

## 1.0X Lower Lens



Lower Lens

Stock **#89-897** [CONTACT US](#)

£227<sup>00</sup>

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| Volume Pricing |                               |
|----------------|-------------------------------|
| Qty 1+         | £227.00 each                  |
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**!** Prices shown are exclusive of VAT/local taxes

### Product Downloads

#### General

Lower Lens (One Required) **Note:**

Modular High Magnification Zoom Lens **Type:**

1.0X Lower Lens **Title:**

#### Optical Properties

**Magnification:**

## Regulatory Compliance

Compliant

RoHS 2015:

View

Certificate of Conformance:

Compliant

Reach 235:

## Product Details

- Wide Range of Magnifications Achievable
- Interchangeable Components Provide Maximum Flexibility
- Motorized and Inline Options Available
- [7X and 12.5X High Precision Zoom Lens Kits](#) Also Available

7X and 12.5X High Precision Zoom Lenses are modular lens systems that consist of a camera mount, camera tube, core module, lower function module, and lower lens. Added versatility is achieved by swapping out modules to change magnification, field of view, or the optical pathway. 7X and 12.5X High Precision Zoom Lenses are compatible with M26 x36 TPI Mitutoyo-style objectives and with camera sensor coverages and mounts ranging from C-Mount to F-Mount and to 35mm DSLR cameras. 50/50 and 90° cubes are available to introduce right angle turns or to support multiple imaging paths. A motor controller for multi-axis zoom and focus functionality is also available and can be connected to USB, Ethernet, or RS-232/422/285 ports.

### Zoom Lens Technical Guide

This downloadable PDF includes everything you need to configure and get started with your zoom lens. Inside, you'll find:

- Guidance on selecting components to best meet application needs
- Required components and how they are integrated
- Available accessories, including in-line illumination
- Par-focalization and par-centering guidance
- Optical performance specifications

[Download Zoom Lens Technical Guide](#)

A complete zoom lens requires a camera mount, camera tube, zoom module, lower function module, and lower lens. An item selection guide can be found on the Technical Information tab.

**LIGHTING ACCESSORIES**

- #89-918 Polarizer
- #89-919 Fiber Optic Light Guide Adapter
- #89-920 10mm Fiber Optic Adapter
- #89-921 In-Line Port w/ Right Angle Bend

NOTE: In-Line Illumination Has Limited Field Illumination With Large FOVS

**CAMERA MOUNTS**

- #89-860 C\CS Camera Mount
- #89-861 F Camera Mount
- #89-862 EOS Camera Mount
- #89-863 Pentax K Camera Mount
- #89-864 1/4" Camera Mount
- #89-865 Micro 1/3" Camera Mount
- #89-866 Sony Alpha Camera Mount

**CAMERA TUBES**

- #89-867 Camera Tube 0.4X\80FL
- #89-868 Camera Tube 0.5X\100FL
- #89-869 Camera Tube 0.6X\120FL
- #89-870 Camera Tube 0.8X\160FL
- #89-871 Camera Tube 1X\200FL
- #89-872 Mini Camera Tube 0.8X\160FL
- #89-873 Mini Camera Tube 1X\200FL
- #89-874 Mini Camera Tube 1.5X\300FL
- #89-875 Mini Camera Tube 2X\400FL
- #89-876 Mini Camera Tube 2.5X\500FL
- #89-877 Mini Camera Tube 3X\600FL

**MOUNTING**

- #89-911 Camera Tube Clamp

**ZOOM MODULES**

**7X ZOOM**

- #89-878 7:1 Zoom Manual
- #89-879 7:1 Zoom Manual w/ Detents
- #89-880 7:1 Zoom Stepper Motorized

**12.5X ZOOM**

- #89-881 12.5:1 Zoom Manual
- #89-882 12.5:1 Zoom Manual w/ Detents
- #89-883 12.5:1 Zoom Stepper Motorized

**ACCESSORIES**

- #89-884 Fixed Aperture Set  
Required For Fixed Magnification Systems

**LOWER FUNCTION MODULES**

- #89-885 Basic
- #89-886 15mm Focus Manual
- #89-887 15mm Focus Stepper Motor
- #89-888 In-Line Illumination
- #89-889 In-Line Illumination With Analyzer
- #89-890 In-Line Illumination 5mm Focus Manual
- #89-891 In-Line Illumination 5mm Focus Manual w/ Analyzer
- #89-892 In-Line Illumination 5mm Focus Stepper Motor
- #89-893 In-Line Illumination 5mm Focus Stepper Motor w/ Analyzer
- #89-904 Objective Adapter
- Mitutoyo Style Objective (M26 x 36TPI)

**LOWER LENSES**

- #89-894 0.4X\500FL
- #89-895 0.5X\400FL
- #89-896 0.67X\300FL
- #89-897 1X\200FL
- #89-898 1.25X\160FL
- #89-899 1.43X\140FL
- #89-900 1.67X\120FL
- #89-901 2X\100FL
- #89-902 3X\67FL
- #89-903 4X\50FL

**ACCESSORIES**

- #89-905 50/50 Cube
- #89-906 Mirror Cube
- #89-907 Mirror Cube Adapter
- #89-910 In-Line Mount
- #89-908 25.4mm Filter Holder
- #89-884 Aperture Set
- #89-909 Adjustable Iris

NOTE: Not Every Combination Will Present Desired Results



### Technical Information

| Specifications        |                    |                 |          |                 |          |                 |          |            |          |                 |          |            |          |
|-----------------------|--------------------|-----------------|----------|-----------------|----------|-----------------|----------|------------|----------|-----------------|----------|------------|----------|
| Lower Lens:           |                    | 0.4X Lower Lens |          |                 |          | 1.0X Lower Lens |          |            |          | 4.0X Lower Lens |          |            |          |
| Working Distance:     |                    | 490mm           |          |                 |          | 190mm           |          |            |          | 32mm            |          |            |          |
| Zoom Modules:         |                    | 7X Zoom         |          | 12.5X Zoom      |          | 7X Zoom         |          | 12.5X Zoom |          | 7X Zoom         |          | 12.5X Zoom |          |
| Max Coax. FOV Dia.:   |                    | Not Recommended |          | Not Recommended |          | Not Recommended |          | 20mm       |          | 9.4mm           |          | 9.9mm      |          |
| Range:                |                    | Low Mag         | High Mag | Low Mag         | High Mag | Low Mag         | High Mag | Low Mag    | High Mag | Low Mag         | High Mag | Low Mag    | High Mag |
| 0.4X Camera Tube      | NA                 | 0.0047          | 0.016    | 0.0036          | 0.019    | 0.012           | 0.039    | 0.009      | 0.048    | 0.047           | 0.16     | 0.036      | 0.19     |
|                       | Res (lp/mm)        | 14              | 47       | 11              | 58       | 35              | 116      | 27         | 144      | 142             | 435      | 108        | 576      |
|                       | PMAG               | 0.067X          | 0.46X    | 0.045X          | 0.55X    | 0.17X           | 1.2X     | 0.11X      | 1.4X     | 0.67X           | 4.6X     | 0.45X      | 5.5X     |
|                       | DOF (mm)           | 25              | 2.4      | 44              | 1.5      | 4.1             | 0.38     | 7          | 0.25     | 0.25            | 0.024    | 0.44       | 0.015    |
|                       | Hor. FOV 1/3" (mm) | 71              | 10       | 107             | 8.7      | 29              | 4.1      | 43         | 3.5      | 7.1             | 1        | 11         | 0.87     |
|                       | Hor. FOV 1/2" (mm) | 95              | 14       | 143             | 12       | 38              | 5.5      | 57         | 4.6      | 10              | 1.4      | 14         | 1.2      |
|                       | Hor. FOV 2/3" (mm) | 131             | 19       | 196             | 16       | 52              | 7.6      | 79         | 6.4      | 13              | 1.9      | 20         | 1.6      |
| 1.0X Camera Tube      | NA                 | 0.0047          | 0.016    | 0.0036          | 0.019    | 0.012           | 0.039    | 0.009      | 0.048    | 0.047           | 0.16     | 0.036      | 0.19     |
|                       | Res (lp/mm)        | 14              | 47       | 11              | 58       | 35              | 116      | 27         | 144      | 142             | 465      | 108        | 576      |
|                       | PMAG               | 0.17X           | 1.2X     | 0.11X           | 1.4X     | 0.42X           | 2.9X     | 0.28X      | 3.5X     | 1.7X            | 12X      | 1.1X       | 14X      |
|                       | DOF (mm)           | 25              | 2.4      | 44              | 1.5      | 4.1             | 0.38     | 7          | 0.25     | 0.25            | 0.024    | 0.44       | 0.015    |
|                       | Hor. FOV 1/3" (mm) | 29              | 4.1      | 43              | 3.5      | 11              | 1.7      | 17         | 1.4      | 2.9             | 0.41     | 4.3        | 0.35     |
|                       | Hor. FOV 1/2" (mm) | 38              | 5.5      | 57              | 4.6      | 15              | 2.2      | 23         | 1.9      | 3.8             | 0.55     | 5.7        | 0.46     |
|                       | Hor. FOV 2/3" (mm) | 52              | 7.6      | 79              | 6.4      | 21              | 3.0      | 31         | 2.6      | 5.2             | 0.76     | 7.9        | 0.64     |
| 3.0X Mini Camera Tube | NA                 | 0.0047          | 0.016    | 0.0036          | 0.019    | 0.012           | 0.039    | 0.009      | 0.048    | 0.047           | 0.16     | 0.036      | 0.19     |
|                       | Res (lp/mm)        | 14              | 47       | 11              | 58       | 35              | 116      | 27         | 144      | 142             | 465      | 108        | 576      |
|                       | PMAG               | 0.50X           | 3.5X     | 0.34X           | 4.1X     | 1.3X            | 8.7X     | 0.84X      | 10X      | 5.0X            | 35X      | 3.4X       | 41X      |
|                       | DOF (mm)           | 25              | 2.4      | 44              | 1.5      | 4.1             | 0.38     | 7          | 0.25     | 0.25            | 0.024    | 0.44       | 0.015    |
|                       | Hor. FOV 1" (mm)   | 25              | 3.7      | 38              | 3.1      | 10              | 1.5      | 15         | 1.2      | 2.5             | 0.37     | 3.8        | 0.31     |
|                       | Hor. FOV 4/3" (mm) | 36              | 5.2      | 54              | 4.3      | 14              | 2.1      | 21         | 1.7      | 3.6             | 0.52     | 5.4        | 0.43     |
|                       | Hor. FOV 35mm (mm) | 71              | 10       | 107             | 8.7      | 29              | 4.1      | 43         | 3.5      | 7.1             | 1        | 11         | 0.87     |