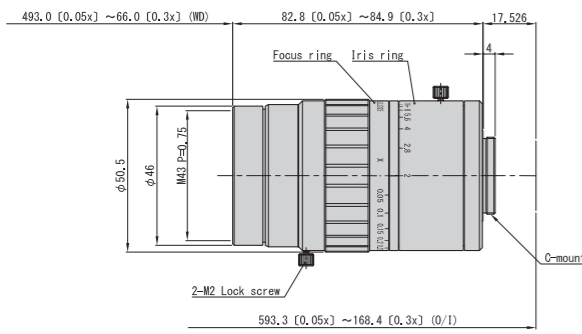
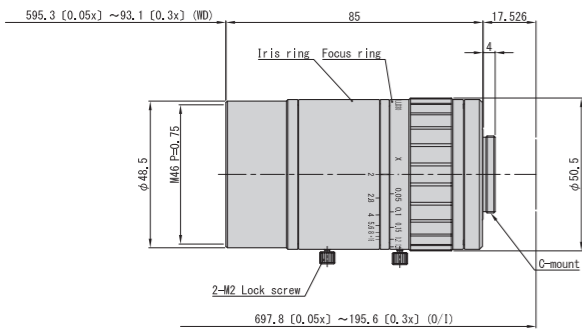


VS-LLD25 Floating System



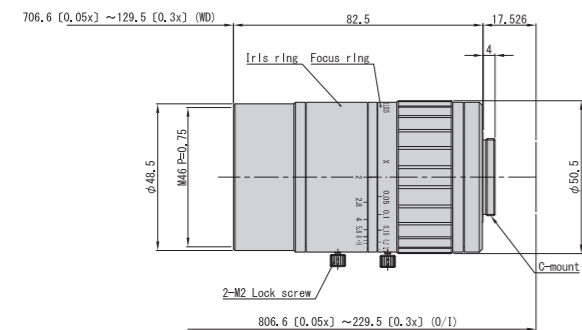
Focal Length (f)	25 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.05x ~ 0.3x		
Optical Mag.	0.05x	0.15x	0.3x
FOV (VxH)	4/3"	272.0 x 362.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	47.3 x 56.0 mm
WD	493.0 mm	150.7 mm	66.0 mm
O/I (Object & Imager distance)	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	17.526 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-LLD30 Floating System



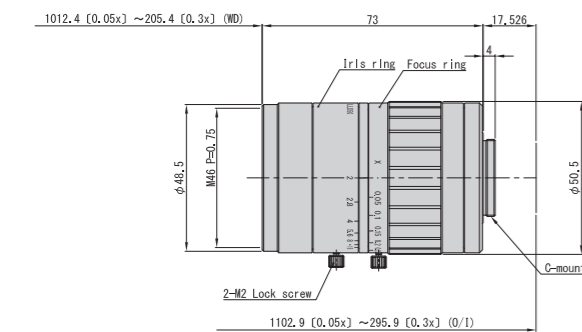
Focal Length (f)	30 mm		
Maximum Aperture Ratio	1:2.0		
Optical Mag. Range	(∞) 0.05x ~ 0.3x		
Optical Mag.	0.05x	0.15x	0.3x
FOV (VxH)	4/3"	272.0 x 362.0 mm	90.7 x 120.7 mm
	1"	225.2 x 225.2 mm	75.1 x 75.1 mm
	2/3"	142.0 x 168.0 mm	47.3 x 56.0 mm
WD	595.3 mm	191.8 mm	93.1 mm
O/I (Object & Imager distance)	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	17.526 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-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	17.526 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-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	17.526 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-LDV Series

1.1" Support, Distortionless Macro Lenses



MTF [30%] (lp/mm: unit of resolution)

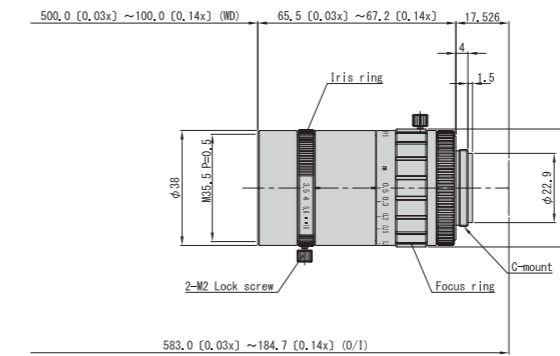
Center 220 lp/mm Periphery 170 lp/mm Image height 70%

Support sensor / image circle size

1/4" 1/3" 1/2" 1/1.8" 2/3" 1" 1.1" 4/3"

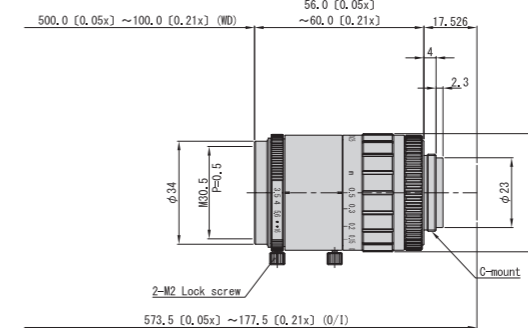
- 1.1", 12MP and 2.74μm resolution support
- f16mm - f75mm, 5 models
- Optimized for Macro Applications (short working distance)

VS-LDV16



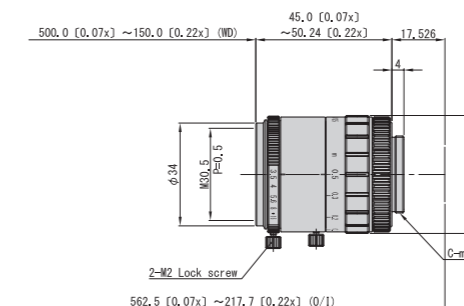
Focal Length (f)	16 mm		
Maximum Aperture Ratio	1:3.5		
Optical Mag. Range	0.03x ~ 0.14x		
Optical Mag.	0.03x	0.07x	0.14x
FOV (VxH)	1.1"	343.3 x 470.0 mm	147.1 x 201.4 mm
	1"	375.3 x 375.3 mm	160.9 x 160.9 mm
	2/3"	236.7 x 280.0 mm	101.4 x 120.0 mm
WD	500.0 mm	200.0 mm	100.0 mm
O/I (Object & Imager distance)	583.0 mm	283.7 mm	184.7 mm
Working F/#	3.5	3.6	3.6
DOF at PCoC φ0.04mm	311.1 mm	58.8 mm	14.7 mm
TV Distortion (1.1")	-0.22 %	-0.28 %	-0.36 %
Relative Illuminance (Y=8.8)	81 %	81 %	82 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17.526 mm		
Sensor Size (max.)	1.1"		
Filter Thread	M 35.5 P = 0.5		
Weight (approx.)	190 g		
Dimension	φ39(max.) x L = 65.5(0.03x) ~ 67.2(0.14x) mm		

VS-LDV25



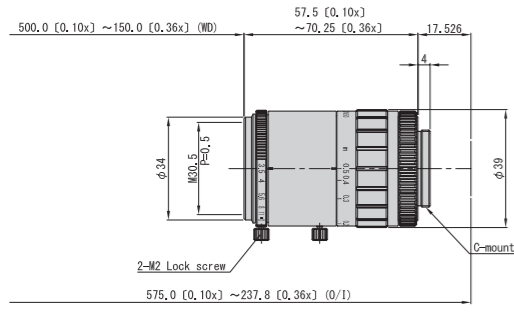
Focal Length (f)	25 mm		
Maximum Aperture Ratio	1:3.5		
Optical Mag. Range	0.05x ~ 0.21x		
Optical Mag.	0.05x	0.11x	0.21x
FOV (VxH)	1.1"	206.0 x 282.0 mm	93.6 x 128.2 mm
	1"	225.2 x 225.2 mm	102.4 x 102.4 mm
	2/3"	142.0 x 168.0 mm	64.6 x 76.4 mm
WD	500.0 mm	200.0 mm	100.0 mm
O/I (Object & Imager distance)	573.5 mm	275.2 mm	177.5 mm
Working F/#	3.6	3.6	3.7
DOF at PCoC φ0.04mm	115.2 mm	23.8 mm	6.7 mm
TV Distortion (1.1")	0.27 %	0.03 %	-0.28 %
Relative Illuminance (Y=8.8)	84 %	86 %	89 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17.526 mm		
Sensor Size (max.)	1.1"		
Filter Thread	M 30.5 P = 0.5		
Weight (approx.)	160 g		
Dimension	φ39(max.) x L = 56(0.05x) ~ 60(0.21x) mm		

VS-LDV35



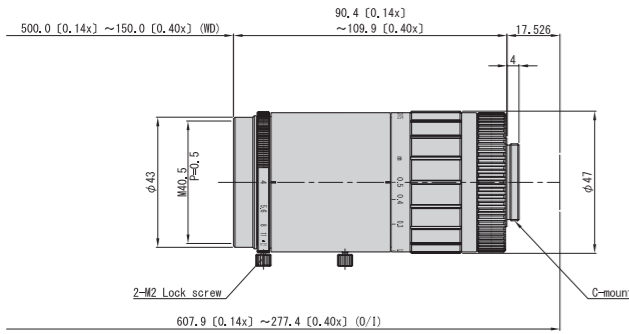
Focal Length (f)	35 mm		
Maximum Aperture Ratio	1:3.5		
Optical Mag. Range	0.07x ~ 0.22x		
Optical Mag.	0.07x	0.17x	0.22x
FOV (VxH)	1.1"	147.1 x 201.4 mm	60.6 x 82.9 mm
	1"	160.9 x 160.9 mm	66.2 x 66.2 mm
	2/3"	101.4 x 120.0 mm	41.8 x 49.4 mm
WD	500.0 mm	200.0 mm	150.0 mm
O/I (Object & Imager distance)	562.5 mm	265.9 mm	217.7 mm
Working F/#	3.6	3.7	3.8
DOF at PCoC φ0.04mm	58.8 mm	10.2 mm	6.3 mm
TV Distortion (1.1")	0.16 %	-0.03 %	-0.12 %
Relative Illuminance (Y=8.8)	87 %	89 %	90 %
Operation	Manual (Lock Screw M2)		
Wavelength	Visible		
Mount	C-Mount		
Flange Back	17.526 mm		
Sensor Size (max.)	1.1"		
Filter Thread	M 30.5 P = 0.5		
Weight (approx.)	115 g		
Dimension	φ39(max.) x L = 45(0.07x) ~ 50.24(0.22x) mm		

VS-LDV50



Focal Length (f)	50 mm			
Maximum Aperture Ratio	1:3.5			
Optical Mag. Range	0.10x ~ 0.36x			
Optical Mag.	0.10x	0.26x	0.36x	
FOV (VxH)	1.1"	103.0 x 141.0 mm	39.6 x 54.2 mm	28.6 x 39.2 mm
	1"	112.6 x 112.6 mm	43.3 x 43.3 mm	31.3 x 31.3 mm
	2/3"	71.0 x 84.0 mm	27.3 x 32.3 mm	19.7 x 23.3 mm
WD	500.0 mm	200.0 mm	150.0 mm	
O/I (Object & Imager distance)	575.0 mm	283.0 mm	237.7 mm	
Working F/#	3.8	4.4	4.7	
DOF at PCoC ϕ 0.04mm	30.4 mm	5.2 mm	2.9 mm	
TV Distortion (1.1")	0.09 %	-0.02 %	-0.05 %	
Relative Illuminance (Y=8.8)	90 %	95 %	96 %	
Operation	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17.526 mm			
Sensor Size (max.)	1.1"			
Filter Thread	M 30.5 P = 0.5			
Weight (approx.)	126 g			
Dimension	ϕ 39(max.) x L = 57.5(0.10x) ~ 70.25(0.36x) mm			

VS-LDV75



Focal Length (f)	75 mm			
Maximum Aperture Ratio	1:4.0			
Optical Mag. Range	0.14x ~ 0.4x			
Optical Mag.	0.14x	0.32x	0.4x	
FOV (VxH)	1.1"	73.6 x 100.7 mm	32.2 x 44.1 mm	25.8 x 35.3 mm
	1"	80.4 x 80.4 mm	35.2 x 35.2 mm	28.2 x 28.2 mm
	2/3"	50.7 x 60.0 mm	22.2 x 26.3 mm	17.8 x 21.0 mm
WD	500.0 mm	200.0 mm	150.0 mm	
O/I (Object & Imager distance)	607.9 mm	321.1 mm	277.4 mm	
Working F/#	4.4	4.9	5.1	
DOF at PCoC ϕ 0.04mm	18.0 mm	3.8 mm	2.6 mm	
TV Distortion (1.1")	0.10 %	-0.08 %	-0.13 %	
Relative Illuminance (Y=8.8)	95 %	96 %	97 %	
Operation	Manual (Lock Screw M2)			
Wavelength	Visible			
Mount	C-Mount			
Flange Back	17.526 mm			
Sensor Size (max.)	1.1"			
Filter Thread	M 40.5 P = 0.5			
Weight (approx.)	285 g			
Dimension	ϕ 47(max.) x L = 90.4(0.14x) ~ 109.9(0.40x) mm			

Table for WD, FOV and Extension Tube Length (Reference)

Extension Tube (mm)	Model	VS-LDV16		VS-LDV25		VS-LDV35		VS-LDV50		VS-LDV75	
		f16	f25	f35	f50	f75					
Focus		500~100	500~100	500~150	500~150	500~150	500~150	500~150	500~150		
0	WD	500.0	100.0	500.0	100.0	500.0	150.0	500.0	150.0	500.0	150.0
	1.1"	332.3 x 454.8	76.3 x 104.4	214.6 x 293.8	49.3x67.5	149.3 x 204.3	47.2 x 64.7	101.0 x 138.2	28.9 x 39.5	73.6 x 100.7	25.8 x 35.3
	2/3"	229.0 x 271.0	52.6 x 62.2	147.9 x 175.0	34.0x40.2	102.9 x 121.7	32.6 x 38.5	69.6 x 82.4	19.9 x 23.5	50.7 x 60.0	17.8 x 21.0
0.5	Mag.	0.031x	0.135x	0.048x	0.209x	0.069x	0.218x	0.102x	0.357x	0.140x	0.400x
	WD	240.6	78.0	348.1	89.3	411.9	95.4	456.4	146.2	476.3	146.8
	1.1"	166.1 x 227.4	62.0 x 84.9	151.5 x 207.4	45.0x61.6	124.1 x 169.9	31.2 x 42.7	92.0 x 125.9	28.1 x 38.4	70.5 x 96.6	25.3 x 34.6
1	2/3"	114.5 x 135.5	42.8 x 50.6	104.4 x 123.5	31.0x36.7	85.5 x 101.2	21.5 x 25.5	63.4 x 75.0	19.3 x 22.9	48.6 x 57.5	17.4 x 20.6
	Mag.	0.062x	0.166x	0.068x	0.229x	0.083x	0.330x	0.112x	0.367x	0.146x	0.407x
	WD	154.1	62.7	264.4	65.0	350.9	90.7	419.8	142.6	452.8	144.1
1.5	1.1"	110.8 x 151.6	52.3 x 71.6	117.0 x 160.2	41.4x56.6	106.2 x 145.4	29.9 x 40.9	84.4 x 115.6	27.3 x 37.4	67.3 x 92.2	24.9 x 34.1
	2/3"	76.3 x 90.3	36.0 x 42.6	80.7 x 95.5	28.5x33.7	73.2 x 86.6	20.6 x 24.3	58.2 x 68.9	18.8 x 22.3	46.4 x 54.9	17.2 x 20.3
	Mag.	0.093x	0.197x	0.088x	0.249x	0.097x	0.345x	0.122x	0.377x	0.153x	0.413x
2	WD	110.8	51.6	211.8	73.0	305.2	86.8	388.7	139.2	431.3	141.1
	1.1"	83.1 x 113.7	45.2 x 61.8	95.4 x 130.6	38.3x52.4	92.8 x 127.0	28.7 x 39.3	78.0 x 106.8	26.6 x 36.4	64.4 x 88.1	24.5 x 33.6
	2/3"	57.3 x 67.7	31.1 x 36.8	65.7 x 77.8	26.4x31.2	64.0 x 75.7	19.8 x 23.4	53.8 x 63.6	18.3 x 21.7	44.4 x 52.5	16.9 x 20.0
5	Mag.	0.124x	0.228x	0.108x	0.269x	0.111x	0.359x	0.132x	0.387x	0.160x	0.420x
	WD	84.8	43.1	175.5	66.9	267.6	83.1	362.1	135.9	414.4	138.2
	1.1"	66.5 x 91.0	39.8 x 54.4	80.5 x 110.2	35.8x49.0	81.7 x 111.9	27.6 x 37.8	72.5 x 99.3	25.9 x 35.5	62.0 x 84.9	24.1 x 33.0
10	2/3"	45.8 x 54.2	27.4 x 32.4	55.5 x 65.6	24.7x29.2	56.3 x 66.7	19.0 x 22.5	50.0 x 59.2	17.9 x 21.2	42.8 x 50.6	16.6 x 19.7
	Mag.	0.155x	0.259x	0.128x	0.288x	0.126x	0.373x	0.142x	0.397x	0.166x	0.427x
	WD			80.9	41.3	155.4	65.5	257.5	119.4	326.6	123.1
15	1.1"			41.5 x 56.9	25.2x34.6	48.8 x 66.8	22.4 x 30.7	51.0 x 69.8	22.5 x 30.9	50.0 x 68.4	22.1 x 30.2
	2/3"			28.6 x 33.9	17.4x20.6	33.6 x 39.8	15.5 x 18.3	35.1 x 41.6	15.5 x 18.4	34.5 x 40.8	15.2 x 18.0
	Mag.			0.248x	0.408x	0.211x	0.459x	0.202x	0.457x	0.206x	0.467x
20	WD					88.2	47.4	175.5	99.7	237.3	103.3
	1.1"					29.1 x 39.8	17.1 x 23.5	34.1 x 46.7	18.5 x 25.3	37.7 x 51.6	19.3 x 26.5
	2/3"					20.1 x 23.7	11.8 x 14.0	23.5 x 27.8	12.7 x 15.1	26.0 x 30.8	13.3 x 15.8
25	Mag.					0.354x	0.601x	0.302x	0.557x	0.273x	0.533x
	WD					59.8	36.2	134.3	86.1	183.1	87.5
	1.1"					20.8 x 28.4	13.8 x 19.0	25.6 x 35.1	15.7 x 21.5	30.3 x 41.5	17.2 x 23.5
30	2/3"					14.3 x 16.9	9.5 x 11.3	17.7 x 20.9	10.8 x 12.8	20.9 x 24.7	11.8 x 14.0
	Mag.					0.496x	0.744x	0.402x	0.657x	0.340x	0.600x
	WD							109.6	76.0	147.3	75.0
35	1.1"							20.5 x 28.1	13.6 x 18.6	25.4 x 34.7	15.4 x 21.1
	2/3"							14.1 x 16.7	9.4 x 11.1	17.5 x 20.7	10.6 x 12.6
	Mag.							0.502x	0.757x	0.406x	0.667x
40	WD							93.0	68.3	121.1	64.9
	1.1"							17.1 x 23.4	12.0 x 16.5	21.8 x 29.8	14.1 x 19.2
	2/3"							11.8 x 14.0	8.3 x 9.8	15.0 x 17.8	9.7 x 11.5
45	Mag.							0.602x	0.857x	0.473x	0.733x
	WD							81.2	62.2	101.4	56.3
	1.1"							14.7 x 20.1	10.8 x 14.7	19.1 x 26.1	12.9 x 17.6
50	2/3"							10.1 x 12.0	7.4 x 8.8	13.1 x 15.6	8.9 x 10.5
	Mag.							0.702x	0.957x	0.540x	0.800x
	WD							72.1	57.3	86.3	49.0
55	1.1"							12.8 x 17.6	9.7 x 13.3	17.0 x 23.3	11.9 x 16.3
	2/3"							8.9 x 10.5	6.7 x 7.9	11.7 x 13.9	8.2 x 9.7
	Mag.							0.802x	1.057x	0.606x	0.867x
60	WD							65.4	53.2	74.0	42.9
	1.1"							11.4 x 15.6	8.9 x 12.2	15.3 x 21.0	11.0 x 15.1
	2/3"							7.9 x 9.3	6.1 x 7.3	10.5 x 12.5	7.6 x 9.0
65	Mag.							0.902x	1.157x	0.673x	0.933x
	WD							59.9	49.7	63.9	37.5
	1.1"							10.3 x 14.1	8.2 x 11.2	13.9 x 19.1	10.3 x 14.1
70	2/3"							7.1 x 8.4	5.6 x 6.7	9.6 x 11.4	7.1 x 8.4
	Mag.							1.002x	1.257x	0.740x	1.000x
	WD							55.3	46.8	55.6	32.8
75	1.1"							9.3 x 12.8	7.6 x 10.4	12.8 x 17.5	9.7 x 13.2
	2/3"							6.4 x 7.6	5.2 x 6.2	8.8 x 10.4	6.7 x 7.9
	Mag.							1.102x	1.357x	0.806x	1.067x