Macro lens

Makro-Symmar 5.6/80-0033

Unlike conventional cameras lenses where the optical performance decreases as the magnification increases, Schneider-Kreuznach macro lenses have been developed and corrected exclusively for the close-up range of 1:20 to 1:1. Due to its mechanical stability and the robust V-mount interface enabling simpler adjustment of the best azimuth position, the system is exceptionally well suited to demanding, continuous industrial use.

Key Features

• Excellent optical imaging performance when using large sensors
• Vibration-insensitive for stable optical performance
• Industry-compatible V-mount interface
• Lockable distance and aperture settings
• Infinitely adjustable aperture, guaranteed long-term stability
• 100% quality control guarantees reliability and constant quality
• Low maintenance requirements, therefore high system reliability

Applications

• Machine Vision and other imaging applications
• PCB inspection
• LCD inspection
• OLED inspection
• Solar inspection

Technical Specifications

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F-number</td>
<td>5.6</td>
</tr>
<tr>
<td>Focal length</td>
<td>82.4 mm</td>
</tr>
<tr>
<td>Image circle</td>
<td>141.2 mm</td>
</tr>
<tr>
<td>Magnification</td>
<td>-1.0</td>
</tr>
<tr>
<td>Transmission</td>
<td>400 - 700 nm</td>
</tr>
<tr>
<td>Interface</td>
<td>V-Mount</td>
</tr>
<tr>
<td>Weight</td>
<td>136 gr.</td>
</tr>
<tr>
<td>Option</td>
<td>Optical filter</td>
</tr>
</tbody>
</table>

Contact

Jos. Schneider Optische Werke GmbH
Ringstraße 132
55543 Bad Kreuznach
Germany
Phone +49 671 601-387
Fax +49 671 601-286
www.schneiderschneiderkreuznach.com/industrialoptics
industrie@scheiderkreuznach.com

Schneider Asia Pacific Ltd.
20/F Central Tower, 28 Queen’s Road Central, Hong Kong
China
Phone +852 8302 0301
Fax +852 8302 4722
www.schneider-asia-pacific.com
info@scheider-asia-pacific.com

Schneider Optics Inc.
285 Oser Ave.
Hauppauge, NY 11788
USA
Phone +1 631 761-5000
Fax +1 631 761-5090
www.schneideroptics.com/industrial
industrial@schneideroptics.com

Jos. Schneider Optische Werke GmbH is certified ISO 9001. We accept no responsibility for any errors and reserve the right of modification without further notice.
Makro-Symmar 5.6/80

**MODULATION with reference to the relative image height**

<table>
<thead>
<tr>
<th>Wavelength (nm)</th>
<th>546</th>
<th>589</th>
<th>644</th>
<th>685</th>
<th>702</th>
<th>780</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spectral weighting</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Spatial frequency</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>15</td>
<td>20</td>
<td>25</td>
</tr>
</tbody>
</table>

| Image Ø f / 5.6 | 160.0 |
| Image Ø f / 15.0 | 160.0 |

**Focusing:** MTF<sub>max</sub> at f / 5.6, R = 20 1/°, μ<sub>ω</sub> = 0
Makro-Symmar 5.6/80

RELATIVE ILLUMINATION
The relative illumination is shown for the given focal distances or magnifications.

\[
\frac{f}{5.6} \quad \frac{f}{16.0}
\]

\[
\begin{align*}
\beta' &= -0.5000 \quad \mu'_{max} = 60.1 \quad \theta_{0}' = 86.9. \\
\beta' &= -1.0000 \quad \mu'_{max} = 80.0 \quad \theta_{0}' = 82.8. \\
\beta' &= -2.0000 \quad \mu'_{max} = 119.2 \quad \theta_{0}' = 86.9.
\end{align*}
\]

DISTORTION
Distortion is shown for the given focal distances or magnifications. Positive values indicate pincushion distortion and negative values barrel distortion.

\[
\begin{align*}
\beta' &= -0.5000 \quad \mu'_{max} = 59.9 \quad \theta_{0}' = 86.9. \\
\beta' &= -1.0000 \quad \mu'_{max} = 79.8 \quad \theta_{0}' = 82.8. \\
\beta' &= -2.0000 \quad \mu'_{max} = 119.2 \quad \theta_{0}' = 86.9.
\end{align*}
\]

TRANSMITTANCE
Relative spectral transmittance is shown with reference to wavelength.