



### Zoom Lens Series

## 4K High Resolution Zoom Lens

The new 4K high resolution zoom lens not only has excellent imaging quality, but provide wider FOV and faster and better. The new one is 1.45 times larger than the FOV of the traditional zoom system.

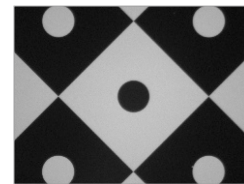
### PRODUCT ADVANTAGES

- 1.Support camera with 1" sensor.
- 2.Horizontal resolution up to 4K with 1" sensor.
- 3.0.68X~5X magnification, meet different measurement requirement.
- 4.Modular design, optional TV adapters and lens attachments and other module component.

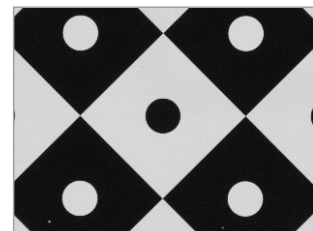
### APPLICATION FIELDS

Widely used in biology, electronic, semiconductor, machine vision field, etc.

### ACTUAL IMAGE



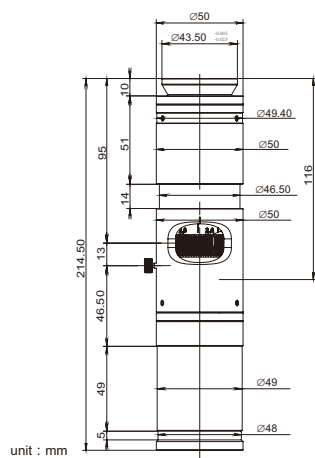
Ordinary Zoom Lens 5X



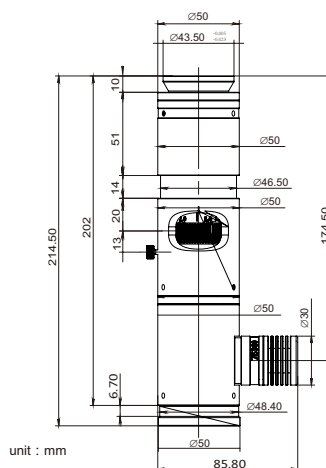
4K High Resolution Zoom Lens 5X

Magnification range	0.68X-5.0X						
W.D.(mm)	80						
Magnification	0.68X	1.0X	2.0X	3.0X	4.0X	5.0X	
DOF(mm)	1.78	0.89	0.25	0.12	0.08	0.07	
N.A.	0.033	0.045	0.08	0.11	0.12	0.12	
F.No.	10.3	11.0	12.4	13.5	16.5	20.6	
Resolution( $\mu$ m)	10.17	7.46	4.19	3.05	2.8	2.8	
TV Distortion	< 0.02%	< 0.02%	< 0.02%	< 0.02%	< 0.02%	< 0.02%	
Field of view size (mm)	1"	23.53×18.82×14.12	16.0×12.8×9.6	8.0×6.4×4.8	5.33×4.27×3.2	4.0×3.2×2.4	3.2×2.56×1.92
	2/3"	16.18×12.94×9.71	11.0×8.8×6.6	5.5×4.4×3.3	3.67×2.93×2.2	2.75×2.2×1.65	2.2×1.76×1.32
	1/2"	11.76×9.41×7.06	8.0×6.4×4.8	4.0×3.2×2.4	2.67×2.13×1.6	2.0×1.6×1.2	1.6×1.28×0.96
	1/3"	8.82×7.06×5.29	6.0×4.8×3.6	3.0×2.4×1.8	2.0×1.6×1.2	1.5×1.2×0.9	1.2×0.96×0.72
MAX.Sensor Size	1"						
Length(mm)	328						
Zoom mode	Manual / Motorized						
Mount	C-Mount						

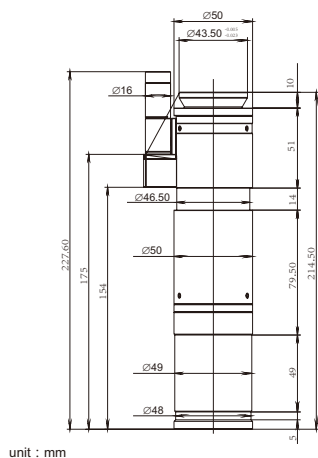
**EHD-K125D**



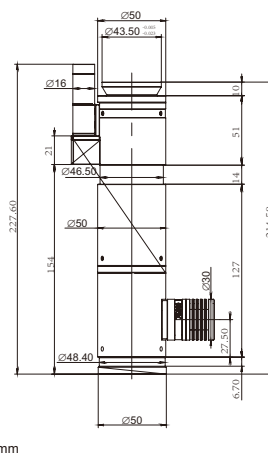
**EHD-K125D-C**

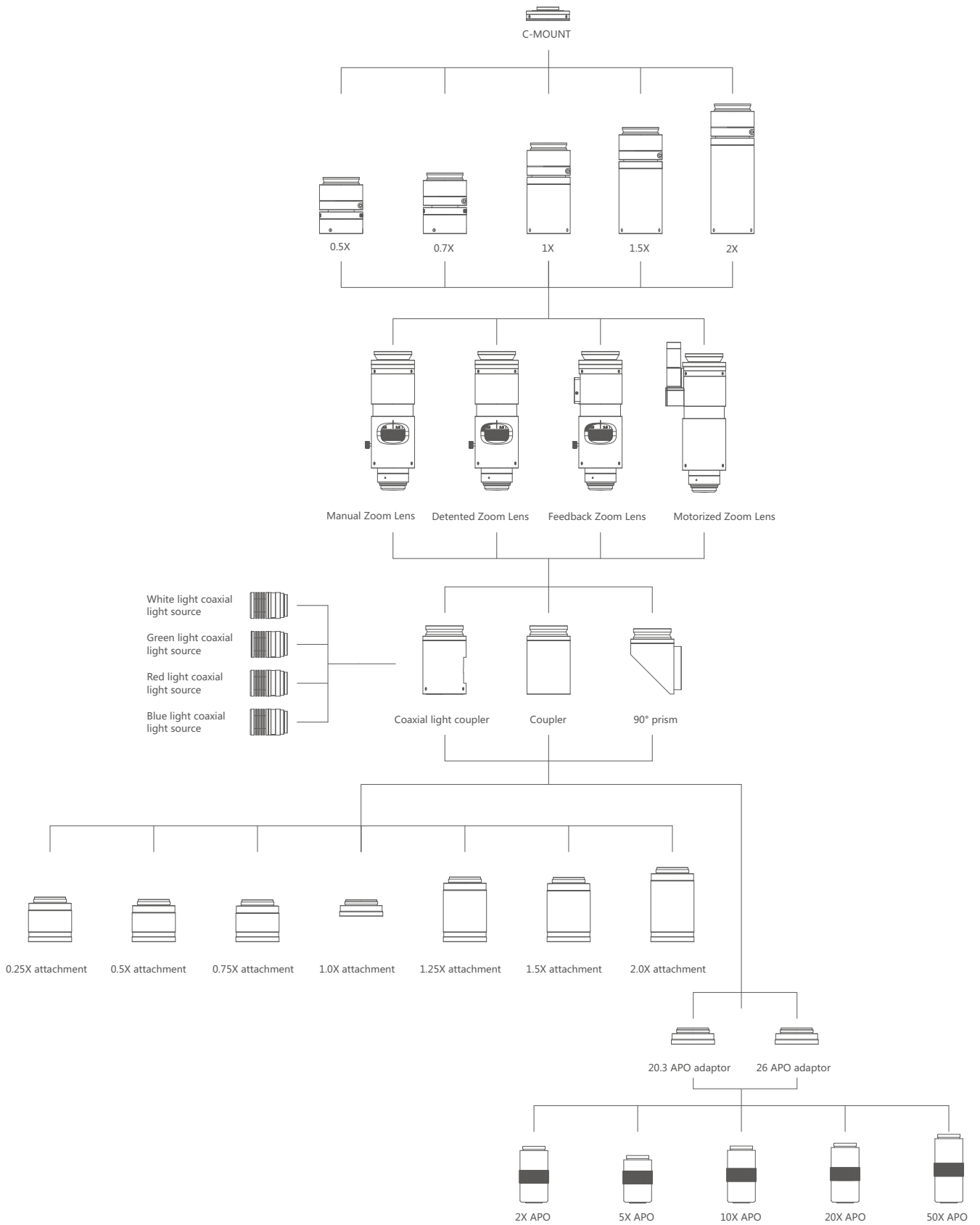


**EHD-K125M**



**EHD-K125M-C**





## Field of view range

Objective category		0.5X Adapter Tube		0.75X Adapter Tube		1.0X Adapter Tube		1.5X Adapter Tube		2.0X Adapter Tube		
		Low magnification	High magnification	Low magnification	High magnification	Low magnification	High magnification	Low magnification	High magnification	Low magnification	High magnification	
0.25X WD: 246mm	Magnification	0.09	0.63	0.12	0.88	0.17	1.25	0.26	1.88	0.34	2.50	
	Camera target	1/2'	94.1×75.3×56.5	12.8×10.2×7.7	67.2×53.8×40.3	9.1×7.3×5.5	47.1×37.6×28.2	6.4×5.1×3.8	31.4×25.1×18.8	4.3×3.4×2.6	23.5×18.8×14.1	3.2×2.6×1.9
		2/3'	-	-	92.4×73.9×55.5	12.6×10.1×7.5	64.7×51.8×38.8	8.8×7.0×5.3	43.1×34.5×25.9	5.9×4.7×3.5	32.4×25.9×19.4	4.4×3.5×2.6
		1'	-	-	-	-	94.1×75.3×56.5	12.8×10.2×7.7	62.7×50.2×37.6	8.5×6.8×5.1	47.1×37.6×28.2	6.4×5.1×3.8
		4/3'	-	-	-	-	-	-	86.3×69.0×51.8	11.7×9.4×7.0	64.7×51.8×38.8	8.8×7.0×5.3
		32mm	-	-	-	-	-	-	-	-	94.1×75.3×56.5	12.8×10.2×7.7
0.5X WD: 135mm	Magnification	0.17	1.25	0.24	1.75	0.34	2.50	0.51	3.75	0.68	5.00	
	Camera target	1/2'	47.1×37.6×28.2	6.4×5.1×3.8	33.6×26.9×20.2	4.6×3.7×2.7	23.5×18.8×14.1	3.2×2.6×1.9	15.7×12.5×9.4	2.1×1.7×1.3	11.8×9.4×7.1	1.6×1.3×1.0
		2/3'	-	-	46.2×37.0×27.7	6.3×5.0×3.8	32.4×25.9×19.4	4.4×3.5×2.6	21.6×17.3×12.9	2.9×2.3×1.8	16.2×12.9×9.7	2.2×1.8×1.3
		1'	-	-	-	-	47.1×37.6×28.2	6.4×5.1×3.8	31.4×25.1×18.8	4.3×3.4×2.6	23.5×18.8×14.1	3.2×2.6×1.9
		4/3'	-	-	-	-	-	-	41.8×33.5×25.1	5.7×4.6×3.4	31.4×25.1×18.8	4.3×3.4×2.6
		32mm	-	-	-	-	-	-	-	-	47.1×37.6×28.2	6.4×5.1×3.8
0.75X	Magnification	0.26	1.88	0.36	2.63	0.51	3.75	0.77	5.63	1.02	7.50	
	Camera target	1/2'	31.4×25.1×18.8	4.3×3.4×2.6	22.4×17.9×13.4	3.0×2.4×1.8	15.7×12.5×9.4	2.1×1.7×1.3	10.5×8.4×6.3	1.4×1.1×0.9	7.8×6.3×4.7	1.1×0.9×0.6
		2/3'	-	-	30.8×24.6×18.5	4.2×3.4×2.5	21.6×17.3×12.9	2.9×2.9×1.8	14.4×11.5×8.6	2.0×1.6×1.2	10.8×8.6×6.5	1.5×1.2×0.9
		1'	-	-	-	-	31.4×25.1×18.8	4.3×3.4×2.6	20.9×16.7×12.5	2.8×2.3×1.7	15.7×12.5×9.4	2.1×1.7×1.3
		4/3'	-	-	-	-	-	-	28.8×23.0×17.3	3.9×3.1×2.3	21.6×17.3×12.9	2.9×2.3×1.8
		32mm	-	-	-	-	-	-	-	-	31.4×25.1×18.8	4.3×3.4×2.6
1.0X WD: 80mm	Magnification	0.34	2.50	0.48	3.50	0.68	5.00	1.02	7.50	1.36	10.0	
	Camera target	1/2'	23.5×18.8×14.1	3.2×2.6×1.9	16.8×13.4×10.1	2.3×1.8×1.4	11.8×9.4×7.1	1.6×1.3×1.0	7.8×6.3×4.7	1.1×0.9×0.6	5.9×4.7×3.5	0.8×0.6×0.5
		2/3'	-	-	23.1×18.5×13.9	3.1×2.5×1.9	16.2×12.9×9.7	2.2×1.8×1.3	10.8×8.6×6.5	1.5×1.2×0.9	8.1×6.5×4.9	1.1×0.9×0.7
		1'	-	-	-	-	23.5×18.8×14.1	3.2×2.6×1.9	15.7×12.5×9.4	2.1×1.7×1.3	11.8×9.4×7.1	1.6×1.3×1.0
		4/3'	-	-	-	-	-	-	21.6×17.3×12.9	2.9×2.3×1.8	16.2×12.9×9.7	2.2×1.8×1.3
		32mm	-	-	-	-	-	-	-	-	23.5×18.8×14.1	3.2×2.6×1.9
1.25X	Magnification	0.43	3.13	0.60	4.38	0.85	6.25	1.28	9.38	1.70	12.5	
	Camera target	1/2'	18.8×15.1×11.3	2.6×2.0×1.5	13.4×10.8×8.1	1.8×1.5×1.1	9.4×7.5×5.6	1.3×1.0×0.8	6.3×5.0×3.8	0.9×0.7×0.5	4.7×3.8×2.8	0.6×0.5×0.4
		2/3'	-	-	18.5×14.8×11.1	2.5×2.0×1.5	12.9×10.4×7.8	1.8×1.4×1.1	8.6×6.9×5.2	1.2×0.9×0.7	6.5×5.2×3.9	0.9×0.7×0.5
		1'	-	-	-	-	18.8×15.1×11.3	2.6×2.0×1.5	12.5×10.0×7.5	1.7×1.4×1.0	9.4×7.5×5.6	1.3×1.0×0.8
		4/3'	-	-	-	-	-	-	17.3×13.8×10.4	2.3×1.9×1.4	12.9×10.4×7.8	1.8×1.4×1.1
		32mm	-	-	-	-	-	-	-	-	18.8×15.1×11.3	2.6×2.0×1.5
1.5X WD: 45mm	Magnification	0.51	3.75	0.71	5.25	1.02	7.50	1.53	11.25	2.04	15.0	
	Camera target	1/2'	15.7×12.5×9.4	2.1×1.7×1.3	11.2×9.0×6.7	1.5×1.2×0.9	7.8×6.3×4.7	1.1×0.9×0.6	5.2×4.2×3.1	0.7×0.6×0.4	3.9×3.1×2.4	0.5×0.4×0.3
		2/3'	-	-	15.4×12.3×9.2	2.1×1.7×1.3	10.8×8.6×6.5	1.5×1.2×0.9	7.2×5.8×4.3	1.0×0.8×0.6	5.4×4.3×3.2	0.7×0.6×0.4
		1'	-	-	-	-	15.7×12.5×9.4	2.1×1.7×1.3	10.5×8.4×6.3	1.4×1.1×0.9	7.8×6.3×4.7	1.1×0.9×0.6
		4/3'	-	-	-	-	-	-	14.4×11.5×8.6	2.0×1.6×1.2	10.8×8.6×6.5	1.5×1.2×0.9
		32mm	-	-	-	-	-	-	-	-	15.7×12.5×9.4	2.1×1.7×1.3
2.0X WD: 27mm	Magnification	0.68	5.00	0.95	7.00	1.36	10.0	2.04	15.0	2.72	20.0	
	Camera target	1/2'	11.8×9.4×7.1	1.6×1.3×1.0	8.4×6.7×5.0	1.1×0.9×0.7	5.9×4.7×3.5	0.8×0.6×0.5	3.9×3.1×2.4	0.5×0.4×0.3	2.9×2.4×1.8	0.4×0.3×0.2
		2/3'	-	-	11.6×9.2×6.9	1.6×1.3×0.9	8.1×6.5×4.9	1.1×0.9×0.7	5.4×4.3×3.2	0.7×0.6×0.4	4.0×3.2×2.4	0.6×0.4×0.3
		1'	-	-	-	-	11.8×9.4×7.1	1.6×1.3×1.0	7.8×6.3×4.7	1.1×0.9×0.6	5.9×4.7×3.5	0.8×0.6×0.5
		4/3'	-	-	-	-	-	-	10.8×8.6×6.5	1.5×1.2×0.9	8.1×6.5×4.9	1.1×0.9×0.7
		32mm	-	-	-	-	-	-	-	-	11.8×9.4×7.1	1.6×1.3×1.0



0.5X~1.0X

### Zoom Lens Series

## 0.5X~1X high resolution zoom lens

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The lens has excellent imaging quality, it has not just telecentric optical design to make sure low distortion, but W.D. can be adjusted and easy to use.

### PRODUCT ADVANTAGES

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1. Telecentric optical design, super low distortion.
2. High resolution, clearer than other zoom lens if same magnification.
3. Aperture adjustable, DOF and resolution can be adjusted properly, if need be.
4. W.D. adjustable. W.D. can be adjusted within a reasonable range.
5. The front of the lens is equipped with a universal filter interface for easy installation of filters.
6. Small structure and less space.

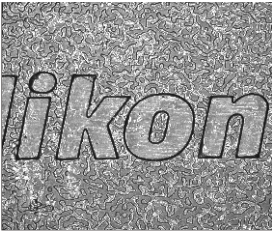
### APPLICATION FIELDS

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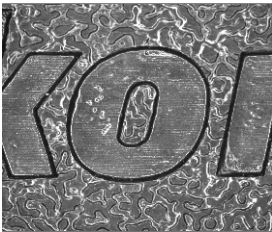
Widely use for semiconductor, automation, communication fields.



## ACTUAL IMAGE



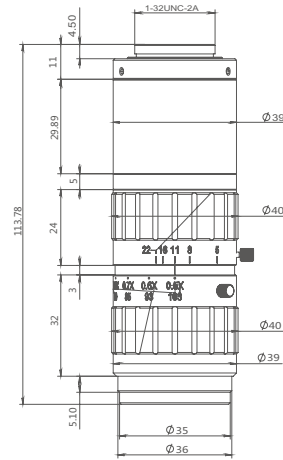
0.5X-digital camera cover logo



1.0X-digital camera cover logo

## DIMENSIONS

### EHD-Z0510



unit : mm

## 0.5X~1X high resolution zoom lens Parameter

Magnification range	0.5X-1.0X						
W.D.(mm)	106	96	88	83	78	75	
Magnification	0.5X	0.6X	0.7X	0.8X	0.9X	1.0X	
DOF(mm)	1.6	1.11	0.82	0.63	0.49	0.40	
N.A.	0.05	0.06	0.07	0.08	0.09	0.10	
F.No.	5	5	5	5	5	5	
Resolution(μm)	6.71	5.59	4.79	4.19	3.73	3.36	
TV Distortion	< 0.02%	< 0.02%	< 0.02%	< 0.02%	< 0.02%	< 0.02%	
Field of view size (mm)	2/3"	22.0x17.6x13.2	18.33x14.67x11.0	15.71x12.57x9.43	13.75x11.0x8.25	12.22x9.78x7.33	11.0x8.8x6.6
	1/2"	16.0x12.8x9.6	13.33x10.67x8.0	11.43x9.14x6.86	10.0x8.0x6.0	8.89x7.11x5.33	8.0x6.4x4.8
	1/3"	12.0x9.6x7.2	10.0x8.0x6.0	8.57x6.86x5.14	7.5x6.0x4.5	6.67x5.33x4.0	6.0x4.8x3.6
MAX.Sensor Size	2/3"						
Mount	C-Mount						
Zoom mode	Manual						



### Zoom Lens Series

## 12.5X Guide Electric Zoom Lens

Built-in double rail structure, high precision and high efficiency, small coefficient of friction. The performance, accuracy, stability and service life of the lens are improved.

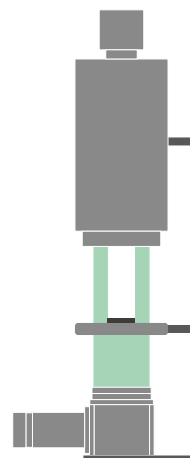
### PRODUCT ADVANTAGES

- 1.High magnification ratio 12.5x.
- 2.Rail structure, zoom times unlimited.
- 3.High contrast.
- 4.Zooming fast and accurate.

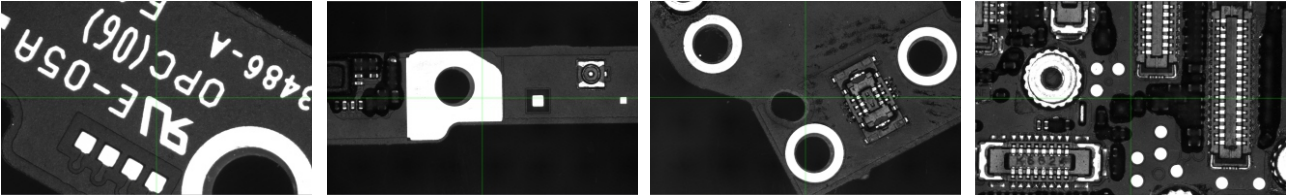
### APPLICATION FIELDS

Widely used in biology, electronic, semiconductor, machine vision field, etc.

### EXAMPLES OF APPLICATION



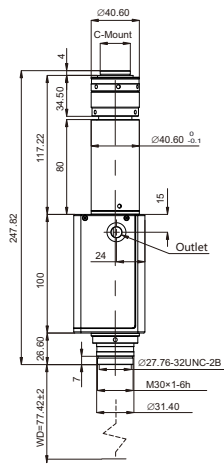
ACTUAL IMAGE



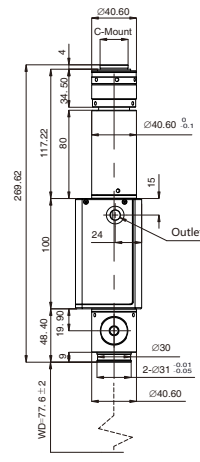
12.5X Guide Electric Zoom Lens Parameter

Optical magnification		0.58X-7.5X															
W.D.(mm)		77.4±2mm															
Magnification		0.58X	0.6X	1X	1.5X	2X	2.5X	3X	3.5X	4X	4.5X	5X	5.5X	6X	6.5X	7X	7.5X
DOF(mm)		2.75	2.67	0.95	0.43	0.27	0.2	0.15	0.12	0.1	0.081	0.073	0.066	0.061	0.056	0.052	0.05
N.A.		0.025	0.025	0.043	0.063	0.074	0.082	0.09	0.097	0.1	0.11	0.11	0.11	0.11	0.11	0.11	0.11
F.No.		12.5	12.5	11.85	11.95	13.65	15.3	16.5	18.4	19.9	20.4	22.45	22.7	26.8	29.4	31.7	33.9
Resolution(μm)		13	13	7.8	5.3	4.53	4.09	3.73	3.46	3.36	3.05	3.05	3.05	3.05	3.05	3.05	3.05
TV Distortion		0.050%	0.050%	0.002%	0.010%	0.020%	0.003%	0.020%	0.020%	0.018%	0.020%	0.010%	0.010%	0.001%	0.010%	0.005%	0.005%
2/3" Field of view size (mm)	D	18.97	18.33	11	7.33	5.5	4.4	3.67	3.14	2.75	2.44	2.2	2	1.83	1.69	1.57	1.47
	L	15.17	14.67	8.8	5.87	4.4	3.52	2.93	2.51	2.2	1.96	1.76	1.6	1.47	1.35	1.26	1.17
	H	11.38	11	6.6	4.4	3.3	2.64	2.2	1.89	1.65	1.47	1.32	1.2	1.1	1.02	0.94	0.88
MAX.Sensor Size		2/3"															
Mount		C-Mount															

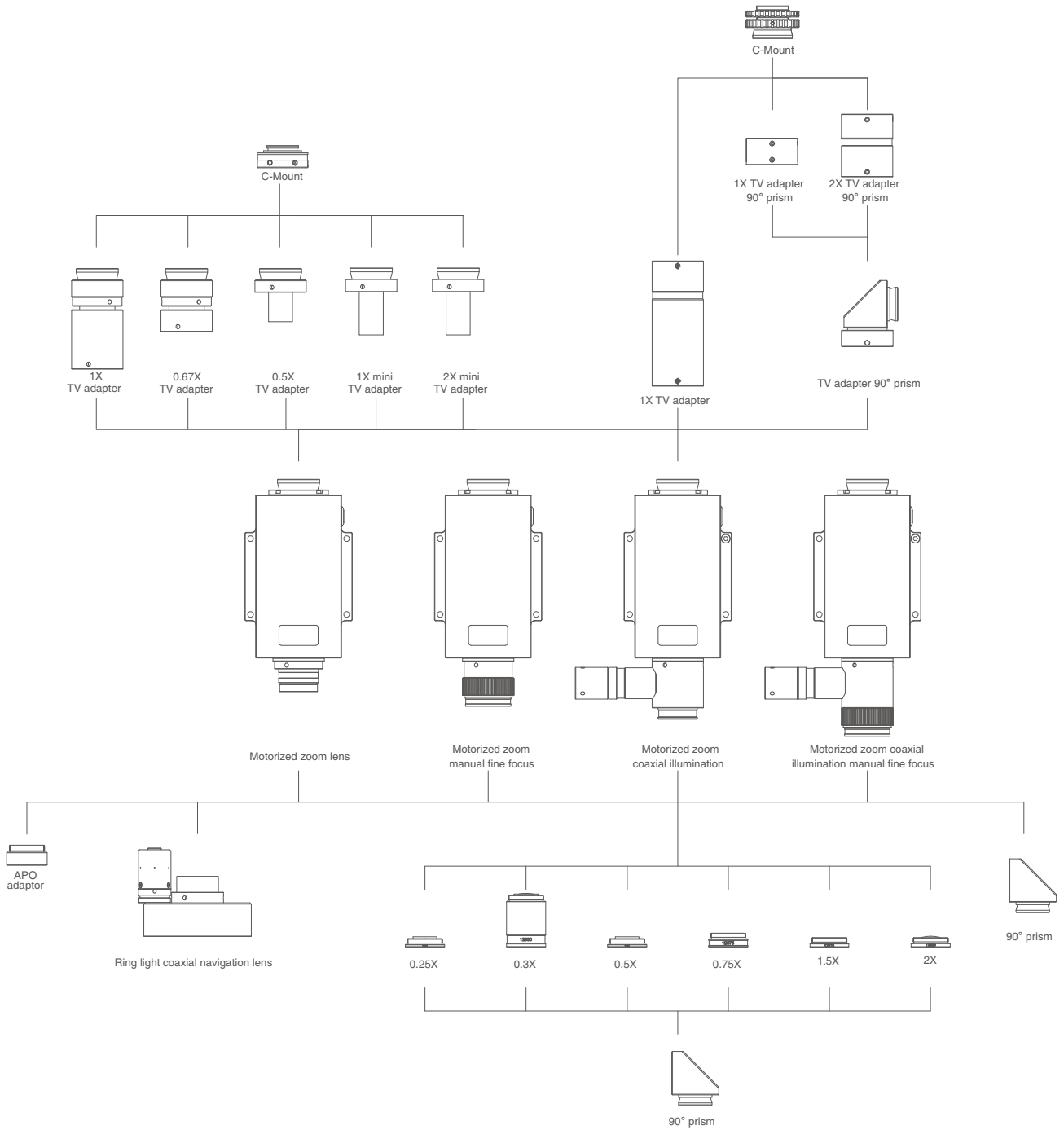
EHD-G125M



EHD-G125M-C









#### Zoom Lens Series

## ZOOM TELECENTRIC LENS

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Telecentric zoom lens is the most advanced solution for image and measurement field, combined with the flexibility of zoom lens and high efficiency of high FOV lens.

#### PRODUCT ADVANTAGES

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1. Objective side telecentric design, no distortion within the DOF.
2. No need to change working distance when zooming.
3. High magnification ratio 10X.
4. Continuous zooming, meet different measurement requirements.
5. Support 10MP 1" camera, Max. FOV 60.6X45.5mm.

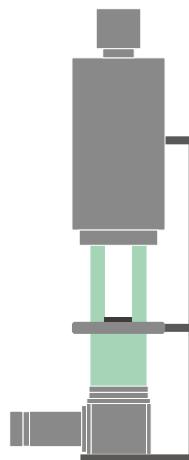
#### APPLICATION FIELDS

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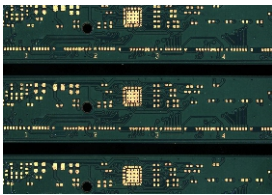
Quick measurement for big FOV.

#### EXAMPLES OF APPLICATION

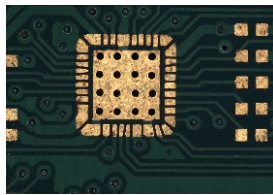
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## ACTUAL IMAGE



0.2X-PCB inspection



2X-PCB inspection



0.2X-Metal part profile



2X-Metal part profile

Note: When taking image, the lens can change the FOV according to the inspection requirements, while changing the magnification.

## Telecentric Zoom Lens Parameter

Coed		EDH-TVM0220-01																		
Item		#610-220																		
Magnification		0.21X	0.3X	0.4X	0.5X	0.6X	0.7X	0.8X	0.9X	1.0X	1.1X	1.2X	1.3X	1.4X	1.5X	1.6X	1.7X	1.8X	1.9X	1.97X
Working Distance		86±2																		
Resolution(μm)		26.91	18.35	12.89	10.64	8.86	7.29	6.25	5.56	5.21	4.89	4.85	4.63	4.64	4.57	4.53	4.46	4.41	4.32	4.30
DOF(mm)		6.99	3.43	1.84	1.18	0.85	0.65	0.52	0.44	0.37	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.16	0.15	0.14
N.A.		0.014	0.019	0.027	0.034	0.039	0.044	0.048	0.051	0.054	0.056	0.058	0.060	0.062	0.064	0.065	0.067	0.069	0.071	0.072
F No.		7.81	7.71	7.35	7.40	7.64	7.96	8.35	8.82	9.34	9.92	10.42	10.86	11.33	11.83	12.23	12.69	13.06	13.43	13.69
TV Distortion		-0.04%	0.05%	0.07%	0.06%	0.05%	0.03%	0.02%	0.01%	0.00%	-0.01%	-0.01%	-0.02%	-0.03%	-0.03%	-0.03%	-0.04%	-0.04%	-0.04%	-0.05%
Object Size Telcentricity(°)		0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.07	0.12	0.18	0.23	0.27	0.31	0.34	0.36	0.39	0.41	0.43	0.44
Object Dimension (mm)	1/3"	22.7×17.0	16.0×12.0	12.0×9.0	9.6×7.2	8.0×6.0	6.9×5.1	6.0×4.5	5.3×4.0	4.8×3.6	4.4×3.3	4.0×3.0	3.7×2.8	3.4×2.6	3.2×2.4	3.0×2.3	2.8×2.1	2.7×2.0	2.5×1.9	2.4×1.8
	1/2"	30.3×22.7	21.4×16.0	16.0×12.0	12.8×9.6	10.7×8.0	9.1×6.9	8.0×6.0	7.1×5.3	6.4×4.8	5.8×4.4	5.3×4.0	4.9×3.7	4.6×3.4	4.3×3.2	4.0×3.0	3.8×2.8	3.6×2.7	3.4×2.5	3.3×2.4
	1/1.8"	33.8×25.4	23.9×17.9	17.9×13.4	14.3×10.7	11.9×8.9	10.2×7.7	8.9×6.7	7.9×6.0	7.1×5.4	6.5×4.9	6.0×4.5	5.5×4.1	5.1×3.8	4.8×3.6	4.5×3.4	4.2×3.2	4.0×3.0	3.8×2.8	3.6×2.7
	2/3"	41.7×31.3	29.4×22.0	22.0×16.5	17.6×13.2	14.7×11.0	12.6×9.4	11.0×8.3	9.8×7.3	8.8×6.6	8.0×6.0	7.3×5.5	6.8×5.1	6.3×4.7	5.9×4.4	5.5×4.1	5.2×3.9	4.9×3.7	4.6×3.5	4.5×3.4
	1"	60.6×45.5	42.7×32.1	32.0×24.0	25.6×19.2	21.3×16.0	18.3×13.7	16.0×12.0	14.2×10.7	12.8×9.6	11.6×8.7	10.7×8.0	9.8×7.4	9.1×6.9	8.5×6.4	8.0×6.0	7.5×5.6	7.1×5.3	6.7×5.1	6.5×4.9
Max. Sensor Size		1"																		
Illumination		-																		
Mount		C-Mount																		
Working Temperature		-10°C ~ +50°C																		