

Bandpass Interference Filters | VPF

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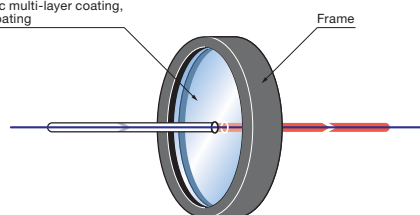
VPF can transmit a specified wavelength range at a spectrum width (half-width) as precise as 1nm to 40nm. It is used to select spectral line from light-sources range from discharge lamp to different lasers wavelength.

- The filters are made of dielectric coating and metallic coating which assure a steep rise and a sharp cut-off spectrum.
- The filters are metallically framed which make it easy to be mounted into a holder.
- Large choice of spectrum, range from UV 214nm to IR 1550nm.



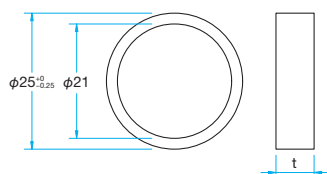
Schematic

Material:
Several optics with
dielectric multi-layer coating,
Metal coating



Outline Drawing

(in mm)



Specifications

Blocking range	<0.01% (1nm – 3.0 μ m)
Surface Quality (Scratch-Dig)	80-50
Incident angle	0°
Coating	Dielectric multi-layer coating, Metal coating

Guide

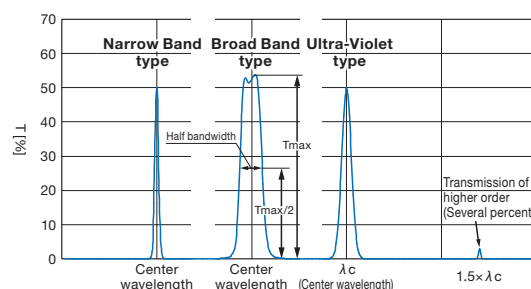
- For filter size of 50 mm, please see VPF-50S or see the high transmittance filter interference filter.
- For custom sizes or center wavelengths or specified spectrum half-width which are not mentioned on-line or in this catalog, please contact our Sales Division.

Attention

- The filters characteristic depends on the angle of incident. If the angle of the light axis inclines, the center wavelength switches to shorter wavelength side and the transmittance may decrease. The selected spectrum width is precise more the inclination tolerance is small. Make sure that the incident angle is set at 0 degrees for an efficient experiment.
- The filter usage temperature of environment is set at 23°C (Celsius), increased temperature moves the center wavelength longer wavelength side.
- Therefore a high precision set up is required for obtaining an efficient experiment each filter thickness is different.
- Interference filters are heat absorptive, therefore they are not fit to use with high power laser and high energy pulsed laser.

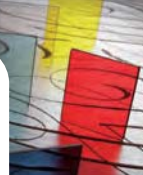
Explanation about spectrum half bandwidth

The feature of a band pass filter is valued by Spectrum half-width as an index. It is shown on the graph located at the right side. It exist in 3 different types; the narrow band, the broadband and the UV spectrum.



Compatible Optic Mounts

MHG-MP25-NL



214.0nm – 647.1nm						
Part Number	Center wavelength [nm]	Laser or Emission line spectrum	Half bandwidth [nm]	Maximum transmittance [%]	Thickness t [mm]	Type
VPF-25C-10-12-21400	214.0 ^{+3.0} _{-0.0}	Zn	10.0±2.0	>12	<4	UV
VPF-25C-10-15-22800	228.0 ^{+3.0} _{-0.0}	Cd	10.0±2.0	>15	<4	UV
VPF-25C-10-15-23200	232.0 ^{+3.0} _{-0.0}	Ni	10.0±2.0	>15	<4	UV
VPF-25C-10-15-23900	239.0 ^{+3.0} _{-0.0}	Co	10.0±2.0	>15	<4	UV
VPF-25C-10-12-25370	253.7 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>12	<4	UV
VPF-25C-10-12-26500	265.0 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>12	<4	UV
VPF-25C-10-12-28000	280.0 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>12	<4	UV
VPF-25C-10-15-28900	289.0 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>15	<4	UV
VPF-25C-10-15-29670	296.7 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>15	<4	UV
VPF-25C-10-15-30710	307.1 ^{+3.0} _{-0.0}	Zn	10.0±2.0	>15	<4	UV
VPF-25C-10-15-31300	313.0 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>15	<4	UV
VPF-25C-10-25-32600	326.0 ^{+3.0} _{-0.0}	Cd	10.0±2.0	>25	<8	Broad Band
VPF-25C-10-25-33400	334.0 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>25	<8	Broad Band
VPF-25C-03-20-33710	337.1 ^{+0.5} _{-0.0}	N ₂	3.0±0.5	>20	<7	Narrow Band
VPF-25C-10-25-33710	337.1 ^{+3.0} _{-0.0}	N ₂	10.0±2.0	>25	<7	Broad Band
VPF-25C-10-25-35000	350.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>25	<7	Broad Band
VPF-25C-40-25-35000	350.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>25	<7	Broad Band
VPF-25C-10-25-35500	355.0 ^{+3.0} _{-0.0}	YAG3 ω	10.0±2.0	>25	<7	Broad Band
VPF-25C-10-25-36500	365.0 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>25	<7	Broad Band
VPF-25C-10-40-40000	400.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>40	<7	Broad Band
VPF-25C-40-40-40000	400.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>40	<7	Broad Band
VPF-25C-10-40-40470	404.7 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>40	<7	Broad Band
VPF-25C-10-40-43580	435.8 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>40	<7	Broad Band
VPF-25C-01-30-44160	441.6 ^{+0.2} _{-0.0}	He-Cd	1.0±0.2	>30	<8.5	Narrow Band
VPF-25C-03-35-44160	441.6 ^{+0.5} _{-0.0}	He-Cd	3.0±0.5	>35	<8.5	Narrow Band
VPF-25C-10-45-44160	441.6 ^{+3.0} _{-0.0}	He-Cd	10.0±2.0	>45	<7	Broad Band
VPF-25C-10-45-45000	450.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>45	<7	Broad Band
VPF-25C-40-50-45000	450.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>50	<7	Broad Band
VPF-25C-10-45-45550	455.5 ^{+3.0} _{-0.0}	Cs	10.0±2.0	>45	<7	Broad Band
VPF-25C-01-30-45790	457.9 ^{+0.2} _{-0.0}	Ar	1.0±0.2	>30	<8.5	Narrow Band
VPF-25C-03-35-45790	457.9 ^{+0.5} _{-0.0}	Ar	3.0±0.5	>35	<8.5	Narrow Band
VPF-25C-10-45-45790	457.9 ^{+3.0} _{-0.0}	Ar	10.0±2.0	>45	<7	Broad Band
VPF-25C-10-45-48610	486.1 ^{+3.0} _{-0.0}	H	10.0±2.0	>45	<7	Broad Band
VPF-25C-01-40-48800	488.0 ^{+0.2} _{-0.0}	Ar	1.0±0.2	>40	<8.5	Narrow Band
VPF-25C-03-45-48800	488.0 ^{+0.5} _{-0.0}	Ar	3.0±0.5	>45	<8.5	Narrow Band
VPF-25C-10-50-48800	488.0 ^{+3.0} _{-0.0}	Ar	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-50000	500.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>50	<7	Broad Band
VPF-25C-40-50-50000	500.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>50	<7	Broad Band
VPF-25C-10-50-50850	508.5 ^{+3.0} _{-0.0}	Cd	10.0±2.0	>50	<7	Broad Band
VPF-25C-01-40-51450	514.5 ^{+0.2} _{-0.0}	Ar	1.0±0.2	>40	<8.5	Narrow Band
VPF-25C-03-45-51450	514.5 ^{+0.5} _{-0.0}	Ar	3.0±0.5	>45	<8.5	Narrow Band
VPF-25C-10-50-51450	514.5 ^{+3.0} _{-0.0}	Ar	10.0±2.0	>50	<7	Broad Band
VPF-25C-01-40-53200	532.0 ^{+0.2} _{-0.0}	YAG2 ω	1.0±0.2	>40	<8.5	Narrow Band
VPF-25C-03-45-53200	532.0 ^{+0.5} _{-0.0}	YAG2 ω	3.0±0.5	>45	<8.5	Narrow Band
VPF-25C-10-50-53200	532.0 ^{+3.0} _{-0.0}	YAG2 ω	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-53500	535.0 ^{+3.0} _{-0.0}	Ti	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-54610	546.1 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-55000	550.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>50	<7	Broad Band
VPF-25C-40-50-55000	550.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>50	<7	Broad Band
VPF-25C-10-50-57700	577.0 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-58930	589.3 ^{+3.0} _{-0.0}	Na	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-60000	600.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>50	<7	Broad Band
VPF-25C-40-50-60000	600.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>50	<7	Broad Band
VPF-25C-01-40-63280	632.8 ^{+0.2} _{-0.0}	He-Ne	1.0±0.2	>40	<8.5	Narrow Band
VPF-25C-03-45-63280	632.8 ^{+0.5} _{-0.0}	He-Ne	3.0±0.5	>45	<8.5	Narrow Band
VPF-25C-10-50-63280	632.8 ^{+3.0} _{-0.0}	He-Ne	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-63620	636.2 ^{+3.0} _{-0.0}	Zn	10.0±2.0	>50	<7	Broad Band
VPF-25C-03-45-64710	647.1 ^{+0.5} _{-0.0}	Kr	3.0±0.5	>45	<8.5	Narrow Band
VPF-25C-10-50-64710	647.1 ^{+3.0} _{-0.0}	Kr	10.0±2.0	>50	<7	Broad Band

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650.0nm – 1550.0nm						
Part Number	Center wavelength [nm]	Laser or Emission line spectrum	Half bandwidth [nm]	Maximum transmittance [%]	Thickness t [mm]	Type
VPF-25C-10-50-65000	650.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>50	<7	Broad Band
VPF-25C-40-50-65000	650.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>50	<7	Broad Band
VPF-25C-10-50-65630	656.3 ^{+3.0} _{-0.0}	H	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-67000	670.0 ^{+3.0} _{-0.0}	LD	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-69430	694.3 ^{+3.0} _{-0.0}	Ruby	10.0±2.0	>50	<7	Broad Band
VPF-25C-10-50-70000	700.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>50	<7	Broad Band
VPF-25C-40-50-70000	700.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>50	<7	Broad Band
VPF-25C-10-45-75000	750.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>45	<7	Broad Band
VPF-25C-40-40-75000	750.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>40	<7	Broad Band
VPF-25C-10-45-76650	766.5 ^{+3.0} _{-0.0}	K	10.0±2.0	>45	<7	Broad Band
VPF-25C-10-45-78000	780.0 ^{+3.0} _{-0.0}	LD	10.0±2.0	>45	<7	Broad Band
VPF-25C-10-45-79470	794.7 ^{+3.0} _{-0.0}	Rb	10.0±2.0	>45	<7	Broad Band
VPF-25C-10-45-80000	800.0 ^{+3.0} _{-0.0}	—	10.0±2.0	>45	<7	Broad Band
VPF-25C-40-45-80000	800.0 ^{+10.0} _{-0.0}	—	40.0±8.0	>45	<7	Broad Band
VPF-25C-10-45-81000	810.0 ^{+3.0} _{-0.0}	LD	10.0±2.0	>45	<7	Broad Band
VPF-25C-10-45-83000	830.0 ^{+3.0} _{-0.0}	LD	10.0±2.0	>45	<7	Broad Band
VPF-25C-10-45-90500	905.0 ^{+3.0} _{-0.0}	LD	10.0±2.0	>45	<7	Broad Band
VPF-25C-10-40-10140	1014.0 ^{+3.0} _{-0.0}	Hg	10.0±2.0	>40	<8.5	Broad Band
VPF-25C-01-30-10640	1064.0 ^{+0.2} _{-0.0}	YAG	1.0±0.2	>30	<8.5	Narrow Band
VPF-25C-03-35-10640	1064.0 ^{+0.5} _{-0.0}	YAG	3.0±0.5	>35	<8.5	Narrow Band
VPF-25C-10-40-10640	1064.0 ^{+3.0} _{-0.0}	YAG	10.0±2.0	>40	<8.5	Broad Band
VPF-25C-10-35-13000	1300.0 ^{+3.0} _{-0.0}	LD	10.0±2.0	>35	<8.5	Narrow Band
VPF-25C-10-30-15000	1500.0 ^{+3.0} _{-0.0}	LD	10.0±2.0	>30	<8.5	Narrow Band
VPF-25C-10-30-15500	1550.0 ^{+3.0} _{-0.0}	LD	10.0±2.0	>30	<8.5	Narrow Band

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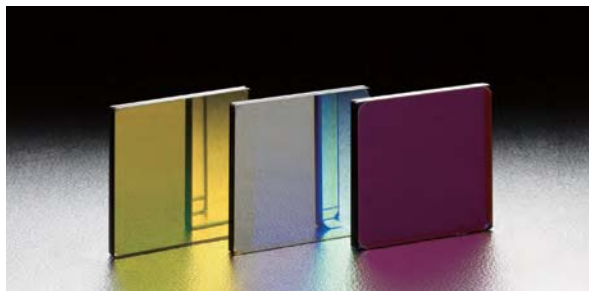
Dielectric Filters

Etalon

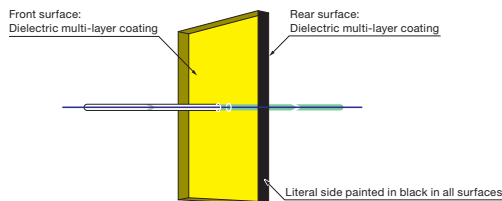
VPF band pass filter with effective diameter at 45mm square.

Fit for experimentation that needs large collimated light incident on sample or on a large diverges light which requires a larger size band pass filter.

- The filters are made of dielectric multilayer coating and metallic coating which assure a steep rise and a sharp cut-off spectrum.
- A selection of filter from the spectrum half-width from 10nm to 12nm, the center spectrum from 400nm to 900nm with 10nm increments.
- The whole lateral side of the filter is painted in black to avoid scattered light effects.

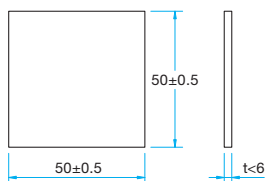


Schematic



Outline Drawing

(in mm)



400nm – 650nm

Part Number	Center wavelength [nm]	Half bandwidth [nm]	Maximum transmittance [%]
VPF-50S-10-45-40000	400±2	10±2	>45
VPF-50S-10-45-41000	410±2	10±2	>45
VPF-50S-10-45-42000	420±2	10±2	>45
VPF-50S-10-45-43000	430±2	10±2	>45
VPF-50S-10-45-44000	440±2	10±2	>45
VPF-50S-10-50-45000	450±2	10±2	>50
VPF-50S-10-50-46000	460±2	10±2	>50
VPF-50S-10-50-47000	470±2	10±2	>50
VPF-50S-10-50-48000	480±2	10±2	>50
VPF-50S-10-50-49000	490±2	10±2	>50
VPF-50S-10-55-50000	500±2	10±2	>55
VPF-50S-10-55-51000	510±2	10±2	>55
VPF-50S-10-55-52000	520±2	10±2	>55
VPF-50S-10-55-53000	530±2	10±2	>55
VPF-50S-10-55-54000	540±2	10±2	>55
VPF-50S-10-60-55000	550±2	10±2	>60
VPF-50S-10-60-56000	560±2	10±2	>60
VPF-50S-10-60-57000	570±2	10±2	>60
VPF-50S-10-60-58000	580±2	10±2	>60
VPF-50S-10-60-59000	590±2	10±2	>60
VPF-50S-12-60-60000	600±2	12±2	>60
VPF-50S-12-60-61000	610±2	12±2	>60
VPF-50S-12-60-62000	620±2	12±2	>60
VPF-50S-12-60-63000	630±2	12±2	>60
VPF-50S-12-60-64000	640±2	12±2	>60
VPF-50S-12-60-65000	650±2	12±2	>60

Specifications

Material	Optical Glass
Clear aperture	≥45×45mm
Blocking range	0.01% (1 – 1200nm)
Incident angle	0°
Coating	Dielectric multi-layer coating

Guide

- For filter size of diameter 25mm, please see VPF-25C or see the high transmittance filter interference filter(YIF).
- For custom sizes or form which are not mentioned on-line or in this catalog or for any specific holder for this filter, please contact our Sales Division.

Attention

- Heatproof temperature at 80°C (Celsius) as maximum, please avoid using it with higher temperature light-source.
- The filters are heat absorptive, therefore they are not fit to use with high power laser and high energy pulsed laser.
- The filters characteristic depends on the angle of incident. If the angle of the light axis inclines, the center wavelength shifts to shorter wavelength side and the transmittance may decrease. More the selected spectrum width is precise more the inclination tolerance is small. Make sure that the incident angle is set at 0 degrees for an efficient experiment.
- The filters usage temperature of environment is set at 23°C (Celsius), more the temperature is high more the center wavelength shifts to the longer wavelength side.
- Therefore a high precision set up is required for obtaining an efficient experiment each filter thickness is different.

660nm – 900nm

Part Number	Center wavelength [nm]	Half bandwidth [nm]	Maximum transmittance [%]
VPF-50S-12-60-66000	660±2	12±2	>60
VPF-50S-12-60-67000	670±2	12±2	>60
VPF-50S-12-60-68000	680±2	12±2	>60
VPF-50S-12-60-69000	690±2	12±2	>60
VPF-50S-12-65-70000	700±2	12±3	>65
VPF-50S-12-65-71000	710±3	12±3	>65
VPF-50S-12-65-72000	720±3	12±3	>65
VPF-50S-12-65-73000	730±3	12±3	>65
VPF-50S-12-65-74000	740±3	12±3	>65
VPF-50S-12-65-75000	750±3	12±3	>65
VPF-50S-12-65-76000	760±3	12±3	>65
VPF-50S-12-65-77000	770±3	12±3	>65
VPF-50S-12-65-78000	780±3	12±3	>65
VPF-50S-12-65-79000	790±3	12±3	>65
VPF-50S-12-65-80000	800±3	12±3	>65
VPF-50S-12-65-81000	810±3	12±3	>65
VPF-50S-12-65-82000	820±3	12±3	>65
VPF-50S-12-65-83000	830±3	12±3	>65
VPF-50S-12-65-84000	840±3	12±3	>65
VPF-50S-12-65-85000	850±3	12±3	>65
VPF-50S-12-65-86000	860±3	12±3	>65
VPF-50S-12-65-87000	870±3	12±3	>65
VPF-50S-12-65-88000	880±3	12±3	>65
VPF-50S-12-65-89000	890±3	12±3	>65
VPF-50S-12-65-90000	900±3	12±3	>65

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