



4-Circle Diffractometer 424-512.51

This 4-circle diffractometer, consisting of the components 424 and 512.51, offers a wide variety of possible applications ranging from residual stress and textural measurements to thin film analysis and wafer investigations.

Integrated in the Phi-circle is an XYZ-adjustment (150mm x 150mm x 25mm). The power supply is via jumper rings.

Specifications Phi-/Chi-circle:

| | Phi-circle | Chi-circle |
|------------------------------|--------------------|------------|
| Travel range [°]: | 360 | 360 |
| Resolution [°]: | 0.001* / 0.002* ** | 0.001* |
| Accuracy ["]: | 30 | 30 |
| Repeatability (unidir.) ["]: | <= 2 | <= 3 |
| Reversal error ["]: | <= 10 | <= 15 |
| Gear ratio: | 360:1 / 180:1** | 360:1 |

* with step motor, 1000 steps/revolution

** using Goniometer 410A

Specifications 2-Theta/Omega:

| | 2-Theta | Omega |
|------------------------------|---------|--------|
| Resolution [°]: | 0.001 | 0.001* |
| Accuracy ["]: | <= 30 | <= 30 |
| Repeatability (unidir.) ["]: | <= 2 | <= 2 |
| Reversal error ["]: | <= 7 | <= 7 |
| Gear ratio: | 360:1 | 360:1 |
| Eccentricity [μm]: | <= 3 | <= 3 |
| Wobble ["]: | <= 4 | <= 4 |

* with step motor, 1000 steps/revolution

Specifications X/Y:

| | X | Y |
|-------------------------------|--------|--------|
| Resolution [mm]: | 0.002* | 0.002* |
| Accuracy [μm]: | +/- 50 | +/- 50 |
| Repeatability (unidir.) [μm]: | +/- 5 | +/- 5 |

| | | |
|-----------------------------------|---|---|
| Reversal error [μm]: | 5 | 5 |
| Spindelsteigung [mm/rev]: | 2 | 2 |

* with step motor, 1000 steps/revolution

Specifications system:

| | |
|---------------------------|-------------|
| Sphere of confusion [mm]: | ≤ 0.03 |
| Weight [kg]: | 120 |

Accessories:

| | |
|--------------------------------------|-------------------------------|
| Collimator-arm XYZ-cryostat carrier: | 8692 |
| Detector: | optional |
| Slit screens: | Series 3000 |
| Control system: | 9300 |
| CCD-camera: | MiniVID |
| Motors: | 2-/3-/5-Ph. |
| Limit switches: | included |
| Zero-point control: | 9100 included |
| Goniometer heads: | Series 1000 |
| Encoder: | incremental absolute |
| Gear boxes (Phi, Omega, 2-Theta): | 2056.05 2056.10 2056.20 |
| Gear boxes (Chi): | 2083.05 2083.10 2083.20 |

