Telecentric Lenses

Megapixel Telecentric Macro Lenses for CCD Cameras

- 2/3“ Telecentric Macro Zoom
- 4/3“ Telecentric Macro Zoom
- 2/3“ Telecentric 5 Megapixel Macro Zoom

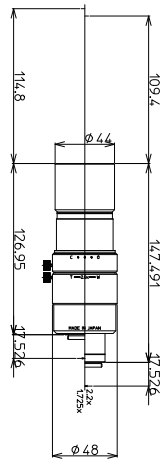
EHD imaging GmbH ■ Zum Rennplatz 15 ■ 49401 Damme/Germany, ■ Phone: +49-5491-2090 ■ Fax:+49-5491-2098

info@ehdimaging.de ■ www.ehd.de

NEW 2/3” TELECENTRIC 5 MEGAPIXEL PLUS SERIES

- Able to adjust the magnification to match with the pixel size of the camera
- Lenses are designed with an optical magnification that is ideal for 5 megapixels and under
- Distortion free lenses of less than 0.02% TV distortion. Distortion is limited to less than 0.25% pixels on the entire image area even when used with a 5 megapixel camera
- Produces high contrast and resolution in both the center and corners

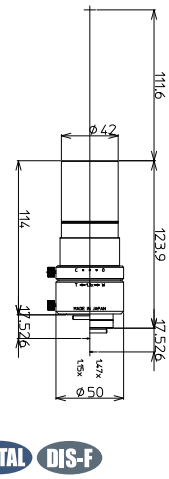
NEW LM1121TC



2/3" 1/1.8" 5MEGA+ (5 Megapixel Plus) C-mt (C-mount) METAL (Metal Body) DIS-F (Distortion Free)

Model		LM1121TC		
magnification		1.725~2.2×		
Image Size		6.6×8.8(Φ11)		
Shooting Magnification		1.725×	2.0×	2.2×
Objective N.A.		0.043	0.032	0.026
W.D(mm)		114.8	111.4	109.4
Shooting Range (mm)	2/3 inch	5.1×3.8	4.4×3.3	4.0×3.0
	1/1.8 inch	4.2×3.1	3.6×2.7	3.3×2.4
	1/2 inch	3.7×2.8	3.2×2.4	2.9×2.2
TV Distortion(%)		0.011	0.004	0.001
Back Focus in Air(mm)		14.7		
Mount		C-mount		
Resolution		120lp/mm		
Size(mm)		Φ48×147.5		
Weight(g)		420		
Temperature Range		−10°C~+50°C		
Storage Temperature Range		−20°C~+60°C		

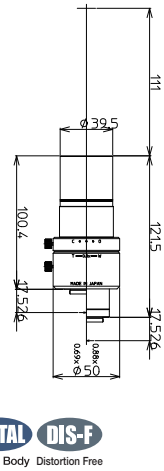
NEW LM1122TC



2/3" 1/1.8" 5MEGA+ (5 Megapixel Plus) C-mt (C-mount) METAL (Metal Body) DIS-F (Distortion Free)

Model		LM1122TC		
magnification		1.15~1.47×		
Image Size		6.6×8.8(Φ11)		
Shooting Magnification		1.15×	1.3×	1.47×
Objective N.A.		0.047	0.060	0.077
W.D(mm)		111.6	111.6	111.6
Shooting Range (mm)	2/3 inch	7.6×5.7	6.6×5.0	6.0×4.5
	1/1.8 inch	6.3×4.7	5.5×4.1	4.9×3.7
	1/2 inch	5.6×4.2	4.9×3.7	4.3×3.3
TV Distortion(%)		−0.015	−0.001	0.011
Back Focus in Air(mm)		14.7		
Mount		C-mount		
Resolution		120lp/mm		
Size(mm)		Φ50×123.9		
Weight(g)		330		
Temperature Range		−10°C~+50°C		
Storage Temperature Range		−20°C~+60°C		

NEW LM1123TC



2/3" 1/1.8" 5MEGA+ (5 Megapixel Plus) C-mt (C-mount) METAL (Metal Body) DIS-F (Distortion Free)

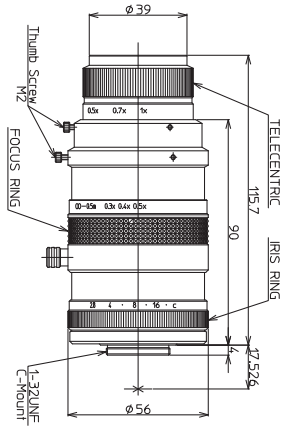
Model		LM1123TC		
magnification		0.69~0.88×		
Image Size		6.6×8.8(Φ11)		
Shooting Magnification		0.069×	0.8×	0.88×
Objective N.A.		0.080	0.097	0.130
W.D(mm)		111.0	111.0	111.0
Shooting Range (mm)	2/3 inch	12.7×9.6	11.0×8.2	10.0×7.5
	1/1.8 inch	10.4×7.8	9.0×6.7	8.2×6.1
	1/2 inch	9.3×7.0	8.0×6.0	7.3×5.5
TV Distortion(%)		−0.001	−0.009	0.005
Back Focus in Air(mm)		14.7		
Mount		C-mount		
Resolution		120lp/mm		
Size(mm)		Φ50×121.5		
Weight(g)		290		
Temperature Range		−10°C~+50°C		
Storage Temperature Range		−20°C~+60°C		

† Images may differ from the actual product.

2/3” TELECENTRIC MACRO ZOOM

- Telecentric lens with variable magnification
- 0.3×~1.0× for macro use

LM50TC



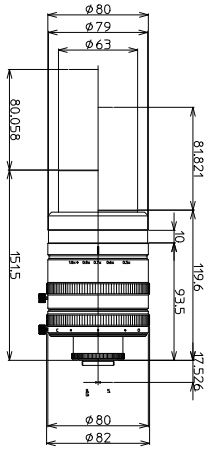
2/3" 1/1.8" 1/2" ZOOM (Manual Zoom Lens) C-mt (C-mount) METAL (Metal Body)

Model		LM50TC	
magnification		0.3~1.0×	
Image Size		6.6×8.8(Φ11)	
Shooting Magnification		0.3×	1.0×
Objective N.A.		0.038	0.100
W.D(mm)		193.4	81.8
Shooting Range (mm)	2/3 inch	29.5×22.2	8.8×6.6
	1/1.8 inch	24.1×18.0	7.2×5.4
	1/2 inch	21.4×16.0	6.4×4.8
TV Distortion(%)		−0.19	−0.1
Back Focus in Air(mm)		22.0	
Mount		C-mount	
Resolution		120lp/mm	
Filter Thrad(mm)		M37.5×P0.5	
Size		Φ56×115.7	
Weight(g)		317	
Temperature Range		−10°C~+50°C	
Storage Temperature Range		−20°C~+60°C	

NEW 4/3” TELECENTRIC MACRO ZOOM

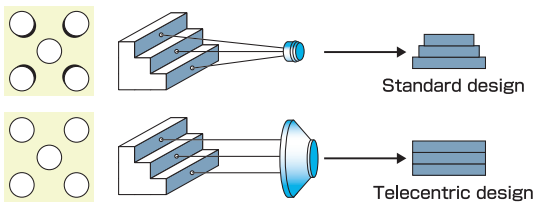
- Telecentric lens with variable magnification
- 0.5×~1.0× for macro use
- Virtually no TV distortion of entire image area
- Able to resolve up to 21 megapixels
- Produces high contrast and resolution in both the center and corners

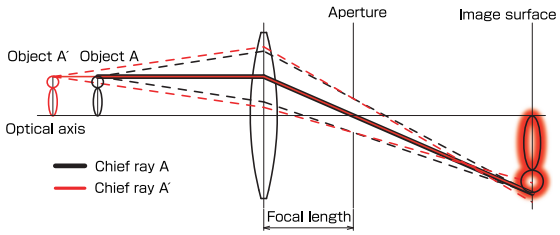
NEW LM1119TC



4/3" 2/3" ZOOM (Manual Zoom Lens) C-mt (C-mount) METAL (Metal Body)

Model		LM1119TC	
magnification		0.5~1.0×	
Image Size		13.8×18.4(Φ23)	
Shooting Magnification		0.5×	1.0×
Objective N.A.		0.05~0.007	0.1~0.014
W.D(mm)		80	81.8
Shooting Range (mm)	4/3 inch	36.8×27.6	18.4×13.8
	1 inch	25.6×19.2	12.8×9.6
	2/3 inch	17.6×13.2	8.8×6.6
TV Distortion(%)		0.1	0.1
Back Focus in Air(mm)		14.7	
Mount		C-mount	
Resolution		120lp/mm	
Size		Φ82×151.5	
Weight(g)		1000	
Temperature Range		−10°C~+50°C	
Storage Temperature Range		−20°C~+60°C	





Telecentric Optical System

In a telecentric optical system, there is no change in magnification when focusing, and magnification is constant over working distances. Thus movement of an object does not change magnification. Therefore, it is suitable for measuring objects with high accuracy.
In a telecentric optical system, the chief rays are parallel to the optical axis. As a result, the aperture becomes greater as the magnification is fixed by focusing the rays. Therefore, its F-number tends to be bigger, in comparison with that of megapixel lenses.

Application examples

- Surface inspection of silicon wafers
- Image defect inspections
- Inspection of dirt on prisms and glass circuit boards
- Measurement of thread pitches
- Reading 2D codes

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