

VS-LLD Series

The VS-LLD series' distortionless design, in combination with a Floating System of internal lens elements, allows it to deliver high resolution performance at any magnification. With 4/3" sensor support it is a great selection to use for any application using a large sensor format that needs a distortionless image.

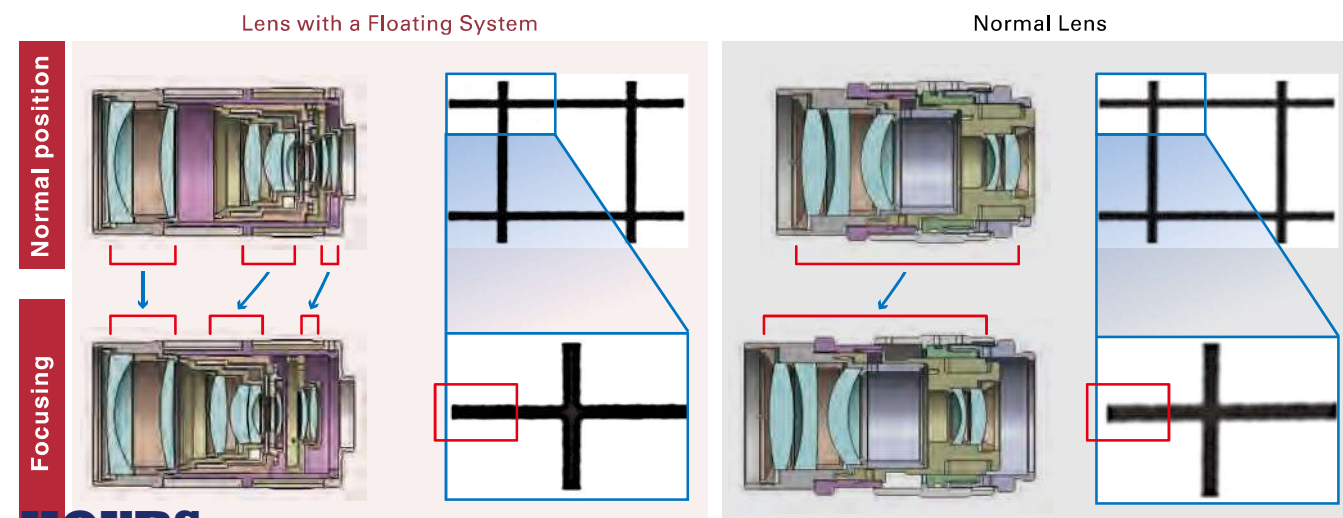
Features

- 4/3" sensor support
- 9 models available
- Focal length 10 - 50mm
- Distortionless
- High Resolution
- Floating System

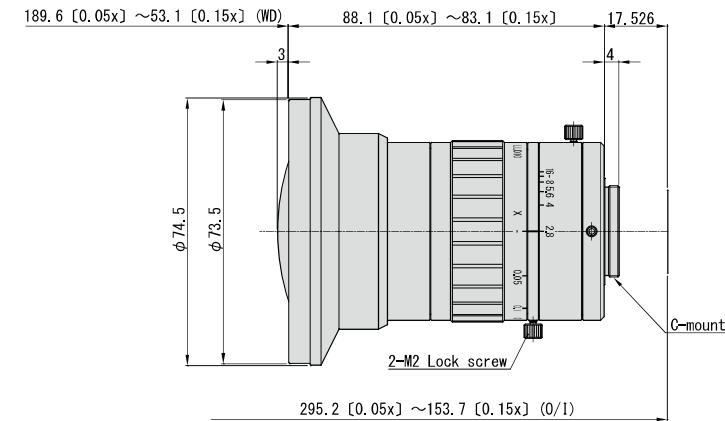


What is a Floating System?

Normally lenses shift just a single group of elements internally when focusing. Having additional floating elements (see picture below) can significantly improve the close-focus performance. Due to the floating component being separate from the group of focusing lens elements, aberrations caused by lens extensions are significantly reduced. Macro lenses make exceptionally great use of this system because they cover a wide range of focus distances in a wide-angle.

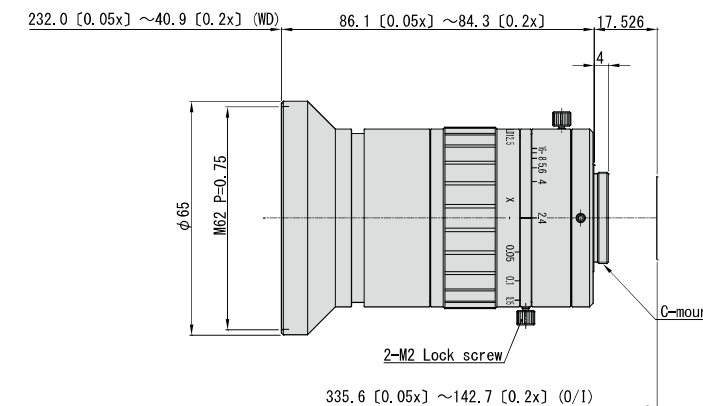


VS-LLD10 Floating System



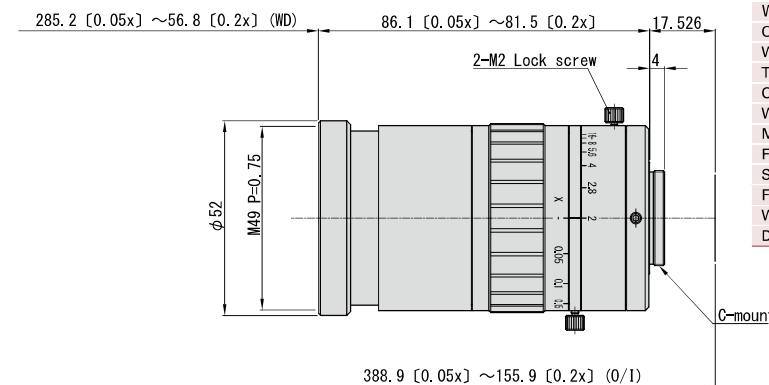
Focal Length (f)	10 mm			
Maximum Aperture Ratio	1:2.8			
Optical Mag. Range	(∞) 0.05x ~ 0.15x			
Optical Mag.	0.05x	0.1x	0.15x	
FOV (V x H)	4/3"	272.0 x 362.0 mm	136.0 x 181.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	112.6 x 112.6 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	71.0 x 84.0 mm	47.3 x 56.0 mm
WD	189.6 mm	87.2 mm	53.1 mm	
O/I (Object & Imager Distance)	295.2 mm	190.1 mm	153.7 mm	
Working F/# x Value at Iris Open	2.9	3.0	3.1	
TV Distortion (4/3")	-0.33 %	-0.68 %	-0.92 %	
Operation	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	4/3"			
Weight (approx.)	450 g			
Dimension	Ø74.5 (max.) x L = 88.1 ~ 83.1 mm			

VS-LLD12.5	Floating System
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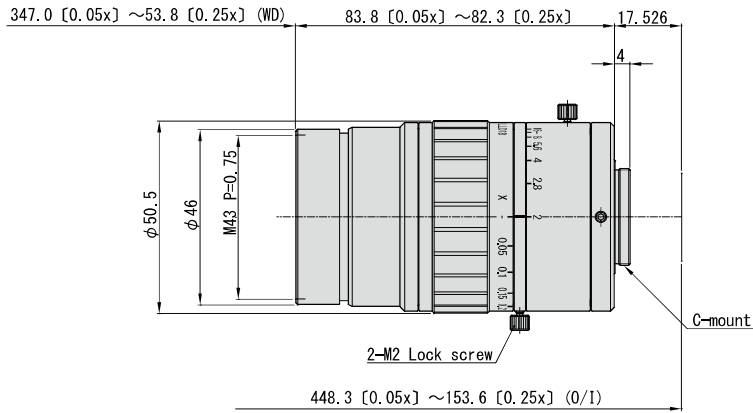
Focal Length (f)	12.5 mm			
Maximum Aperture Ratio	1:2.4			
Optical Mag. Range	(∞) 0.05x ~ 0.2x			
Optical Mag.	0.05x	0.1x	0.2x	
FOV (V x H)	4/3"	272.0 x 362.0 mm	136.0 x 181.0 mm	68.0 x 90.5 mm
	1"	225.2 x 225.2 mm	112.6 x 112.6 mm	56.3 x 56.3 mm
	2/3"	142.0 x 168.0 mm	71.0 x 84.0 mm	35.5 x 42.0 mm
WD	232.0 mm	104.3 mm	40.9 mm	
O/I (Object & Imager Distance)	335.6 mm	207.2 mm	142.7 mm	
Working F/# *Value at Iris Open	2.5	2.6	2.7	
TV Distortion (4/3")	0.33 %	0.05 %	-0.40 %	
Operation	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	4/3"			
Filter Thread	M 62 P = 0.75			
Weight (approx.)	380 g			
Dimension	ø65 (max.) x L = 86.1 ~ 84.3 mm			

VS-LLD15	Floating System
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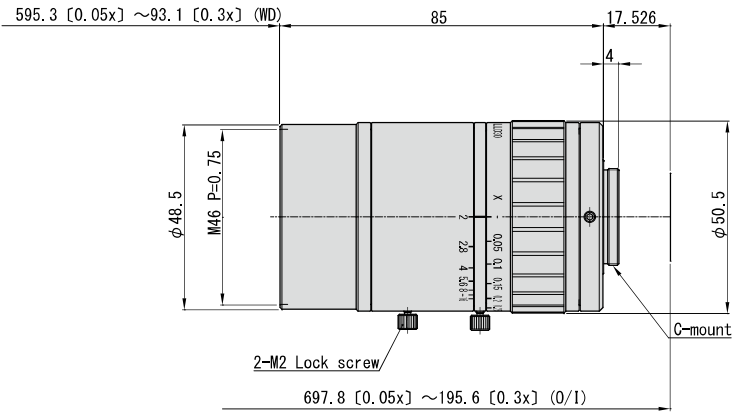
Focal Length (f)	15 mm			
Maximum Aperture Ratio	1:2.0			
Optical Mag. Range	(∞) 0.05x ~ 0.2x			
Optical Mag.	0.05x	0.1x	0.2x	
FOV (V x H)	4/3"	272.0 x 362.0 mm	136.0 x 181.0 mm	68.0 x 90.5 mm
	1"	225.2 x 225.2 mm	112.6 x 112.6 mm	56.3 x 56.3 mm
	2/3"	142.0 x 168.0 mm	71.0 x 84.0 mm	35.5 x 42.0 mm
WD	285.2 mm	132.5 mm	56.8 mm	
O/I (Object & Image Distance)	388.9 mm	234.2 mm	155.9 mm	
Working F/# *Value at Iris Open	2.1	2.2	2.3	
TV Distortion (4/3")	-0.14 %	-0.36 %	-0.64 %	
Operation	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	4/3"			
Filter Thread	M 49 P = 0.75			
Weight (approx.)	330 g			
Dimension	ø52 (max.) x L = 86.1 ~ 81.5 mm			

VS-LLD18 Floating System



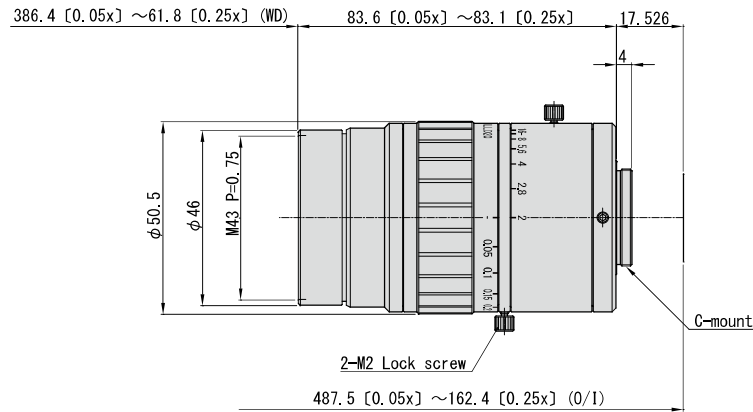
Focal Length (f)	18 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.05x ~ 0.25x		
Optical Mag.	0.05x	0.15x	0.25x
FOV (V x H)	4/3"	272.0 x 362.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	47.3 x 56.0 mm
WD	347.0 mm	102.2 mm	53.8 mm
O/I (Object & Imager Distance)	448.3 mm	202.5 mm	153.6 mm
Working F/# *Value at Iris Open	2.1	2.2	2.3
TV Distortion (4/3")	-0.28 %	-0.40 %	-0.49 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	4/3"		
Filter Thread	M 43 P = 0.75		
Weight (approx.)	320 g		
Dimension	φ50.5 (max.) x L = 83.8 ~ 82.3 mm		

VS-LLD30 Floating System



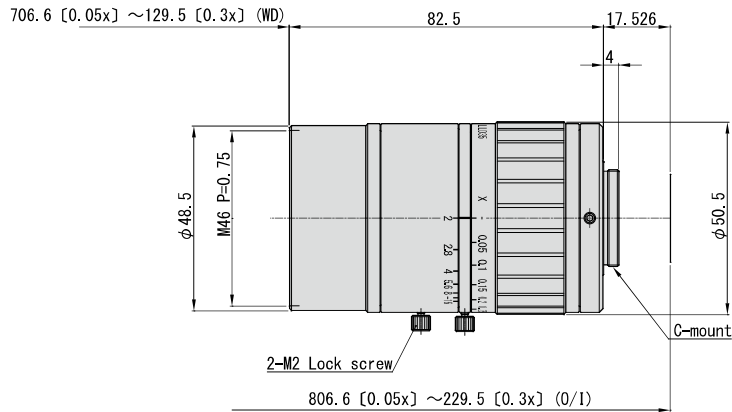
Focal Length(f)	30 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.05x ~ 0.3x		
Optical Mag.	0.05x	0.15x	0.3x
FOV(VxH)	4/3"	272.0 x 362.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	47.3 x 56.0 mm
WD	595.3 mm	191.8 mm	93.1 mm
O/I (Object & Imager Distance)	697.8 mm	294.3 mm	195.6 mm
Working F/# *Value at Iris Open	2.2	2.4	2.7
TV Distortion (4/3")	-0.08 %	-0.04 %	-0.04 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	4/3"		
Filter Thread	M 46 P = 0.75		
Weight (approx.)	310 g		
Dimension	φ50.5 (max.) x L = 85 mm		

VS-LLD20 Floating System



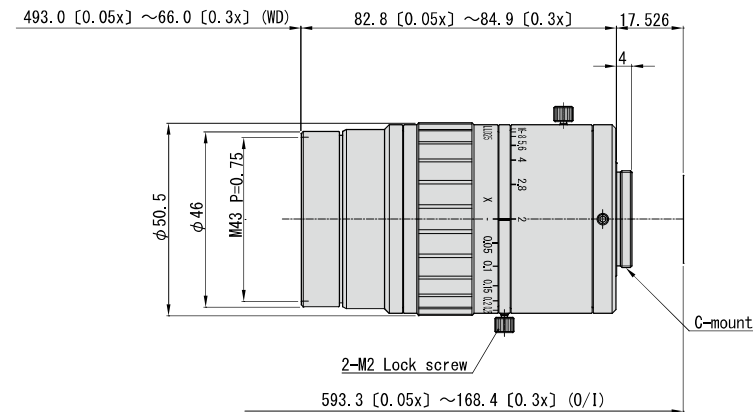
Focal Length (f)	20 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.05x ~ 0.25x		
Optical Mag.	0.05x	0.15x	0.25x
FOV (V x H)	4/3"	272.0 x 362.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	47.3 x 56.0 mm
WD	386.4 mm	115.4 mm	61.8 mm
O/I (Object & Imager Distance)	487.5 mm	216.1 mm	162.4 mm
Working F/# *Value at Iris Open	2.1	2.2	2.3
TV Distortion (4/3")	-0.10 %	-0.22 %	-0.30 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	4/3"		
Filter Thread	M 43 P = 0.75		
Weight (approx.)	310 g		
Dimension	φ50.5 (max.) x L = 83.6 ~ 83.1 mm		

VS-LLD35 Floating System



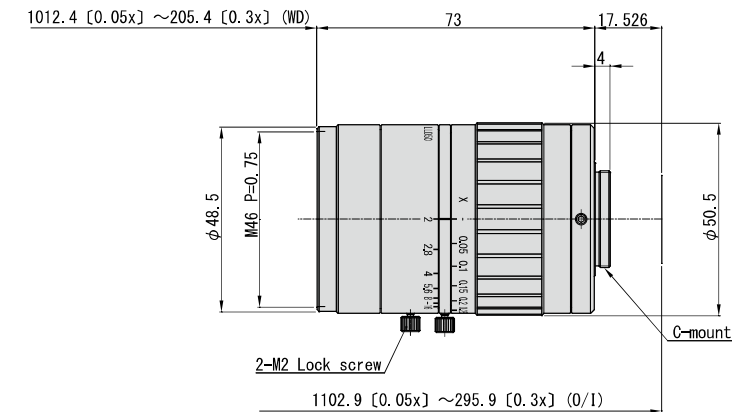
Focal Length(f)	35 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.05x ~ 0.3x		
Optical Mag.	0.05x	0.15x	0.3x
FOV(VxH)	4/3"	272.0 x 362.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	47.3 x 56.0 mm
WD	706.6 mm	239.2 mm	129.5 mm
O/I (Object & Imager Distance)	806.6 mm	339.2 mm	229.5 mm
Working F/# *Value at Iris Open	2.2	2.5	3.0
TV Distortion (4/3")	-0.15 %	-0.14 %	-0.10 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	4/3"		
Filter Thread	M 46 P = 0.75		
Weight (approx.)	295 g		
Dimension	φ50.5 (max.) x L = 82.5 mm		

VS-LLD25 Floating System



Focal Length (f)	25 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.05x ~ 0.3x		
Optical Mag.	0.05x	0.15x	0.3x
FOV (V x H)	4/3"	272.0 x 362.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	47.3 x 56.0 mm
WD	493.0 mm	150.7 mm	66.0 mm
O/I (Object & Imager Distance)	593.3 mm	251.7 mm	168.4 mm
Working F/# *Value at Iris Open	2.1	2.3	2.5
TV Distortion (4/3")	-0.13 %	-0.19 %	-0.24 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	4/3"		
Filter Thread	M 43 P = 0.75		
Weight (approx.)	285 g		
Dimension	φ50.5 (max.) x L = 82.8 ~ 84.9 mm		

VS-LLD50 Floating System



Focal Length(f)	50 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.05x ~ 0.3x		
Optical Mag.	0.05x	0.15x	0.3x
FOV(VxH)	4/3"	272.0 x 362.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	47.3 x 56.0 mm
WD	1012.4 mm	356.5 mm	205.4 mm
O/I (Object & Imager Distance)	1102.9 mm	447.0 mm	295.9 mm
Working F/# *Value at Iris Open	2.2	2.6	3.2
TV Distortion (4/3")	-0.01 %	-0.08 %	-0.09 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	4/3"		
Filter Thread	M 46 P = 0.75		
Weight (approx.)	250 g		
Dimension	φ50.5 (max.) x L = 73 mm		

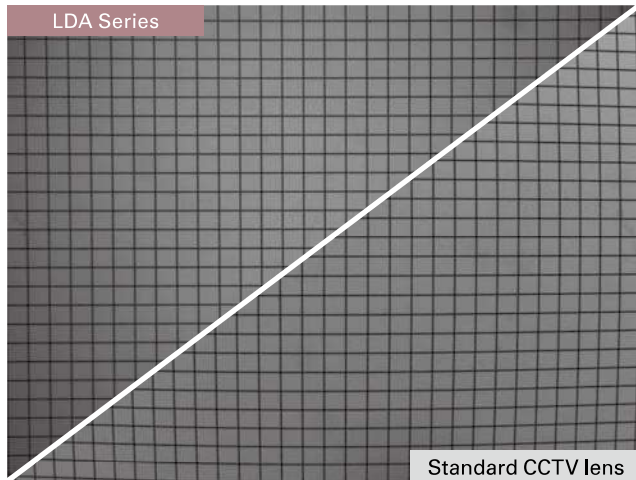
VS-LDA Series 2/3" 1/1.8"

The VS-LDA series generates a low distortion image, even when using extension tubes, by using a larger number of lens shifts. Its design allows for the support of a wide range of magnification, WD, and DOF.

- Features
- 1/2" - 2/3" sensor support
 - 10 models available
 - Focal length 4 - 75mm
 - Distortionless
 - Reduced Shading



Distortion comparison chart



Lens shift

The VS-LDA Series' low distortion and less shading is a result of utilizing a higher number of lens shifts. This allows VS-LDA lenses to have a great variety of WD and magnifications while maintaining a high quality image for the entire FOV.

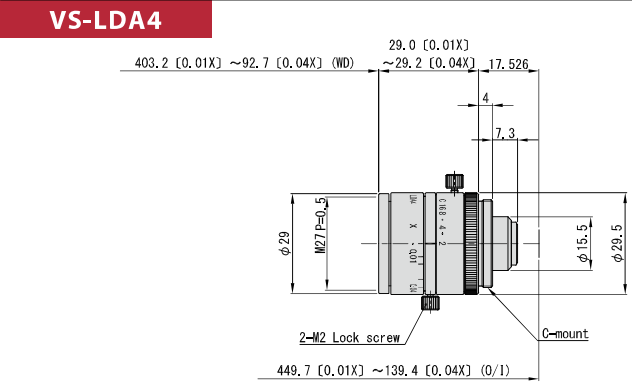


Table for WD, FOV and Extension Tube Length

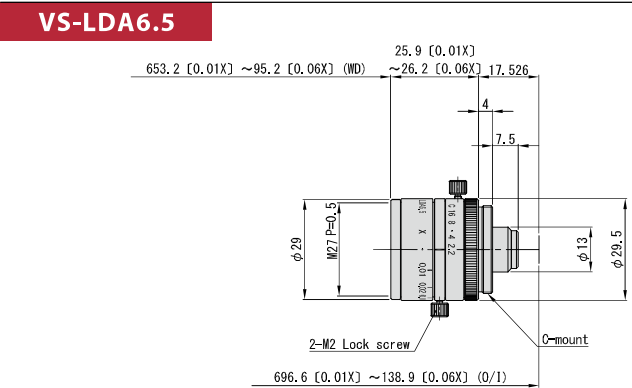
Model Extension Tube (mm)	VS-LDA4		VS-LDA6.5		VS-LDA10		VS-LDA15		VS-LDA20		VS-LDA25		VS-LDA30		VS-LDA35		VS-LDA50		VS-LDA75		
	f4		f6.5		f10		f15		f20		f25		f30		f35		f50		f75		
	Focus 400~90mm		650~95mm		330~90mm		500~90mm		500~90mm		500~100mm		400~150mm		150~100mm		500~200mm		530~250mm		
0	WD	403.2	92.7	653.2	95.2	330.2	91.0	489.2	88.9	510.3	86.6	508.2	100.2	381.6	141.5	142.9	96.1	512.4	221.5	527.5	245.6
	1/2"	480.0x640.0	120.0x160.0	480.0x640.0	80.0x106.7	160.0x213.3	48.0x64.0	160.0x213.3	32.0x42.7	120.0x160.0	21.8x29.1	96.0x128.0	19.2x25.6	60.0x80.0	20.9x27.8	16.0x21.3	9.6x12.8	48.0x64.0	19.2x25.6	32.0x42.7	13.7x18.3
	1/3"	360.0x480.0	90.0x120.0	360.0x480.0	60.0x80.0	120.0x160.0	36.0x48.0	120.0x160.0	24.0x32.0	90.0x120.0	16.4x21.8	72.0x96.0	14.4x19.2	45.0x60.0	15.7x20.9	12.0x16.0	7.2x9.6	36.0x48.0	14.4x19.2	24.0x32.0	10.3x13.7
	Mag.	0.010x	0.040x	0.010x	0.060x	0.030x	0.100x	0.030x	0.150x	0.040x	0.220x	0.050x	0.250x	0.080x	0.230x	0.300x	0.500x	0.100x	0.250x	0.150x	0.350x
0.5	WD			62.4	33.2	118.3	57.3	227.1	70.8	316.1	77.3	362.5	92.7	315.8	135.0	137.6	94.2	468.3	214.1	505.5	241.5
	1/2"			56.5x75.3	35.6x47.4	60.8x81.0	32.2x43.0	76.2x101.6	26.2x35.0	75.0x100.0	19.7x26.2	68.6x91.4	17.8x23.7	49.5x66.0	19.4x25.9	15.3x20.4	9.3x12.5	43.6x58.2	18.5x24.6	30.6x40.8	13.4x17.9
	1/3"			42.4x56.5	26.7x35.6	45.6x60.8	24.2x32.2	57.1x76.2	19.7x26.2	56.3x75.0	14.8x19.7	51.4x68.6	13.3x17.8	37.1x49.5	14.6x19.4	11.5x15.3	7.0x9.3	32.7x43.6	13.8x18.5	22.9x30.6	10.1x13.4
	Mag.			0.085x	0.135x	0.079x	0.149x	0.063x	0.183x	0.064x	0.244x	0.070x	0.270x	0.097x	0.247x	0.314x	0.514x	0.110x	0.260x	0.157x	0.357x
1	WD					68.6	40.3	143.6	58.0	227.8	69.7	284.7	86.5	272.0	125.1	132.6	92.3	428.3	206.5	485.3	237.5
	1/2"					37.5x50.0	24.2x32.3	49.5x66.0	22.1x29.5	54.5x72.7	17.9x23.9	53.9x71.9	16.6x22.1	42.5x56.6	18.3x24.3	14.6x19.5	9.1x12.1	39.7x52.9	17.7x23.6	29.3x39.0	13.2x17.6
	1/3"					28.1x37.5	18.2x24.2	37.1x49.5	16.6x22.1	40.9x54.5	13.4x17.9	40.4x53.9	12.5x16.6	31.9x42.5	13.7x18.3	10.9x14.6	6.8x9.1	29.8x39.7	13.7x17.7	22.0x29.3	9.9x13.4
	Mag.					0.128x	0.198x	0.097x	0.217x	0.088x	0.268x	0.089x	0.289x	0.113x	0.292x	0.343x	0.543x	0.131x	0.281x	0.170x	0.370x
1.5	WD					46.8	30.2	104.3	48.9	177.4	63.4	232.1	80.7	237.3	125.1	128.2	90.6	397.7	200.1	469.4	234.2
	1/2"					27.3x36.4	19.5x26.0	36.9x49.2	19.2x25.6	42.9x57.1	16.4x21.9	44.0x58.7	15.5x20.7	36.9x49.2	17.1x22.9	14.0x18.7	8.8x11.8	36.6x48.9	17.1x22.8	28.2x37.6	13.0x17.3
	1/3"					20.5x27.3	14.6x19.5	27.7x36.9	14.4x19.2	32.1x42.9	12.3x16.4	33.0x44.0	11.7x15.5	27.7x36.9	12.9x17.1	10.5x14.0	6.6x8.8	27.5x36.6	12.8x17.1	21.2x28.2	9.7x13.0
	Mag.					0.176x	0.246x	0.130x	0.250x	0.112x	0.292x	0.109x	0.309x	0.130x	0.280x	0.343x	0.543x	0.131x	0.281x	0.170x	0.370x
2	WD							80.9	41.9	143.6	57.8	197.4	76.0	210.6	112.1	124.2	89.0	371.5	194.2	452.2	230.5
	1/2"							29.4x39.3	17.0x22.6	35.0x46.7	15.1x20.2	37.5x50.0	14.6x19.5	32.7x43.5	16.2x21.5	13.4x17.9	8.6x11.5	34.0x45.4	16.5x22.0	27.1x36.2	12.7x17.0
	1/3"							22.1x29.4	12.7x17.0	26.3x35.0	11.4x15.1	28.1x37.5	11.0x14.6	24.5x32.7	12.1x16.2	10.1x13.4	6.5x8.6	25.5x34.0	12.4x16.5	20.3x27.1	9.5x12.7
	Mag.							0.163x	0.283x	0.137x	0.317x	0.128x	0.328x	0.147x	0.297x	0.357x	0.557x	0.141x	0.291x	0.177x	0.377x
5	WD							66.1	37.4	101.9	55.4	128.0	86.6	105.2	80.6	266.4	165.0	373.6	211.2		
	1/2"							17.1x22.8	10.4x13.9	19.5x26.0	10.8x14.3	19.4x25.9	12.1x16.1	10.8x14.4	7.5x10.0	23.6x31.5	13.6x18.1	22.0x29.4	11.5x15.3		
	1/3"							12.8x17.1	7.8x10.4	14.6x19.5	8.1x10.8	14.6x19.4	9.1x12.1	8.1x10.8	5.6x7.5	17.7x23.6	10.2x13.6	16.5x22.0	8.6x11.5		
	Mag.							0.281x	0.461x	0.246x	0.446x	0.247x	0.397x	0.443x	0.643x	0.203x	0.353x	0.218x	0.418x		
10	WD											55.9	37.9	79.2	64.3	86.0	70.7	186.1	133.9	293.8	186.8
	1/2"											10.9x14.5	7.5x10.0	11.6x15.5	8.5x11.4	8.2x10.9	6.1x8.2	15.7x20.9	10.5x14.0	16.8x22.5	9.9x13.2
	1/3"											8.1x10.9	5.6x7.5	8.7x11.6	6.4x8.5	6.2x8.2	4.6x6.1	11.8x15.7	7.9x10.5	12.6x16.8	7.4x9.9
	Mag.											0.442x	0.642x	0.413x	0.563x	0.585x	0.785x	0.306x	0.456x	0.285x	0.485x
15	WD													58.3	52.1	74.2	63.8	146.2	114.4	243.8	168.0
	1/2"													8.3x11.0	6.6x8.8	6.6x8.8	5.2x6.9	11.7x15.6	8.6x11.4	13.6x18.1	8.7x11.6
	1/3"													6.2x8.3	4.9x6.6	4.9x6.6	3.9x5.2	8.8x11.7	6.4x8.6	10.2x13.6	6.5x8.7
	Mag.													0.580x	0.730x	0.728x	0.928x	0.409x	0.559x	0.353x	0.553x
20	WD													46.7	44.5	66.3	58.8	122.1	100.7	210.4	153.6
	1/2"													6.4x8.6	5.4x7.1	5.5x7.3	4.5x6.0	9.4x12.5	7.2x9.7	11.4x15.2	7.7x10.3
	1/3"													4.8x6.4	4.0x5.4	4.1x5.5	3.4x4.5	7.0x9.4	5.4x7.2	8.6x11.4	5.8x7.7
	Mag.													0.747x	0.897x	0.871x	1.071x	0.513x	0.663x	0.420x	0.620x
25	WD							39.4	39.3	60.6	54.9	106.3	90.9	185.8	141.8						
	1/2"													5.3x7.0	4.5x6.0	4.7x6.3	4.0x5.3	7.8x10.4	6.3x8.4	9.8x13.1	7.0x9.3
	1/3"													3.9x5.3	3.4x4.5	3.6x4.7	3.0x4.0	5.8x7.8	4.7x6.3	7.4x9.8	5.2x7.0
	Mag.													0.913x	1.063x	1.014x	1.214x	0.616x	0.786x	0.488x	0.688x
30	WD							34.3	35.4	56.4	51.9	95.1	83.4	167.3	132.1						
	1/2"													4.4x5.9	3.9x5.2	4.2x5.5	3.5x4.7	6.7x8.9	5.5x7.4	8.6x11.5	6.3x8.5
	1/3"													3.3x4.4	2.9x3.9	3.1x4.2	2.7x3.5	5.0x6.7	4.1x5.5	6.5x8.6	4.8x6.3
	Mag.													1.080x	1.230x	1.156x	1.356x	0.719x	0.869x	0.556x	0.756x
35	WD							30.6	32.5	53.0	49.4	86.6	77.5	153.0	124.1						
	1/2"													3.8x5.1	3.4x4.6	3.7x4.9	3.2x4.3	5.8x7.8	4.9x6.6	7.7x10.3	5.8x7.8
	1/3"													2.9x3.8	2.6x3.4	2.8x3.7	2.4x3.2	4.4x5.8	3.7x4.9	5.8x7.7	4.4x5.8
	Mag.													1.247x	1.397x	1.299x	1.499x	0.822x	0.972x	0.623x	0.823x
40	WD															50.4	47.4	80.0	72.7	141.3	117.3
	1/2"															3.3x4.4	2.9x3.9	5.2x6.9	4.5x6.0	6.9x9.3	5.4x7.2
	1/3"															2.5x3.3	2.2x2.9	3.9x5.2	3.3x4.5	5.2x6.9	4.0x5.4
	Mag.															1.442x	1.642x	0.925x	1.075x	0.691x	0.891x
45	WD															48.2	45.7	74.8	68.8	131.8	111.5
	1/2"															3.0x4.0	2.7x3.6	4.7x6.2	4.1x5.4	6.3x8.4	5.0x6.7
	1/3"															2.3x3.0	2.0x2.7	3.5x4.7	3.1x4.1	4.7x6.3	3.8x5.0
	Mag.															1.584x	1.784x	1.028x	1.178x	0.758x	0.958x
50	WD															46.4	44.2	70.5	65.5	123.8	106.4
	1/2"															2.8x3.7	2.5x3.3	4.2x5.7	3.7x5.0	5.8x7.7	4.7x6.2
	1/3"															2.1x2.8	1.9x2.5	3.2x4.2	2.8x3.7	4.4x5.8	3.5x4.7
	Mag.															1.727x	1.927x	1.131x	1.281x	0.826x	1.026x

Description of the table above

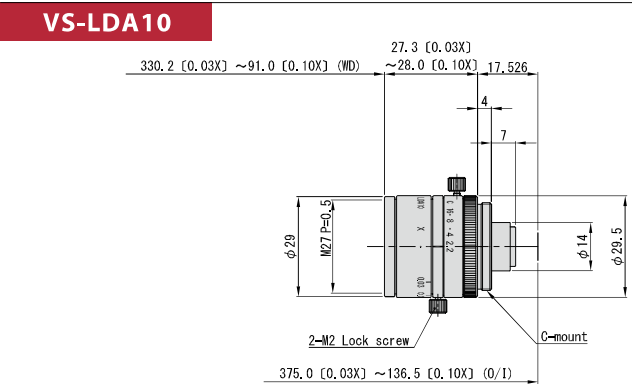
Extension Tube (mm)	Model	VS-LDA○○		
	Focal Length	(f)		
5	Focus	0.5m~∞		Object Distance(mm)
	WD	103	130	The distance between the object and the front of the lens
	1/3"	14x19	19x25	FOV with a 1/3" sensor
	1/2"	18x24	24x32	FOV with a 1/2" sensor
	Mag.	0.25x	0.20x	Optical Magnification
Length of Extension Tube				



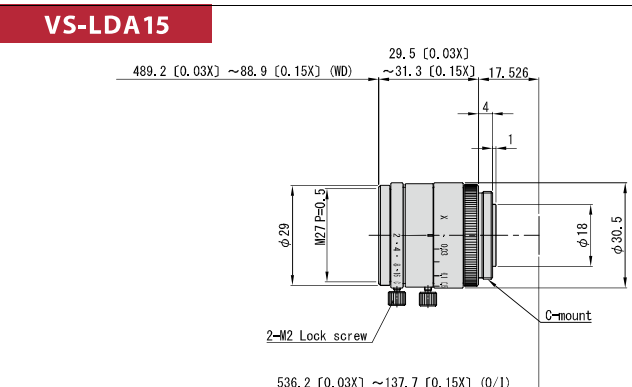
Focal Length(f)	4			
Maximum Aperture Ratio	1:2.0			
Optical Mag. Range	(∞) 0.01x ~ 0.04x			
Optical Mag.		0.01x	0.016x	0.03x
FOV(VxH)	2/3"	—		
	1/2"	480.0 x 640.0	300.0 x 400.0	160.0 x 213.3
	1/3"	360.0 x 480.0	225.0 x 300.0	120.0 x 160.0
WD		403.2 mm	247.9 mm	127.2 mm
O/I (Object & Imager distance)		449.7 mm	294.5 mm	173.9 mm
Working F/# *Value at Iris open		2.1	2.1	2.1
TV Distortion (1/2")		-0.23 %	-0.23 %	-0.24 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	1/2"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	49 g			
Dimension	φ29.5(max.) x L = 29.0 ~ 29.2 mm			



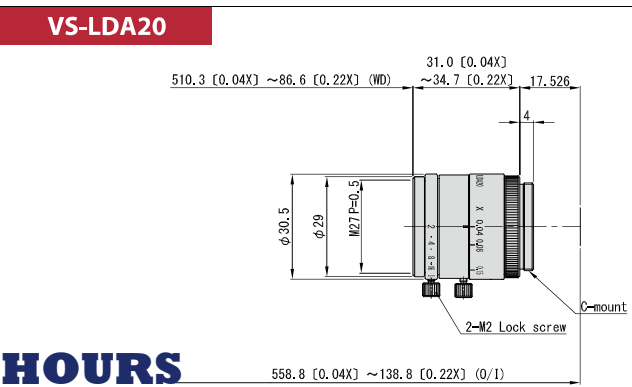
Focal Length(f)	6.5			
Maximum Aperture Ratio	1:2.2			
Optical Mag. Range	(∞) 0.01x ~ 0.06x			
Optical Mag.		0.01x	0.02x	0.04x
FOV(VxH)	2/3"	—		
	1/2"	480.0 x 640.0	240.0 x 320.0	120.0 x 160.0
	1/3"	360.0 x 480.0	180.0 x 240.0	90.0 x 120.0
WD		653.2 mm	318.4 mm	151.0 mm
O/I (Object & Imager distance)		696.6 mm	361.9 mm	194.6 mm
Working F/# *Value at Iris open		2.3	2.3	2.3
TV Distortion (1/2")		0.16 %	0.09 %	-0.05 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	1/2"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	40 g			
Dimension	φ29.5(max.) x L = 25.9 ~ 26.2 mm			



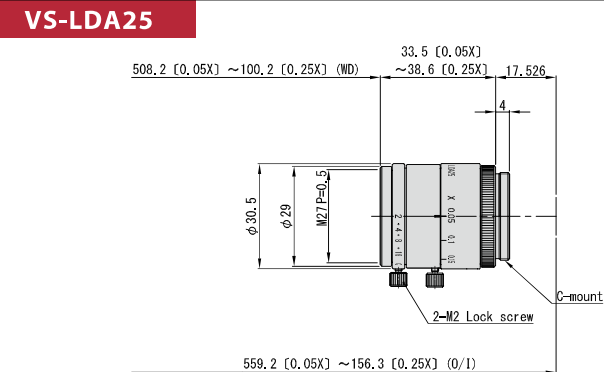
Focal Length(f)	10			
Maximum Aperture Ratio	1:2.2			
Optical Mag. Range	(∞) 0.03x ~ 0.10x			
Optical Mag.		0.03x	0.05x	0.08x
FOV(VxH)	2/3"	—		
	1/2"	160.0 x 213.3	96.0 x 128.0	60.0 x 80.0
	1/3"	120.0 x 160.0	72.0 x 96.0	45.0 x 60.0
WD		330.2 mm	193.5 mm	116.7 mm
O/I (Object & Imager distance)		375.0 mm	238.5 mm	162.0 mm
Working F/# *Value at Iris open		2.3	2.3	2.4
TV Distortion (1/2")		0.03 %	0.01 %	-0.02 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	1/2"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	42 g			
Dimension	φ29.5(max.) x L = 27.3 ~ 28.0 mm			



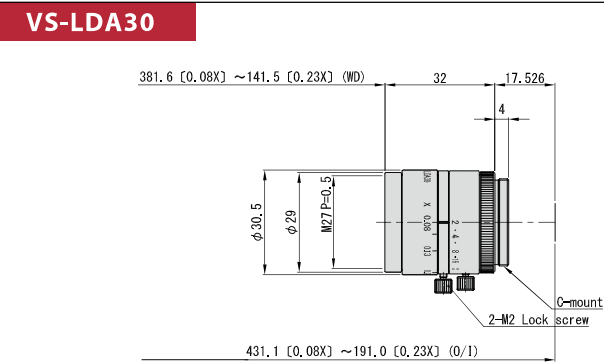
Focal Length(f)	15			
Maximum Aperture Ratio	1:2.0			
Optical Mag. Range	(∞) 0.03x ~ 0.15x			
Optical Mag.		0.03x	0.06x	0.10x
FOV(VxH)	2/3"	236.7 x 280.0	118.3 x 140.0	71.0 x 84.0
	1/2"	160.0 x 213.3	80.0 x 106.7	48.0 x 64.0
	1/3"	120.0 x 160.0	60.0 x 80.0	36.0 x 48.0
WD		489.2 mm	239.0 mm	138.9 mm
O/I (Object & Imager distance)		536.2 mm	286.4 mm	186.9 mm
Working F/# *Value at Iris open		2.1	2.1	2.2
TV Distortion (2/3")		-0.01 %	-0.02 %	-0.05 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	2/3"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	46 g			
Dimension	φ30.5(max.) x L = 29.5 ~ 31.3 mm			



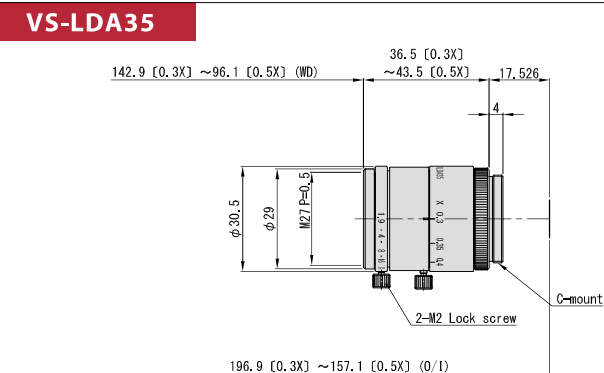
Focal Length(f)	20			
Maximum Aperture Ratio	1:2.0			
Optical Mag. Range	0.04x ~ 0.22x			
Optical Mag.		0.04x	0.08x	0.15x
FOV(VxH)	2/3"	177.5 x 210.0	88.8 x 105.0	47.3 x 56.0
	1/2"	120.0 x 160.0	60.0 x 80.0	32.0 x 42.7
	1/3"	90.0 x 120.0	45.0 x 60.0	24.0 x 32.0
WD		510.3 mm	251.3 mm	130.5 mm
O/I (Object & Imager distance)		558.8 mm	300.6 mm	181.3 mm
Working F/# *Value at Iris open		2.1	2.2	2.3
TV Distortion (2/3")		-0.01 %	-0.05 %	-0.12 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	2/3"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	47 g			
Dimension	φ30.5(max.) x L = 31.0 ~ 34.7 mm			



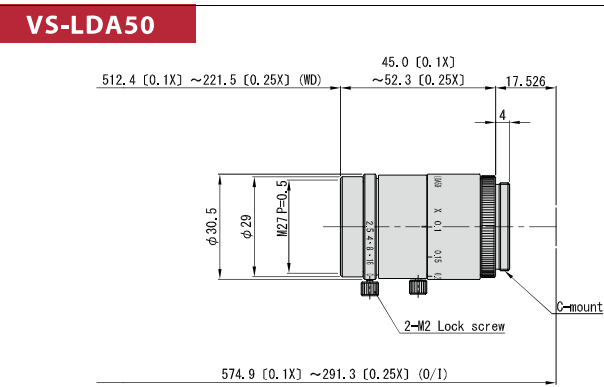
Focal Length(f)	25			
Maximum Aperture Ratio	1:2.0			
Optical Mag. Range	0.05x ~ 0.25x			
Optical Mag.		0.05x	0.1x	0.20x
FOV(VxH)	2/3"	142.0 x 168.0	71.0 x 84.0	35.5 x 42.0
	1/2"	96.0 x 128.0	48.0 x 64.0	24.0 x 32.0
	1/3"	72.0 x 96.0	36.0 x 48.0	18.0 x 24.0
WD		508.2 mm	253.2 mm	125.7 mm
O/I (Object & Imager Distance)		559.2 mm	305.5 mm	180.5 mm
Working F/# *Value at Iris Open		2.1	2.2	2.4
DOF at PCoC φ0.04mm		672 mm	176 mm	4.8 mm
TV Distortion (2/3")		0.06 %	0.02 %	-0.04 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	2/3"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	49 g			
Dimension	φ30.5(max.) x L = 33.5 ~ 38.6 mm			



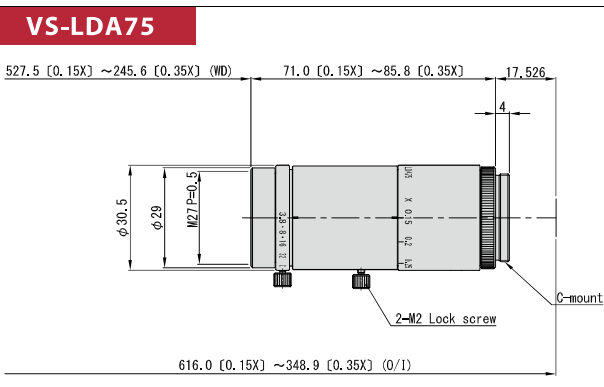
Focal Length(f)	30			
Maximum Aperture Ratio	1:2.0			
Optical Mag. Range	0.08x ~ 0.23x			
Optical Mag.		0.08x	0.10x	0.20x
FOV(VxH)	2/3"	88.8 x 105.0	71.0 x 84.0	35.5 x 42.0
	1/2"	60.0 x 80.0	48.0 x 64.0	24.0 x 32.0
	1/3"	45.0 x 60.0	36.0 x 48.0	18.0 x 24.0
WD		381.6 mm	302 mm	160.2 mm
O/I (Object & Imager Distance)		431.1 mm	356.7 mm	209.7 mm
Working F/# *Value at Iris Open		2.4	2.4	2.7
TV Distortion (2/3")		0.08 %	0.05 %	-0.04 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	2/3"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	47 g			
Dimension	φ30.5(max.) x L = 32 mm			



Focal Length(f)	35			
Maximum Aperture Ratio	1:1.9			
Optical Mag. Range	0.3x ~ 0.5x			
Optical Mag.		0.30x	0.35x	0.40x
FOV(VxH)	2/3"	23.7 x 28.0	20.3 x 24.0	17.8 x 21.0
	1/2"	16.0 x 21.3	13.7 x 18.3	12.0 x 16.0
	1/3"	12.0 x 16.0	10.3 x 13.7	9.0 x 12.0
WD		429.9 mm	126.2 mm	113.7 mm
O/I (Object & Imager Distance)		196.9 mm	182.0 mm	171.2 mm
Working F/# *Value at Iris Open		2.5	2.6	2.7
DOF at PCoC φ0.04mm		2.2 mm	1.7 mm	1.4 mm
TV Distortion (2/3")		0.02 %	0.01 %	0.01 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	2/3"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	58 g			
Dimension	φ30.5(max.) x L = 36.5 ~ 43.5 mm			



Focal Length(f)	50			
Maximum Aperture Ratio	1:2.5			
Optical Mag. Range	0.1x ~ 0.25x			
Optical Mag.		0.10x	0.15x	0.20x
FOV(VxH)	2/3"	71.0 x 84.0	47.3 x 56.0	35.5 x 42.0
	1/2"	48.0 x 64.0	32.0 x 42.7	24.0 x 32.0
	1/3"	36.0 x 48.0	24.0 x 32.0	18.0 x 24.0
WD		512.4 mm	350.8 mm	270.0 mm
O/I (Object & Imager Distance)		574.9 mm	415.7 mm	337.4 mm
Working F/# *Value at Iris Open		2.7	2.8	2.9
TV Distortion (2/3")		0.03 %	0.02 %	0.01 %
Operation of Iris & Zoom	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17526 mm			
Sensor Size (max.)	2/3"			
Filter Thread	M 27 P = 0.5			
Weight (approx.)	76 g			
Dimension	φ30.5(max.) x L = 45.0 ~ 52.3 mm			



VS-MCA Series 2/3" 1/1.8"

Especially designed to stay in focus regardless of vibration or shock.
With a fixed iris and a screw lock mechanism it is able to not only deliver a high quality image, but also maintain it though out the vision systems use.

- Features
- 10 models available
 - Focal length 4 - 75mm
 - Open iris, 5,6 and 8,0 versions
 - Ruggedized and Vibrations resistant
 - Torque body for easy mounting control



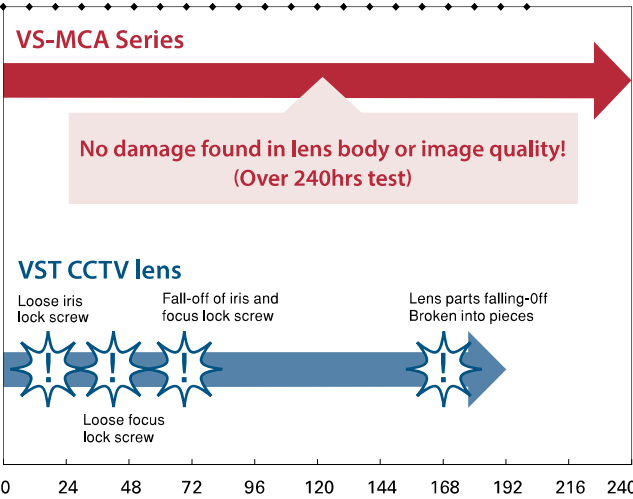
Improvement of Vibration Resistance

Focus locking system has been changed from point fixing to surface fixing utilizing a ring and internal mechanical structure designed for high vibration resistance.



Vibration test result by high speed vibration machine

Condition: Acceleration=57.7m/s2(*1G=9.8m/s2)
From 9.9Hz to 1000Hz (approx.3 minutes interval)



*The test result was caused by the harsh testing for destructive purpose.

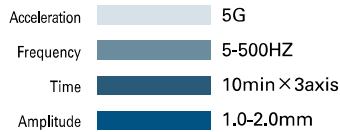


By setting the torque value, it becomes possible to eliminate "difference" by people. In addition, vibration can be managed including the camera by using torque wrench.
※ If the torque wrench does not enter, there are two incisions in the edge of the lens so that it can be fixed with a crab eye wrench.

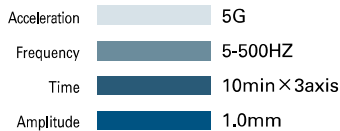
Standard Lens Vibration and Shock Test Result

Condition

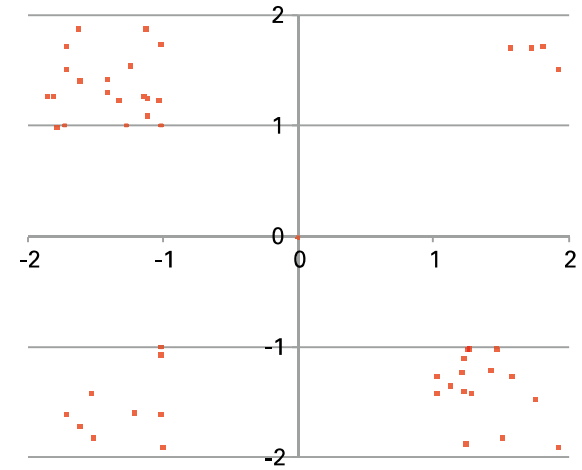
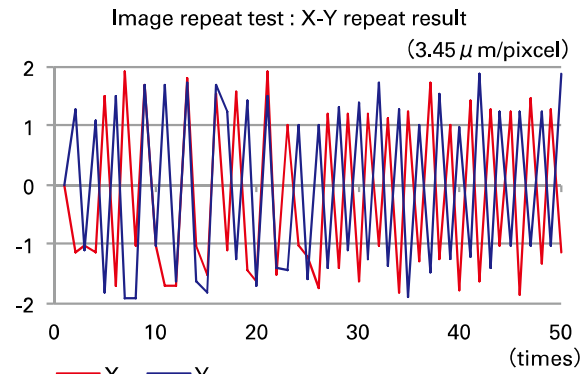
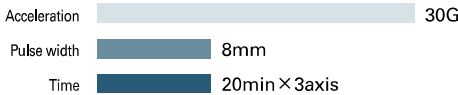
Sweep test.



Fixed frequency test.



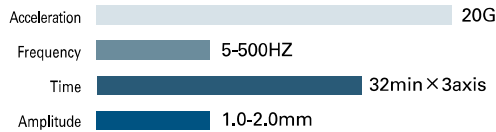
Shock impact test.



VS-MCA Series Vibration and Shock Test Result

Condition

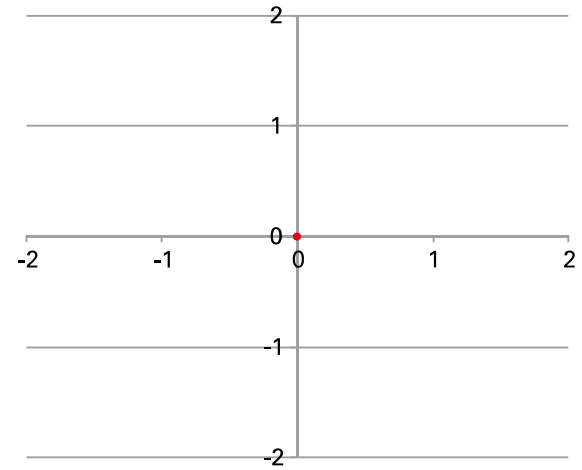
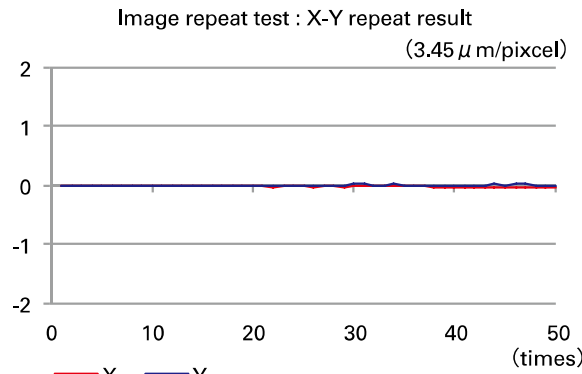
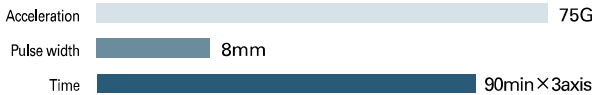
Sweep test.



Fixed frequency test.

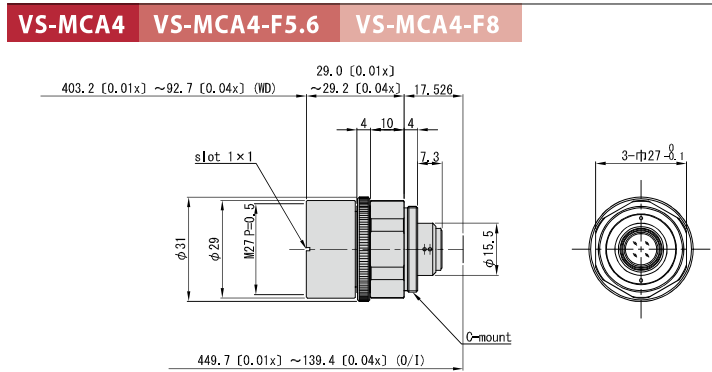


Shock impact test.

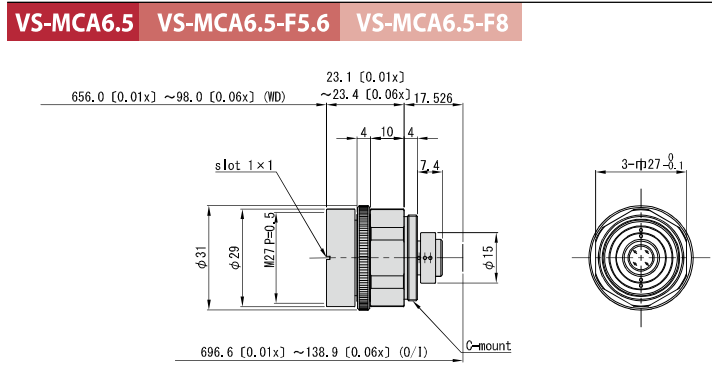


*Internal Testing Data

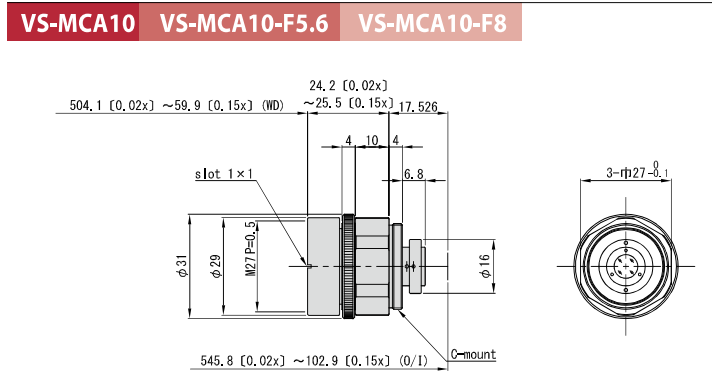
Variable Magnification Model (FNO options-Open/5.6/8)



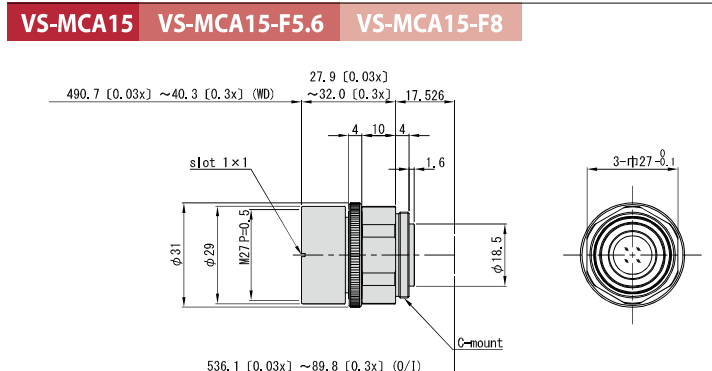
Focal Length(f)	4 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.01x ~ 0.04x		
Optical Mag.	0.01x	0.02x	0.04x
FOV(VxH)	2/3"	—	
	1/2"	480.0 x 640.0mm	240.0 x 320.0mm
	1/3"	360.0 x 480.0mm	180.0 x 240.0mm
WD	403.2 mm	196.2 mm	92.7 mm
O/I (Object & Imager Distance)	449.7 mm	242.8 mm	139.4 mm
Aperture	2 5.6 8	2 5.6 8	2 5.6 8
Working F/#	2.1 5.7 8.1	2.1 5.7 8.2	2.2 5.8 8.3
TV Distortion (1/2")	-0.23 %	-0.23 %	-0.24 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	1/2"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	44 g		
Dimension	φ31 (max.) x L = 29 ~ 29.2 mm		



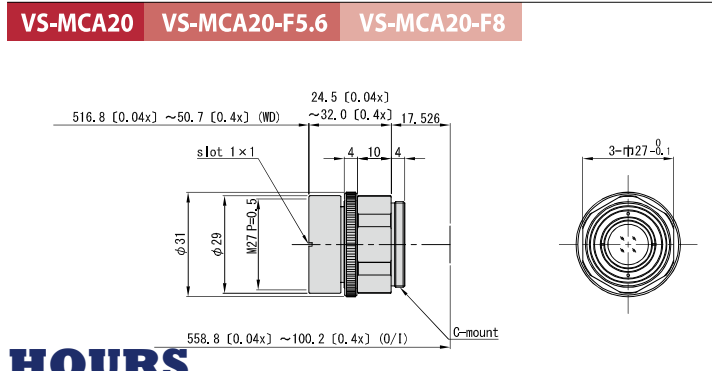
Focal Length(f)	6.5 mm		
Maximum Aperture Ratio	1:2.2		
Optical Mag. Range	(∞) 0.01x ~ 0.06x		
Optical Mag.	0.01x	0.03x	0.06x
FOV(VxH)	2/3"	—	
	1/2"	480.0 x 640.0mm	160.0 x 213.3mm
	1/3"	360.0 x 480.0mm	120.0 x 160.0mm
WD	656.0 mm	209.6 mm	98.0 mm
O/I (Object & Imager Distance)	696.6 mm	250.3 mm	138.9 mm
Aperture	2 5.6 8	2 5.6 8	2 5.6 8
Working F/#	2.3 5.7 8.1	2.3 5.8 8.2	2.3 5.9 8.5
TV Distortion (1/2")	0.16 %	0.02 %	-0.18 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	1/2"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	36 g		
Dimension	φ31 (max.) x L = 23.1 ~ 23.4 mm		



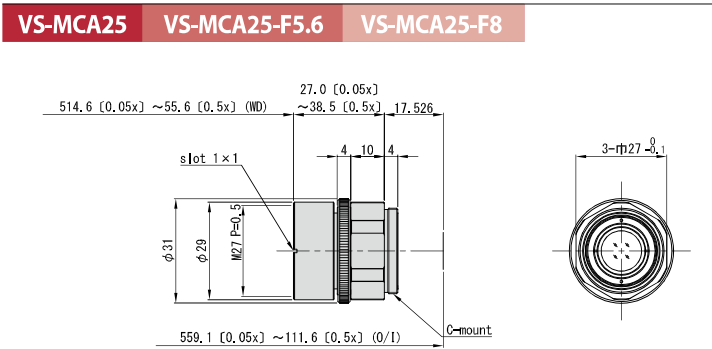
Focal Length(f)	10 mm		
Maximum Aperture Ratio	1:2.2		
Optical Mag. Range	(∞) 0.02x ~ 0.15x		
Optical Mag.	0.02x	0.1x	0.15x
FOV(VxH)	2/3"	—	
	1/2"	240.0 x 320.0mm	48.0 x 64.0mm
	1/3"	180.0 x 240.0mm	36.0 x 48.0mm
WD	504.1 mm	94.0 mm	59.9 mm
O/I (Object & Imager Distance)	545.8 mm	136.5 mm	102.9 mm
Aperture	2 5.6 8	2 5.6 8	2 5.6 8
Working F/#	2.3 5.7 8.2	2.4 6.2 8.8	2.6 6.4 9.2
TV Distortion (1/2")	0.04 %	-0.04 %	-0.07 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	1/2"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	40 g		
Dimension	φ31 (max.) x L = 24.2 ~ 25.5 mm		



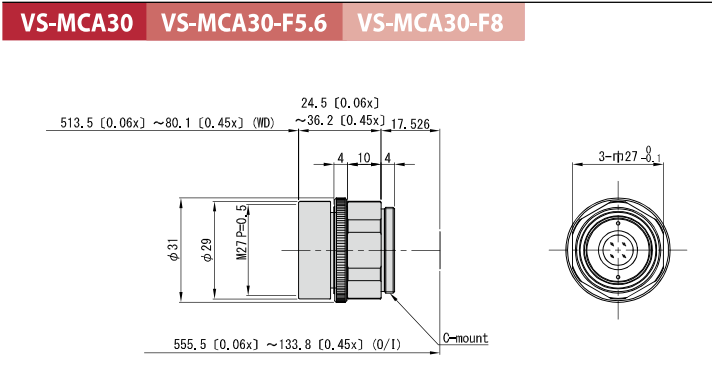
Focal Length(f)	15 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.03x ~ 0.3x		
Optical Mag.	0.03x	0.2x	0.3x
FOV(VxH)	2/3"	236.7 x 280.0mm	35.5 x 42.0mm
	1/2"	160.0 x 213.3mm	24.0 x 32.0mm
	1/3"	120.0 x 160.0mm	18.0 x 24.0mm
WD	490.7 mm	65.4 mm	40.3 mm
O/I (Object & Imager Distance)	536.1 mm	113.4 mm	89.8 mm
Aperture	2 5.6 8	2 5.6 8	2 5.6 8
Working F/#	2.1 5.8 8.2	2.4 6.7 9.6	2.6 7.3 10.4
TV Distortion (2/3")	-0.01 %	-0.13 %	-0.22 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	2/3"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	42 g		
Dimension	φ31 (max.) x L = 27.9 ~ 32 mm		



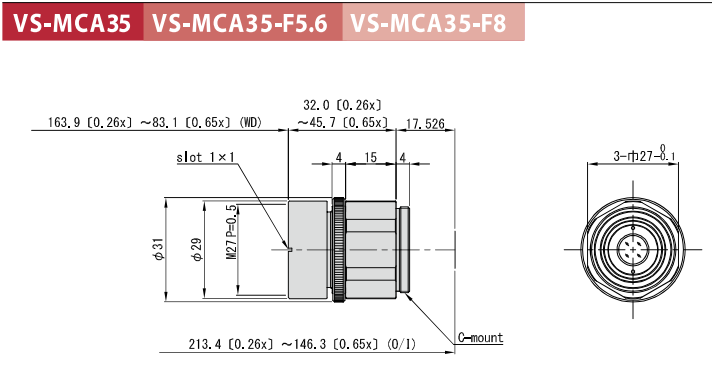
Focal Length(f)	20 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	0.04x ~ 0.4x		
Optical Mag.	0.04x	0.25x	0.4x
FOV(VxH)	2/3"	177.5 x 210.0 mm	28.4 x 33.6 mm
	1/2"	120.0 x 160.0 mm	19.2 x 25.6 mm
	1/3"	90.0 x 120.0 mm	14.4 x 19.2 mm
WD	516.8 mm	81.8 mm	50.7 mm
O/I (Object & Imager Distance)	558.8 mm	128.2 mm	100.2 mm
Aperture	2 5.6 8	2 5.6 8	2 5.6 8
Working F/#	2.1 5.8 8.3	2.5 7.0 10.0	2.9 7.8 11.2
TV Distortion (2/3")	-0.01 %	-0.19 %	-0.25 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	2/3"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	36 g		
Dimension	φ31 (max.) x L = 24.5 ~ 32 mm		



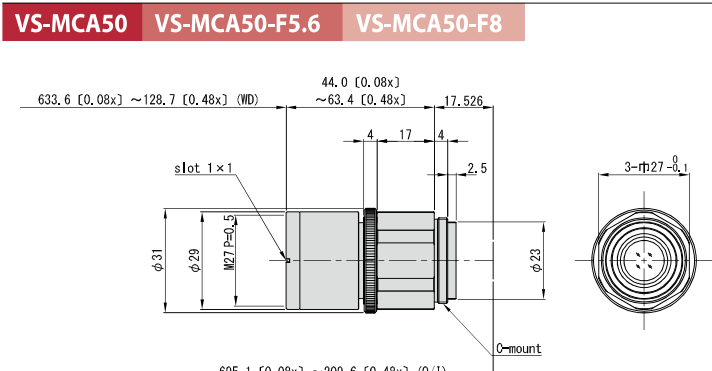
Focal Length(f)	25 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	0.05x ~ 0.5x		
Optical Mag.	0.05x	0.25x	0.5x
FOV(VxH)	2/3"	142.0 x 168.0mm	28.4 x 33.6mm
	1/2"	96.0 x 128.0mm	19.2 x 25.6mm
	1/3"	72.0 x 96.0mm	14.4 x 19.2mm
WD	514.6 mm	106.6 mm	55.6 mm
O/I (Object & Imager Distance)	559.1 mm	156.3 mm	111.6 mm
Aperture	2 5.6 8	2 5.6 8	2 5.6 8
Working F/#	2.1 5.9 8.4	2.5 7.0 10.0	3.0 8.4 12.0
TV Distortion (2/3")	0.06 %	-0.06 %	-0.12 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	2/3"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	38 g		
Dimension	φ31 (max.) x L = 27 ~ 38.5 mm		



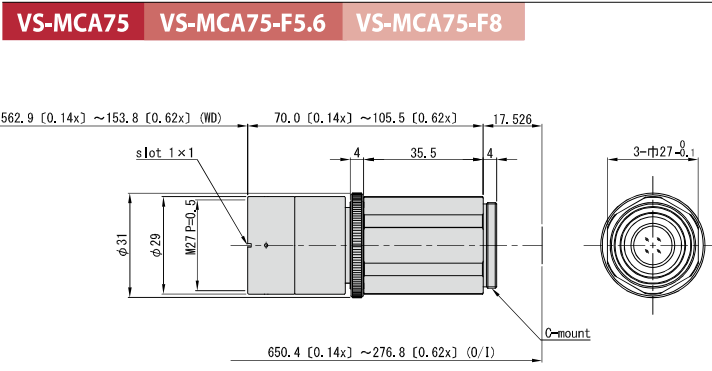
Focal Length(f)	30 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	0.06x ~ 0.45x		
Optical Mag.	0.06x	0.25x	0.45x
FOV(VxH)	2/3"	118.3 x 140.0mm	28.4 x 33.6mm
	1/2"	80.0 x 106.7mm	19.2 x 25.6mm
	1/3"	60.0 x 80.0mm	14.4 x 19.2mm
WD	513.5 mm	133.5 mm	80.1 mm
O/I (Object & Imager Distance)	555.5 mm	181.2 mm	133.8 mm
Aperture	2 5.6 8	2 5.6 8	2 5.6 8
Working F/#	2.4 5.9 8.5	2.5 7.0 10.0	3.3 8.1 11.6
TV Distortion (2/3")	0.11 %	-0.07 %	-0.09 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	2/3"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	39 g		
Dimension	φ31 (max.) x L = 24.5 ~ 36.2 mm		



Focal Length(f)	35 mm		
Maximum Aperture Ratio	1:1.9		
Optical Mag. Range	0.26x ~ 0.65x		
Optical Mag.	0.26x	0.45x	0.65x
FOV(VxH)	2/3"	27.3 x 32.3mm	15.8 x 18.7mm
	1/2"	18.5 x 24.6mm	10.7 x 14.2mm
	1/3"	13.9 x 18.5mm	8.0 x 10.7mm
WD	163.9 mm	107.0 mm	55.5 mm
O/I (Object & Imager Distance)	213.4 mm	163.2 mm	146.3 mm
Aperture	1.9 5.6 8	1.9 5.6 8	1.9 5.6 8
Working F/#	2.5 7.1 10.1	3.0 8.1 11.6	3.5 9.2 13.2
TV Distortion (2/3")	0.03 %	0.00 %	0.01 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	2/3"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	43 g		
Dimension	φ31 (max.) x L = 32 ~ 45.7 mm		



Focal Length(f)	50 mm		
Maximum Aperture Ratio	1:2.5		
Optical Mag. Range	0.08x ~ 0.48x		
Optical Mag.	0.08x	0.3x	0.48x
FOV(VxH)	2/3"	88.8 x 105.0mm	23.7 x 28.0mm
	1/2"	60.0 x 80.0mm	16.0 x 21.3mm
	1/3"	45.0 x 60.0mm	12.0 x 16.0mm
WD	633.6 mm	189.3 mm	128.7 mm
O/I (Object & Imager Distance)	695.1 mm	261.5 mm	209.6 mm
Aperture	2.5 5.6 8	2.5 5.6 8	2.5 5.6 8
Working F/#	2.6 6.0 8.6	3.2 7.3 10.4	3.6 8.3 11.8
TV Distortion (2/3")	0.04 %	-0.01 %	-0.01 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	2/3"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	60 g		
Dimension	φ31 (max.) x L = 45 ~ 63.4 mm		



Focal Length(f)	75 mm		
Maximum Aperture Ratio	1:3.8		
Optical Mag. Range	0.14x ~ 0.62x		
Optical Mag.	0.14x	0.4x	0.62x
FOV(VxH)	2/3"	50.7 x 60.0mm	17.8 x 21.0mm
	1/2"	34.3 x 45.7mm	12.0 x 16.0mm
	1/3"	25.7 x 34.3mm	9.0 x 12.0mm
WD	562.9 mm	219.5 mm	153.8 mm
O/I (Object & Imager Distance)	650.4 mm	326.2 mm	276.8 mm
Aperture	3.8 5.6 8	3.8 5.6 8	3.8 5.6 8
Working F/#	4.1 7.0 10.1	4.8 9.7 13.9	6.2 12.0 17.2
TV Distortion (2/3")	0.03 %	-0.01 %	-0.02 %
Operation	Manual		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17526 mm		
Sensor Size (max.)	2/3"		
Filter Thread	M 27 P = 0.5		
Weight (approx.)	80 g		
Dimension	φ31 (max.) x L = 70 ~ 105.5 mm		

1" Ruggedized Macro Lenses

VS-MCH1 Series 1" 1/1.2"

Torque body for easy mounting control.
Threaded iris plate system to lock the iris in place and avoid dust generation.

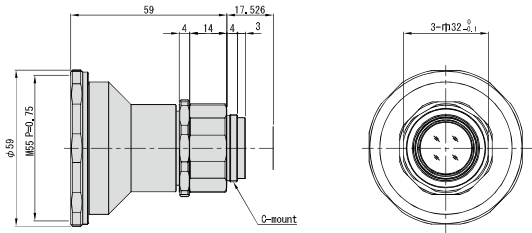


Threaded iris plate system to lock the iris in place (F1.4 / F5.6 / F8)



- Features
- 1" sensor support
 - 6 models available
 - Focal length 8-50
 - Changeable Iris plate system from Fno 1.4/5.6/8
 - Torque body for easy mounting control
 - Threaded iris plate system to lock the iris in place and avoid dust generation from vibration

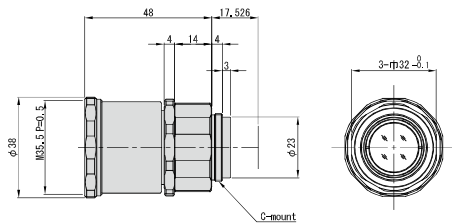
VS-MC08H1



Focal Length (f)	8 mm
Maximum Aperture Ratio	1:1.4
Angle of View (1")	72.7° x 72.7°
M.O.D	100 mm
TV Distortion (1")	-0.35 %
Operation	Manual
Wavelength	Visible
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M 55 P = 0.75
Weight (approx.)	- g
Dimension	φ59(max.) x L = 59 mm

※Changeable Iris plate system from Fno 1.4/5.6/8

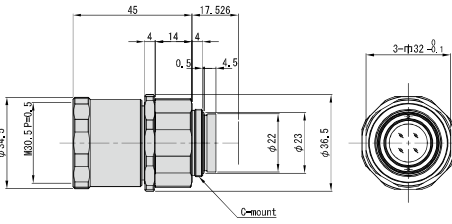
VS-MC12H1



Focal Length (f)	12 mm
Maximum Aperture Ratio	1:1.4
Angle of View (1")	50.8° x 50.8°
M.O.D	300 mm
TV Distortion (1")	-0.32 %
Operation	Manual
Wavelength	Visible
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M 35.5 P = 0.5
Weight (approx.)	- g
Dimension	φ38(max.) x L = 48 mm

※Changeable Iris plate system from Fno 1.4/5.6/8

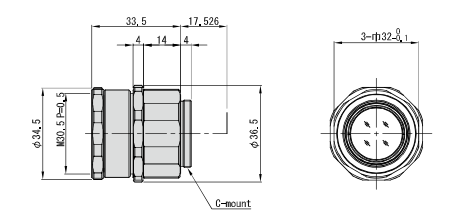
VS-MC16H1



Focal Length (f)	16 mm
Maximum Aperture Ratio	1:1.4
Angle of View (1")	38.6° x 38.6°
M.O.D	300 mm
TV Distortion (1")	-0.65 %
Operation	Manual
Wavelength	Visible
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M 30.5 P = 0.5
Weight (approx.)	- g
Dimension	φ36.5(max.) x L = 45 mm

※Changeable Iris plate system from Fno 1.4/5.6/8

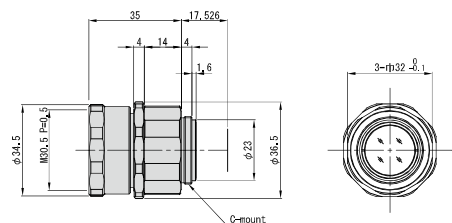
VS-MC25H1



Focal Length (f)	25 mm
Maximum Aperture Ratio	1:1.4
Angle of View (1")	25.1° x 25.1°
M.O.D	300 mm
TV Distortion (1")	-0.46 %
Operation	Manual
Wavelength	Visible
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M 30.5 P = 0.5
Weight (approx.)	66 g
Dimension	φ36.5(max.) x L = 33.5 mm

※Changeable Iris plate system from Fno 1.4/5.6/8

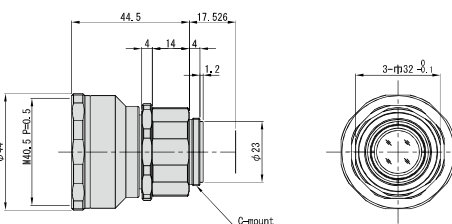
VS-MC35H1



Focal Length (f)	35 mm
Maximum Aperture Ratio	1:1.4
Angle of View (1")	18.3° x 18.3°
M.O.D	300 mm
TV Distortion (1")	-0.31 %
Operation	Manual
Wavelength	Visible
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M 30.5 P = 0.5
Weight (approx.)	- g
Dimension	φ36.5(max.) x L = 35 mm

※Changeable Iris plate system from Fno 1.4/5.6/8

VS-MC50H1



Focal Length (f)	50 mm
Maximum Aperture Ratio	1:1.8
Angle of View (1")	12.8° x 12.8°
M.O.D	500 mm
TV Distortion (1")	-0.01 %
Operation	Manual
Wavelength	Visible
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M 40.5 P = 0.5
Weight (approx.)	- g
Dimension	φ44(max.) x L = 44.5 mm

※Changeable Iris plate system from Fno 1.4/5.6/8

Fixed Magnification Distortionless Macro Lenses

VS-MC Series 2/3" 1/1.8"

Applications needing a fixed magnification can take advantage of this iteration of the VS-MC series made to cover a reasonably wide magnification range with almost 0% distortion. Its compact size, in combination with an optical mirror or prism, effectively allows you to place your camera in a convenient location for your application.

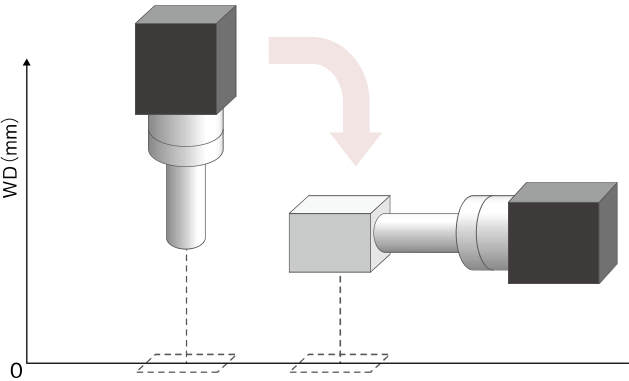
- Features
- 2/3" sensor support
 - Slim $\phi 16$ mm body
 - Distortionless
 - Optical Prism ready
 - Optical Mirror ready



Application example

■ Optional prism / mirror unit.

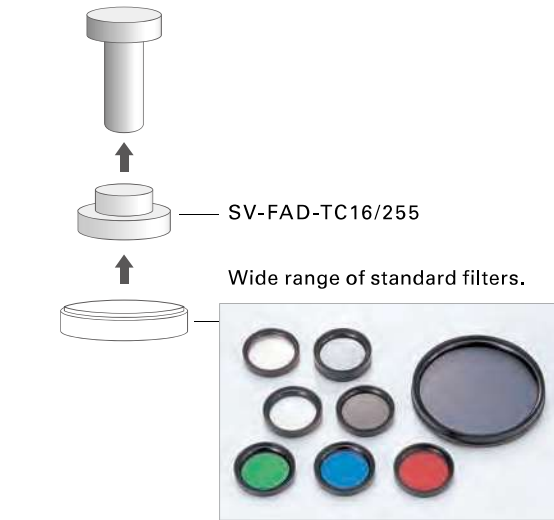
VS-PZ16-1



*Shading or Vignetting may occur, please inquire for more details.

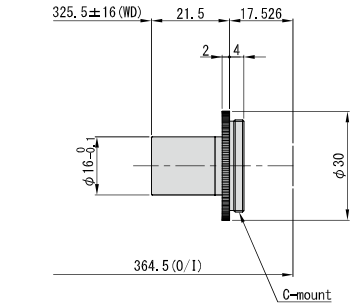
■ Filter adapter

SV-FAD-TC16/255



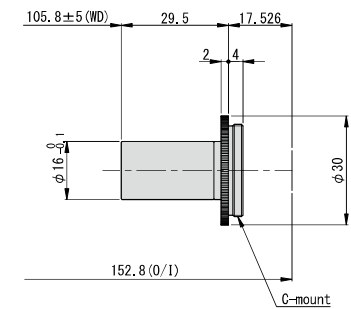
Fixed Magnification Model

VS-MC01-330



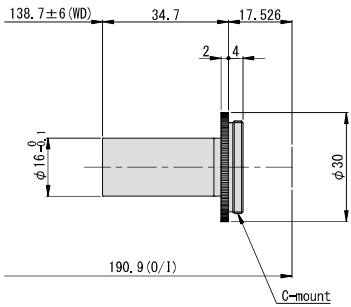
Optical Mag.	0.1x ± 5 %
Focal Length (f)	30.0 mm
FOV(VxH)	2/3" 71.0 x 84.0 mm
	1/2" 48.0 x 64.0 mm
	1/3" 36.0 x 48.0 mm
WD	325.5 mm ± 16
O/I (Object & Imager Distance)	364.5 mm
Working F/#	4.4
NA	0.011
DOF at PCoC $\phi 0.04$ mm	35.2 mm
TV Distortion (2/3")	0.01 %
Relative Illuminance (Y=5.5)	80 %
Wavelength	Visible
Mount	C-Mount
Flange Back	17526 mm
Sensor Size (max.)	2/3"
Weight (approx.)	14 g
Dimension	$\phi 30$ (max.) x L = 21.5 mm

VS-MC03-100



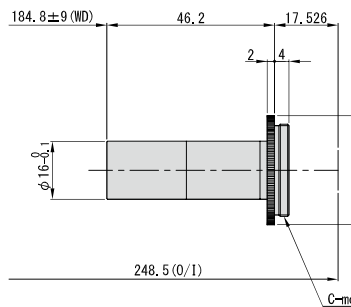
Optical Mag.	0.3x ± 5 %
Focal Length (f)	27.5 mm
FOV(VxH)	2/3" 23.7 x 28.0 mm
	1/2" 16.0 x 21.3 mm
	1/3" 12.0 x 16.0 mm
WD	105.8 mm ± 5
O/I (Object & Imager Distance)	152.8 mm
Working F/#	5.2
NA	0.029
DOF at PCoC $\phi 0.04$ mm	4.6 mm
TV Distortion (2/3")	0.00 %
Relative Illuminance (Y=5.5)	94 %
Wavelength	Visible
Mount	C-Mount
Flange Back	17526 mm
Sensor Size (max.)	2/3"
Weight (approx.)	16 g
Dimension	$\phi 30$ (max.) x L = 29.5 mm

VS-MC03-135



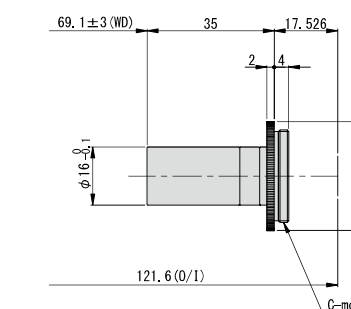
Optical Mag.	0.3x ± 5 %
Focal Length (f)	33.7 mm
FOV(VxH)	2/3" 23.7 x 28.0 mm
	1/2" 16.0 x 21.3 mm
	1/3" 12.0 x 16.0 mm
WD	138.7 mm ± 6
O/I (Object & Imager Distance)	190.9 mm
Working F/#	5.3
NA	0.028
DOF at PCoC $\phi 0.04$ mm	4.7 mm
TV Distortion (2/3")	0.00 %
Relative Illuminance (Y=5.5)	93 %
Wavelength	Visible
Mount	C-Mount
Flange Back	17526 mm
Sensor Size (max.)	2/3"
Weight (approx.)	16 g
Dimension	$\phi 30$ (max.) x L = 34.7 mm

VS-MC03-180



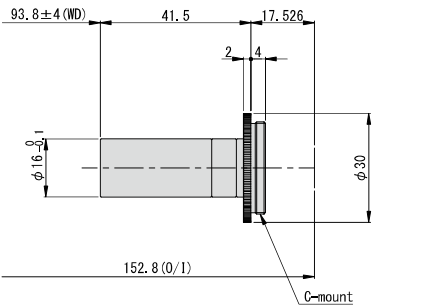
Optical Mag.	0.3x ± 5 %
Focal Length (f)	43.9 mm
FOV(VxH)	2/3" 23.7 x 28.0 mm
	1/2" 16.0 x 21.3 mm
	1/3" 12.0 x 16.0 mm
WD	184.8 mm ± 9
O/I (Object & Imager Distance)	248.5 mm
Working F/#	5.3
NA	0.028
DOF at PCoC $\phi 0.04$ mm	4.7 mm
TV Distortion (2/3")	0.00 %
Relative Illuminance (Y=5.5)	94 %
Wavelength	Visible
Mount	C-Mount
Flange Back	17526 mm
Sensor Size (max.)	2/3"
Weight (approx.)	19 g
Dimension	$\phi 30$ (max.) x L = 46.2 mm

VS-MC05-65



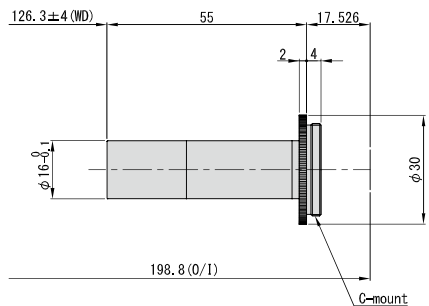
Optical Mag.	0.5x ± 5 %
Focal Length (f)	27.5 mm
FOV(VxH)	2/3" 14.2 x 16.8 mm
	1/2" 9.6 x 12.8 mm
	1/3" 7.2 x 9.6 mm
WD	69.1 mm ± 3
O/I (Object & Imager Distance)	121.6 mm
Working F/#	6.0
NA	0.042
DOF at PCoC $\phi 0.04$ mm	1.9 mm
TV Distortion (2/3")	-0.02 %
Relative Illuminance (Y=5.5)	98 %
Wavelength	Visible
Mount	C-Mount
Flange Back	17526 mm
Sensor Size (max.)	2/3"
Weight (approx.)	17 g
Dimension	$\phi 30$ (max.) x L = 35 mm

VS-MC05-90



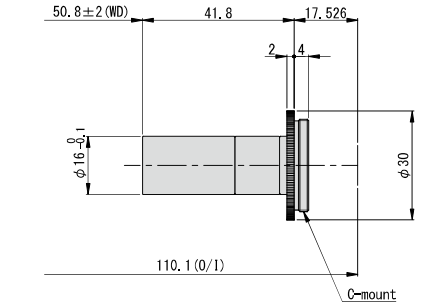
Optical Mag.	0.5x	± 5 %
Focal Length (f)		33.7 mm
FOV(VxH)	2/3"	14.2 x 16.8 mm
	1/2"	9.6 x 12.8 mm
	1/3"	7.2 x 9.6 mm
WD		93.8 mm ± 4
O/I (Object & Imager Distance)		152.8 mm
Working F/#		6.1
NA		0.041
DOF at PCoC ϕ 0.04mm		2.0 mm
TV Distortion (2/3")		0.00 %
Relative Illuminance (Y=5.5)		95 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		18 g
Dimension		ϕ 30(max.) x L = 41.5 mm

VS-MC05-130



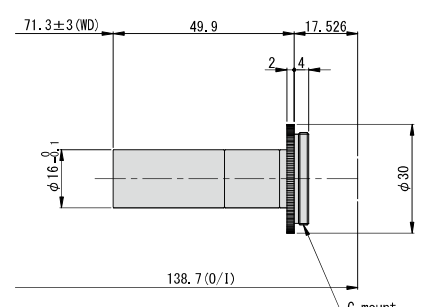
Optical Mag.	0.5x	± 5 %
Focal Length (f)		43.9 mm
FOV(VxH)	2/3"	14.2 x 16.8 mm
	1/2"	9.6 x 12.8 mm
	1/3"	7.2 x 9.6 mm
WD		126.3 mm ± 4
O/I (Object & Imager Distance)		198.8 mm
Working F/#		6.1
NA		0.041
DOF at PCoC ϕ 0.04mm		2.0 mm
TV Distortion (2/3")		0.00 %
Relative Illuminance (Y=5.5)		96 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		21 g
Dimension		ϕ 30(max.) x L = 55 mm

VS-MC075-50



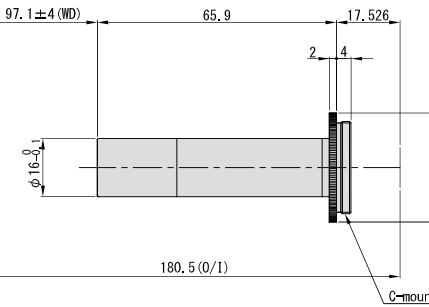
Optical Mag.	0.75x	± 5 %
Focal Length (f)		27.5 mm
FOV(VxH)	2/3"	9.5 x 11.2 mm
	1/2"	6.4 x 8.5 mm
	1/3"	4.8 x 6.4 mm
WD		50.8 mm ± 2
O/I (Object & Imager Distance)		110.1 mm
Working F/#		5.8
NA		0.065
DOF at PCoC ϕ 0.04mm		0.8 mm
TV Distortion (2/3")		-0.03 %
Relative Illuminance (Y=5.5)		98 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		18.5 g
Dimension		ϕ 30(max.) x L = 41.8 mm

VS-MC075-70



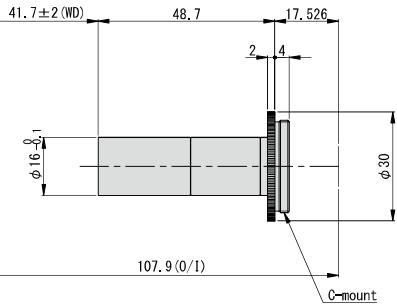
Optical Mag.	0.75x	± 5 %
Focal Length (f)		33.7 mm
FOV(VxH)	2/3"	9.5 x 11.2 mm
	1/2"	6.4 x 8.5 mm
	1/3"	4.8 x 6.4 mm
WD		71.3 mm ± 3
O/I (Object & Imager Distance)		138.7 mm
Working F/#		6.8
NA		0.055
DOF at PCoC ϕ 0.04mm		1.0 mm
TV Distortion (2/3")		0.00 %
Relative Illuminance (Y=5.5)		96 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		19 g
Dimension		ϕ 30(max.) x L = 49.9 mm

VS-MC075-100



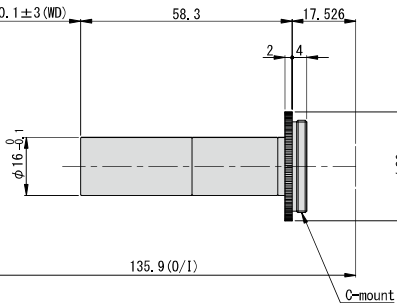
Optical Mag.	0.75x	± 5 %
Focal Length (f)		43.9 mm
FOV(VxH)	2/3"	9.5 x 11.2 mm
	1/2"	6.4 x 8.5 mm
	1/3"	4.8 x 6.4 mm
WD		97.1 mm ± 4
O/I (Object & Imager Distance)		180.5 mm
Working F/#		7.1
NA		0.053
DOF at PCoC ϕ 0.04mm		1.0 mm
TV Distortion (2/3")		0.00 %
Relative Illuminance (Y=5.5)		97 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		23 g
Dimension		ϕ 30(max.) x L = 65.9 mm

VS-MC1-40



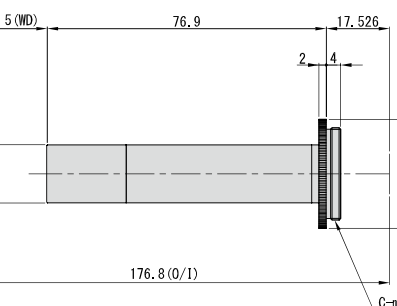
Optical Mag.	1x	± 5 %
Focal Length (f)		27.5 mm
FOV(VxH)	2/3"	7.1 x 8.4 mm
	1/2"	4.8 x 6.4 mm
	1/3"	3.6 x 4.8 mm
WD		41.7 mm ± 2
O/I (Object & Imager Distance)		107.9 mm
Working F/#		6.6
NA		0.076
DOF at PCoC ϕ 0.04mm		0.5 mm
TV Distortion (2/3")		-0.04 %
Relative Illuminance (Y=5.5)		98 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		19.5 g
Dimension		ϕ 30(max.) x L = 48.7 mm

VS-MC1-60



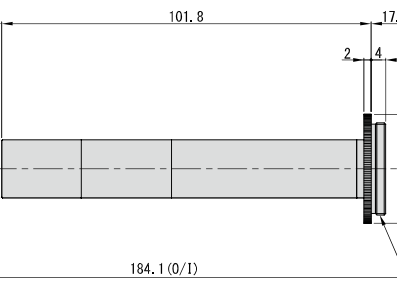
Optical Mag.	1x	± 5 %
Focal Length (f)		33.7 mm
FOV(VxH)	2/3"	7.1 x 8.4 mm
	1/2"	4.8 x 6.4 mm
	1/3"	3.6 x 4.8 mm
WD		60.1 mm ± 3
O/I (Object & Imager Distance)		135.9 mm
Working F/#		7.8
NA		0.064
DOF at PCoC ϕ 0.04mm		0.6 mm
TV Distortion (2/3")		0.00 %
Relative Illuminance (Y=5.5)		97 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		21 g
Dimension		ϕ 30(max.) x L = 58.3 mm

VS-MC1-80



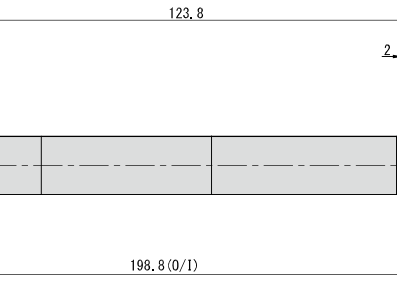
Optical Mag.	1x	± 5 %
Focal Length (f)		43.9 mm
FOV(VxH)	2/3"	7.1 x 8.4 mm
	1/2"	4.8 x 6.4 mm
	1/3"	3.6 x 4.8 mm
WD		82.4 mm ± 2.5
O/I (Object & Imager Distance)		176.8 mm
Working F/#		8.1
NA		0.061
DOF at PCoC ϕ 0.04mm		0.6 mm
TV Distortion (2/3")		0.00 %
Relative Illuminance (Y=5.5)		99 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		25 g
Dimension		ϕ 30(max.) x L = 76.9 mm

VS-MC1.5-65



Optical Mag.	1.5x	± 5 %
Focal Length (f)		43.9 mm
FOV(VxH)	2/3"	4.7 x 5.6 mm
	1/2"	3.2 x 4.3 mm
	1/3"	2.4 x 3.2 mm
WD		64.8 mm ± 2
O/I (Object & Imager Distance)		184.1 mm
Working F/#		10.0
NA		0.075
DOF at PCoC ϕ 0.04mm		0.4 mm
TV Distortion (2/3")		0.00 %
Relative Illuminance (Y=5.5)		99 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		29 g
Dimension		ϕ 30(max.) x L = 101.8 mm

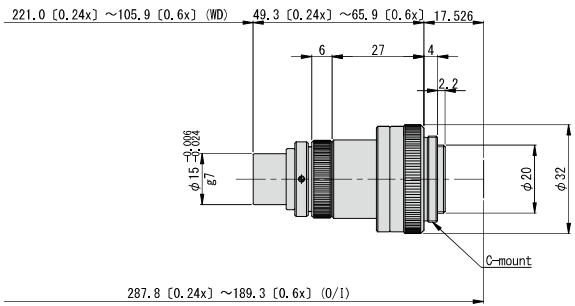
VS-MC2-60



Optical Mag.	2x	± 5 %
Focal Length (f)		43.9 mm
FOV(VxH)	2/3"	3.6 x 4.2 mm
	1/2"	2.4 x 3.2 mm
	1/3"	1.8 x 2.4 mm
WD		57.5 mm ± 2
O/I (Object & Imager Distance)		198.8 mm
Working F/#		12.1
NA		0.083
DOF at PCoC ϕ 0.04mm		0.2 mm
TV Distortion (2/3")		0.00 %
Relative Illuminance (Y=5.5)		99 %
Wavelength		Visible
Mount		C-Mount
Flange Back		17526 mm
Sensor Size (max.)		2/3"
Weight (approx.)		34 g
Dimension		ϕ 30(max.) x L = 123.8 mm

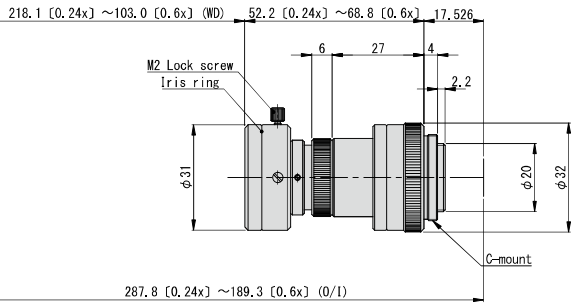
Variable Magnification Model

VS-MC024



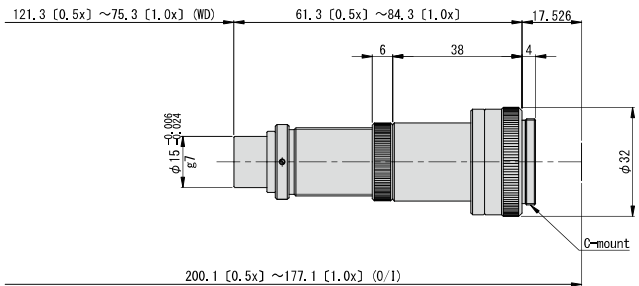
Optical Mag. Range		0.24x ~ 0.6x		
Optical Mag.		0.24x	0.4x	0.6x
FOV(VxH)	2/3"	29.6 x 35.0mm	17.8 x 21.0mm	11.8 x 14.0mm
	1/2"	20.0 x 26.7mm	12.0 x 16.0mm	8.0 x 10.7mm
	1/3"	15.0 x 20.0mm	9.0 x 12.0mm	6.0 x 8.0mm
WD		221.0 mm	144.3 mm	105.9 mm
O/I (Object & Imager Distance)		287.8 mm	218.5 mm	189.3 mm
Working F/#		4.1	4.6	5.1
DOF at PCoC ϕ 0.04mm		5.7 mm	2.3 mm	1.1 mm
TV Distortion (2/3")		0.01 %		
Relative Illuminance (Y=5.5)		80 %		
Operation		Manual		
Wavelength		Visible		
Mount		C-Mount		
Flange Back		17526 mm		
Sensor Size (max.)		2/3"		
Weight (approx.)		52 g		
Dimension		ϕ 32 (max.) x L = 49.3 ~ 65.9 mm		

VS-MC024S



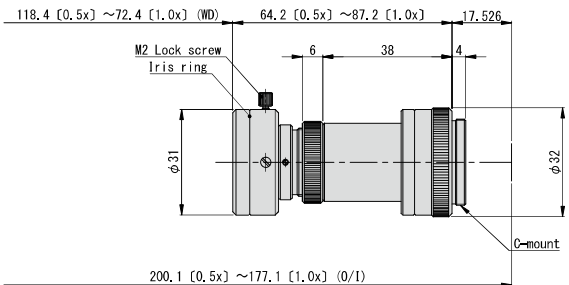
Optical Mag. Range		0.24x ~ 0.6x		
Optical Mag.		0.24x	0.4x	0.6x
FOV(VxH)	2/3"	29.6 x 35.0mm	17.8 x 21.0mm	11.8 x 14.0mm
	1/2"	20.0 x 26.7mm	12.0 x 16.0mm	8.0 x 10.7mm
	1/3"	15.0 x 20.0mm	9.0 x 12.0mm	6.0 x 8.0mm
WD		218.1 mm	141.4 mm	103.0 mm
O/I (Object & Imager Distance)		287.8 mm	218.5 mm	189.3 mm
Working F/#		4.1	4.6	5.1
DOF at PCoC ϕ 0.04mm		5.7 mm	2.3 mm	1.1 mm
TV Distortion (2/3")		0.01 %		
Relative Illuminance (Y=5.5)		80 %		
Operation		Manual (Lock Screw M2)		
Wavelength		Visible		
Mount		C-Mount		
Flange Back		17526 mm		
Sensor Size (max.)		2/3"		
Weight (approx.)		68 g		
Dimension		ϕ 32 (max.) x L = 52.2 ~ 68.8 mm		

VS-MC0510



Optical Mag. Range		0.5x ~ 1.0x		
Optical Mag.		0.5x	0.75x	1.0x
FOV(VxH)	2/3"	14.2 x 16.8mm	9.5 x 11.2mm	7.1 x 8.4mm
	1/2"	9.6 x 12.8mm	6.4 x 8.5mm	4.8 x 6.4mm
	1/3"	7.2 x 9.6mm	4.8 x 6.4mm	3.6 x 4.8mm
WD		121.3 mm	90.6 mm	75.3 mm
O/I (Object & Imager Distance)		200.1 mm	180.9 mm	177.1 mm
Working F/#		4.8	5.9	6.4
DOF at PCoC ϕ 0.04mm		1.5 mm	0.8 mm	0.5 mm
TV Distortion (2/3")		0.00 %		
Relative Illuminance (Y=5.5)		88 %		
Operation		Manual		
Wavelength		Visible		
Mount		C-Mount		
Flange Back		17526 mm		
Sensor Size (max.)		2/3"		
Weight (approx.)		52 g		
Dimension		ϕ 32 (max.) x L = 61.3 ~ 84.3 mm		

VS-MC0510S



Optical Mag. Range		0.5x ~ 1.0x		
Optical Mag.		0.5x	0.75x	1.0x
FOV(VxH)	2/3"	14.2 x 16.8mm	9.5 x 11.2mm	7.1 x 8.4mm
	1/2"	9.6 x 12.8mm	6.4 x 8.5mm	4.8 x 6.4mm
	1/3"	7.2 x 9.6mm	4.8 x 6.4mm	3.6 x 4.8mm
WD		118.4 mm	87.6 mm	72.4 mm
O/I (Object & Imager Distance)		200.1 mm	180.9 mm	177.1 mm
Working F/#		4.8	5.9	6.4
DOF at PCoC ϕ 0.04mm		1.5 mm	0.8 mm	0.5 mm
TV Distortion (2/3")		0.00 %		
Relative Illuminance (Y=5.5)		88 %		
Operation		Manual (Lock Screw M2)		
Wavelength		Visible		
Mount		C-Mount		
Flange Back		17526 mm		
Sensor Size (max.)		2/3"		
Weight (approx.)		66 g		
Dimension		ϕ 32 (max.) x L = 64.2 ~ 87.2 mm		

Super Compact Distortionless Macro Lenses

VS-MC Series (Compact)

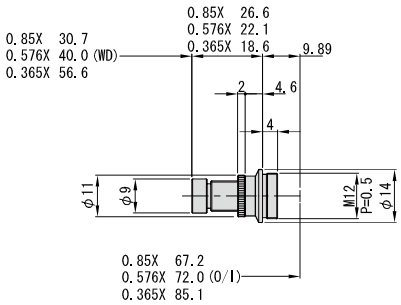
This very compact series of macro lenses, camera and lighting is ideal to use in a space constrained environment.

Features

- 1/6" sensor support
- M10.5 P=0.5 mount
- Super Compact

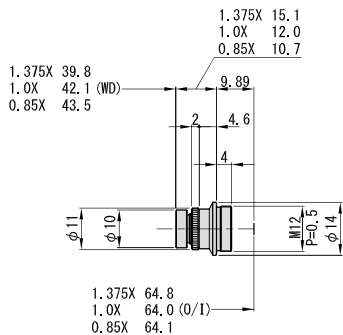


VS-MC0576N



Optical Mag. Range		0.365x ~ 0.85x		
Optical Mag.		0.365x	0.576x	0.85x
FOV(VxH)	1/2"	—		
	1/3"	—		
	1/6"	4.7 x 6.3 mm	3.0 x 4.0 mm	2.0 x 2.7 mm
WD		56.6 mm	40.0 mm	30.7 mm
O/I (Object & Imager Distance)		85.1 mm	72.0 mm	67.2 mm
Working F/#		9.5	11.0	12.8
NA		0.019	0.026	0.033
DOF at PCoC ϕ 0.04mm		5.7 mm	2.7 mm	1.4 mm
TV Distortion (1/6")		-0.01 %	0.00 %	0.00 %
Wavelength		Visible		
Mount		M 12 P = 0.5		
Flange Back		9.89 mm		
Sensor Size (max.)		1/6"		
Image Circle		ϕ 3.7 mm		
Weight (approx.)		4 g		
Dimension		ϕ 14 (max.) x L = 18.6 ~ 26.6 mm		

VS-MC1375-40N



Optical Mag. Range		0.85x ~ 1.375x		
Optical Mag.		0.85x	1.0x	1.375x
FOV(VxH)	1/2"	—		
	1/3"	—		
	1/6"	2.0 x 2.7 mm	1.7 x 2.3 mm	1.3 x 1.7 mm
WD		43.5 mm	42.1 mm	39.8 mm
O/I (Object & Imager Distance)		64.1 mm	64.0 mm	64.8 mm
Working F/#		7.4	8.5	11.0
NA		0.057	0.059	0.063
DOF at PCoC ϕ 0.04mm		0.8 mm	0.7 mm	0.5 mm
TV Distortion (1/6")		0.53 %	0.44 %	0.30 %
Wavelength		Visible		
Mount		M 12 P = 0.5		
Flange Back		9.89 mm		
Sensor Size (max.)		1/6"		
Image Circle		ϕ 3.7 mm		
Weight (approx.)		2.5 g		
Dimension		ϕ 14 (max.) x L = 10.7 ~ 15.1 mm		

VS-UV & SWIR Series 1" 2/3" 1/1.8"

The VS-UV & SWIR series were designed especially for varying wavelength spectrums. Applications utilizing IR are able to do see or omit certain aspects of the objects that are being inspected. The lenses in this lineup allow for just that, as well as being compact and low in distortion.

- Features
- 1/2" - 1" sensor support
 - Visible & IR design
 - Compact design
 - Low Distortion



Visible Lens + Visible Lighting



IR Lens + IR Lighting



Near-UV Changeable Magnification

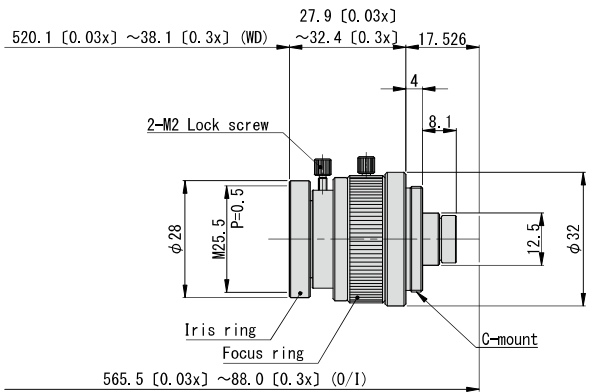
VS-MC00303NS-UV & VS-MC0510S-UV

These models are macro lenses specially designed for Near Ultraviolet (NUV) wavelengths with a peak transmittance of 365nm. Magnification at x0.03~x0.3 (MC0030NS-UV) and x0.4~x1.0 (MC0510-UV) with a low distortion of -0.05~-0.1%

- Features
- High resolution and reduced shading
 - Simple and robust mechanical design for vibration resistance
 - Special coating to eliminate unnecessary wavelengths
 - Adjustable iris for contrast and brightness control

VS-MC00303NS-UV

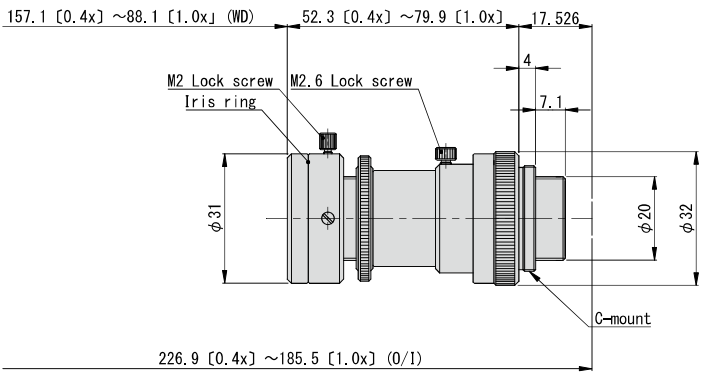
BTO



Optical Mag. Range	0.03x ~ 0.3x		
Optical Mag.	0.03x	0.1x	0.3x
FOV(VxH)	2/3"	—	
	1/2"	160.0 x 213.3 mm	48.0 x 64.0 mm
	1/3"	120.0 x 160.0 mm	36.0 x 48.0 mm
WD	520.1 mm	144.1 mm	38.1 mm
O/I (Object & Imager Distance)	565.5 mm	190.6 mm	88.0 mm
Working F/# *Value at Iris Open	4.1	4.4	5.1
NA	0.004	0.012	0.029
DOF at PCoC ϕ 0.04mm	373.3 mm	33.6 mm	4.6 mm
TV Distortion (1/2")	0.00 %		
Relative Illuminance (Y=4)	92 %		
Wavelength	Ultraviolet		
Mount	C-Mount		
Flange Back	17.526 mm		
Sensor Size (max.)	1/2"		
Filter Thread	M 25.5 P = 0.5		
Weight (approx.)	41 g		
Dimension	ϕ 32 (max.) x L = 27.9 ~ 32.4 mm		

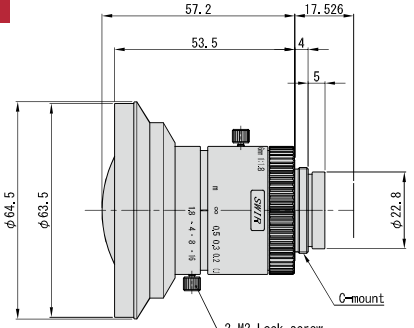
VS-MC0510S-UV

BTO



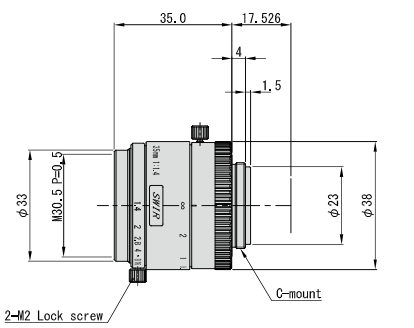
Optical Mag. Range	0.4x ~ 1.0x		
Optical Mag.	0.4x	0.75x	1.0x
FOV(VxH)	2/3"	—	
	1/2"	12.0 x 16.0 mm	6.4 x 8.5 mm
	1/3"	9.0 x 12.0 mm	4.8 x 6.4 mm
WD	157.1 mm	103.4 mm	88.1 mm
O/I (Object & Imager Distance)	226.9 mm	189.3 mm	185.5 mm
Working F/# *Value at Iris Open	4.8	5.6	6.4
NA	0.052	0.067	0.078
DOF at PCoC ϕ 0.04mm	1.5 mm	0.8 mm	0.5 mm
TV Distortion (1/2")	0.00 %		
Relative Illuminance (Y=4)	89 %		
Wavelength	Ultraviolet		
Mount	C-Mount		
Flange Back	17.526 mm		
Sensor Size (max.)	1/2"		
Weight (approx.)	76 g		
Dimension	ϕ 32 (max.) x L = 52.3 ~ 79.9 mm		

VS-0618H1-SWIR



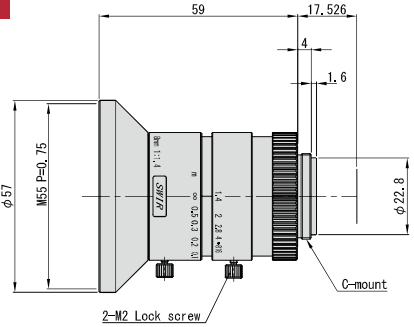
Focal Length (f)	6 mm
Maximum Aperture Ratio	1:1.8
Aperture	F1.8 ~ 16
Angle of View (1")	87.3° x 87.3°
M.O.D	100 mm
TV Distortion (1")	-0.61 %
Operation	Manual (Lock screw M2)
Wavelength	Short Wave IR
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Weight (approx.)	205 g
Dimension	φ64.5(max.) x L = 57.2 mm

VS-3514H1-SWIR



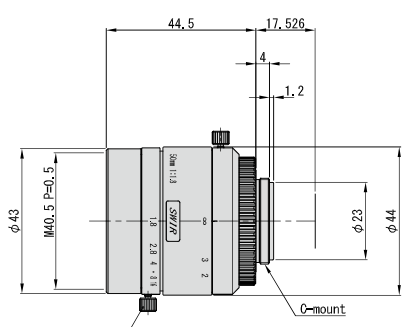
Focal Length (f)	35 mm
Maximum Aperture Ratio	1:1.4
Aperture	F1.4 ~ 16
Angle of View (1")	18.3° x 18.3°
M.O.D	300 mm
TV Distortion (1")	-0.31 %
Operation	Manual (Lock screw M2)
Wavelength	Short Wave IR
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M30.5 P = 0.5
Weight (approx.)	92 g
Dimension	φ38(max.) x L = 35 mm

VS-0814H1-SWIR



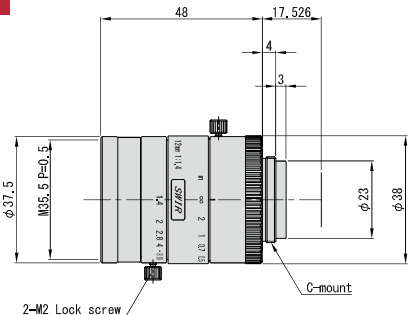
Focal Length (f)	8 mm
Maximum Aperture Ratio	1:1.4
Aperture	F1.4 ~ 16
Angle of View (1")	71.8° x 71.8°
M.O.D	100 mm
TV Distortion (1")	-0.54 %
Operation	Manual (Lock screw M2)
Wavelength	Short Wave IR
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M55 P = 0.75
Weight (approx.)	175 g
Dimension	φ57(max.) x L = 59 mm

VS-5018H1-SWIR



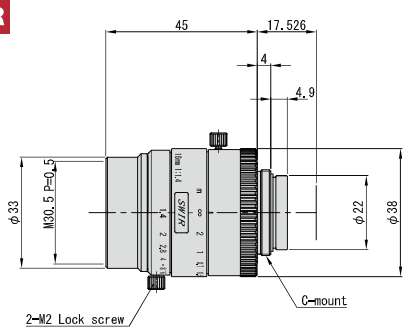
Focal Length (f)	50 mm
Maximum Aperture Ratio	1:1.8
Aperture	F1.8 ~ 16
Angle of View (1")	12.8° x 12.8°
M.O.D	500 mm
TV Distortion (1")	-0.01 %
Operation	Manual (Lock screw M2)
Wavelength	Short Wave IR
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M40.5 P = 0.5
Weight (approx.)	128 g
Dimension	φ44(max.) x L = 44.5 mm

VS-1214H1-SWIR



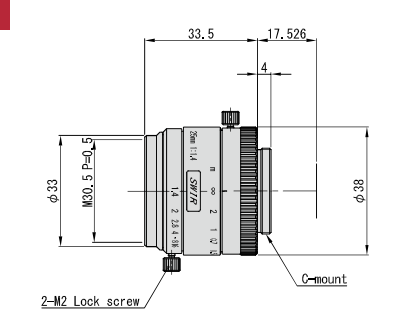
Focal Length (f)	12 mm
Maximum Aperture Ratio	1:1.4
Aperture	F1.4 ~ 16
Angle of View (1")	50.8° x 50.8°
M.O.D	300 mm
TV Distortion (1")	-0.32 %
Operation	Manual (Lock screw M2)
Wavelength	Short Wave IR
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M35.5 P = 0.5
Weight (approx.)	130 g
Dimension	φ38(max.) x L = 48 mm

VS-1614H1N-SWIR



Focal Length (f)	16 mm
Maximum Aperture Ratio	1:1.4
Aperture	F1.4 ~ 16
Angle of View (1")	38.6° x 38.6°
M.O.D	300 mm
TV Distortion (1")	-0.65 %
Operation	Manual (Lock screw M2)
Wavelength	Short Wave IR
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M30.5 P = 0.5
Weight (approx.)	120 g
Dimension	φ38(max.) x L = 45 mm

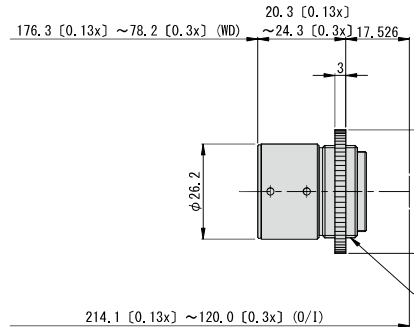
VS-2514H1-SWIR



Focal Length (f)	25 mm
Maximum Aperture Ratio	1:1.4
Aperture	F1.4 ~ 16
Angle of View (1")	25.1° x 25.1°
M.O.D	300 mm
TV Distortion (1")	-0.46 %
Operation	Manual (Lock screw M2)
Wavelength	Short Wave IR
Mount	C-Mount
Flange Back	17.526 mm
Sensor Size (max.)	1"
Filter Thread	M30.5 P = 0.5
Weight (approx.)	84 g
Dimension	φ38(max.) x L = 33.5 mm

VS-MC01303IR

BTO



Optical Mag. Range	0.13x~0.3x		
Optical Mag.	0.13x	0.2x	0.3x
FOV (V x H)	1"	86.6x86.6mm	56.3x56.3mm
	2/3"	54.6x64.6mm	35.5x42.0mm
	1/2"	36.9x49.2mm	24.0x32.0mm
WD	176.3mm	115.7mm	78.2mm
O/I (Object & Imager Distance)	214.1mm	156.3mm	120.0mm
Working F/# * Value at Iris Open	4.0	4.2	4.6
NA	0.016	0.024	0.033
DOF at PCoC φ0.04mm	18.9mm	8.4mm	4.1mm
TV Distortion (1")	0.10%		
Wavelength	Visible ~ Near IR		
Mount	C-Mount		
Flange Back	17.526 mm		
Image Circle	φ22 mm		
Weight (approx.)	40 g		
Dimension	φ34(max.) x L = 20.3 ~ 24.3 mm		

Visible~Near IR (IR Corrected design) Changeable Magnification

VS-MC01303IR Features

VS-MC 01303IR has optically corrected the focusing difference between Visible and Near-IR range (400~950nm). If not optically corrected, WD needs to be changed between visible and NIR, which also requires a machine design change.

VS-MC01303IR will fit in any application. This lens also has a large image circle of φ22mm and is suitable for large format sensors.

