

Substage/Ringlight Illumination RetroZoom 65 Optical Performance Matrix

		0.375X TV Tube		0.5X TV Tube		0.67X TV Tube		1.0X TV Tube		1.5X TV Tube		2.0X TV Tube																	
		Low Mag	High Mag	Low Mag	High Mag	Low Mag	High Mag	Low Mag	High Mag	Low Mag	High Mag	Low Mag	High Mag																
		NA	Res (lp/mm)	Mag	DOF	NA	Res (lp/mm)	Mag	DOF	NA	Res (lp/mm)	Mag	DOF	NA	Res (lp/mm)	Mag	DOF	NA	Res (lp/mm)	Mag	DOF								
0.18X Aux Lens 29-20-09-000 WD: 468 mm	Res (lp/mm)	0.0049	0.013	0.0049	0.013	0.0049	0.013	0.0049	0.013	0.0049	0.013	0.0049	0.013	0.0049	0.013	0.0049	0.013	0.0049	0.013	0.0049	0.013								
	Mag	15	40	15	40	15	40	15	40	15	40	15	40	15	40	15	40	15	40	15	40								
	DOF	0.047	0.30	0.063	0.41	0.08	0.54	0.13	0.81	0.19	1.22	0.25	1.62	0.32	2.05	0.43	2.75	0.53	3.43	0.62	4.12								
	FOV	57.59 x 76.79	9.09 x 12.12	43.19 x 57.59	6.81 x 9.09	32.23 x 42.98	5.09 x 6.78	21.60 x 28.79	3.41 x 4.54	14.40 x 19.20	2.27 x 3.03	10.80 x 14.40	1.70 x 2.27	75.12 x 100.16	11.85 x 15.80	56.34 x 75.12	8.89 x 11.85	42.04 x 56.06	6.63 x 8.84	28.17 x 37.56	4.44 x 5.93	18.78 x 25.04	2.96 x 3.95	14.08 x 18.78	2.22 x 2.96				
	Cam Format	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"			
0.25X Aux Lens 29-20-09-000 WD: 310 mm	Res (lp/mm)	0.0065	0.018	0.0065	0.018	0.0065	0.018	0.0065	0.018	0.0065	0.018	0.0065	0.018	0.0065	0.018	0.0065	0.018	0.0065	0.018	0.0065	0.018								
	Mag	20	54	20	54	20	54	20	54	20	54	20	54	20	54	20	54	20	54	20	54								
	DOF	0.066	0.42	0.088	0.56	0.12	0.75	0.18	1.13	0.26	1.69	0.35	2.25	0.46	3.03	0.62	4.12	0.91	6.06	1.30	8.78								
	FOV	41.46 x 55.29	6.54 x 8.72	31.10 x 41.46	4.91 x 6.54	23.21 x 30.94	3.66 x 4.88	15.55 x 20.73	2.45 x 3.27	10.37 x 13.82	1.64 x 2.18	7.77 x 10.37	1.23 x 1.64	54.08 x 72.11	8.53 x 11.38	40.56 x 54.08	6.40 x 8.53	30.27 x 40.36	4.78 x 6.37	20.28 x 27.04	3.20 x 4.27	15.14 x 20.18	2.39 x 3.18	10.14 x 13.52	1.60 x 2.13	6.76 x 9.01	1.07 x 1.42	5.07 x 6.76	0.80 x 1.07
	Cam Format	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"			
0.5X Aux Lens 29-20-38-000 WD: 178 mm	Res (lp/mm)	0.013	0.035	0.013	0.035	0.013	0.035	0.013	0.035	0.013	0.035	0.013	0.035	0.013	0.035	0.013	0.035	0.013	0.035	0.013	0.035								
	Mag	39	105	39	105	39	105	39	105	39	105	39	105	39	105	39	105	39	105	39	105								
	DOF	0.13	0.84	0.18	1.1	0.23	1.5	0.35	2.3	0.53	3.4	0.70	4.5	0.46	3.03	0.62	4.12	0.91	6.06	1.30	8.78								
	FOV	20.73 x 27.64	3.27 x 4.36	15.55 x 20.73	2.45 x 3.27	11.60 x 15.47	1.83 x 2.44	7.77 x 10.37	1.23 x 1.64	5.18 x 6.91	0.82 x 1.09	3.89 x 5.18	0.61 x 0.82	27.04 x 36.06	4.27 x 5.69	20.28 x 27.04	3.20 x 4.27	15.14 x 20.18	2.39 x 3.18	10.14 x 13.52	1.60 x 2.13	6.76 x 9.01	1.07 x 1.42	5.07 x 6.76	0.80 x 1.07				
	Cam Format	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"			
0.75X Aux Lens 29-20-39-000 WD: 114 mm	Res (lp/mm)	0.019	0.052	0.019	0.052	0.019	0.052	0.019	0.052	0.019	0.052	0.019	0.052	0.019	0.052	0.019	0.052	0.019	0.052	0.019	0.052								
	Mag	57	156	57	156	57	156	57	156	57	156	57	156	57	156	57	156	57	156	57	156								
	DOF	0.20	1.3	0.26	1.7	0.35	2.3	0.53	3.4	0.79	5.1	1.1	6.8	0.21	1.57	0.21	1.57	0.21	1.57	0.21	1.57								
	FOV	13.82 x 18.43	2.18 x 2.91	10.37 x 13.82	1.64 x 2.18	7.74 x 10.31	1.22 x 1.63	5.18 x 6.91	0.82 x 1.09	3.46 x 4.61	0.55 x 0.73	2.59 x 3.46	0.41 x 0.55	18.03 x 24.04	2.84 x 3.79	13.52 x 18.03	2.13 x 2.84	10.14 x 13.52	1.60 x 2.13	6.76 x 9.01	1.07 x 1.42	5.07 x 6.76	0.80 x 1.07						
	Cam Format	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"			
1.0X configuration NO LENS REQ'D WD: 89 mm	Res (lp/mm)	0.026	0.070	0.026	0.070	0.026	0.070	0.026	0.070	0.026	0.070	0.026	0.070	0.026	0.070	0.026	0.070	0.026	0.070	0.026	0.070								
	Mag	78	210	78	210	78	210	78	210	78	210	78	210	78	210	78	210	78	210	78	210								
	DOF	0.26	1.7	0.35	2.3	0.47	3.0	0.70	4.5	1.1	6.8	1.4	9	0.12	0.84	0.12	0.84	0.12	0.84	0.12	0.84								
	FOV	10.37 x 13.82	1.64 x 2.18	7.77 x 10.37	1.23 x 1.64	5.80 x 7.74	0.92 x 1.22	3.89 x 5.18	0.61 x 0.82	2.59 x 3.46	0.41 x 0.55	1.94 x 2.59	0.31 x 0.41	14.22 x 18.96	2.84 x 3.79	13.52 x 18.03	2.13 x 2.84	10.14 x 13.52	1.60 x 2.13	6.76 x 9.01	1.07 x 1.42	5.07 x 6.76	0.80 x 1.07						
	Cam Format	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"			
1.5X Aux Lens 29-20-40-000 WD: 52 mm	Res (lp/mm)	0.040	0.11	0.040	0.11	0.040	0.11	0.040	0.11	0.040	0.11	0.040	0.11	0.040	0.11	0.040	0.11	0.040	0.11	0.040	0.11								
	Mag	120	330	120	330	120	330	120	330	120	330	120	330	120	330	120	330	120	330	120	330								
	DOF	0.39	2.5	0.53	3.4	0.70	4.5	1.1	6.8	1.6	10	2.1	14	0.047	0.35	0.047	0.35	0.047	0.35	0.047	0.35								
	FOV	6.91 x 9.21	1.09 x 1.45	5.18 x 6.91	0.82 x 1.09	3.87 x 5.16	0.61 x 0.81	2.59 x 3.46	0.41 x 0.55	1.73 x 2.30	0.27 x 0.36	1.30 x 1.73	0.20 x 0.27	9.48 x 12.64	1.90 x 2.53	9.01 x 12.02	1.42 x 1.90	6.73 x 8.97	1.06 x 1.42	4.51 x 6.01	0.71 x 0.95	3.00 x 4.01	0.47 x 0.63	2.25 x 3.00	0.36 x 0.47				
	Cam Format	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"			
2.0X Aux Lens 29-20-41-000 WD: 32 mm	Res (lp/mm)	0.055	0.15	0.055	0.15	0.055	0.15	0.055	0.15	0.055	0.15	0.055	0.15	0.055	0.15	0.055	0.15	0.055	0.15	0.055	0.15								
	Mag	165	450	165	450	165	450	165	450	165	450	165	450	165	450	165	450	165	450	165	450								
	DOF	0.53	3.4	0.70	4.5	0.9	6.0	1.4	9	2.1	14	2.8	18	0.025	0.19	0.025	0.19	0.025	0.19	0.025	0.19								
	FOV	5.18 x 6.91	0.82 x 1.09	3.89 x 5.18	0.61 x 0.82	2.90 x 3.87	0.46 x 0.61	1.94 x 2.59	0.31 x 0.41	1.30 x 1.73	0.20 x 0.27	0.97 x 1.30	0.15 x 0.20	7.11 x 9.48	1.42 x 1.90	6.76 x 9.01	1.07 x 1.42	5.05 x 6.73	0.80 x 1.06	3.38 x 4.51	0.53 x 0.71	2.25 x 3.00	0.36 x 0.47	1.69 x 2.25	0.27 x 0.36				
	Cam Format	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"	1/4"	1/3"	1/2"	2/3"	1"			

Limited vignetting at low magnification
 Not a recommended configuration



INSPECTION | MACHINE VISION | RESEARCH



OPTEM RETROZOOM 65

6.5:1 LENS SYSTEM

MODULAR FLEXIBILITY AND SIMPLICITY
Reliable Performance in a Compact Design

Simplicity in Design... Reliability in Field

The Optem® RetroZoom 65 Lens 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 modular Optem Zoom Lenses, The RetroZoom 65 combines zoom, function and illumination options into one compact body. Coupled with parallel performance to 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 RetroZoom 65 delivers flexibility and exacting performance, assuring you of seamless changeout and integration.

Proof in the Performance

The RetroZoom 65 delivers parfocal 6.5:1 zoom covering magnifications of 0.7X – 4.5X and resolution of 72 – 240 lp/mm in optimal configuration. Maximum ranges of 3.0X – 21.0X and 144 – 480 lp/mm can be achieved with 2X Dovetail Tube and 2X Auxiliary Lens combinations.

Dependent upon Auxiliary Lens, RetroZoom 65 spans working distances from 35 – 306mm and fields-of-view ranging from 9.4 x 12.6mm to 0.53 x 0.71mm dependent upon camera format.



RetroZoom 65

REQUIRED COMPONENTS

Dovetail Tubes - 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 & Function Core - RetroZoom 65 cores are available in manual base configuration, or with 3mm or 12mm fine focus. All can be specified with coaxial illumination for use with Infinity-Corrected Objectives or with Auxiliary Lenses.

Auxiliary Lenses - For added magnification and 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 8, 10 or 12mm coaxial cables. For maximum illumination control and uniformity, specify the 110V or 220V Optem® VSi Light Sources.

OPTEM LONG-WORKING DISTANCE OBJECTIVES

Achieve significantly higher magnification and resolution. Combine your Zoom 70XL with the expanded line of Optem Long-Working Distance Objectives.

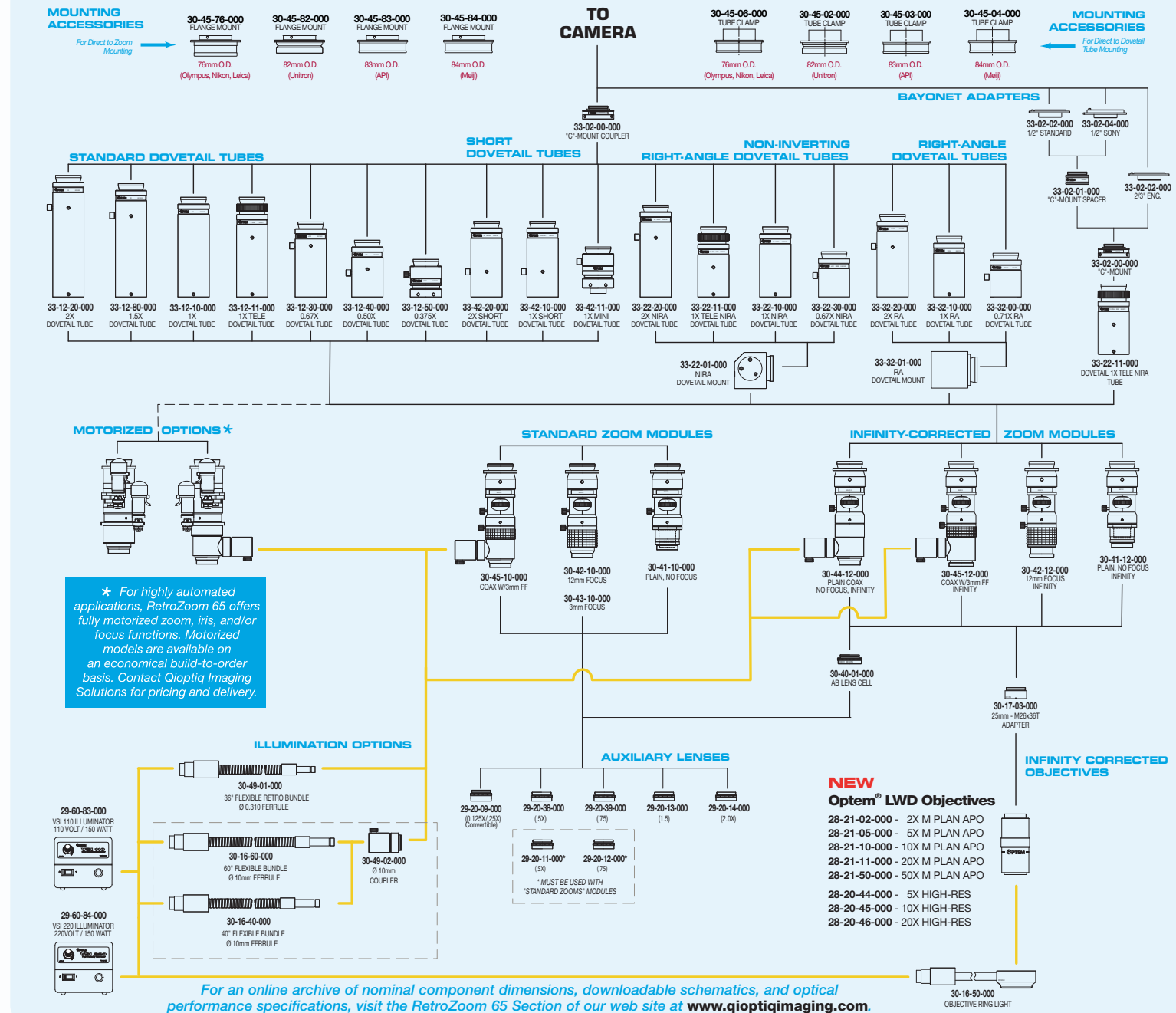
Optem M-Plan APO - Eliminate Chromatic aberration across exceptionally flat fields for the ultimate in high-magnification accuracy. Select from 2X, 5X, 10X, 20X and 50X Long-Working Distance Objectives. Optem M-Plan APO Objectives are functional replacements for Mitutoyo 378 Series Objectives and are ideal for metrology applications.

Optem High-Resolution - Specifically designed to capture maximum resolution at the high-end magnifications of Optem Lenses, the 5X, 10X and 20X Optem HR Objectives are ideal for applications where distinguishing every finite detail is critical.

MOTORIZATION OPTIONS

Although not offered as standard delivery items within the RetroZoom 65 line, fully motorized zoom and focus functions can be specified. Choose from DC and stepper motor options depending upon your automation and control needs. Available with MicroMo or Vexta motors, and stepper options with Hall Effect sensors.

www.qioptiqimaging.com



Contact Qioptiq Imaging Solutions today to specify a reliable and streamlined second source to your current 6.5:1 zoom lens.



RETROZOOM 65