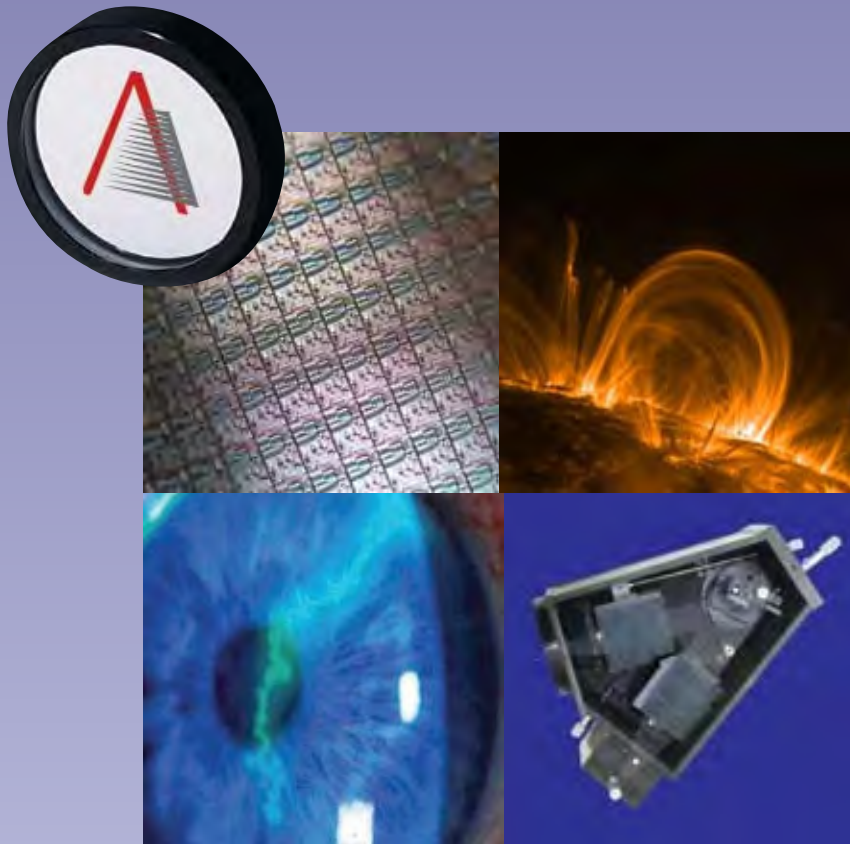


OPTICS & COATINGS

120nm - 1064nm



Semiconductor | Aerospace | Laser | Analytic Instruments

UV Bandpass Filters

Narrow, Broad and Wideband

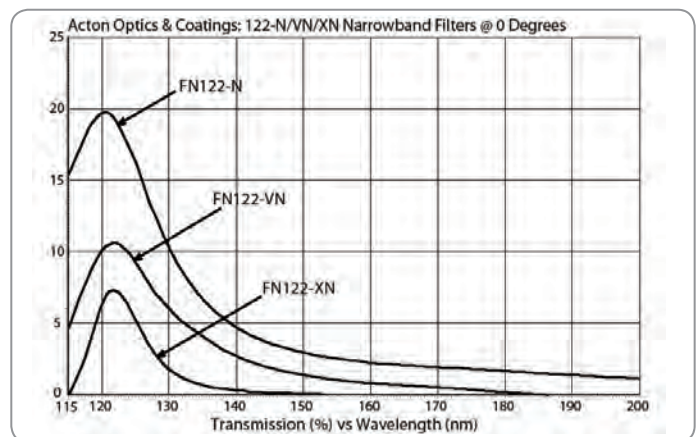
Acton's standard bandpass filters are made from the highest quality optical materials for use in research and industrial applications. Filters are visually and optically inspected before they are shipped, and include individual transmittance curves to show the filter's performance characteristics. Detailed "rejection" curves may be purchased at the time of manufacture. Image quality filters are available on request. Other wavelengths and sizes are available. Please feel free to contact us with details of your OEM filter requirements.

See the following page for examples of transmission traces from selected Acton bandpass filters.



VUV Filter Characteristics

Acton Optics & Coatings' 121.6nm Lyman Alpha filters demonstrate the effect of bandwidth on transmission in VUV-UV filters. Overall filter transmission is limited due to material and deposition constraints. As bandwidth is decreased, the peak transmission decreases in response. The benefit is added rejection in the UV-VIS range, illustrated by the combined curve diagram to the right, which shows three variations of Acton's 122nm bandpass filters. Depending on the application's required bandwidth, peak transmission and rejection are all factors in the design of the filter. See the following page for examples of transmission traces from selected Acton bandpass filters.



UV Bandpass Filters

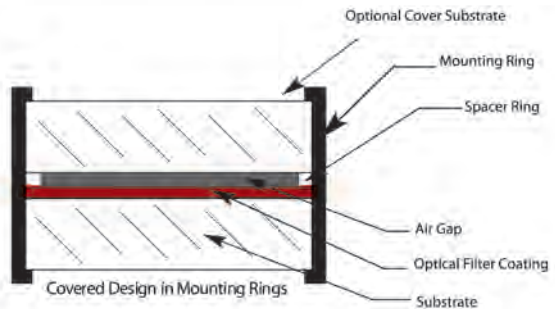
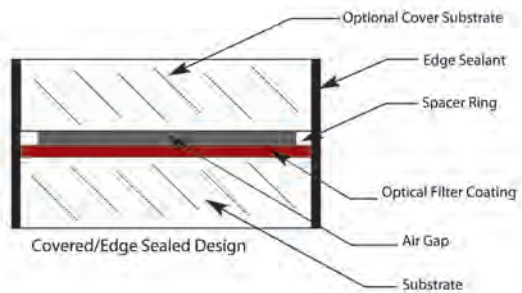
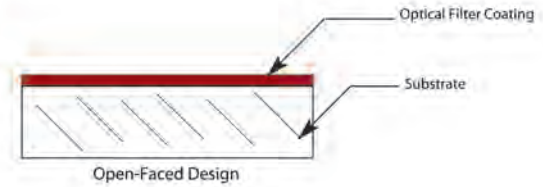
Available Designs for Standard Bandpass Filters

Open-Faced - The open-faced design includes a substrate with an optical filter coating on one surface. Open-faced filters must be handled with care as the soft filter coating is exposed. Potential damage from moisture, atmospheric contaminants or handling can be reduced by sealing the filter with a protective fused silica cover, as shown below (available above 190nm only).

Covered / Edge Sealed - Filters above 190nm may be supplied with a fused silica cover for protective purposes. As shown in the diagram, a spacer ring is placed between the substrates to form a small air gap, then the edges are sealed. This design enables the filter to be handled without risk of touching the delicate filter coating. Please note that covering a filter decreases its transmission by 2-3%.

Edge sealing adds approximately 0.010" (0.254mm) to the diameter of the filter. Total thickness for a covered and edge sealed filter is approximately twice that of an open-faced design. Exact dimensions are available from the Optics Sales Department.

Mounted - Open-faced or covered filters (without edge sealant) can be supplied in metal mounting rings, if desired. The rings are constructed from aluminum and are black anodized. Mounting a filter reduces clear aperture and increases the outside diameter as outlined below.



Diameter Information for -N, -B, -W and -VBB Filters



Unmounted Filter Diameter	Diameter Tolerance	Mounted Filter Diameter $\pm 0.005''$	Unmounted Filter Thickness	Mounted Thickness	Clear Aperture
0.5" (12.7mm)	+0.00"/-0.005" (+0/-0.127mm)	0.625" (15.88mm)	2mm	0.300" (7.62mm)	0.450" (11.43mm)
1.0" (25.4mm)	+0.00"/-0.005" (+0/-0.127mm)	1.200" (30.48mm)	2.5mm	0.375" (9.53mm)	0.800" (20.32mm)
2.0" (50.8mm)	+0.00"/-0.005" (+0/-0.127mm)	2.225" (56.52mm)	4mm	0.500" (12.7mm)	1.900" (48.26mm)

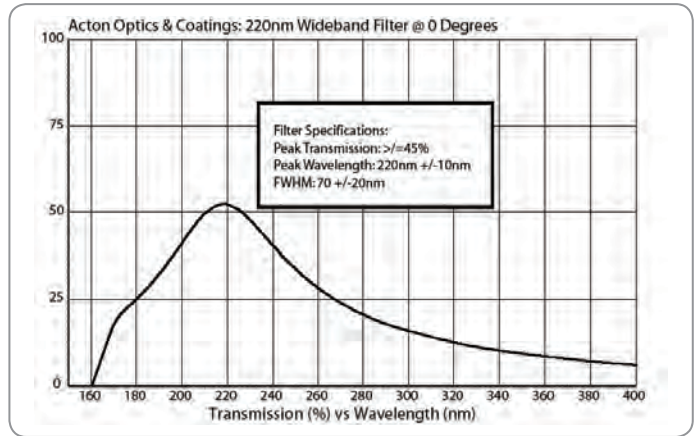
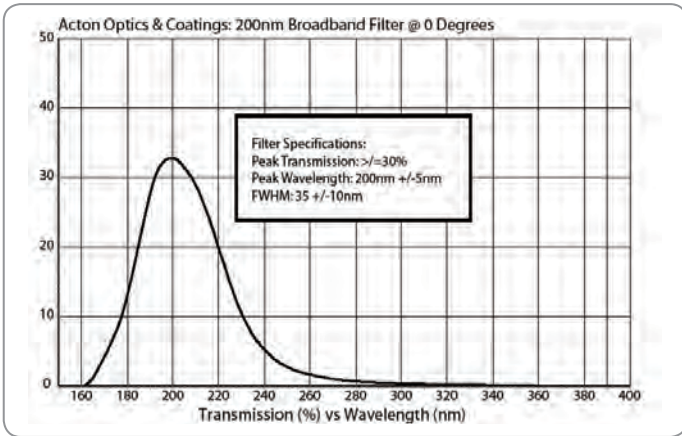
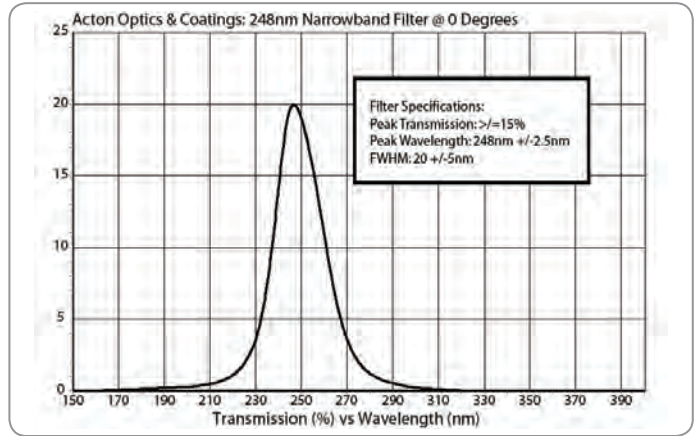
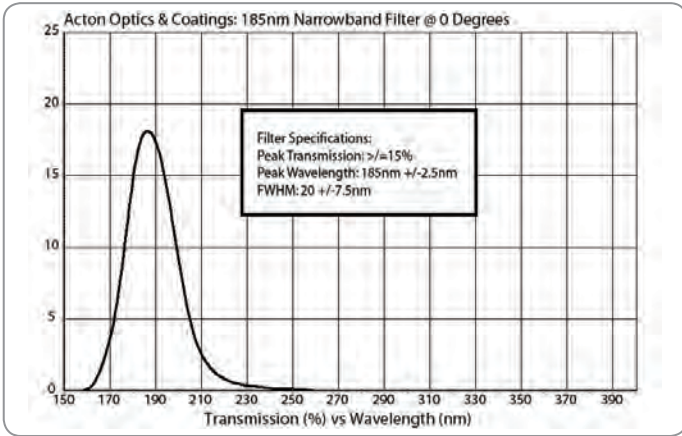
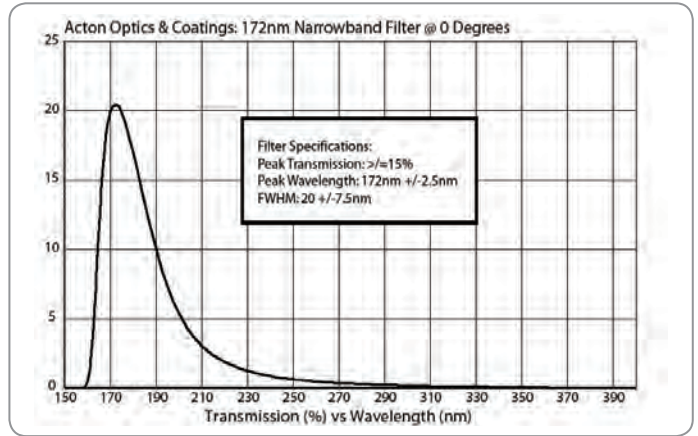
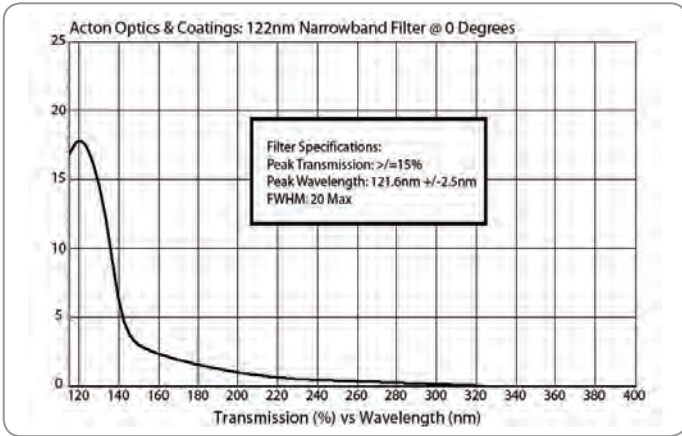
NOTE: Filters are supplied open-faced unless otherwise specified

* 2.0" Diameter 122-157nm filters are 5mm thick

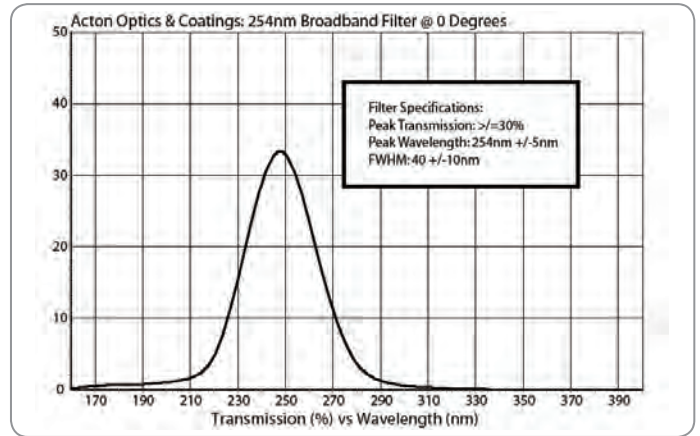
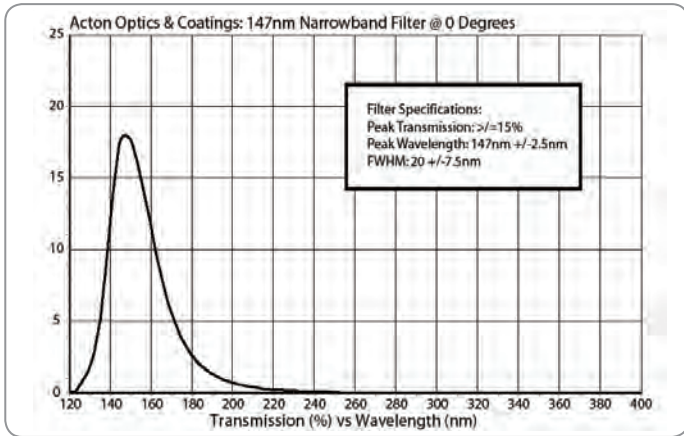
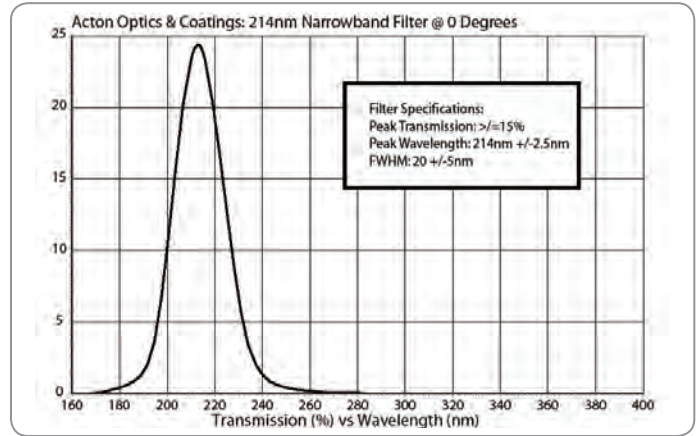
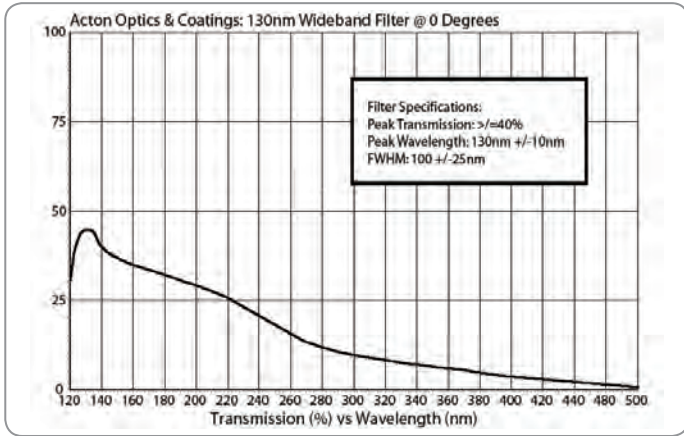
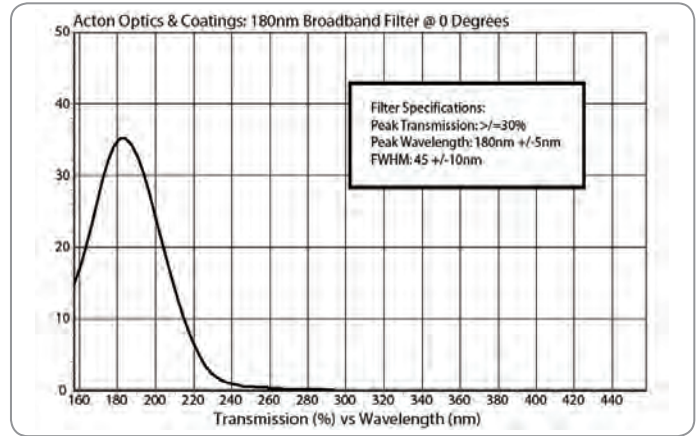
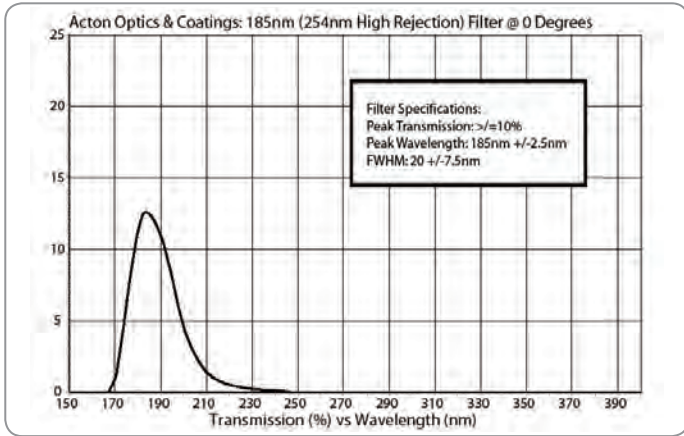
Filter Material Information

Wavelengths	120-150nm	157nm	170-320nm
Substrate Material	VUV MgF ₂	VUV CaF ₂	UV Grade Fused Silica

Narrow, Broad and Wideband Filters



Narrow, Broad and Wideband Filters



UV Bandpass Filters

Narrowband Filter Specifications/Part Numbers



Peak Wavelength (nm)	FWHM (nm)	Min. Peak Transmission	0.5" Diameter 2mm Thick	1.0" Diameter 2.5mm Thick	2.0" Diameter 4mm thick
122 +/-2.5nm	10 max.	5%	FN122-XN-.5D	FN122-XN-1D	FN122-XN-2D
122 +/-2.5nm	15 max.	10%	FN122-VN-.5D	FN122-VN-1D	FN122-VN-1D
122 +/-2.5nm	20 max.	15%	FN122-N-.5D	FN122-N-1D	FN122-N-2D
126 +/-2.5nm	20 +/-5	15%	FN126-N-.5D	FN126-N-1D	FN126-N-2D
130 +/-2.5nm	20 +/-5	15%	FN130-N-.5D	FN130-N-1D	FN130-N-2D
135 +/-2.5nm	20 +/-7.5	15%	FN135-N-.5D	FN135-N-1D	FN135-N-2D
140 +/-2.5nm	20 +/-5	15%	FN140-N-.5D	FN140-N-1D	FN140-N-2D
147 +/-2.5nm	20 +/-7.5	15%	FN147-N-.5D	FN147-N-1D	FN147-N-2D
150 +/-2.5nm	20 +/-5	15%	FN150-N-.5D	FN150-N-1D	FN150-N-2D
155 +/-2.5nm	20 +/-5	12%	FN155-N-.5D	FN155-N-1D	FN155-N-2D
157 +/-2.5nm	20 +/-5	12%	FN157-N-.5D	FN157-N-1D	FN157-N-2D
160 +/-2.5nm	20 +/-7.5	12%	FN160-N-.5D	FN160-N-1D	FN160-N-2D
172 +/-2.5nm	20 +/-7.5	15%	FN172-N-.5D	FN172-N-1D	FN172-N-2D
180 +/-2.5nm	20 +/-7.5	15%	FN180-N-.5D	FN180-N-1D	FN180-N-2D
185 +/-2.5nm	20 +/-7.5	15%	FN185-N-.5D	FN185-N-1D	FN185-N-2D
185 +/-2.5nm	20 +/-7.5	10%	FN185-HR-.5D	FN185-HR-1D	FN185-HR-2D
190 +/-2.5nm	20 +/-5	15%	FN190-N-.5D	FN190-N-1D	FN190-N-2D
193 +/-2.5nm	20 +/-5	15%	FN193-N-.5D	FN193-N-1D	FN193-N-2D
200 +/-2.5nm	20 +/-5	15%	FN200-N-.5D	FN200-N-1D	FN200-N-2D
205 +/-2.5nm	20 +/-5	15%	FN205-N-.5D	FN205-N-1D	FN205-N-2D
210 +/-2.5nm	20 +/-5	15%	FN210-N-.5D	FN210-N-1D	FN210-N-2D
214 +/-2.5nm	20 +/-5	15%	FN214-N-.5D	FN214-N-1D	FN214-N-2D
220 +/-2.5nm	20 +/-5	15%	FN220-N-.5D	FN220-N-1D	FN220-N-2D
222 +/-2.5nm	20 +/-5	15%	FN222-N-.5D	FN222-N-1D	FN222-N-2D
230 +/-2.5nm	20 +/-5	15%	FN230-N-.5D	FN230-N-1D	FN230-N-2D
240 +/-2.5nm	20 +/-5	15%	FN240-N-.5D	FN240-N-1D	FN240-N-2D
250 +/-2.5nm	20 +/-5	15%	FN250-N-.5D	FN250-N-1D	FN250-N-2D
254 +/-2.5nm	20 +/-5	15%	FN254-N-.5D	FN254-N-1D	FN254-N-2D

UV Bandpass Filters

Broadband and Wideband Filter Specifications/Part Numbers



Peak Wavelength (nm) <i>Broadband</i>	FWHM (nm)	Min. Peak Transmission	0.5" Diameter 2mm Thick	1.0" Diameter 2.5mm Thick	2.0" Diameter 4mm thick
130 +/-5nm	40 +/-10	30%	FB130-B-.5D	FB130-B-1D	FB130-B-2D
140 +/-5nm	60 +/-10	30%	FB140-B-.5D	FB140-B-1D	FB140-B-2D
150 +/-5nm	60 +/-10	30%	FB150-B-.5D	FB150-B-1D	FB150-B-2D
180 +/-5nm	40 +/-10	30%	FB180-B-.5D	FB180-B-1D	FB180-B-2D
190 +/-5nm	35 +/-10	30%	FB190-B-.5D	FB190-B-1D	FB190-B-2D
200 +/-5nm	35 +/-10	30%	FB200-B-.5D	FB200-B-1D	FB200-B-2D
210 +/-5nm	35 +/-10	30%	FB210-B-.5D	FB210-B-1D	FB210-B-2D
214 +/-5nm	35 +/-10	30%	FB214-B-.5D	FB214-B-1D	FB214-B-2D
220 +/-5nm	35 +/-10	30%	FB220-B-.5D	FB220-B-1D	FB220-B-2D
230 +/-5nm	35 +/-10	30%	FB230-B-.5D	FB230-B-1D	FB230-B-2D
240 +/-5nm	35 +/-10	30%	FB240-B-.5D	FB240-B-1D	FB240-B-2D
250 +/-5nm	40 +/-10	30%	FB250-B-.5D	FB250-B-1D	FB250-B-2D
254 +/-5nm	40 +/-10	30%	FB254-B-.5D	FB254-B-1D	FB254-B-2D

Peak Wavelength (nm) <i>Wideband</i>	FWHM (nm)	Min. Peak Transmission	0.5" Diameter 2mm Thick	1.0" Diameter 2.5mm Thick	2.0" Diameter 4mm thick
130+/-10nm	100 +/-25	40%	FW130-W-.5D	FW130-W-1D	FW130-W-2D
160 +/-10nm	100 +/-25	45%	FW160-W-.5D	FW160-W-1D	FW160-W-2D
200 +/-10nm	60+/-20	45%	FW200-W-.5D	FW200-W-1D	FW200-W-2D
250 +/-10nm	80 +/-20	45%	FW250-W-.5D	FW250-W-1D	FW250-W-2D
300 +/-10nm	100 +/-25	45%	FW300-W-.5D	FW300-W-1D	FW300-W-2D

Filters are available for all wavelengths up to 320nm. Specifications for FWHM, peak transmission and peak wavelength fall within peak wavelength ranges listed above.