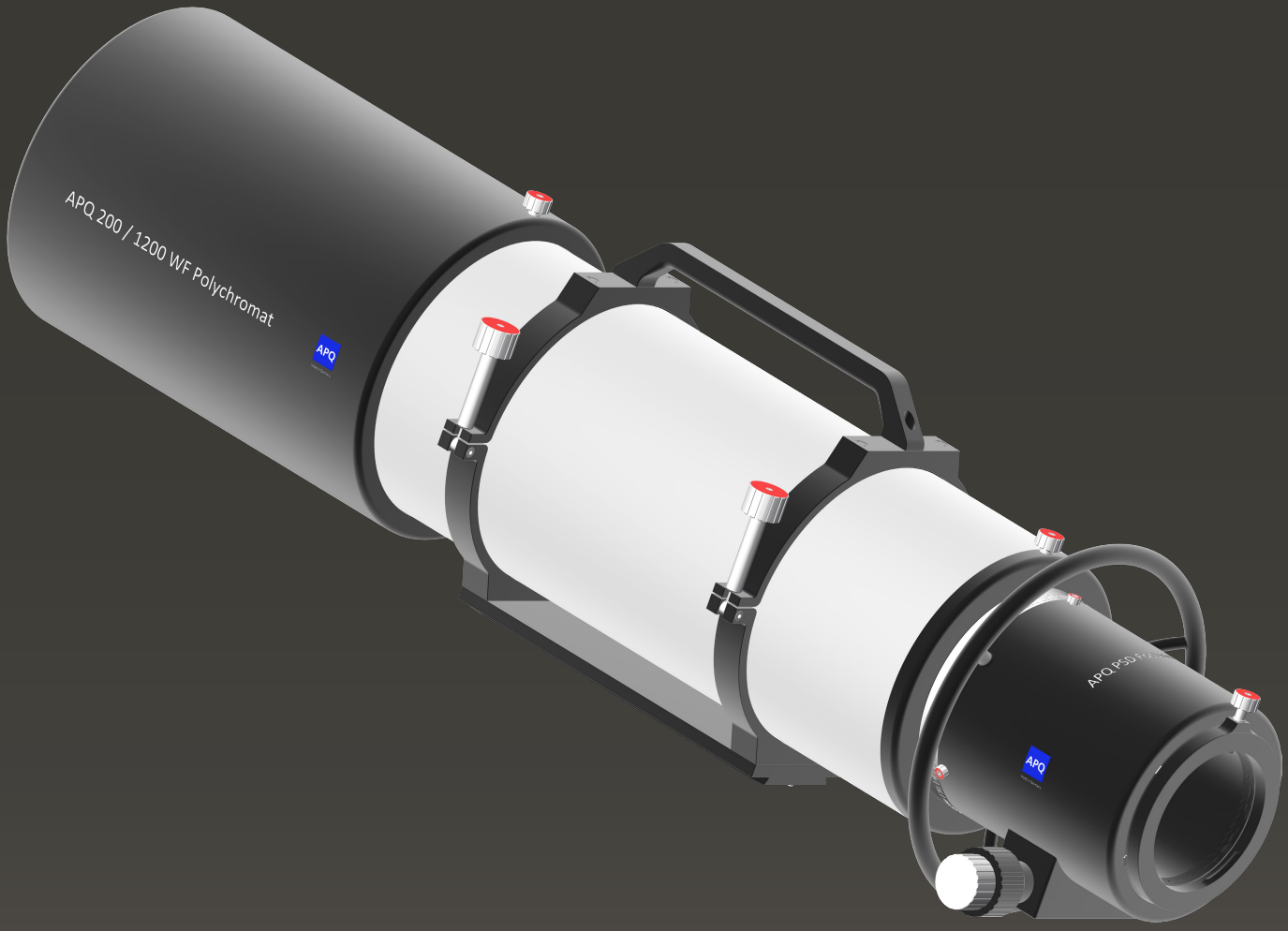
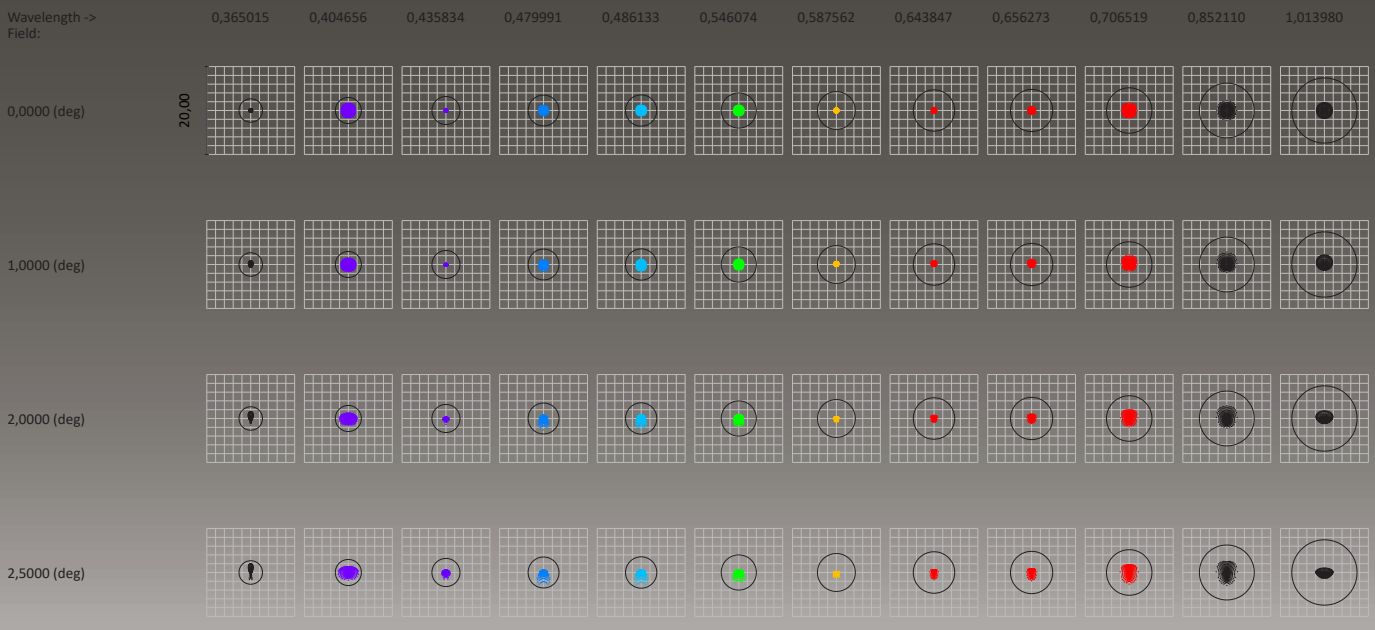
APQ 200/1200 Fluorite Wide Field Polychromat





Surface: IMA
Units are µm
Scale bar: 20

Airy Radius: 3,997 µm
Reference: Centroid

Matrix Spot Diagram

APQ 200/1200 Fluorite Wide Field Polychromat

Stunning imaging performance for astronomy, wide-field photography, remote sensing and optronics.

Features

- UBVRI Fluorite Wide Field Polychromat
- Ten lens aspherical design
- 3 lenses from CaF_2
- System correction by precision optics master
- Oil spaced[1] and air gaps
- Ultra broad band antireflection coating
- Compensation cell
- Adjustable optical system
- Integrated special focal reducer corrector
- Rectractable and lockable dew cap
- Newly developed APQ PSD Focuser 100/120[2]
- Ø104.9mm (5°)[3] non-vignetted image field diameter predestined for full size, IMX411, GSENSE6060 and larger CMOS sensors

Description

- The APQ 200/1200 Fluorite Wide Field Polychromat does not show any decrease of the Strehl ratio near or below the diffraction limit in the peripheral regions of the visual spectrum, as is the case with most apochromats.
- Due to its polychromatic correction, the ten lens CaF_2 optical system of the APQ 200/1200 is able to achieve the maximum possible resolution up to the edge of the non-vignetted image field of Ø104.9mm (5°)[3] (IMX411: image diagonal 66.7mm, GSENSE6060: image diagonal 86.9mm) and thereby utilize the full UBVRI spectral range (365nm – 1014nm) of modern electronic sensors (CCD, CMOS).
- The RMS spot size is well within the diameter of the Airy disc for all wavelengths in the entire spectral range from 365nm to 1014nm, even at the edge oft the image field of Ø104.9mm (5°)[3].
- We source the high-quality fluorite blanks with special parameters in selected quality from a certified manufacturer, which also supplies the global players of precision optical equipment with CaF_2 raw material for the production of stepper lenses for VUV photolithography.
- The surfaces of the optics lenses made of three different special optical glasses of SCHOTT® or OHARA® and CaF_2 are precision machined, a lens surface is an asphere.
- Because every fabrication can only be done with finite precision, even the latest technologies and state-of-the-art CNC precision machining processes are subject to errors. All manufacturing parameters must therefore be tolerated conscientiously.
- The required high image quality is achieved by a final system correction, which is performed by a precision optics master with decades of experience in his field.
- Thanks to a novel compensation cell, the lenses of the oiled[1] and with air gaps spaced optical systems are held in stable position with fluctuations in temperature.
- The thermal equilibrium sets in quickly and rattling of lenses in the cell with all negative consequences is prevented.
- The optical system can be adjusted precisely to the optical axis of the OTA.
- The CNC precision machining of lens cell, dew cap and telescope tube ensures the required high centering accuracy.
- Inside the OTA, a defined surface structure and a diaphragm system in combination with an antireflective coating of all internal surfaces effectively prevent the occurrence of scattered light and tube reflections.
- The over 220mm[2] sliding dew cap, which can be clamped in any position, takes into account the non-vignetted image field diameter of 5° of the WF Polychromat. On the dew cap the label APQ 200/1200 WF Polychromat, the brand logo APQ as well as the indication of origin Made in Germany are applied.
- At the end of the refractor, the brand new APQ PSD Focuser 100/120[2] is mounted with an APQ Quick Changer with the S108 dovetail ring system for coupling adapters and components.
- The APQ Focuser is rotatable by 360°, so that it can always be turned into the desired position. The dual-speed mechanism with coarse and fine drive has a reduction ratio of 10:1[2].
- The eye-catching color of the OTA stands out significantly from the general standard white and gives the APQ WF Polychromat a unique and distinctive design with a high value of brand recognition.
- The APQ 200/1200 WF Polychromat is our top-of-the-line refractor that is predestined for scientific research in astronomy, wide-field photography, remote sensing and optronics, but also for visual observation.

Specification

Optical system APQ 200/1200 WF Polychromat	Fluorite Wide Field Polychromat
Optical design	ten lens aspherical design
Coupling technique	oil spaced[1] and air gaps
Mounting type	compensation cell
Cell material	high quality aluminum and stainless steel alloys
Image field diameter	Ø104.9mm (5°) non-vignetted
Polychromatic RMS spot radius vs. field	≤ 1.0µm (365nm – 1014nm) / Ø104.9mm (5°)[3]
Polychromatic Strehl ratio	≥ 0.95 (365nm – 1014nm)
Maximum focal shift range	0.0484mm ≙ ±0.002% (365nm – 1014nm)[3]
Anti-reflection coating	Ultra-ARB $_{RAVG}$ < 0.7% (365nm – 1014nm)[3]
Clear aperture	200mm
Focal length	1200mm
Focal ratio	f/6
Image scale	2.865'/mm or 0.349mm/'
Resolution	0.57"[3]
Magnification range	33x – 600x (exit pupil 6mm – 0.33mm)
Test protocol	optical inspection certificate
Tube assembly 200/1200	high quality aluminum and stainless steel alloys
Tube and dew cap colors	silver metallic / black metallic
Tube diameter	Ø218mm[2]
Telescope length (dew cap and focuser)	1019mm / 1359mm (retracted / extended)[2]
Dew cap diameter	Ø252mm[2]
Dew cap length	361mm[2]
Dew cap sliding range	220mm[2]
Backfocus	280mm[2]
Focuser	APQ PSD Focuser 100/120[2]
Clear diameter	Ø100mm (3.94")[2]
Focusing range	120mm (4.72")[2]
Lifting capacity	n/a
Reduction ratio	10:1[2]
360° rotatable and lockable	yes
Motorized drive as option	yes
Temperature compensation as option	yes
Weight	n/a
OTA APQ 200/1200 WF Polychromat	optical system, tube assembly, dew cap, focuser
Adapter	S108 Quick Changer
Dust-covers	dust-covers for dew cap and quick changer
Tube rings	optional
Dovetail Plate	optional
Accessories	optional
Weight (including focuser)	n/a

Recommended Accessories

- Tube Rings
- Dovetail Plate
- Steering Wheel
- Tube Cap
- Carrying Handle
- Quick Changer
- Change Rings
- Extension Tubes
- Adapters
- Covers

[1] special design for space use possible
[2] information is subject to change
[3] according to optical design

APQ JENA
Loebstedter Strasse 74
D-07749 Jena
Germany

CEO & Founder: Dipl.-Ing. Norbert Stroemich
+49 171 7127287
info@apq.de
apq.de

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