

NEW Celestron StarBright® XLT™ High Performance Optical Coatings Outperform The Competitor's UHTC.

StarBright XLT — An Optical System Breakthrough! Celestron has taken its renowned StarBright technology to an even higher level of light transmission with the introduction of our new optional StarBright XLT High Performance Optical Coating System.

StarBright XLT Optical System Design — You'll See The Light.

One of the most important factors in the evaluation of a Schmidt-Cassegrain telescope's optical system performance is its transmission — the percentage of incoming light that reaches the focal plane. The design of the XLT System accomplishes two crucial objectives: Develop a coating system that is optimized for visual use and for CCD/Photographic imaging.

Celestron StarBright XLT: The Bottom Line.

- 11% brighter than UHTC across the spectrum from 400nm to 750nm. (See Fig.#1)
- 11% more photons will be detected with a CCD camera using StarBright XLT coating system compared to UHTC coatings (See Fig.#2)
- 6% brighter than UHTC to the dark-adapted eye (See Fig.#3)
- 16% brighter than our standard StarBright coating across the spectrum from 400nm to 750nm.

Coming Out of the Dark — StarBright XLT Performance Where It Counts

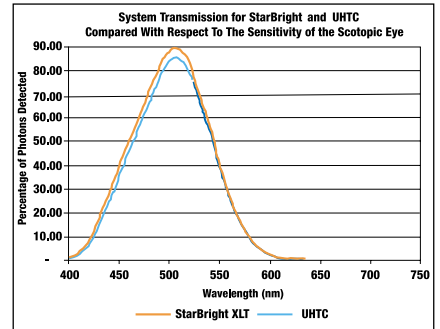


Fig #3: The scotopic, dark adapted eye is most sensitive at about 510nm. The dark-adapted eye has nearly zero sensitivity below 400nm and above 650nm. This plot compares StarBright XLT and our measurement of UHTC taking into account the sensitivity of the human eye. The result is that StarBright XLT is a 6% improvement over UHTC for visual observing.*

System Transmission At Specific Wavelengths — Celestron StarBright XLT vs UHTC

	Wavelength (nm)	StarBright XLT	UHTC Measured	Percent Improvement
H-beta	486	87.5	83.0	5%
Helium II and O ₃	496	88.0	84.0	5%
O ₃	501	88.0	84.3	5%
Center of dark adapted vision	510	88.7	84.8	5%
Helium I	588	88.0	81.6	8%
N ₂	655	84.0	73.8	14%
N ₂ and H-alpha	658	84.0	73.0	15%
Sulfur II	673	83.0	72.0	15%

UHTC Coatings Don't Measure Up To StarBright XLT

In order to determine how our newly designed XLT performs compared to the competition, we tested several optical systems with UHTC coatings. All measurements have been conducted with spectrophotometers measuring light transmission of coated correctors and reflectance of coated mirrors. This allows us to compare the transmission of our correctors and the reflectance of our mirrors against those of the competition. To ensure the integrity, accuracy, and reliability of these test results, they have been independently verified. A detailed description of our testing process can be found on our website: www.celestron.com/starbrightxlt.*

System Transmission for StarBright XLT and UHTC

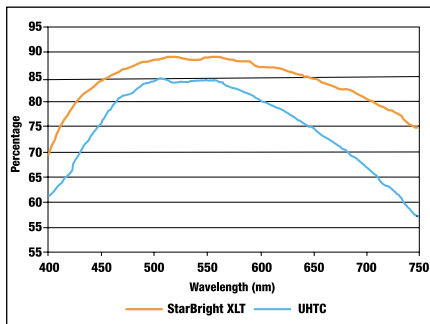


Fig #1: This is a plot of measured system transmission for Celestron's StarBright XLT and UHTC coatings. The StarBright XLT coating has an overall average system transmission of 83.5% compared to UHTC at 75.1%. System transmission is determined by taking the measured value of the reflectance of the primary, times the reflectance of the secondary, times the transmission of the corrector lens.*

CCD Imaging — It's All In The Photons

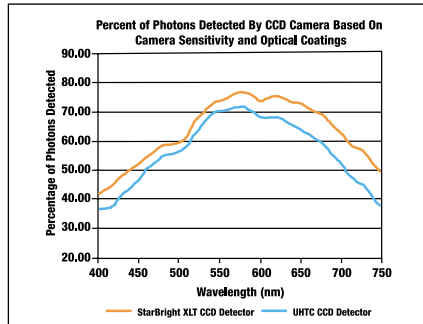


Fig #2: StarBright XLT is not only optimized for visual use, it is also optimized for imaging. This plot takes into account the sensitivity of a popular CCD chip (KAK-3200 used in SBIG's ST10ME) in conjunction with the system transmission based on the optical coatings. Our measurements indicate that the CCD chip will detect 11% more photons with Celestron's StarBright XLT than UHTC.*

*Percent differences are calculated by taking the comparison data percentage divided by the baseline data. Example: Measured average system transmission for UHTC is 75.1%. XLT average system transmission is 83.5%. 83.5% divided by 75.1% = 1.11 or 11% improvement. Measurement results are rounded to the nearest whole percentage.

The StarBright XLT System — What makes it different makes it better. — There are three major components that make up our StarBright XLT high transmission optical system design:

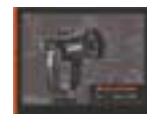
- 1. Unique enhanced multi-layer mirror coatings** — Our mirror coatings are made from precise layers of aluminum (Al), SiO₂ (quartz), TiO₂ (titanium dioxide), and SiO₂. Reflectivity is fairly flat across the spectrum, optimizing it for both CCD imaging and visual use.
- 2. Multi-layer anti-reflective coatings** — Made from precise layers of MgF₂ (magnesium fluoride), and HfO₂ (hafnium dioxide). A rare element costing nearly

\$2000 per kilogram, hafnium gives us a wider band pass than titanium, used in UHTC coatings.

- 3. High transmission water white glass** — Celestron Schmidt-Cassegrain optical systems with optional StarBright XLT coatings use water white glass instead of soda lime glass for the corrector lens. *Water white glass transmits about 90.5% without anti-reflective coatings.* That is 3.5% better transmission than uncoated soda lime glass. *When water white glass is used in conjunction with StarBright XLT's anti-reflective coatings, the average transmission reaches 97.4% — an 8% improvement!*

StarBright XLT Pricing

All 8" Schmidt-Cassegrain Products.....	\$125
All 9.25" Schmidt-Cassegrain Products.....	\$175
All 11" Schmidt-Cassegrain Products.....	\$225
All 14" Schmidt-Cassegrain Products.....	\$275



NEW 2003 PRODUCT GUIDE

To request a copy of Celestron's new 2003 Product Guide, contact us at (310) 328-9560.



2835 Columbia Street • Torrance, CA 90503 U.S.A.
Tel: 310.328.9560 • www.celestron.com

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For more information about StarBright XLT visit: www.celestron.com/starbrightxlt