

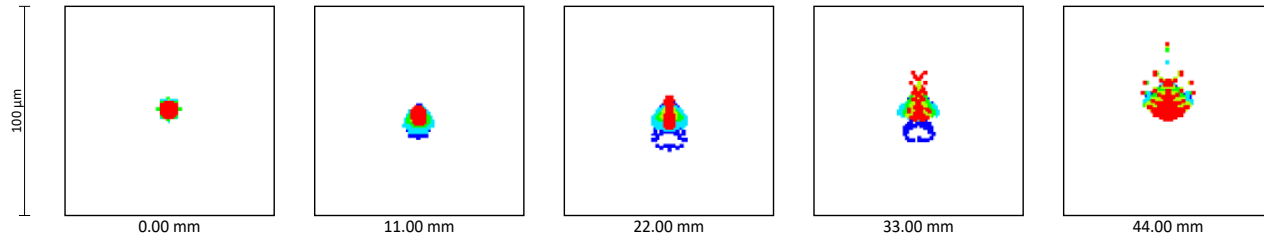
Comparison of Published Manufacturer Spot Diagrams

Refractors with 100-110 mm aperture - common display scale of 100 μm

Takahashi FSQ-106EDX4 at Prime Focus

Wavelength (nm)

436.00
486.00
546.00
588.00
656.00



Corrected image field: 88 mm

Displayed diagram field: to $r = 44.00$ mm ($\varnothing 88$ mm in the source diagram).
System: 530 mm, $f/5.0$.

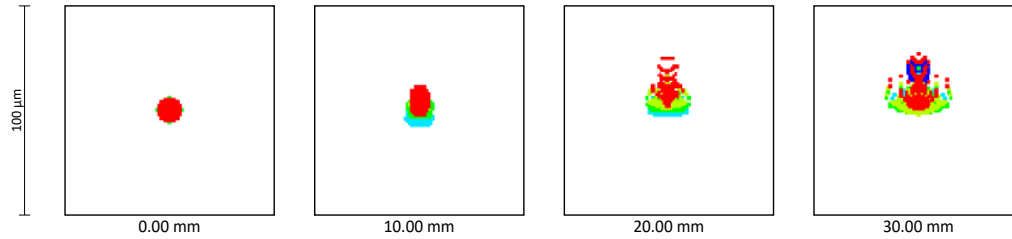
<https://takahashi-europe.com/catalog/refractors/wide-field-astrograph-refractor/fsq-106-8x4/fsq-106ed4>

Method and limitations: The comparison uses theoretical spot diagrams published by the respective manufacturers. The diagrams have only been placed on a common graphical scale of 100 μm . Wavelengths, field positions, focus definitions, weightings and calculation methods are not fully identical. This is not an independent laboratory test or a measurement of production instruments, and it does not by itself establish an overall performance ranking.

Takahashi FSQ-106EDX4 with 645-RD QE0.72X

Wavelength (nm)

436.00
486.00
546.00
588.00
656.00



Corrected image field: 60 mm

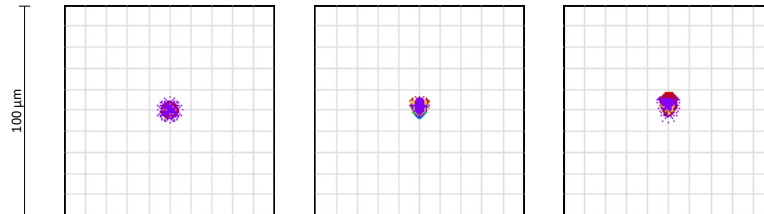
Displayed diagram field: to $r = 30.00$ mm; corrected image circle $\varnothing 60$ mm.
System: 380 mm, $f/3.6$.
Classification: Because of the larger image field and different focal ratio, this configuration is shown separately rather than as a direct ranking against the 44-45.5 mm group.

<https://takahashi-europe.com/catalog/refractors/wide-field-astrograph-refractor/fsq-106-8x4/fsq-106ed4>

Astro-Physics 110GTX with 0.83x 110TCC

Wavelength (μm)

0.4358
0.4600
0.4861
0.5460
0.5875
0.6562



Corrected image field: 4.5" / 44 mm

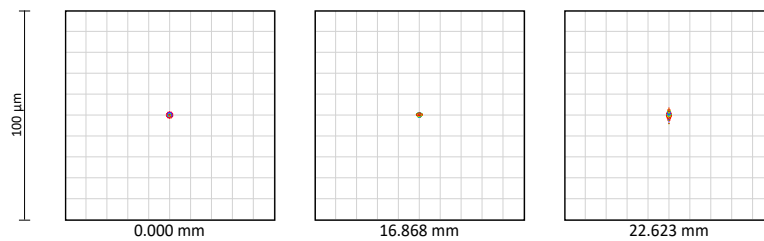
Displayed diagram field: to $r = 22.013$ mm (approx. $\varnothing 44$ mm). The manufacturer specifies a $\varnothing 50$ mm image circle for the 110TCC; the published performance diagrams cover a $\varnothing 44$ mm field.
System: 550 mm, $f/5.0$.

<https://www.astro-physics.com/110tcc-0.83x>

APQ 100/640 with APQ Field Corrector

Wavelength (μm)

0.4358
0.4861
0.5461
0.5876
0.6563



Corrected image field: 4" / 45 mm

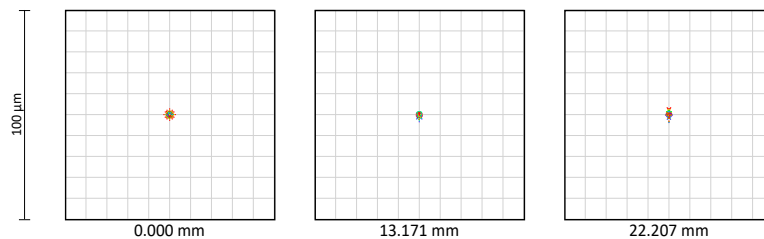
Displayed diagram field: to $r = 22.623$ mm; current product specification: $\varnothing 45.5$ mm unvignetted, flattened image field.
System: 640 mm, $f/6.4$.

<https://apa.de/en/products/polychromat/100-640-110tcc-34tr>

APQ 100/640 with APQ 0.78x Focal Reducer Corrector

Wavelength (μm)

0.4358
0.4861
0.5461
0.5876
0.6563



Corrected image field: 5" / 44 mm

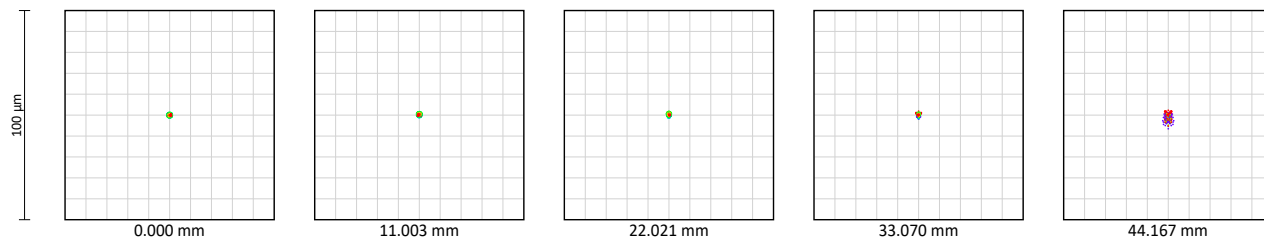
Displayed diagram field: to $r = 22.207$ mm; current product specification: $\varnothing 44.8$ mm unvignetted, flattened image field.
System: 500 mm, $f/5.0$.

<https://apa.de/en/products/polychromat/100-640-110tcc-34tr>

APQ 110/550 Wide Field Polychromat

Wavelength (μm)

0.4358
0.4861
0.5461
0.5876
0.6563



Corrected image field: 9" / 88 mm

Displayed design field: to $r = 44.167$ mm (approx. $\varnothing 88.3$ mm). The current product specification states a $\varnothing 67.4$ mm unvignetted image field; the wider plot shows theoretical correction outside that unvignetted area.
System: 550 mm, $f/5.0$.

<https://apa.de/en/products/polychromat/110-550-110tcc-34tr>

Interpretation: Smaller and more closely colour-overlapped geometric spots indicate lower geometric blur under the assumptions of the respective model. The diagrams do not show, among other factors, manufacturing and alignment tolerances, thermal state, vignetting, transmission, stray light, sensor sampling or atmospheric seeing. Product and company names are trademarks of their respective owners. Source images © respective rights holders; reproduced as identified source excerpts for technical comparison. No affiliation with or endorsement by the named manufacturers. Sources accessed: 27 July 2026.

← Airy Disk Diameter 8.5 μm

← Airy Disk Diameter 6.7 μm

← Airy Disk Diameter 6.7 μm