AZ800

800MM ALT-AZIMUTH PROFESSIONAL TELESCOPE WITH DUAL NASMYTH FOCUS

PRODUCT FEATURES:

- **Optic design by Dipl.Phys. Philipp Keller**
- **Can be ordered with Cassegrain- or RC optics**
- **Zero expansion AstroSitall optics from LOMO**
- **Optional available are field flattener and focal reducer optimized for the given telescope**
- **Motorized switch between multiple Nasmyth focus stages with a mouse click**
- **ASA Direct Drive Technology**
- **Suitable for Remote Observing**
- **Manufactured with the latest in CNC technology in conjunction with high strength carbon fibre**
- **Compact size with a moderate weight of 800kg**
- **Heavy, equipment can be loaded on both focal stages without changing the center of gravity**

The AZ 800 is an AltAz mounted Telescope with Nasymth-Focus, which contains all the knowledge and experiences gained from the professional telescopes installed by Philipp Keller and is now build with the most advanced CNC from ASA.

Compact Size. The azimuthal design allows a very compact telescope, fitting in smaller domes compared to an equatorial telescope.

User Friendly. The Nasmyth focal point can be switched between the left and the right focus side by a mouse click within a few seconds. A direct drive motor in combination with a 0.1 arc second encoder and reference switch is used to turn the tertiary mirror. You could use one focus for visual observations while leaving your CCD camera installed on the other side. If you want to take an image of that object, all it takes is a mouse click. Of course you could also use two different CCD cameras, one installed with a ASA Reducer for wide field imaging, the other one with a Barlow lens for planetary work. Since all accessories are mounted in the center of gravity, there is no change in telescope balance when something is mounted or removed on the Nasmyth Focus. Since there is also no focuser directly at the focus (focusing for both foci is done with the secondary), the weight of the CCD or accessories can be very heavy. The comfort in visual observing is stunning compared to a classical AltAz (i.e. Dobson) or an equatorial telescope because with our telescope design the focus position and thus the view point is always at the same height.

Precise. With the AZ800 we have reached a new dimension of pointing and tracking accuracy. This is done with the direct drive and an ultra-high resolution encoder with a readout of better than 1/100 arc second directly on the telescope axis. Zero backlash, zero periodic error. ASA has sold more direct drive mounts than any other telescope manufacturer. The azimuthal design is also supporting overall better accuracies compared the equatorial telescopes because hysteresis effects, caused by optic shifts can be avoided. The ASA Derotator is correcting the field rotation that is existent in AltAz Telescopes. Even with 8m focal length seeing limited exposures without any autoguiding with 5 minutes or more is not a problem.

Perfect Optics, zero expansion. When it comes to optics, we don't compromise and use zero expansion AstroSitall optics from LOMO with L/8 wavefront PtV, measured in focus, proved with an interferogram of the complete system. These optics will not only show the L/8 accuracy in theory and after 20 hours cool down in the optic lab like cheap optics from borosilicate (Duran, Pyrex, Supremax etc.) but also in variable temperature conditions usually found in observatories. The optics we use are Cassegrain and RC optic sets with optional correctors. Because the mirrors are aspheric. They are more expensive compared to the much cheaper Dall Kirkham system (with one spherical mirror) but they are able to cover a much larger field. Since the basic setup uses no corrector, you can combine these systems with either a field flattener for up to 100mm field diameter or a reducer.

SPECIFICATIONS

Optical System	Cassegrain	Ritchey–Chrétien (RC)
Optical Design	Dipl. Phys. Philipp Keller	
Aperture	800mm	
Focal length	7200mm	6400mm
Focal ration	f9	f8
Back focus	250mm	
Focus position	Nasmyth focus	
Field of View FOV	38 arc mins	43 arc mins
Fully baffled field	See vignetting plot	

Primary Mirror Blank	Cassegrain	Ritchey–Chrétien (RC)
Optical diameter	800mm	
Outer diameter	815mm	
Mirror material	AstroSitall	
Mirror coating	Al+Si02 coating with 91% reflectivity	
Edge thickness	900mm	
Cell	18 point floating, roller ball bearing on the side	

Secondary Mirror Blank	Cassegrain	Ritchey–Chrétien (RC)
Optical diameter	250mm	287mm
Outer diameter	256mm	293mm
Mirror material	AstroSital	
Mirror coating	Al+Si02 coating with 91% reflectivity	
Thickness	40mm	

Tertiary Mirror Blank	Cassegrain	Ritchey–Chrétien (RC)
Optical diameter	150mm (small axis) with 97% reflectivity	
Thickness	21mm	

Motion Control	Cassegrain	Ritchey–Chrétien (RC)
Motor Control	ASA Direct Drive with Autoslew software	
Azimuth motor	ASA Direct Drive motor	
Altitude motor	ASA Direct Drive motor	
Encoder	Renshaw High Resolution	
Motor torque	Approximately 120 Nm	

Mechanical Structure	Cassegrain	Ritchey–Chrétien (RC)
Material	High grade aluminium components	
Processing	CNC machined	
Fork assembly	Single piece U shaped fork arm for maximum stiffness	
Azimuth bearing	780mm	
Altitude bearing	170mm	
Optical tube	CNC technology in conjunction with high strength carbon	
Weight	800kg	800kg

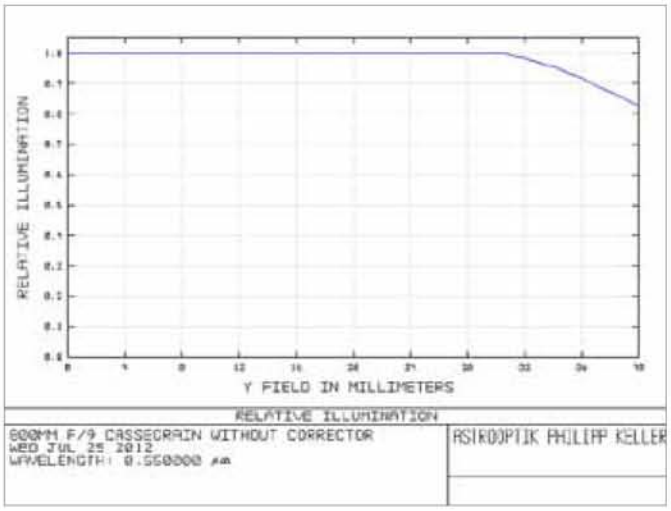
System Performance	Cassegrain	Ritchey–Chrétien (RC)
Operating voltage	24V 1-4 A/Tracking	
Pointing	<8" RMS with pointing file	
Tracking precision	<0,25" RMS in 5 minutes	
Encoder resolution	0,007" on the axis	
Moving speed	13° / sec.	

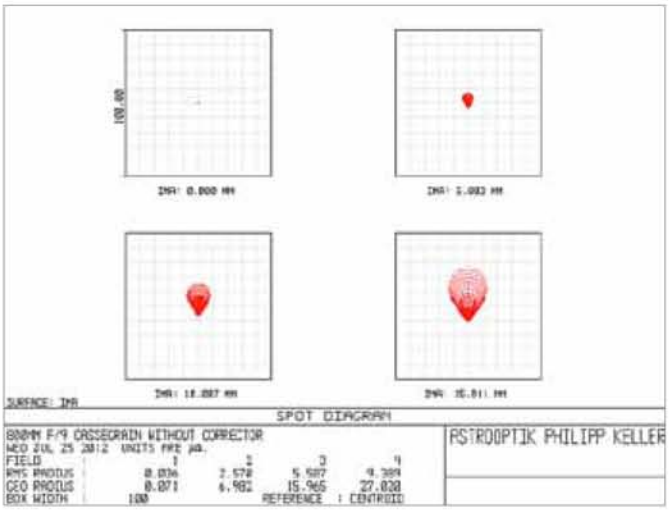
Price and optional features are on the website www.astrosysteme.at

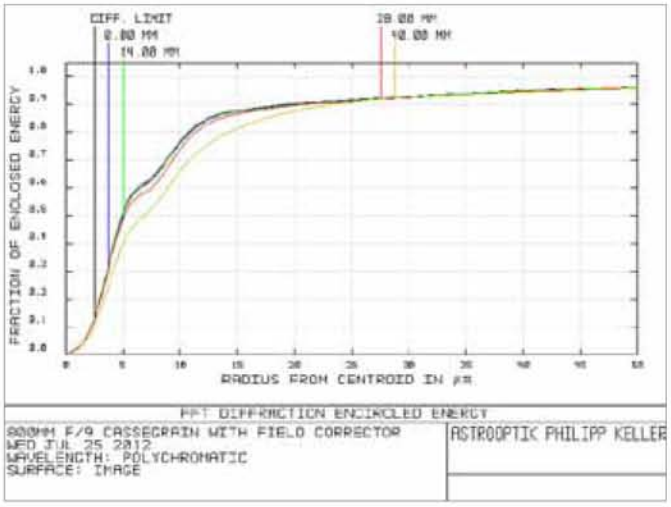
Comments on Spot diagrams and vignetting data:

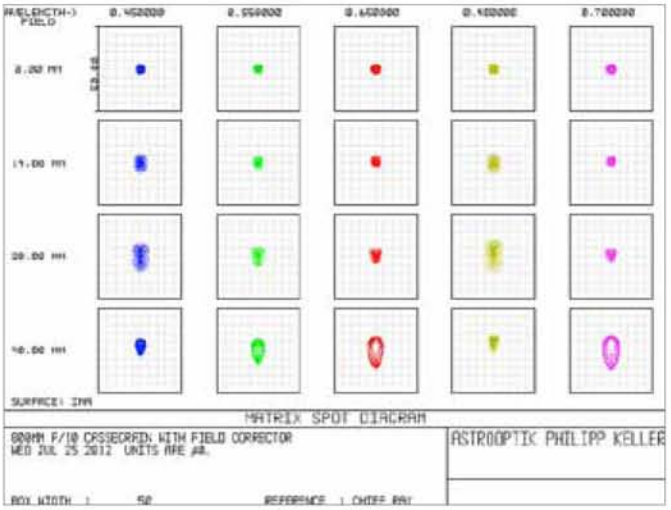
The shown field data is for field radius always. Field diameter is 2x this size. Please note that the vignetting is calculated for our standard baffle design which is a good compromise between central obscuration and vignetting. If you need a larger field with 100% illumination it is possible with the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

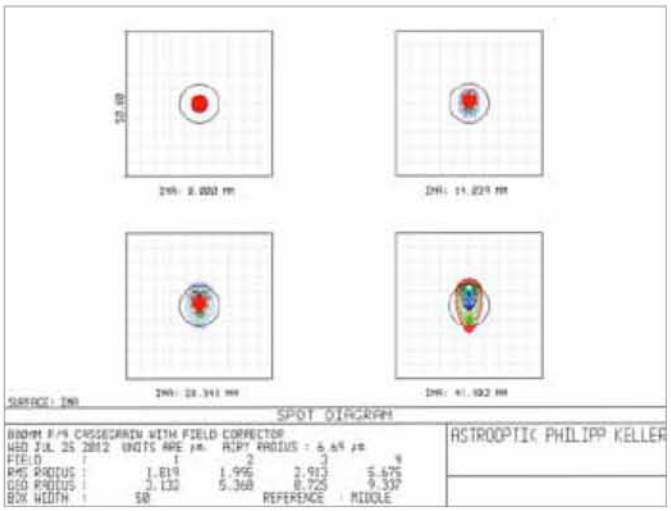
SPOT DIAGRAM











SPOT DIAGRAM