Internal absorption of light in the colored glasses used to make traditional filters limits the final transmission. For example, the UV filter typically does not transmit more than 59% of the light. The RC filter, 70-80%, new Astronom Photometrics coated filters exceed 95% (see actual scans below).

Schott RG-39 glass (with Schott GG-455 glass) in the traditional photometric filter may degrade and become cloudy due to surface crystallization from exposure to humidity. It needs to be covered by a clear glass to prevent any exposed surface, making the filter thicker.

With the advent of high performance, hard and durable dielectric coatings, both high transmission in excess of 90% and durability can be achieved. Filters last longer and transmit more light.

Astronom Photometrics UVBRc filters adhere to the Johnson-Cousins designs as closely as possible. The following is a partial compilation of actual scans of the Astronom Photometrics UVBRc filter set. They may be compared to the Astronom-Schott (coated glass) filters.

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**Astronom Photometrics Johnson-Cousins UVBRc**

- **Transmission (%)**
- **Wavelength (nm)**
- **Type**
- **Size**
- **Price**

**Unmounted B**
- (B'<i>70</i> 505)
- 1.25"
- $175
- 50mm dia. Unmounted V
- (V' <i>27R</i>)
- $350
- 50mm dia. Mounted V
- (V' <i>27R</i>)
- $175
- 50mm square Unmounted R
- (R' <i>27R</i>)
- $390
- 50mm dia. Mounted R
- (R' <i>27R</i>)
- $175
- 50mm dia. Unmounted Ic
- (Ic' <i>27R</i>)
- $350
- 50mm dia. Unmounted I
- (Ic' <i>5-R</i>)
- $390
- 50mm square Unmounted Ic
- (Ic' <i>5-R</i>)
- $390
- 1.25" mounted Perforated (UV Blocked Clear)
- (C2_27R)
- $140
- 50mm dia. Perforated (UV Blocked Clear)
- (C2_50R)
- $250
- 50mm dia. Perforated (UV Blocked Clear)
- (C2_50R)
- $295

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These filters are compatible with all Astronom LRGB and narrowband filters. You can add an Astronom Clear or Ha filter and they will be compatible with the limits of your optical system.

**Specifications:**
- Coatings designed after UV, B, V, R, I: Johnson/Cousins
- Improved B filter
- 100% coated filters - no colored glass
- Peak transmission guaranteed = 90%
- λ315: typical out-of-band 300-1100 nm, additional = <6.1% (Tobs for B’)
- 9% free, single fused silica substrates
- 1/4 wave propagated wavefront prior to coating
- <0.2 arcminute substrate parallelism
- 3.000 < <0.025 mm substrate thickness
- Edge-thickened
- 1.25" mounted
- 49.7 mm dia. unmounted (for most filter wheels, e.g. 5200)
- 49.7 x 49.7 mm square unmounted