

# MMS<sup>®</sup> MODULAR MAGNIFICATION SYSTEM

Edmund Optics Inc.

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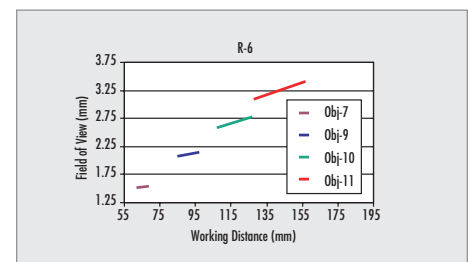
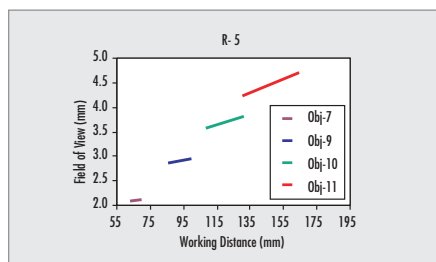
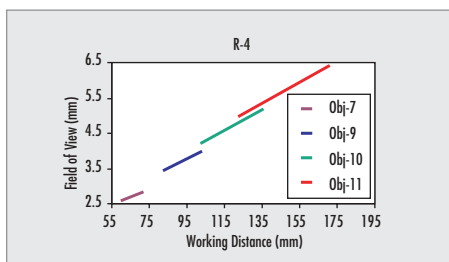
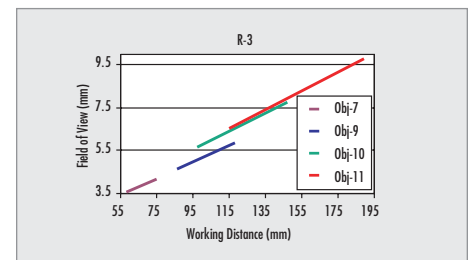
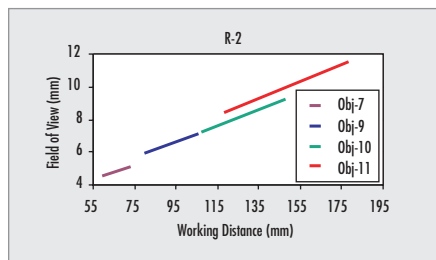
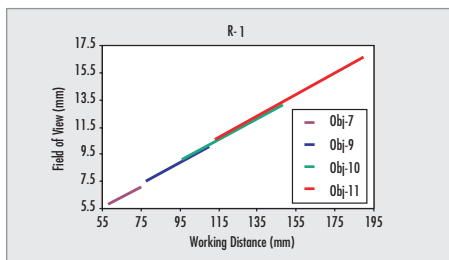


Designed for flexible integration, our **Modular Magnification System (MMS<sup>®</sup>)** imaging lenses each feature an adjustable iris and fine focus. A complete system requires a front objective and rear assembly (each sold separately). A variety of both components are available and can be interchanged to produce 24 different magnification/working distance combinations. Currently, nominal working distances of 67mm, 91mm, 116mm or 141mm are available, with resolution as high as 114 lp/mm. The  $\pm 8$ mm of focus adjustment allows for a range of fields of view and working distances with one set of components. Fields of view may be adjusted by as much as 50% within working distance ranges of up to 77mm. Depending on components chosen, distortion as low as 0.13% can be achieved using a  $\frac{2}{3}$ " format CCD.

- Designed for OEM Integration
- Max. CCD Size:  $\frac{2}{3}$ " Format
- Working Distances Ranging from 67 mm to 141 mm
- Magnifications Ranging from 0.5x to 4.0x

Rear Assembly	Stock No	Front Objective Attachments										*FOV is for $\frac{1}{2}$ " Format CCD			
		Obj-7: 67mm nominal WD			Obj-9: 91mm nominal WD			Obj-10: 116mm nominal WD			Obj-11: 141mm nominal WD				
		PMag	FOV*	Obj Res	PMag	FOV*	Obj Res	PMag	FOV*	Obj Res	PMag	FOV*	Obj Res		
R-1	#55-905	1.0X	6.40	36.0 lp/mm	0.75X	8.53	28.5 lp/mm	0.6X	10.67mm	25.4 lp/mm	0.5X	12.80mm	20.2 lp/mm		
R-2	#55-906	1.3X	4.92	57.0 lp/mm	1.0X	6.40	40.3 lp/mm	0.8X	8.00mm	32.0 lp/mm	0.7X	9.14mm	28.5 lp/mm		
R-3	#55-907	1.6X	4.00	64.0 lp/mm	1.25X	5.12	50.8 lp/mm	1.0X	6.40mm	36.0 lp/mm	0.8X	8.00mm	32.0 lp/mm		
R-4	#55-908	2.3X	2.78	80.6 lp/mm	1.75X	3.66	57.0 lp/mm	1.4X	4.57mm	45.3 lp/mm	1.1X	5.82mm	36.0 lp/mm		
R-5	#55-909	3.0X	2.13	90.5 lp/mm	2.2X	2.91	64.0 lp/mm	1.75X	3.66mm	57.0 lp/mm	1.5X	4.27mm	50.8 lp/mm		
R-6	#55-910	4.0X	1.60	114.0 lp/mm	3.0X	2.13	80.6 lp/mm	2.4X	2.67mm	64.0 lp/mm	2.0X	3.20mm	50.8 lp/mm		
				#55-901			#55-902			#55-903			#55-904		

## REAR ASSEMBLIES: FULL RANGE WITH OBJECTIVES (FOV VS WD)



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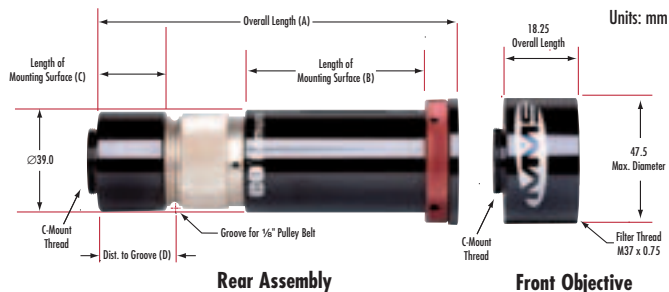
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REAR ASSEMBLY DIMENSIONS		All Dimensions in mm			
Stock Number	A	B	C	D	
#55-905	64.3	8.3	13.3	16.5	
#55-906	74.3	23.4	8.2	11.4	
#55-907	80.9	25.1	13.1	16.2	
#55-908	102.8	37.9	22.3	25.5	
#55-909	114.9	59.2	13.1	16.2	
#55-910	135.2	67.0	25.6	28.7	



## MVO<sup>®</sup> MMS<sup>®</sup> IN-LINE ATTACHMENT

- Compatible with Entire Line of MMS<sup>®</sup> Lenses
- Provides Even Illumination Across the Field of View

This in-line attachment has been specifically designed for our MVO<sup>®</sup> MMS<sup>®</sup> Lenses. It is equipped with C-Mount threads so that it can be inserted in between the rear assembly and the front objective to create a complete in-line system. Focus adjustment allows for optimum coverage for each objective. Compatible light guides and illuminators can be found online at [www.edmundoptics.com](http://www.edmundoptics.com).

### SPECIFICATIONS

<b>Dimensions (Dia. x H x L):</b>	50.0mm x 39mm x 86.2mm
<b>Optimized Bundle Diameter:</b>	1/16"
<b>Required Ferrule Diameter:</b>	0.187"

<b>MVO<sup>®</sup> MMS<sup>™</sup> In-Line Attachment</b>	<b>#56-244</b>
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## MMS<sup>®</sup> TO MITUTOYO ADAPTER FOR INFINITY-CORRECTED OBJECTIVES

- Higher Magnification Range than MMS<sup>®</sup> Front Objectives
- Recommended for M Plan Apo 2X to 10X Mitutoyo Objectives

The MMS<sup>®</sup> to Mitutoyo Adapter increases the flexibility of our MMS<sup>®</sup> modular system. Easily integrated, it simply attaches to the selected MMS<sup>®</sup> Rear Assembly before connecting the desired Mitutoyo objective (M26 x 36 TPI). Adapter extends the MMS<sup>®</sup> magnification range from 0.5X-4.0X to 0.75X-16.5X. The high magnification and diffraction limited performance of the Mitutoyo objectives coupled with the MMS<sup>®</sup> Rear Assemblies allows for more working distance (WD) and field of view (FOV) combinations. Note that the MMS<sup>®</sup> to Mitutoyo Adapter can only be used with infinity-corrected objectives (Compact and Telecentric Mitutoyo objectives will not work). The adapter only adds 12.4mm to the length of the system (not including the objective).

Using this adapter, the MMS<sup>®</sup> In-Line Attachment (see above) can also be added for illumination with the Mitutoyo objectives. Note that vignetting may occur as iris closes due to the objective aperture.



MMS <sup>®</sup> Rear Assembly	Stock Number	Price	Mitutoyo Objectives					
			2X (34mm WD)		5X (34mm WD)		10X (33.5mm WD)	
			PMAG	FOV*	PMAG	FOV*	PMAG	FOV*
R-1	U55-905	\$499.00	0.75X	8.5mm	1.875X	3.4mm	3.75X	1.71mm
R-2	U55-906	\$499.00	1.0X	6.4mm	2.5X	2.56mm	5X	1.28mm
R-3	U55-907	\$499.00	1.25X	5.12mm	3.125X	2.05mm	6.25X	1.02mm
R-4	U55-908	\$499.00	1.75X	3.66mm	4.375X	1.46mm	8.75X	0.73mm
R-5	U55-909	\$499.00	2.25X	2.84mm	5.625X	1.14mm	11.25X	0.57mm
R-6	U55-910	\$499.00	3.3X	1.94mm	8.25X	0.78mm	16.5X	0.39mm

\*Horizontal FOV is for 1/2" CCD.

<b>MMS<sup>®</sup> to Mitutoyo Adapter</b>	<b>U58-156</b>
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