ASA Astrosysteme GmbH Galgenau 19 A-4212 Neumarkt i. M.
Phone +43 (0) 79 42/778 11-50 office@astrosysteme.at www.astrosysteme.at

ASA
ASTRO SYSTEME AUSTRIA

ASA400

400MM TELESCOPE WITH CARBON OPEN TRUSS TUBE

PRODUCT FEATURES:

- **Optic design by Dipl. Phys.Philipp Keller**
- **Can be ordered with Cassegrain or Ritchey-Chrétien (RC)-Optics**
- **Zero expansion AstroSitall optics from LOMO**
- **High stiffness**
- **Automatic main mirror covers***
- **Field flattener and focal reducer***
- **Removable mirror cell**
- **Internal cabling**
- **Remote operation possible**
- **Computerized construction**
- **Manufactured with CNC technology in conjunction with high strength carbon fiber**

* Optional

Cassegrain and Ritchey–Chrétien (RC) telescopes are used by professional observatories, research institutions and universities. Our telescopes are designed by Philipp Keller, a German physicist and optical engineer. The telescopes are made in open truss construction style with CFK-tubes and precision optics from LOMO Optics. Customers can choose to opt for the optical sets or the complete telescope system which can be set up in an equatorial or alt-az design. In combination with a focal reducer or field flattener designed by Philipp Keller, these instruments can also be used for large CCD sensors with diameters of 150mm and more and still display pin point stars all the way to the corners.

Best configuration possible: LOMO Optics inside!

LOMO Optics has established itself as a very reliable manufacturer of precision optics. LOMO's mirrors are of the highest grade in the industry: If your aim is perfect imaging quality and you do not want to spend the few clear nights with inferior optics, then LOMO should be your choice. In order for the optics to provide optimal corrections also during volatile thermal conditions, we only offer our optical sets in either AstroSitall or Zerodur ceramics. LOMO offers perfect quality parabolic mirrors, flat optics as well as Cassegrain- and RC-Systems. Contrary to other optic vendors we deliver every optical set with test certificate and interferogram. Philipp Keller has designed and implemented over 400 telescopes globally and all the optics delivered always more than have fulfilled their specifications.

- System-wave front accuracy minimum L/8 Peak to Valley at 632 nm in focus
- System-wave front accuracy minimum L/35 RMS at 632 nm in focus
- Surface Quality 80/50 scratch/dig
- Coating Aluminium and Quartz, other coatings like silver and gold upon request!

Optical performance that will always perform on the seeing limit

Both the Ritchey-Chrétien and Cassegrain telescope will need a corrector when used with large format CCD cameras. When comparing the performance of both systems, the Cassegrain will perform very similar to the RC but at a lower price. The benefit of the RC-design lies in the fact that the field correction without field flattener is slightly better compared to the Cassegrain.

The result will be a more rigid system that will increase the precision of the telescope. Since professional telescopes are used in fixed locations, the slight gain of weight will be more than offset by the prevailing benefits such as higher pointing and tracking accuracy as well as improved focusing precision.

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SPECIFICATIONS

400 MM TELESCOPE – OPEN TRUSS TUBE CARBON, OPTIC DESIGN DIPL. PHYS. PHILIPP KELLER		
Version	**Cassegrain**	**Ritchey-Chrétien**
Item number	ASA400CA	ASA400RC
Aperture	400 mm	400 mm
Focal Length	3600 mm	3200 mm
Focal Ratio	f9	f8
Back Focus	400 mm**	400 mm**
Field of View	76 arc mins (80 mm)	86 arc mins (80 mm)

Main mirror specs	**Cassegrain**	**Ritchey-Chrétien**
Optical Diameter	400 mm	400 mm
Mirror Diameter	410 mm	410 mm
Mirror material	AstroSitall	AstroSitall
Coating	Al+SiO2 Coating with 91% Reflexion	
Surface quality	L/8 PtV Wavefront > 95 strehl	
Mirror thickness	50 mm	50 mm
Mirror cell	9 point floating	9 point floating

Secondary mirror specs	**Cassegrain**	**Ritchey-Chrétien**
Optical Diameter	130 mm	155 mm
Mirror Diameter	135 mm	160 mm
Mirror material	AstroSitall	AstroSitall
Coating	Al+SiO2 Coating with 91% Reflexion	
Thickness	30 mm	30 mm

Mechanical specs	**Cassegrain**	**Ritchey-Chrétien**
Material	High end aluminium parts and carbon fiber	
Workmanship	CNC manufactured	
Weight	69 kg	69 kg

Image Quality	See Spot-Diagrams and Vignettingdata*
Cooling	Computer controlled fans
Focuser	Computer controlled motorized focuser
Baffle	Main mirror baffle

** See www.astrosysteme.at*
*** Maximum Back-Focus available. In conjunction with the ASA flange this value is reduced by 92 mm. The Back-Focus can be reduced and enlarged by secondary focussing. The focussing range for diffraction limiting is +/-40mm. Nevertheless the mechanical range is larger.*

Comments on Spot diagrams and vignetting data:
The shown field data is for field radius always. Field diameter is 2x this size. Please note that the vignetting is calculated for our standard baffle design which is a good compromise between central obscuration and vignetting. If you need a larger field with 100% illumination it is possible with the drawback of a larger central obscuration (throughput).

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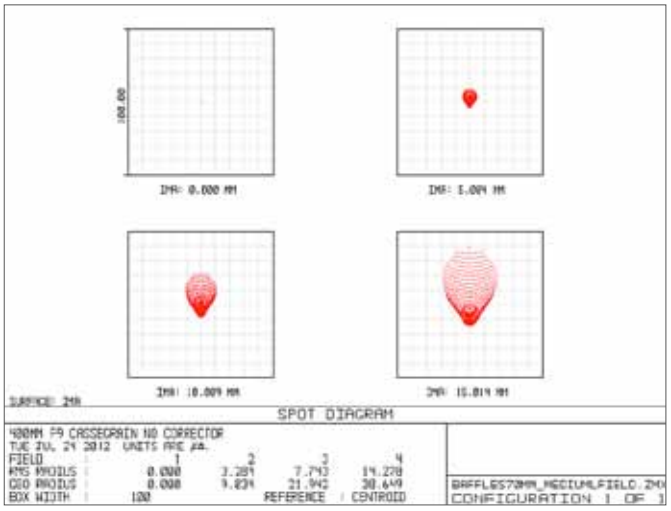
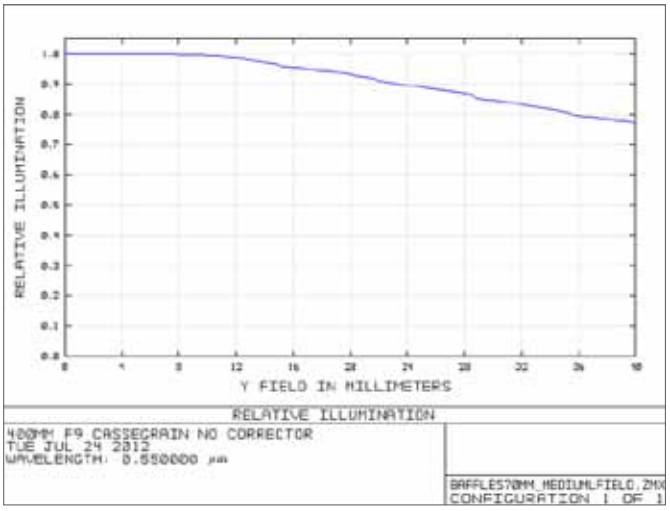
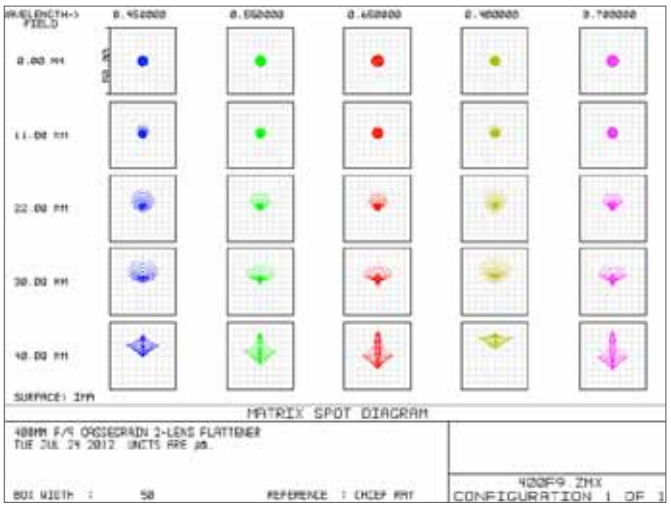
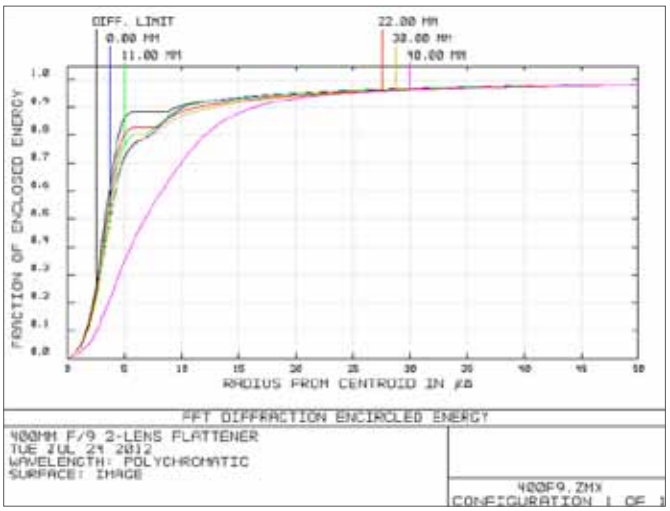
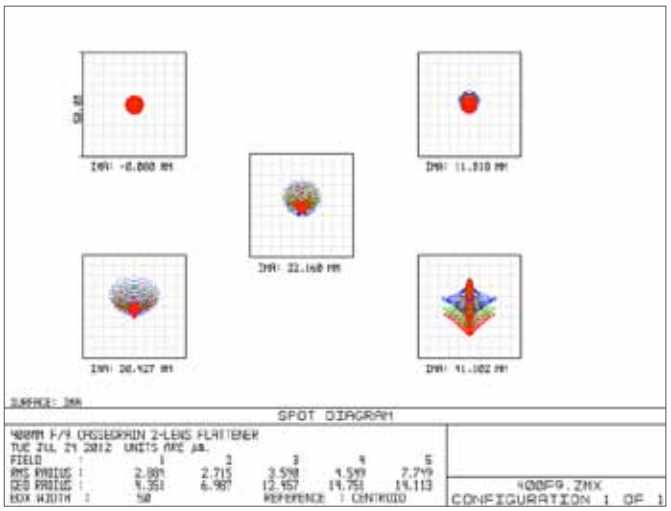
DIAGRAMS CASSEGRAIN











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DIAGRAMS RC