

Siemens Star TC-RT02

Resolution testchart with very high precision



This resolution test consists of 5 Siemens stars and shows the peculiarity that the tapered segments in the center of the stars are precisely manufactured to a minimum width of 150 nm. Thus, this testchart is also suitable for the determination of the resolution of microscope objectives of very high numerical aperture.

Additional measuring and positioning marks facilitate the adjustment. The pattern is "negative", i.e. the Siemens stars are transparent.

Our high-resolution testcharts are made with high-precision e-beam lithography. A quartz substrate with broad spectral transmission (DUV-VIS-NIR), on which a chromium layer of high optical density is applied, serves as a support. The test structures are produced by ablation of the chromium layer, whereby structural sizes down to 100 nm are possible. At the same time, excellent dimensional tolerances and straightness of the structural edges is ensured.

For use with a microscope objective lens there is a version with a 0.17 mm cover glass available.

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| Substrate | Quartz wafer (fused silica), 10 mm x 10 mm x 1 mm (layout see next page) |
| Substrate holder | Microscope slide format 75 mm x 25 mm x 1.5 mm, Stainless steel with laser engraving |
| Patterned layer | Chrome, optical density OD > 8@400nm / 6@550nm / 4.5@750nm / 3.6@1 μm |
| Pattern | 1 central Siemens star with 36 segment pairs (diameter 8mm) 4 small Siemens stars with 36 segment pairs each (diameter 1.5mm) 6 measuring marks |
| Dimensional tolerance (max. absolute error) | 100nm/cm = 10 ⁻⁵ |
| Spectral transmission range | 200nm – 2000nm |
| Cover Glass (optional) | 0.17 mm optical thickness |

Siemens star testchart layout

