MACROZOOM LENS

HMZ Series

High Resolution Macro Zoom Lens

High resolution and compact design

- Compatible with 1/1.8 inch of Mega Pixel camera
- High resolution and compact design
- High contrast and low distortion
- Improve uniformity of brightness for co-axial illumination
- Magnification and working distance can be converted to 0.21x - 18x, WD40 - 332mm by using converters

HMZ0745 (Manual Zoom/Straight type)

HMZ0745C-SM (Motorized Zoom/Co-axial type)

HMZ0745C (Manual Zoom/Co-axial type)

Lens

<table>
<thead>
<tr>
<th>Model</th>
<th>Magnification</th>
<th>WD</th>
<th>TV distortion</th>
<th>Resolution</th>
<th>Object side NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMZ0745</td>
<td>0.7× - 4.5×</td>
<td>92mm</td>
<td>0.05% - 0.08%</td>
<td>11.5μ - 2.87μ</td>
<td>0.03 - 0.12</td>
</tr>
</tbody>
</table>

* Indicated specifications are design values.
* Resolution indicates a theoretical resolution at a wavelength of 550nm.
* Depth of field is calculating assuming a horizontal 320 TV resolution using 1/2 inch camera (permissible circle of confusion 40μ).

Front Converter

Rear Converter

(Wiring Diagram) HMZ0745C-SM
**Low Magnification Zoom Lens with Co-axial Illumination**

Built-in co-axial illumination
Suitable for various applications, inspection of wafer, IC chip, etc...

- 10x Zoom (0.2x - 2.0x)
- Compact design of 10x zoom ratio
- Reduce relative illumination
- High resolution at the whole magnification
- Motorized zoom type is available
- Long WD, 227mm

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### TLZ Series

**TLZ0220C (Manual Zoom)**

<table>
<thead>
<tr>
<th>Magnification</th>
<th>0.2x - 2.0x</th>
</tr>
</thead>
<tbody>
<tr>
<td>WD</td>
<td>227mm</td>
</tr>
<tr>
<td>Resolution</td>
<td>22.4μ - 7.6μ</td>
</tr>
<tr>
<td>Object side NA</td>
<td>0.015 - 0.044</td>
</tr>
</tbody>
</table>

**TLZ0220C-SM (Motorized Zoom)**

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**TLZ0220C (Manual Zoom)**

Magnification: 0.2x - 2.0x
Depth of field: 13.1mm - 0.45mm
WD: 227mm
Resolution: 22.4μ - 7.6μ
Object side NA: 0.015 - 0.044

**TLZ0220C-SM (Motorized Zoom)**

Magnification: 0.2x - 2.0x
Depth of field: 13.1mm - 0.45mm
WD: 227mm
Resolution: 22.4μ - 7.6μ
Object side NA: 0.015 - 0.044

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### 8.0x Compact Macro Zoom Lens

Compact and wide zoom ratio, suitable for inspection of various objects

- Long WD, 180mm
- Focus function is available
- φ29mm, suitable for small and limited spaces

### 6.0x Zoom Lens

Suitable for high speed applications

- WD500mm - ∞
  - Macro photography: Possible to use at WD10mm by pulling a macro lever
  - Large aperture, suitable for high speed camera

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**TLZ0220C-SM**

(Wiring Diagram) TLZ0220C-SM

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**CMZ0540-2**

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<tr>
<th>Magnification</th>
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</tr>
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<tbody>
<tr>
<td>WD</td>
<td>180.3mm</td>
</tr>
<tr>
<td>Resolution</td>
<td>14μ - 6.3μ</td>
</tr>
<tr>
<td>Object side NA</td>
<td>0.024 - 0.053</td>
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**PH6 x 8Macro**

Model Focal length (Zoom Ratio): 8 - 48mm (6.0x)
Magnification: 0.017 - 0.1
WD: 500mm
Filter Pitch: 0.017 - 0.1

**J6 x 11Macro**

Model Focal length (Zoom Ratio): 11.5 - 69mm (6.0x)
Magnification: 0.024 - 0.14
WD: 500mm
Filter Pitch: 0.024 - 0.14

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**TLZ0220C**

(Wiring Diagram) TLZ0220C-SM

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**CMZ0540-2**

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