

SZ6 Series

zoom stereo industry lens

Machine Vision / Industrial Inspection / Scientific Research



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ISO 9001
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SZ6 series zoom stereo industry lens, designed for modern production in the field of machine vision field, industrial inspection field, and scientific research field. Modularization product combination and excellent optical performance make SZ6 lens to be the best choice for applications in these fields.

- Compact design, so that all functions are concentrated in a tube, it is very suitable for the small installation space of modern equipment.
- Parallel semi-apochromatic optical system and application of advanced multi-layer coating technology, excellently correct the edge imaging effect of the field of view, to get high-definition and high contrast images, restore the true colors of the objects.
- Zoom ratio 1:6.5, zoom range 0.7X–4.5X, standard working distance 90mm, resolution 63–180lp/mm, to meet the requirements of machine vision conventional imaging
- Select a variety of magnification via the auxiliary lens and CCD adapters, make the whole system has a maximum magnification range up to 0.09X–18X, working distance 37mm–356mm, object field of view 0.23mm–91mm.
- Coaxial illumination system, use high-brightness single 1W LED, color temperature 5500K, uniform illumination, suitable for high precision detection of high reflectivity surface, and the occasions with limited exterior lighting.
- A variety of additional functions for option.

SZ6 Series

SZ6DF3/SZ6CHIF3/SZ6DF12

SZ6D/SZ6CHI standard lens, you can choose fine focus functions. Fine focus allows the user a certain extent to adjust the system's working distance when unnecessary to adjust the body installation position. To accommodate different heights of the samples on the same working face, greatly improved the applicability of the system.
SZ6DF3/SZ6CHIF3 fine focus range 3mm
SZ6DF12 fine focus 12mm

The range of fine focusing distance under different auxiliary objectives: (mm)

Auliliary objective	Standard working distance(mm)	3mm Fine focus	12mm Fine focus
0.25X	356	338–390.5	230–390.5
0.5X	170	164.5–176.5	133.5–176.5
0.75X	113	111–116.5	95.5–116.5
1X	90	88.5–91.5	79.5–91.5
1.5X	52	51.5–52.8	47.5–52.8
2X	37	36.7–37.4	34.4–37.4

SZ6DP/SZ6CHIDP

On the standard lens, it can be equipped with rate locating. Zoom in the whole trip, there are four anchor point, namely, 1X, 2X, 3X, 4X, coupled with highest and lowest times locating, the user have six anchor points to accurately locate, in order to facilitate measurement under fixed magnification and fixed calibration, and the standard testing occasions which need re-use various fixed-rate.
Rate locating can be used in conjunction with any other additional functions.



SZ6M

SZ6M high ratio zoom lens, get substantial increase on magnification through combined use metallurgical lens, the zoom range can up to 3.5X–450X, resolution 400–1700lp/mm. Long working distance infinity semi-apochromatic metallurgical objective lens provides a high-definition and high-resolution microscopic images.
Optional 5X, 10X, 20X, 50X metallurgical objectives
When use metallurgical objectives, only choose 1X and above CCD adapter.
When the zoom magnification below 1X, use 1 / 2 or above CCD, the shadow will appear around the field of view.

Parameter of Metallurgical Objectives

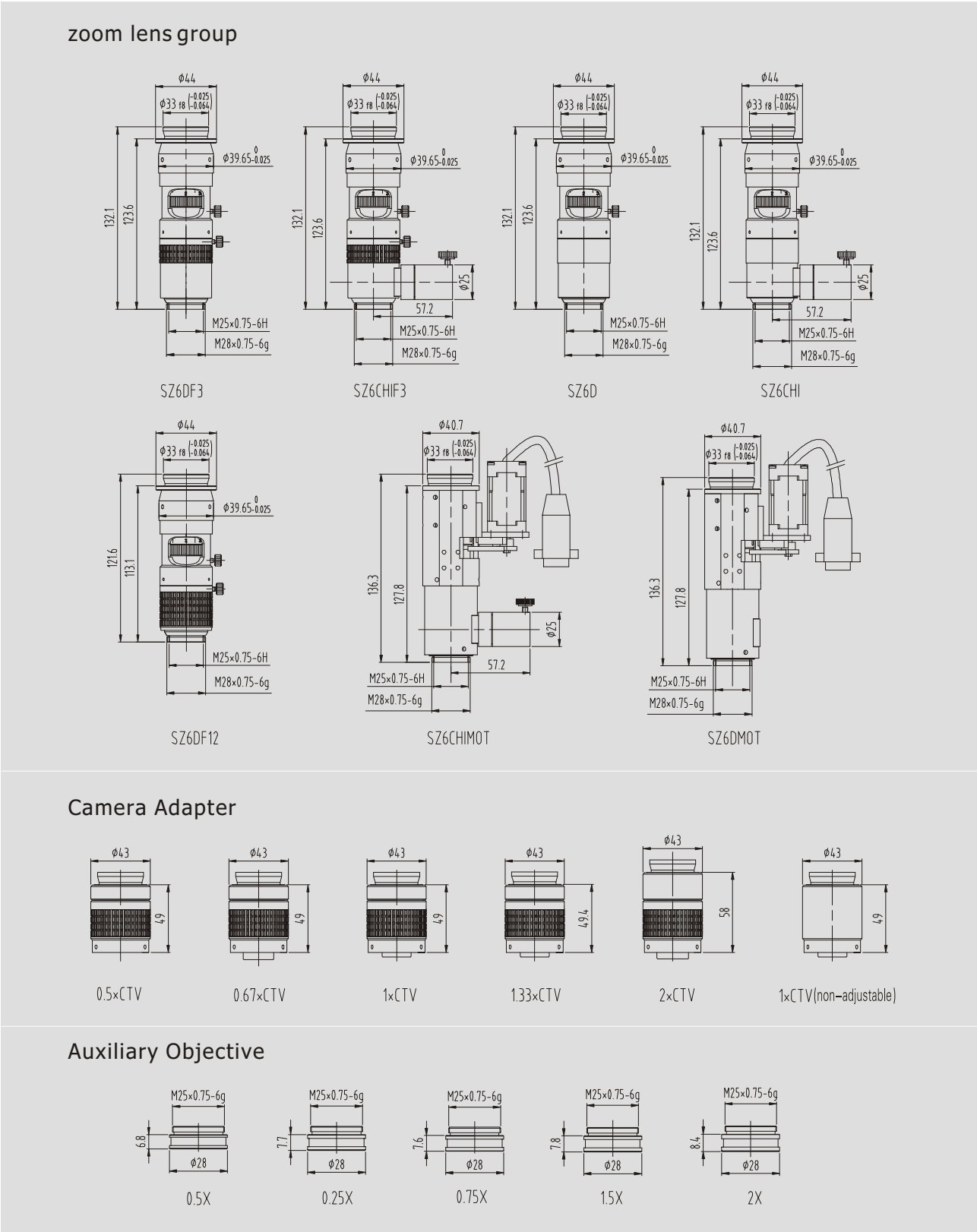
Magnification	Working Distance(mm)	Numerical Aperture (N.A.)
5X	10.8	0.15
10X	10.0	0.30
20X	4.0	0.45
50X	7.8	0.55

SZ6DMOT/SZ6CHIMOT motorized zoom lens

Motorized monocular picture:



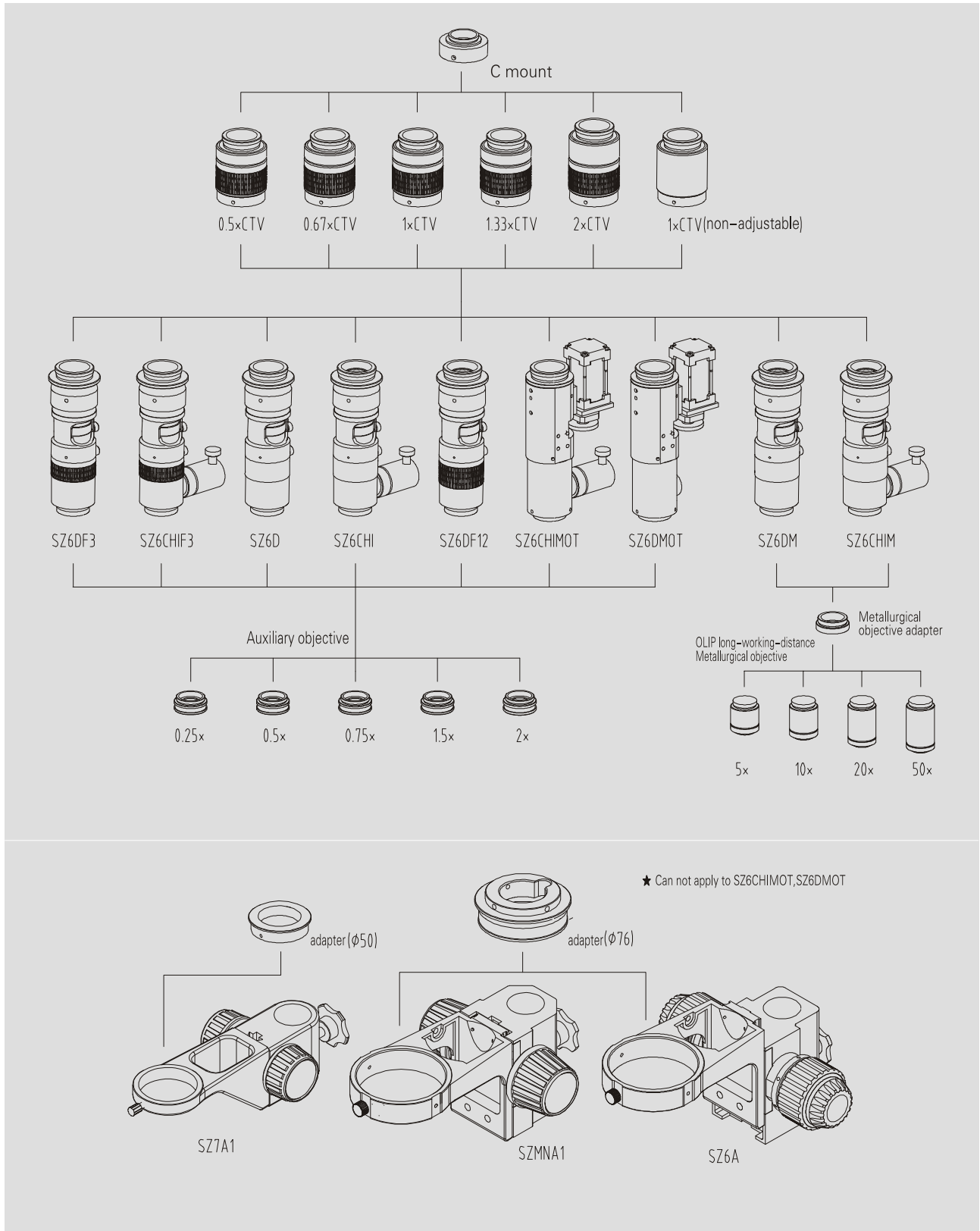
SZ6 system dimensions



Motorized monocular parameters

Controller	
Power	24VDC/2A
Console	USB, RS-232, S terminal
Dual five-phase stepper motor connections	Dual 15-pin D-SUB connector
Windows operating system	USB port connection
Motor	Five-phase stepper motor Stepping angle 0.72° 24V/0.7A
Software	SZ6 Motor Control

SZ6 configuration diagram



SZ6 Performance Parameters table

Auxiliary objective	Mag/ FOV	0.5X CTV Low-High	0.67X CTV Low-High	1X CTV Low-High	1.33X CTV Low-High	2X CTV Low-High	N.A. Low-High	Resolution (um) Low-High	Depth of Field(mm) Low-High
0.25X WD:356 mm	Mag	0.09X-0.56X	0.12X-0.75X	0.18X-1.13X	.24X-1.5X	0.35X-2.25X			
	1/4"	45.70-7.12	34.03-5.33	22.85-3.56	17.18-2.68	11.42-1.78	0.0075-0.0175	27.78-9.26	13.89-1.54
	1/3"	68.64-10.64	51.12-8.04	34.32-5.32	25.80-4.0	17.16-2.66	0.0075-0.0175	27.78-9.26	13.89-1.54
	1/2"	91.36-14.16	68.06-10.66	45.68-7.08	34.34-5.32	22.84-3.54	0.0075-0.0175	27.78-9.26	13.89-1.54
	2/3"	125.68-19.52	93.62-14.66	62.84-9.76	47.25-7.34	31.42-4.88	0.0075-0.0175	27.78-9.26	13.89-1.54
0.5X WD:170 mm	Mag	0.18x-1.13x	0.24x-1.5x	0.35x-2.25x	0.46x-3x	0.7x-4.5x			
	1/4"	22.85-3.56	17.02-2.66	11.42-1.78	8.59-1.34	5.71-0.89	0.015-0.035	15.15-4.76	4.13-0.41
	1/3"	34.32-5.32	25.56-4	17.16-2.67	12.90-2.01	8.58-1.33	0.015-0.035	15.15-4.76	4.13-0.41
	1/2"	45.68-7.08	34.03-5.33	22.85-3.56	17.18-2.68	11.42-1.77	0.015-0.035	15.15-4.76	4.13-0.41
	2/3"	62.84-9.76	46.81-7.33	31.43-4.89	23.63-3.68	15.71-2.44	0.015-0.035	15.15-4.76	4.13-0.41
0.75X WD:113 mm	Mag	0.27x-1.69x	0.35x-2.25x	0.53x-3.38x	0.7x-4.5x	1.05x-6.75x			
	1/4"	15.22-2.38	11.34-1.78	7.61-1.19	5.72-.89	3.81-0.59	0.0225-0.0525	9.80-3.14	1.73-0.18
	1/3"	22.86-3.56	17.04-2.67	11.43-1.78	8.59-1.34	5.72-0.89	0.0225-0.0525	9.80-3.14	1.73-0.18
	1/2"	30.46-4.74	22.69-3.56	15.23-2.37	11.45-1.78	7.62-1.19	0.0225-0.0525	9.80-3.14	1.73-0.18
	2/3"	41.9-6.52	31.21-4.89	20.95-3.26	15.75-2.45	10.48-1.63	0.0225-0.0525	9.80-3.14	1.73-0.18
1X WD:90 mm	Mag	0.35x-2.25x	0.47x-3x	0.7x-4.5x	0.94x-6x	1.4x-9x			
	1/4"	11.42-1.78	8.51-1.33	5.71-0.89	4.29-.67	2.86-0.45	0.03-0.07	7.25-2.35	0.95-0.10
	1/3"	17.16-2.67	12.77-2.01	8.58-1.33	6.45-1.0	4.29-0.67	0.03-0.07	7.25-2.35	0.95-0.10
	1/2"	22.85-3.56	17.01-2.67	11.42-1.77	8.59-1.33	5.71-0.89	0.03-0.07	7.25-2.35	0.95-0.10
	2/3"	31.43-4.89	23.40-3.65	15.71-2.44	11.81-1.83	7.86-1.22	0.03-0.07	7.25-2.35	0.95-0.10
1.5X WD:52 mm	Mag	0.53X-3.38X	0.71X-4.50X	1.05X-6.75X	1.40-8.98	2.10X-13.50X			
	1/4"	7.61-1.19	5.67-0.89	3.81-0.59	2.86-.44	1.91-0.30	0.045-0.105	4.90-1.57	0.43-0.04
	1/3"	11.43-1.78	8.52-1.33	5.72-0.89	4.3-.67	2.86-0.44	0.045-0.105	4.90-1.57	0.43-0.04
	1/2"	15.23-2.37	11.34-1.77	7.62-1.19	5.73-.89	3.81-0.59	0.045-0.105	4.90-1.57	0.43-0.04
	2/3"	15.00-3.26	15.60-2.44	10.48-1.63	7.88-1.22	5.24-0.81	0.045-0.105	4.90-1.57	0.43-0.04
2X WD:37 mm	Mag	0.70X-4.50X	0.94X-6.00X	1.40X-9.00X	1.86X-11.97X	2.80X-18.00X			
	1/4"	5.71-0.89	4.26-0.67	2.86-0.45	2.15-.34	1.43-0.23	0.06-0.14	3.62-1.17	0.24-0.02
	1/3"	8.58-1.33	6.39-1.00	4.29-0.67	3.22-.50	2.15-0.33	0.06-0.14	3.62-1.17	0.24-0.02
	1/2"	11.42-1.77	8.51-1.33	5.71-0.89	4.29-.67	2.86-0.44	0.06-0.14	3.62-1.17	0.24-0.02
	2/3"	11.40-2.44	11.70-1.83	7.86-1.22	5.91-.92	3.93-0.61	0.06-0.14	3.62-1.17	0.24-0.02

Note:

- 1) FOV value is depending on the size of diagonal line of CCD and the system ratio, is calculated as the actual observed object can size to the diagonal measure of value. Horizontal = diagonal * 0.8 vertical = diagonal* 0.6.
- 2)When using coaxial illumination, recommended more than 1X auxiliary objective and CTV, the rate allocation is too small will result in a low magnification zoom lens, the shadow appears around the field.