

Telecentric Lens for 2 Megapixel Camera

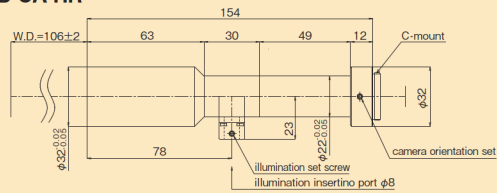
FVL HR series

Coaxial type / Straight type

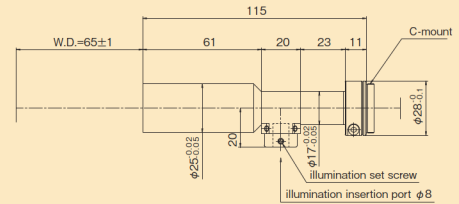
Telecentric lens for 2 megapixel camera. Designed for high-resolution alignment and size measurement. Some models are compatible with 5 megapixel camera. Choose from coaxial type and straight type.



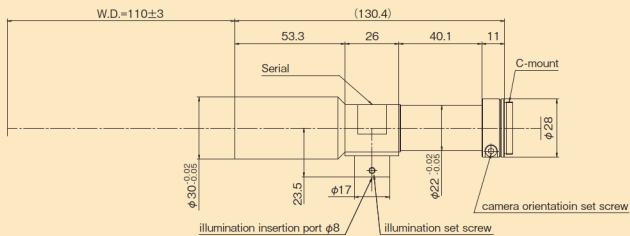
FVL-0.5X-106D-CA-HR



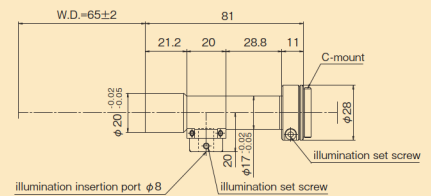
FVL-1X-65D-CA-HR



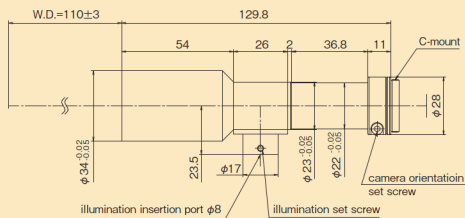
FVL-1.5X-110D-CA-HR



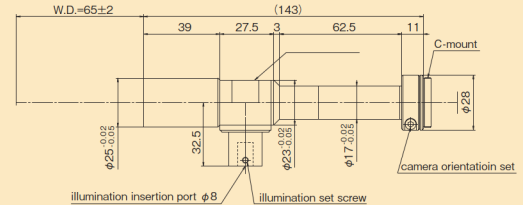
FVL-2X-65D-CA-HR



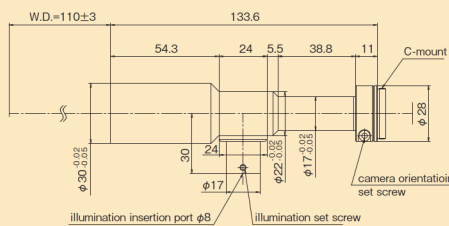
FVL-2X-110D-CA-HR



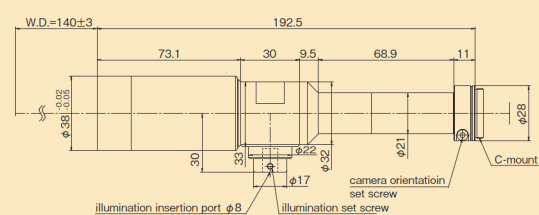
FVL-4X-65D-CA-HR



FVL-4X-110D-CA-HR



FVL-4X-140D-CA-HR



■ Specification

Model #	Coaxial	FVL-0.5X-106D-CA-HR	FVL-1X-65D-CA-HR	FVL-1.5X-110D-CA-HR	FVL-2X-65D-CA-HR	FVL-2X-110D-CA-HR	FVL-4X-65D-CA-HR	FVL-4X-110D-CA-HR	FVL-4X-140D-CA-HR
	Straight	FVL-0.5X-106-CA-HR	FVL-1X-65-CA-HR	FVL-1.5X-110-CA-HR	FVL-2X-65-CA-HR	FVL-2X-110-CA-HR	FVL-4X-65-CA-HR	FVL-4X-110-CA-HR	FVL-4X-140-CA-HR
Magnification		0.5X	1X	1.5X	2X	2X	4X	4X	4X
Working distance		106mm	65mm	110mm	65mm	110mm	65mm	110mm	140mm
Focal depth		2.8mm	808μm	423μm	270μm	240μm	80μm	100μm	106μm
Distortion		Less than 0.05%	Less than 0.1%	Less than 0.01%	Less than 0.01%	Less than 0.01%	Less than 0.02%	Less than 0.025%	Less than 0.015%
Resolution LP/mm		80LP/mm	147LP/mm	188LP/mm	222LP/mm	222LP/mm	333LP/mm	256LP/mm	250LP/mm
Resolution power		12.0μm	6.8μm	5.3μm	4.5μm	3.9μm	2.7μm	3.5μm	3.5μm
N.A.		0.028	0.049	0.063	0.075	0.085	0.125	0.096	0.096
F number		8.8	10.1	11.9	13.3	11.8	15.8	21	21.2
Camera mount		C-MOUNT							
Equivalent sensor		Under 2/3 inch camera							
Weight	Coaxial	140g	82g	158g	56g	106g	106g	110g	220g
	Straight	133g	76g	150g	50g	100g	100g	102g	210g

Note: Resolution power is calculated as theoretical resolution based on NA of wavelength of 550nm.
 Note: Focal depth is calculated as maximum circle of confusion is $\phi 40\mu\text{m}$.

C-mount Type

FVL65mm series

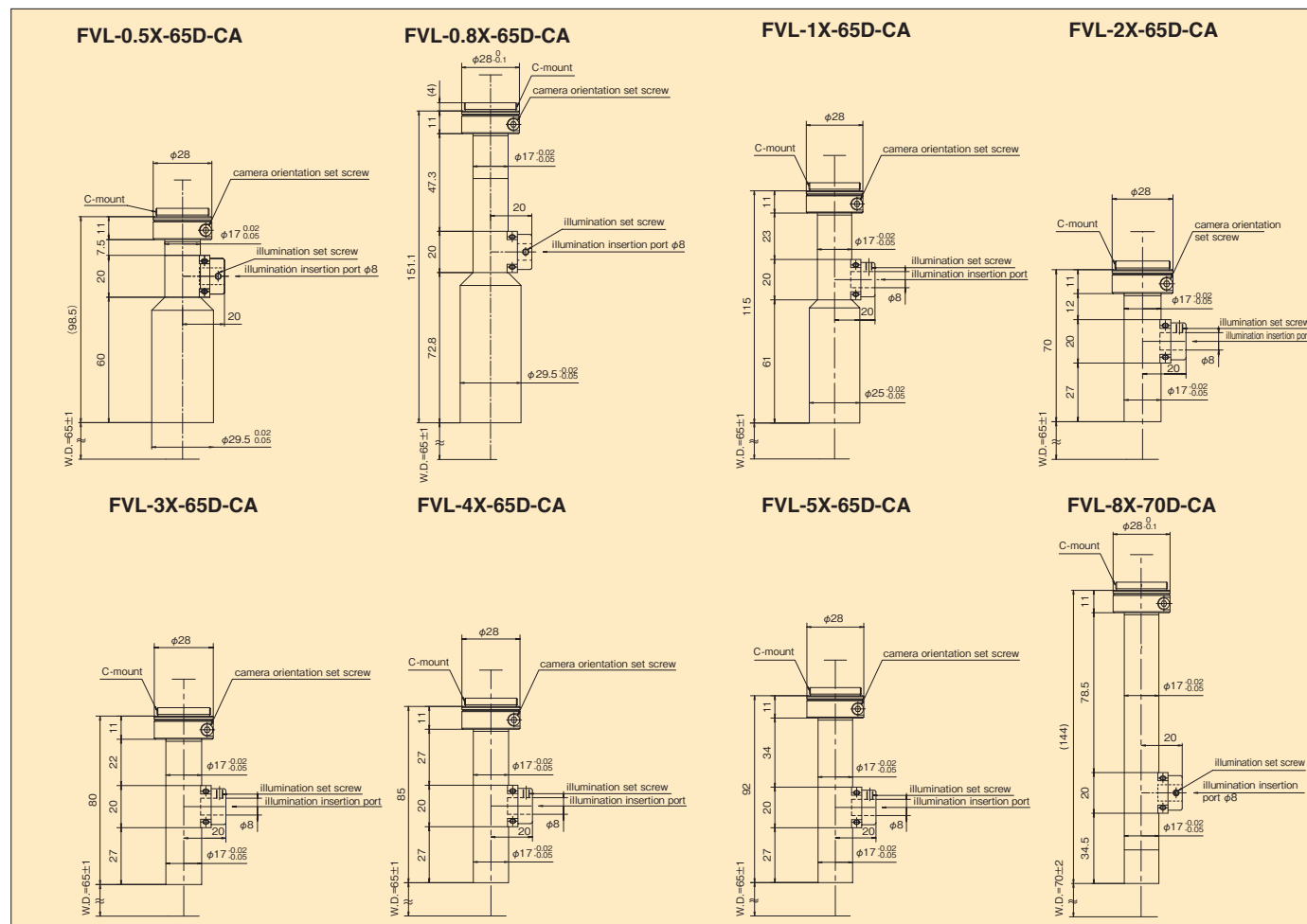
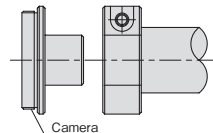
Coaxial illumination tube / Straight tube

WD=65mm Telecentric bonder lens. High-resolution, low distortion lens that is suitable for image processing systems. The lens uses a new C-mount adapter that allows total adjustment of camera orientation. Choose from a variety of illumination port styles and magnifications.



Split clamp C-mount type

Split clamp tightening method is adopted for easier camera orientation setting.



■ Specification

Model #	Coaxial	FVL-0.5×-65D-CA	FVL-0.8×-65D-CA	FVL-1×-65D-CA	FVL-2×-65D-CA	FVL-3×-65D-CA	FVL-4×-65D-CA	FVL-5×-65D-CA	FVL-8×-70D-CA
	Straight	FVL-0.5×-65-CA	FVL-0.8×-65-CA	FVL-1×-65-CA	FVL-2×-65-CA	FVL-3×-65-CA	FVL-4×-65-CA	FVL-5×-65-CA	—
Magnification		0.5X	0.8X	1X	2X	3X	4X	5X	8X
Working distance		65mm							70mm
Focal depth		1.7mm	1.3mm	920μm	326μm	197μm	131μm	97μm	60μm
Distortion		Less than 0.02%	Less than 0.2%	Less than 0.1%	Less than 0.1%	Less than 0.1%	Less than 0.1%	Less than 0.1%	Less than 0.4%
Resolution LP/mm		125LP/mm	120LP/mm	120LP/mm	178LP/mm	208LP/mm	238LP/mm	238LP/mm	244LP/mm
Resolution power		8.0μm	8.3μm	8.3μm	5.6μm	4.8μm	4.2μm	4.2μm	4.1μm
N.A.		0.046	0.04	0.04	0.06	0.07	0.08	0.08	0.081
F number		5.4	10.1	11.5	16.3	22.2	26.2	30.2	48.2
Camera mount		C-MOUNT							
Equivalent sensor		Under 1/2 inch camera	Under 2/3 inch camera						
Weight	Coaxial	100g	112g	82g	48g	50g	54g	58g	100g
	Straight	94g	106g	76g	42g	44g	48g	52g	—