



OPTEM RETROZOOM 65

6.5:1 OPTICAL SYSTEM

OPTICAL FLEXIBILITY AND SIMPLICITY
Reliable Replacement for 6.5:1 Zoom Alternatives

Simplicity in Design...

Reliability in Field

The Optem® RetroZoom 65 Optical System is specifically designed to provide today's machine vision OEM with a plug-and-run replacement for alternative brand 6.5:1 zoom lenses.

Unlike most Optem Zoom Systems, The RZ65 combines zoom, function and illumination options into one compact zoom core. Coupled with its parallel performance with competitive lenses, this design assures seamless integration, comparable space requirements and streamlined ordering and inventory.

With a variety of Zoom core options, TV Tubes, and Accessories to choose from, the RZ65 delivers exacting performance, assuring you of seamless changeout and integration.

Proof in the Performance

The RetroZoom 65 delivers parfocal 6.5:1 zoom covering magnifications from 0.7X to 4.5X in optimal configuration and maximum magnification range of 0.066X and 22X depending upon the specified dovetail tubes and magnification accessories.

With a variety of Auxiliary Lenses, RZ65 spans working distances from 35 – 306mm and field-of-view range covers 9.4mm x 12.6mm to 0.53mm x 0.71mm dependent upon camera format.



RetroZoom 65

Required Components

DOVETAIL TUBE - The critical link between your camera and the zoom core, RetroZoom 65 Dovetail tubes are available in any number of configurations, mount types and magnifications to have further effect on your on screen image.



ZOOM CORE - RetroZoom 65 cores are available in base configuration, or with 3mm or 12mm fine focus and/or coaxial illumination options for use with infinity-Corrected Objectives or with standard Auxiliary Lenses.

AUXILIARY LENSES - For added magnification or greater fields-of-view, incorporate one of seven magnifying or reducing Auxiliary Lenses below your RetroZoom 65.

Illumination Options

The RetroZoom 65 is available with a full compliment of illumination accessories to ensure you of the optimal lighting for your subject and application.



Choose from a Ring Light to mount below your Infinity-Corrected Objective or any number of Coaxial Zoom Cores that accept for 8, 10 or 12mm coaxial cables. For maximum illumination control and uniformity, specify the 110V or 220V Optem® VSi Lamphouse.

Infinity-Corrected Objectives

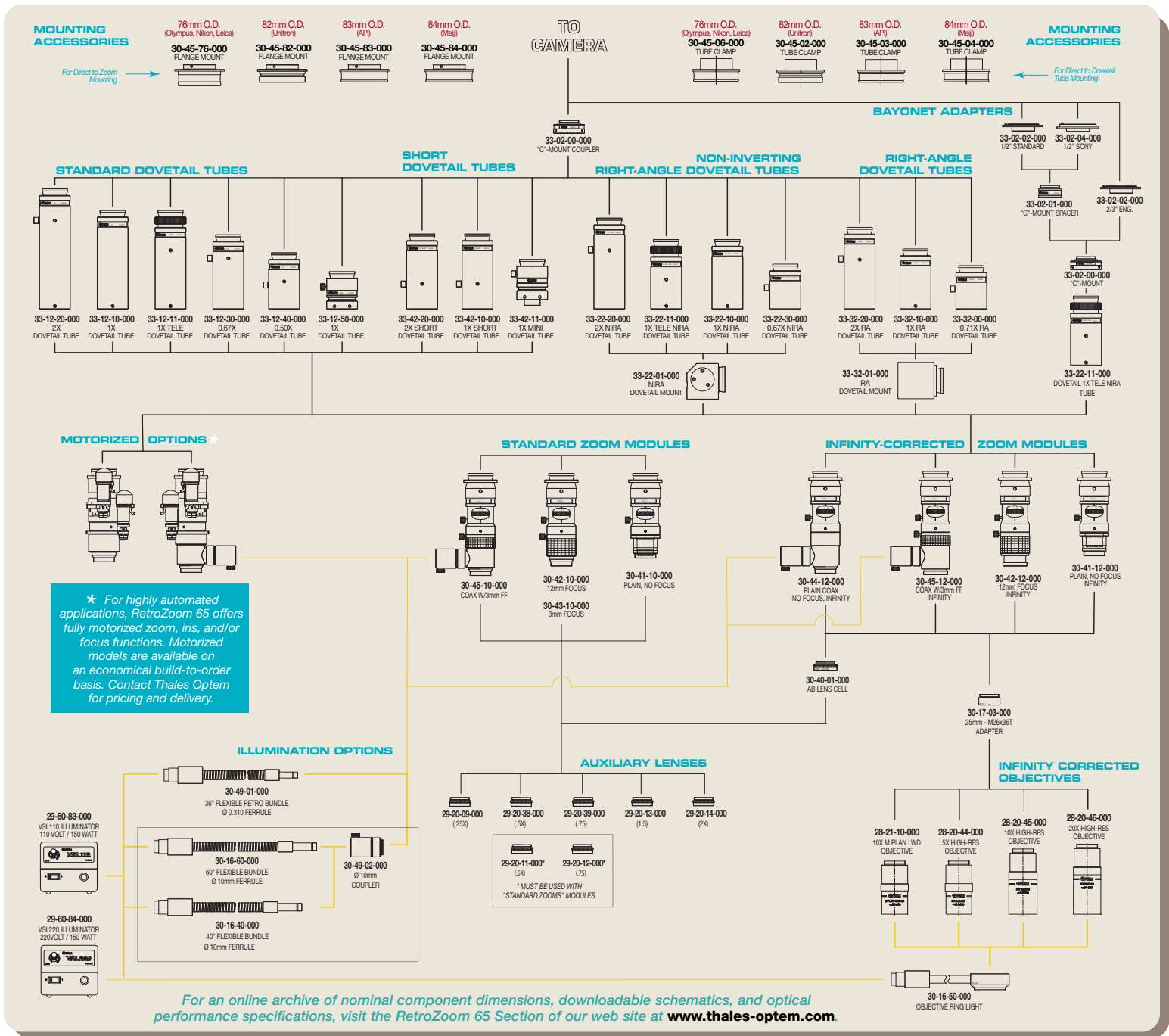
Achieve significantly higher magnification and increased resolution by combining your RetroZoom 65 with an Optem® Infinity-Corrected objective from one of four Objective Zoom Cores. Other brand objectives can be integrated similarly, but require an RMS Adapter (see System Diagram, opposite). Equipped with an Optem Infinity-Corrected Objective, your RetroZoom 65 will effectively perform like a high-priced microscope, with the added benefit of a continuous 6.5:1 zoom range.



Motorization

Although not offered as in-stock items within the RetroZoom 65 line, fully motorized zoom and focus functions can be specified on a non standard delivery basis. Choose from DC and stepper motor options depending upon your automation and control needs. Available with MicroMo or Vexta motors, and Stepper options available with Hall Effect Sensors.





Contact Thales Optem today to specify a reliable and streamlined second source to your current 6.5:1 zoom optical lens supplier.



RETROZOOM 65

RetroZoom 65 Optical Performance

AUXILIARY LENS

0.25X 29-20-09-000

306mm
WORKING
DISTANCE

| | | 0.375X TV TUBE | | 0.5X TV TUBE | | 0.67X TV TUBE | | 1.0X TV TUBE | | 2.0X TV TUBE | |
|------------------------------|--------|----------------|--------------|---------------|-------------|---------------|-----------|--------------|-----------|--------------|-----------|
| | | Low | High | Low | High | Low | High | Low | High | Low | High |
| F.O.V. (mm) camera format | N.A. | 0.0065 | 0.0176 | 0.0065 | 0.0176 | 0.0065 | 0.0176 | 0.0065 | 0.0176 | 0.0065 | 0.0176 |
| | MAG. | 0.066 | 0.4277 | 0.09 | 0.57 | 0.12 | 0.76 | 0.18 | 1.13 | 0.34846 | 2.1786 |
| | D.O.F. | 13.02 | 1.78 | 13.02 | 1.78 | 13.02 | 1.78 | 13.02 | 1.78 | 13.02 | 1.78 |
| | 1/4" | 36.36 x 48.48 | 5.61 x 7.48 | 27.25 x 36.33 | 4.23 x 5.64 | 20.4 x 27.1 | 3.2 x 4.2 | 13.6 x 18.2 | 2.1 x 2.8 | 6.9 x 9.2 | 1.1 x 1.5 |
| | 1/3" | 54.55 x 72.73 | 8.42 x 11.22 | 40.87 x 54.49 | 6.34 x 8.46 | 30.5 x 40.7 | 4.7 x 6.3 | 20.5 x 27.3 | 3.2 x 4.3 | 10.3 x 13.8 | 1.7 x 2.2 |

0.5X 29-20-38-000

169mm
WORKING
DISTANCE

| | | | | | | | | | | | |
|------------------------------|--------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-----------|-------------|
| F.O.V. (mm) camera format | N.A. | 0.0129 | 0.0349 | 0.0129 | 0.0349 | 0.013 | 0.035 | 0.0129 | 0.0349 | 0.013 | 0.035 |
| | MAG. | 0.13 | 0.85 | 0.17 | 1.13 | 0.23 | 1.50 | 0.35 | 2.24 | 0.69 | 4.31 |
| | D.O.F. | 3.31 | 0.45 | 3.31 | 0.45 | 3.31 | 0.45 | 3.31 | 0.45 | 3.31 | 0.45 |
| | 1/4" | 18.3 x 24.3 | 2.8 x 3.8 | 13.8 x 18.3 | 2.1 x 2.8 | 10.3 x 13.7 | 1.6 x 2.1 | 6.9 x 9.2 | 1.1 x 1.4 | 3.5 x 4.6 | 0.56 x 0.74 |
| | 1/3" | 27.4 x 36.5 | 4.2 x 5.7 | 20.6 x 27.5 | 3.2 x 4.3 | 15.4 x 20.5 | 2.4 x 3.2 | 10.3 x 13.8 | 1.6 x 2.1 | 5.2 x 7.0 | 0.84 x 1.11 |

0.75X 29-20-31-000

110mm
WORKING
DISTANCE

| | | | | | | | | | | | |
|------------------------------|--------|-------------|-------------|-------------|-----------|-------------|-----------|-----------|-------------|-----------|-------------|
| F.O.V. (mm) camera format | N.A. | 0.019 | 0.052 | 0.019 | 0.052 | 0.019 | 0.052 | 0.0193 | 0.0523 | 0.019 | 0.052 |
| | MAG. | 0.20 | 1.27 | 0.26 | 1.68 | 0.35 | 2.25 | 0.52 | 3.34 | 1.03 | 6.42 |
| | D.O.F. | 1.49 | 0.20 | 1.49 | 0.20 | 1.49 | 0.20 | 1.49 | 0.20 | 1.49 | 0.20 |
| | 1/4" | 12.2 x 16.3 | 1.89 x 2.53 | 9.2 x 12.3 | 1.4 x 1.9 | 6.9 x 9.2 | 1.1 x 1.4 | 4.6 x 6.1 | 0.72 x 0.96 | 2.3 x 3.1 | 0.37 x 0.50 |
| | 1/3" | 18.3 x 24.4 | 2.84 x 3.79 | 13.8 x 18.4 | 2.1 x 2.9 | 10.3 x 13.7 | 1.6 x 2.1 | 6.9 x 9.2 | 1.08 x 1.44 | 3.5 x 4.7 | 0.56 x 0.75 |

1.0X no lens

89mm
WORKING
DISTANCE

| | | | | | | | | | | | |
|------------------------------|--------|-------------|-------------|-------------|-----------|------------|-----------|-----------|-------------|-----------|-------------|
| F.O.V. (mm) camera format | N.A. | 0.026 | 0.070 | 0.026 | 0.070 | 0.026 | 0.070 | 0.026 | 0.070 | 0.026 | 0.070 |
| | MAG. | 0.27 | 1.72 | 0.35 | 2.28 | 0.47 | 3.05 | 0.70 | 4.50 | 1.40 | 8.76 |
| | D.O.F. | 0.81 | 0.11 | 0.81 | 0.11 | 0.81 | 0.11 | 0.81 | 0.11 | 0.81 | 0.11 |
| | 1/4" | 9.0 x 12.0 | 1.40 x 1.86 | 6.8 x 9.0 | 1.1 x 1.4 | 5.1 x 6.7 | 0.8 x 1.0 | 3.4 x 4.6 | 0.53 x 0.71 | 1.7 x 2.3 | 0.27 x 0.37 |
| | 1/3" | 13.5 x 18.0 | 2.09 x 2.79 | 10.2 x 13.6 | 1.6 x 2.1 | 7.6 x 10.1 | 1.2 x 1.6 | 5.1 x 6.9 | 0.80 x 1.07 | 2.6 x 3.4 | 0.41 x 0.55 |

1.5X 29-20-13-000

50mm
WORKING
DISTANCE

| | | | | | | | | | | | |
|------------------------------|--------|------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| F.O.V. (mm) camera format | N.A. | 0.040 | 0.11 | 0.040 | 0.11 | 0.040 | 0.11 | 0.0399 | 0.1084 | 0.040 | 0.11 |
| | MAG. | 0.40 | 2.62 | 0.54 | 3.47 | 0.72 | 4.64 | 1.08 | 6.89 | 2.13 | 12.88 |
| | D.O.F. | 0.35 | 0.05 | 0.35 | 0.05 | 0.35 | 0.05 | 0.35 | 0.05 | 0.35 | 0.05 |
| | 1/4" | 6.0 x 8.0 | 0.92 x 1.22 | 4.4 x 5.9 | 0.69 x 0.92 | 3.3 x 4.4 | 0.52 x 0.69 | 2.2 x 3.0 | 0.35 x 0.46 | 1.1 x 1.5 | 0.19 x 0.25 |
| | 1/3" | 9.0 x 12.0 | 1.38 x 1.83 | 6.7 x 8.9 | 1.04 x 1.38 | 5.0 x 6.6 | 0.78 x 1.03 | 3.3 x 4.5 | 0.52 x 0.70 | 1.7 x 2.3 | 0.28 x 0.37 |

2.0X 29-20-14-000

35mm
WORKING
DISTANCE

| | | | | | | | | | | | |
|------------------------------|--------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| F.O.V. (mm) camera format | N.A. | 0.055 | 0.15 | 0.06 | 0.15 | 0.06 | 0.15 | 0.06 | 0.15 | 0.06 | 0.15 |
| | MAG. | 0.57 | 3.64 | 0.75 | 4.84 | 1.00 | 6.40 | 1.50 | 9.80 | 2.98 | 22.0 |
| | D.O.F. | 0.18 | 0.02 | 0.18 | 0.02 | 0.18 | 0.02 | 0.18 | 0.02 | 0.18 | 0.02 |
| | 1/4" | 4.2 x 5.7 | 0.66 x 0.88 | 3.2 x 4.3 | 0.50 x 0.66 | 2.4 x 3.2 | 0.38 x 0.50 | 1.6 x 2.1 | 0.24 x 0.33 | 0.8 x 1.1 | 0.11 x 0.15 |
| | 1/3" | 6.4 x 8.5 | 0.99 x 1.32 | 4.8 x 6.4 | 0.74 x 0.99 | 3.6 x 4.8 | 0.56 x 0.75 | 2.4 x 3.2 | 0.37 x 0.49 | 1.2 x 1.6 | 0.16 x 0.22 |

N.A. = Numerical Aperture

MAG. = Magnification

D.O.F. = Depth-of-Field

F.O.V. = Field-of-View

— = zoom range is limited due to vignetting

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