

Astronomy Filters

UBVRI Filters

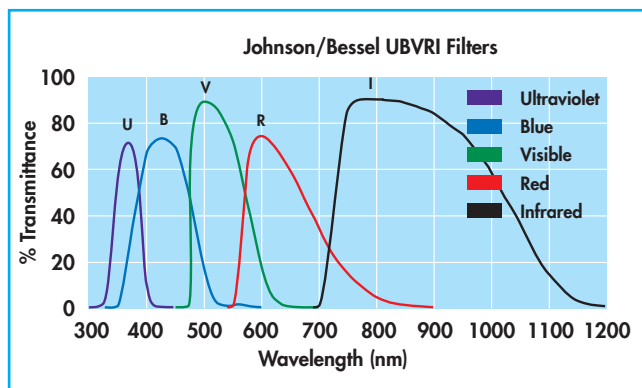
Andover Corporation now offers two sets of UBVRI filters—the Johnson/Bessel and the Kron/Cousins types—as standard items. These wideband filters isolate and measure large specific bands of light emitted by astronomical objects. Both types have the same ultraviolet, blue and visible filters, but different red and infrared filters. The Johnson/Bessel type is better suited for use with a photomultiplier tube, while the Kron/Cousins type is better suited for use with a Silicon CCD.

- Options for professionals and amateurs alike
- Ideal for photometric calibration



General Specifications	
Size Tolerance	+0/-0.25mm
Glass Thickness	5.0mm +/-0.1mm
Bevels	Break all sharp edges
Coating Durability	Per MIL-C-48497A moderate abrasion
Construction	Schott glass substrates (ground and polished) laminated with index-matching epoxy

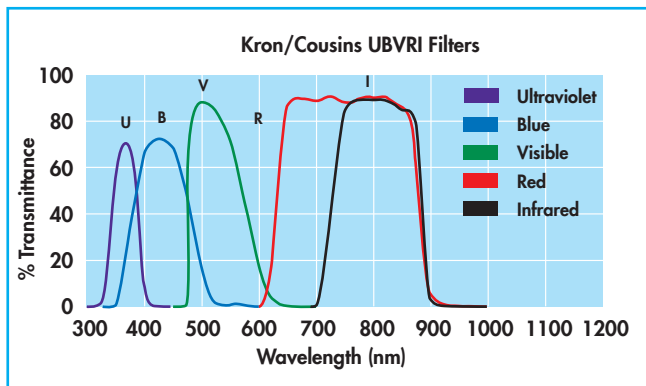
Optical Specifications	
Transmitted Wavefront	1/4 wave or better per 25mm
Parallelism	30 arc seconds or better
Surface Quality	60/40 or better per MIL-C-675
Optical Quality	Image Quality
AR Coatings	Exterior surfaces (appropriate to the filter passband)



Johnson/Bessel Filter Specifications					
	U	B	V	R	I
Nominal CW/L	365nm	440nm	550nm	630nm	900nm
Nominal FWHM	60nm	100nm	90nm	120nm	300nm
Nominal Transmission	> 50%	> 55%	> 70%	> 70%	> 70%

Part Number & Type							
Size & Shape		U	B	V	R	I	5-Piece Set
25mm Ø	○	JOHN-U-25	JOHN-B-25	JOHN-V-25	JOHN-R-25	JOHN-I-25	JOHN-FA-25
50mm Ø	○	JOHN-U-50	JOHN-B-50	JOHN-V-50	JOHN-R-50	JOHN-I-50	JOHN-FA-50
50 x 50mm SQ	□	JOHN-U-50S	JOHN-B-50S	JOHN-V-50S	JOHN-R-50S	JOHN-I-50S	JOHN-FA-50S
31mm Ø (Mounted)	○	JOHN-U-31M	JOHN-B-31M	JOHN-V-31M	JOHN-R-31M	JOHN-I-31M	JOHN-FA-31M
50mm Ø (Mounted)	○	JOHN-U-50M	JOHN-B-50M	JOHN-V-50M	JOHN-R-50M	JOHN-I-50M	JOHN-FA-50M

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Kron/Cousins Filter Specifications					
	U	B	V	R	I
Nominal CW/L	365nm	440nm	550nm	760nm	800nm
Nominal FWHM	60nm	100nm	90nm	250nm	150nm
Nominal Transmission	> 50%	> 55%	> 70%	> 70%	> 70%

Part Number & Type							
Size & Shape		U	B	V	R	I	5-Piece Set
25mm Ø	○	KRON-U-25	KRON-B-25	KRON-V-25	KRON-R-25	KRON-I-25	KRON-FA-25
50mm Ø	○	KRON-U-50	KRON-B-50	KRON-V-50	KRON-R-50	KRON-I-50	KRON-FA-50
50 x 50mm SQ	□	KRON-U-50S	KRON-B-50S	KRON-V-50S	KRON-R-50S	KRON-I-50S	KRON-FA-50S
31mm Ø (Mounted)	○	KRON-U-31M	KRON-B-31M	KRON-V-31M	KRON-R-31M	KRON-I-31M	KRON-FA-31M
50mm Ø (Mounted)	○	KRON-U-50M	KRON-B-50M	KRON-V-50M	KRON-R-50M	KRON-I-50M	KRON-FA-50M

Nebula Filters

A true nebula filter works by blocking out the sky glow (artificial light pollution) and enhancing deep-sky objects. Andover manufactures two types of filters that are considered best for viewing emission nebulae (created when a star is born) and planetary nebulae (created when a star is dying).

- Options for professionals and amateurs alike
- Ideal for eliminating light pollution

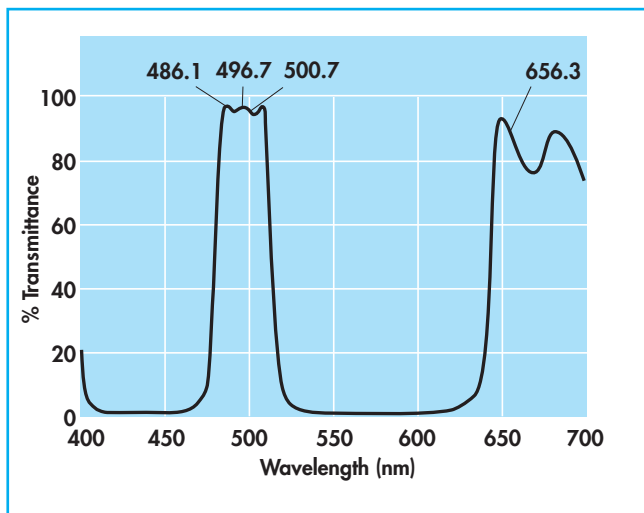
Optical Specifications	
Transmitted Wavefront	3-5 waves per 25mm
Parallelism	1 arc minute or better
Surface Quality	80/50 or better per MIL-C-675
AR Coatings	BBAR on all exterior surfaces
Durability	Per MIL-C-48497A, moderate abrasion

Physical Specifications		
	31mm Ø ○	50mm Ø ○
Mounting	Threaded eyepiece	Threaded ring
Construction	Laminated filter	Laminated filter
Outside Diameter	31.0mm +0/- .12mm	50.0mm +0/- .12mm
Clear Aperture	24.1mm diameter	45mm diameter
Thickness	10.0mm +0/- .5mm	8.2mm +0/- .5mm
Thread Size	1-1/8-40	M48-0.75

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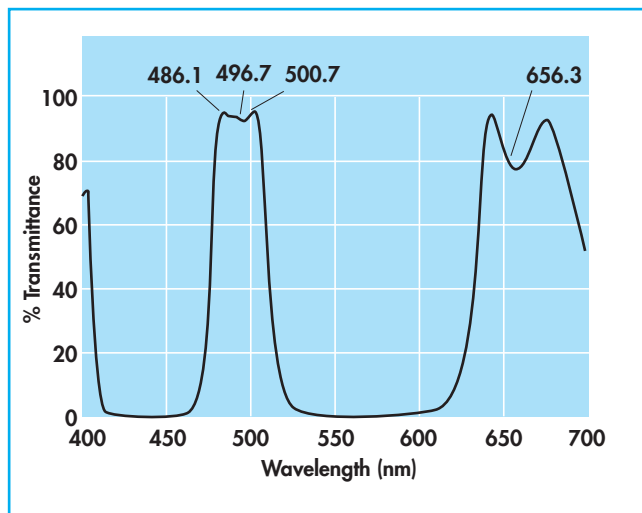
Three-Channel Nebula Filter

Suitable for viewing both types of nebulae, the Andover three-channel nebula filter is unique in its ability to block the sky glow and enhance the nebulae, as well as let through a selected band of blue light that improves the viewing of star clusters. This filter also transmits the hydrogen-alpha line, which is very important for photographing emission nebulae.



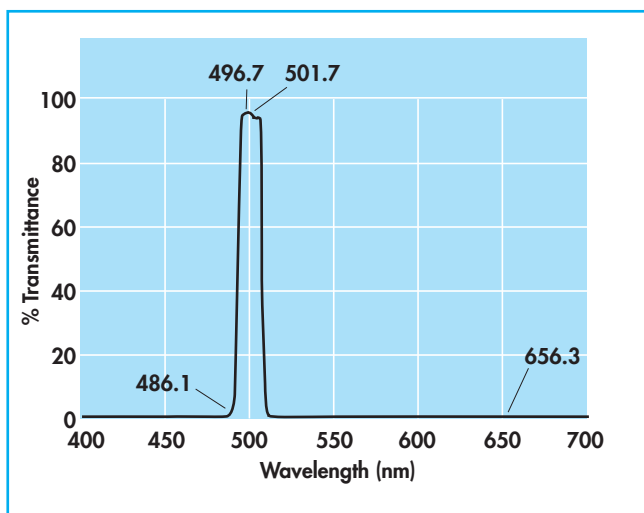
Blue Nebula Filter

Similar to the three-channel nebula filter, the blue nebula has greater transmission in the blue region, creating a more natural-looking view while retaining good contrast. The hard, first-surface coating renders this filter virtually indestructible.



O-III Nebula Filter

Featuring a narrower bandpass than the three-channel version, the O-III nebula filter blocks out much of the sky glow and isolates the two O-III lines centered at 496.9nm and 500.7nm. This filter significantly increases contrast, making it well-suited for viewing planetary nebulae.



	Size, Shape & Part Number	
	31mm Ø ○	50mm Ø ○
Three-Channel	Nebula-NB-31	Nebula-NB-50
O-III	Oxygen-III-31	Oxygen-III-50
Blue Nebula	Blue-Nebula-31	Blue-Nebula-50