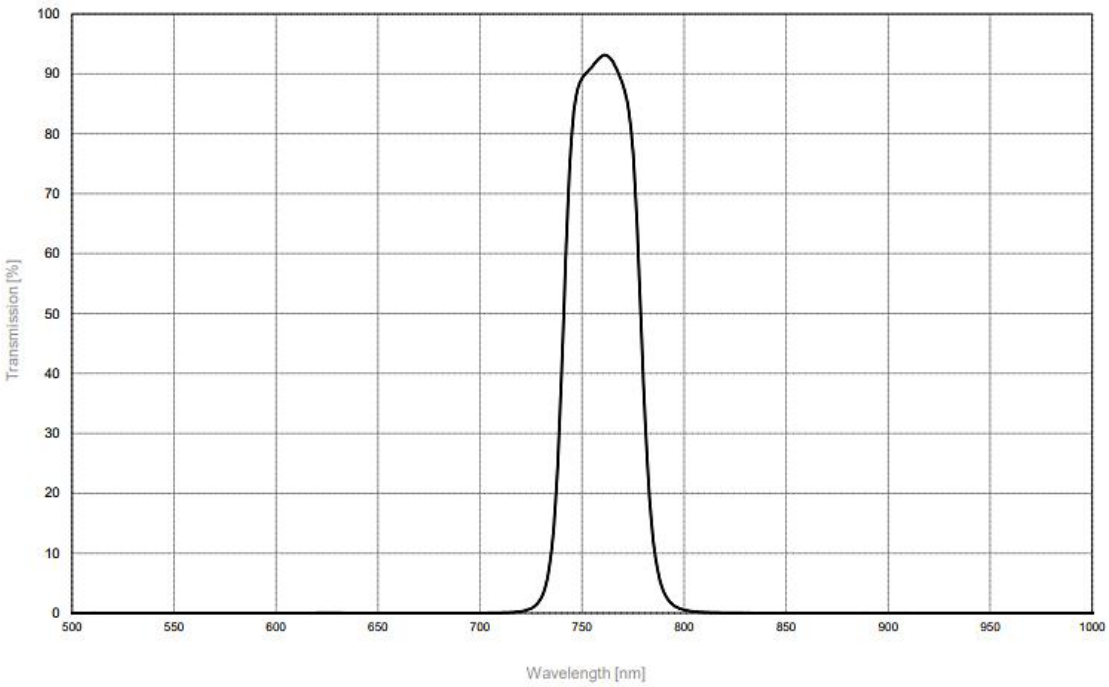
- Coated tip working in air
- Coated tip connected to uncoated tip
- Number of coatings required
- Fiber supplier

E.g.: BP-0760-037 Specifications:
CWL: 760 ±7 nm HW: 37 ±7 nm
Tmin: 60 %
Blocking: 1200 nm

Measured values:
CWL = 759.88 nm...OK
HW = 38.5 nm...OK
Cuton 5 % = 732.43 nm
Cutoff 5 % = 788.55 nm

Spectrogon:
HP1 = 740.63 nm
HP2 = 779.12 nm
Tpeak = 93.14 %...OK
Tavg = 90.46 %

Slope 1 = 1.55 %
Slope 2 = 1.7 %



Notes:
1. The steep spectral edges and tight blocking specifications lead to designs with high physical thickness. We have found that the tip of the fiber can support up to 6 microns of material. Thick coatings may delaminate and/or cause core-cladding leakage. Customers are advised to use the recommended filter thickness.
2. High NA multimode fibers lead to high AOI. High AOI causes any interference filter to blue shift. The observed spectral performance will be a weighted average of the performance at each angle. These spectral shifts can be modeled and measured in

the AOI lab.

3.Idealphotonics monitors the reflectivity of the fiber tip during the deposition process. This requires that the uncoated end of the monitoring fiber must be terminated with a connector (preferably FC/PC). If the connected end is not suitable for a given application, we will place an additional fiber near the customer's fiber for monitoring.

4. If a single-mode tip is coated and connected to another single-mode tip, a near-zero blue shift will occur. The number of fiber lengths allowed for one deposition depends on the fiber configuration (connected, cleaved, bundled, etc.).