

# Astrodon Photometrics UV, B, V, Rc, Ic Filters

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## The Standard for Photometric Measurements for Decades

Astrodon Photometrics UVBRI filters are 100%-Coated for long-term durability and consistency of research with the highest throughput.

Astrodon has been purchased by Optical Structures Incorporated (OSI). The web store has transitioned to the OSI store at [FarpointAstro.com](http://FarpointAstro.com).

You may purchase  
Astrodon Photometrics  
UV, B, V, Rc, Ic Filters  
directly from the  
manufacturer here.

## Astrodon Photometrics UV, B, V, Rc, Ic Filters

Astrodon Photometrics UV, B, V, Rc, Ic filters are 100%-coated for long-term durability and consistency of research. **UV, B, V, Rc, Ic** filters have been the standard for photometric measurements for decades. They have evolved over time as technology changed. H. Johnson in the 1950s and A.W.J. Cousins in the 1970s designed these filters for photomultiplier tubes (PMT). M. Bessell in the early 1990s selected colored glasses to match the Johnson/Cousins designs for CCD cameras of the time. However, Bessell's designs were based upon colored glasses available at the time. Some of those glasses (e.g. Schott KG-4 used in conjunction with Schott RG-9 to make the "I" photometric filter) have been discontinued. Lastly, PMTs of the time limited light past 900 nm, whereas modern CCDs are sensitive to 1100 nm. Thus, to truly match the Johnson/Cousins Ic filter, a dielectric coating must be used to block light past 900 nm for CCD systems. This cannot be achieved with colored glasses. We use Ic and Rc (c = Cousins) to designate that we match the Johnson/Cousins designs with our coated filters, as closely as possible.

### Astrodon Photometrics UV, B, V, Rc, Ic:

- Achieve the highest transmission possible for fainter objects
- Use hard-oxide durable coatings (no V filter fogging) for durability

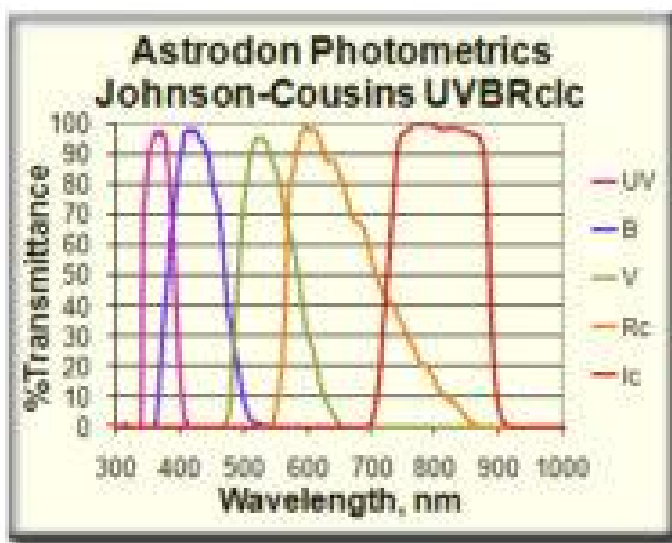
- Include A/R coating and construction that minimizes halos around stars
- Do not depend upon colored glasses being discontinued
- Includes Ic filter (which must use a 900 nm cut-off coating)
- Proud supplier to Las Cumbres Observatory Global Telescopes, AAVSO, Caltech/Palomar, NASA, MIT, Harvard, Apache Point, U. Valencia, and research organizations worldwide
- Proudly made in the U.S.A.

Internal absorption of light in colored glasses used to make traditional filters limits the final throughput. For example, the traditional UV filter made with colored glasses typically does not transmit more than 60-70% at the peak. The Rs filter, 70 -80%. **Astrodon Photometrics** 100%-coated filters exceed 95% (see actual scans below).

Schott BG-39 glass (with Schott GG-495 glass) used in the traditional photometric V filter may degrade and become cloudy due to surface crystallization from exposure to humidity. It needs to be covered by a clear glass to protect any exposed surface, making the filter thicker.

With the advent of high performance, hard and durable dielectric coatings, both high transmission in excess of 95% and durability can be achieved. Filters last longer and transmit more light. Durability is critical for long-term, consistent research.

**Astrodon Photometrics** UV, B, V, Rc, Ic filters adhere to the **Johnson/Cousins/Bessel** designs as closely as possible. The following is a spectral compilation of actual scans of the **Astrodon Photometrics** UV, B, V, Rc, Ic filter set.



## SPECIFICATIONS

- Spectral profiles designed after UV, B, V, Rc, Ic Johnson/Cousins
- Improved B filter (B\*\*\*) extending blocking >1100 nm and eliminating small light leaks that affected measurements of reddest stars in our initial filters
- 100% coated – no colored glass
- Peak transmission guaranteed > 90%
- <0.01%T(ave) typical out-of-band 300 – 1100 nm; additionally =<0.1% Tabs for B\*\*\*
- Striae-free, single fused silica substrates
- 1/4-wave propagated wavefront prior to coating
- <0.5 arcminute substrate parallelism
- 3.000 +/-0.025 mm substrate thickness
- Parfocal with all **Astrodon** filters
- Edge-blackened
- 1.25" mounted, 49.7 mm dia. and square unmounted

- Other sizes available on a custom basis for filters as large as 150 mm
- Proudly made in the U.S.A.

[Click here to download a PDF](#) of the Initial AAVSO test results of Astrodon Photometrics UVBRI and Sloan filters in 2009.