

E-Beam Lithography Mastering

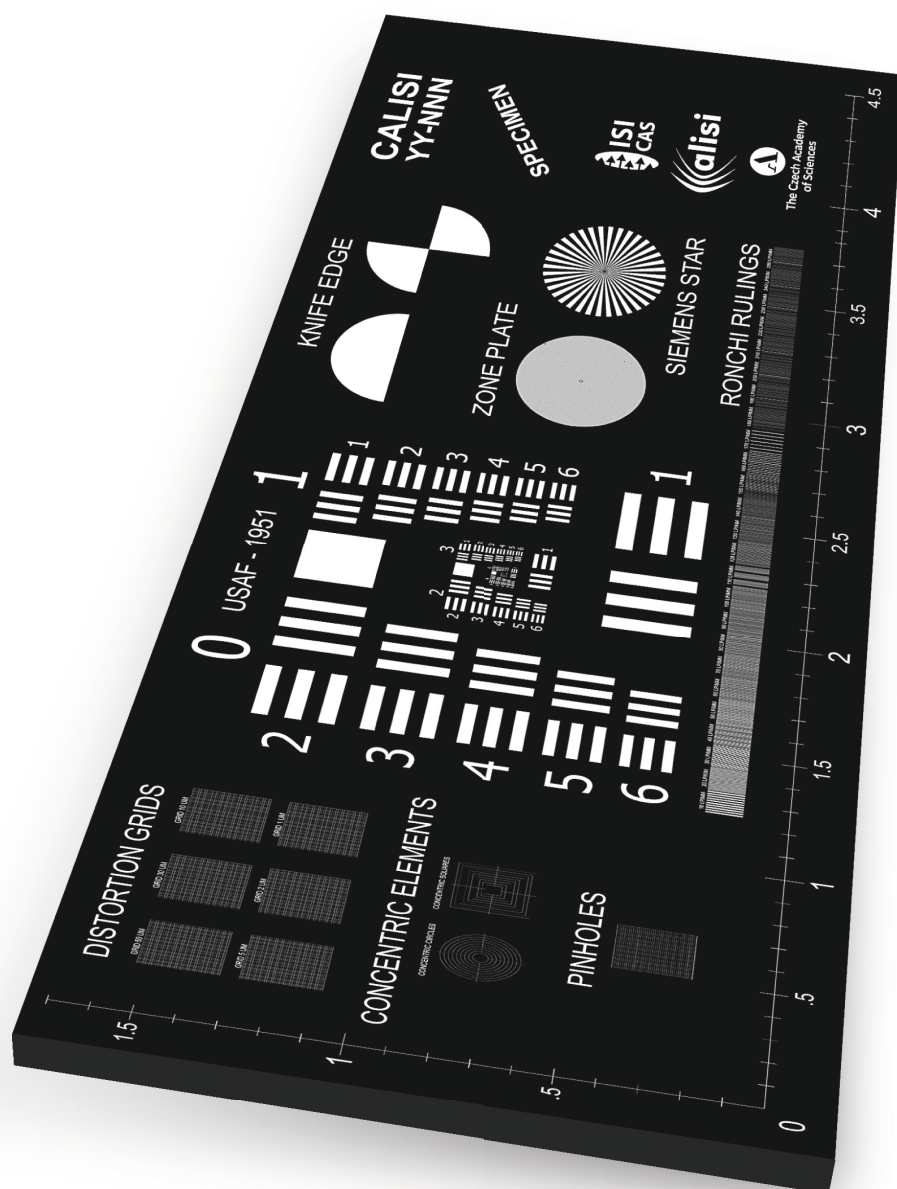
Micro & Nano Scales and Rulers



**ISI
CAS**

Institute of Scientific
Instruments
The Czech Academy
of Sciences

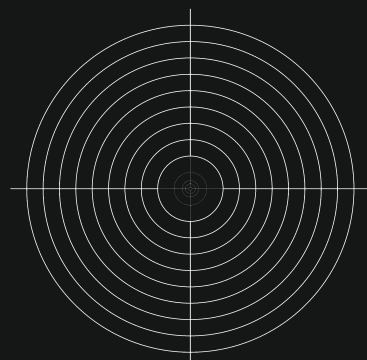
APPLICATIONS



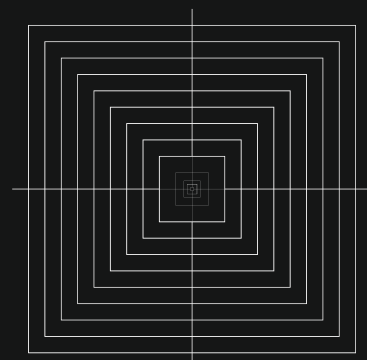
Institute of Scientific Instruments
of the CAS, v.v.i.

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The Czech Republic
www.isibrno.cz

CONCENTRIC CIRCLES



CONCENTRIC SQUARES



*Concentric elements for aberration
identification in imaging systems*

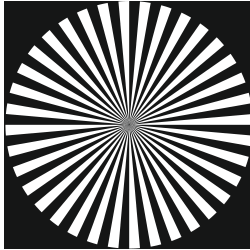
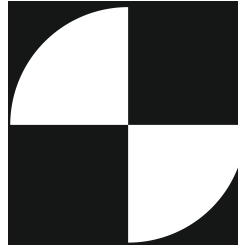
Multi optical and nano tool for dozens of resolution or calibration tasks:

- Lenses and lens systems
- Optical microscopes
- Confocal microscopes
- Scanning Electron Microscopes (SEM)
- Scanning Probe Microscopes (SPM)

MAIN FEATURES

Knife edge

- Optical surface testing

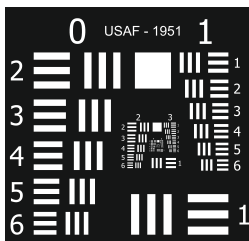
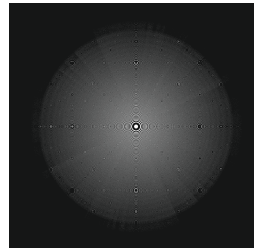


Siemens star

- Resolution check
- Focus errors, astigmatism and other aberration identification

Zone plate

- Radially symmetric rings (Fresnel zones)



USAF 1951

- Modulation transfer function analysis
- Imaging system resolution determination / evaluation

Specification:

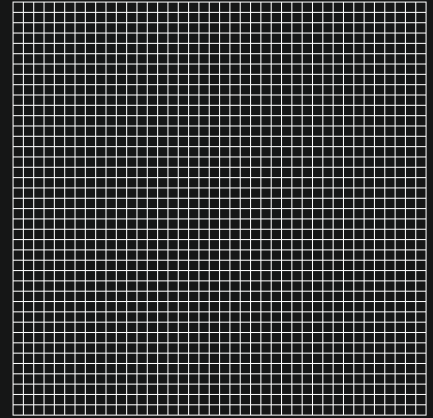
- Resolution down to 20 nanometres
- 46,7 mm × 18,3 mm image area (differs upon request)
- Negativ or positive design (combined sample included)
- Chromium 100 nm opaque mask material and thickness (customised upon request)
- Custom specific area

WHAT YOU WILL BENEFIT FROM

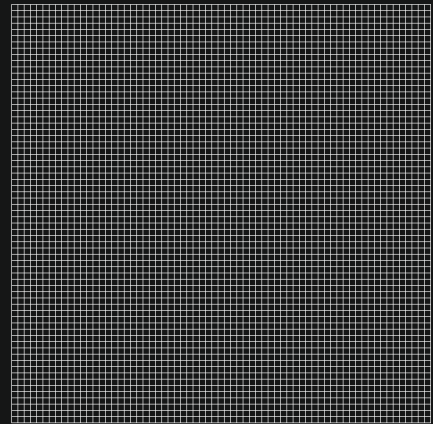
Technical Advantages

- Large mastering area (up to 150 mm × 150 mm).
- Specific sample shape and size.
- High flexibility in design (combination of various features).
- Customer-related approach.

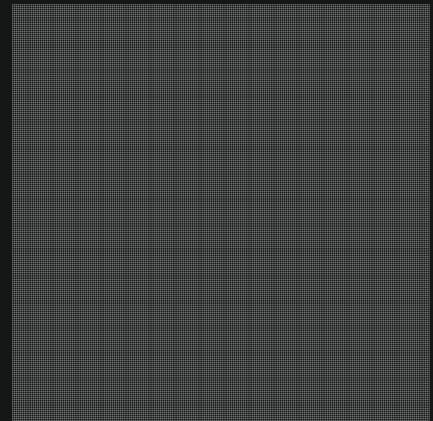
GRID 50 UM



GRID 30 UM



GRID 10 UM



Distortion grids

220 LP/MM 230 LP/MM 240 LP/MM 250 LP/MM



Ronchi Rulings pattern:
Variable frequency gratings
(e. g. 220 LP/MM up to 250 LP/MM)