

Optem® Long Working Distance Objectives



Infinity-Corrected Objectives

With a generous parfocal distance of 95 mm^a, Optem Long Working Distance Objectives are the perfect machine vision and industrial imaging solution when you need added magnification and resolving power without compromising working space around your subject.

Select from the complete line of Optem M Plan APO Objectives when flat-field precision, color accuracy and even illumination are critical... ideal for metrology! The re-engineered Optem M Plan APO Objectives introduce a novel optical design optimized to meet the apochromatic flat-field demands of large-format sensors and advanced image processing techniques. The latest widefield M PLAN objective increases your usable FOV by 56%, supporting sensor sizes up to 30mm.

Alternatively, leverage a 50% boost in numerical aperture with the field-proven imaging power of Optem High-Resolution Objectives, designed for use with Optem Zoom Products. All Optem Objectives afford a 95 mm parfocal distance as measured from the shoulder to the object plane and feature M26x36T threads.

Optem LWD Infinity-Corrected Objectives

28-21-50-001	50X M Plan APO, LWD
28-21-11-001	20X M Plan APO, LWD
28-21-10-000	10X M Plan APO, LWD
28-21-05-001	5X M Plan APO, LWD
28-21-02-001	2X M Plan APO, LWD
28-21-10-001	10X M PLAN APO Widefield, LWD
28-20-46-000	20X High-Resolution, LWD
28-20-45-000	10X High-Resolution, LWD
28-20-44-000	5X High-Resolution, LWD

^a Parfocal distance measured from the objective shoulder to the object plane

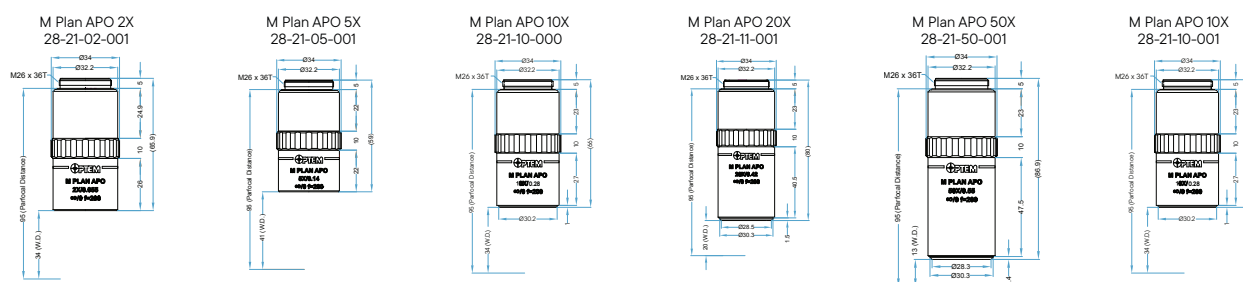
TECHNICAL SPECIFICATIONS

Optem M Plan APO Objectives

Realize flat-field precision that is free of chromatic aberration when imaging accuracy really counts. Optem M Plan Apo Objectives feature M26x36T threads and are optimized for use with Optem Micro-Inspection Lenses, A-Zoom® & A-Zoom μ Probing Microscopes and a range of popular industrial inspection and semiconductor microscopes. Optem M Plan APO Objectives are a parallel replacement for Mitutoyo 378 Series objectives.

Cat. No.	Objective Description	Numerical Aperture	Working Distance	EFL (mm)	Resolution (μm)	DOF (μm)	Real FOV (mm)	Real FOV (VxH, mm) (1/2" Sensor)	Mass (g)
28-21-02-001	LWD 2X	0.055	34 mm	100	6.1	181.8	ø12.00	240 x 0.32	233
28-21-05-001	LWD 5X	0.14	41 mm	40	2.4	28.1	ø4.80	0.96 x 0.128	220
28-21-10-000	LWD 10X	0.30	34 mm	20	1.1	6.1	ø2.40	0.48 x 0.64	240
28-21-11-001	LWD 20X	0.42	20 mm	10	0.8	3.1	ø1.20	0.24 x 0.32	284
28-21-50-001	LWD 50X	0.55	13 mm	4	0.61	1.8	ø0.48	0.10 x 0.13	299
28-21-10-001	Widefield 10X	0.28	34 mm	20	1.2	7.0	ø3.00	0.48 x 0.64	172

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Optem High-Resolution Objectives

Optem High-Resolution Objectives are specifically designed for use with Optem zoom modules, including the A-Zoom and A-Zoom μ Microscopes^b. These High-Resolution Objectives are the ideal solution for high-end imaging applications where extremely fine detail and edge distinction is critical.

Cat. No.	Objective Description	Numerical Aperture	Working Distance	EFL (mm)	Resolution (μm)	DOF (μm)	Real FOV (mm)	Real FOV (VxH, mm) (1/2" Sensor)	Mass (g)
28-20-44-000	High-Res 5X	0.225	34 mm	40	1.5	10.9	N/A ^b	N/A	210
28-20-45-000	High-Res 10X	0.45	19 mm	20	0.74	2.7	N/A ^b	N/A	190
28-20-46-000	High-Res 20X	0.60	13 mm	10	0.56	1.5	N/A ^b	N/A	290

^bOptem High-Resolution Objectives are specifically designed for use with Optem Lens Systems. Not intended for use with conventional microscope optics.

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