High Precision
Measurement with an accuracy of seconds for traversing, triangulations up to second order; establishing astronomical positions and optical tooling applications.

High Reliability
Automatic vertical circle indexing for precise measurement of zenith angles. Protection against reading errors by extensive digitization of circle readings.

Easy Operation
Coaxial arrangement of clamps and tangent screws. Reading images of horizontal and vertical circles in different colors. Combined coarse – fine focusing for full utilization of high image quality.

Microscope reading:
378.8506 grads
Approx. 1/8 actual size
## Technical Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telescope type</td>
<td>anellastic, apochromatic with flat-field eyepiece, erect image</td>
</tr>
<tr>
<td>Magnification</td>
<td>30 x</td>
</tr>
<tr>
<td>Aperture</td>
<td>40 mm</td>
</tr>
<tr>
<td>Length of telescope</td>
<td>155 mm</td>
</tr>
<tr>
<td>Field of view</td>
<td>24 m at 1000 m</td>
</tr>
<tr>
<td>Shortest focusing distance</td>
<td>1.6 m</td>
</tr>
<tr>
<td>Stadia constant</td>
<td>100.0</td>
</tr>
<tr>
<td>Addition constant negligible beyond</td>
<td>2.5 m</td>
</tr>
<tr>
<td>Diameter of Hz-circle</td>
<td>100 mm</td>
</tr>
<tr>
<td>Diameter of V-circle</td>
<td>85 mm</td>
</tr>
<tr>
<td>Direct reading of micrometer to</td>
<td>0.1 mgrant or 1”</td>
</tr>
<tr>
<td>Magnification of Hz-microscope</td>
<td>36 x</td>
</tr>
<tr>
<td>Magnification of V-microscope</td>
<td>42 x</td>
</tr>
<tr>
<td>Sensitivity of circular level</td>
<td>10” per 2 mm</td>
</tr>
<tr>
<td>Sensitivity of plate level</td>
<td>20” per 2 mm</td>
</tr>
<tr>
<td>Working range of vertical index compensator</td>
<td>± 2”</td>
</tr>
<tr>
<td>Reposition accuracy</td>
<td>± 0.2”</td>
</tr>
<tr>
<td>Available zenith angles without accessories</td>
<td>45° to 140°</td>
</tr>
<tr>
<td>Constrained centering</td>
<td>Zeiss center spigot (DIN 18719)</td>
</tr>
<tr>
<td>Focusing range of optical plummet</td>
<td>0.55 m to ∞</td>
</tr>
<tr>
<td>Magnification of optical plummet</td>
<td>2 x</td>
</tr>
<tr>
<td>Weight of instrument</td>
<td>5.2 kg</td>
</tr>
<tr>
<td>Weight of case</td>
<td>4.8 kg</td>
</tr>
<tr>
<td>Nominal accuracy</td>
<td>± 1” or ± 0.25 mgrant</td>
</tr>
</tbody>
</table>

## Ordering Data

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>70 24 13</td>
<td>9.5</td>
</tr>
<tr>
<td>70 24 12</td>
<td>9.5</td>
</tr>
<tr>
<td>70 72 23</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Subject to modifications in the interest of technical progress.