

1.1" 12MP  
MPY



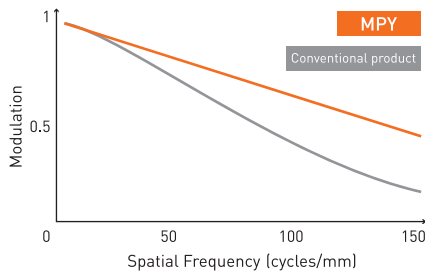
- ✓ Ultra-high resolution lens, suitable for 1.1" 12 megapixel sensor
- ✓ Enlarged image circle up to  $\varnothing 17.6\text{mm}$  (1.1" sensor). The most compact, lightweight lens design on the machine vision market
- ✓ Floating design achieves ultra-high resolution in the whole range of near focus to infinity
- ✓ Vibration resistance up to 5G

# MPY Series

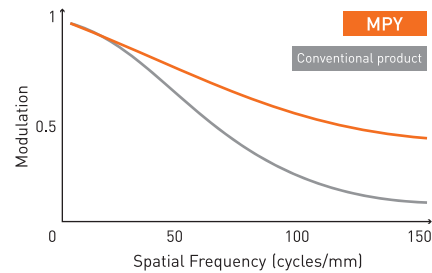
1.1" 12 MEGAPIXEL Machine Vision Lens

Model No.	Format	Focal Length	F No.	Working Distance	Weight
V0828-MPY2	1.1"	8mm	F2.8-F16	0.2m-Inf.	155g
V1228-MPY2		12mm		0.3m-Inf.	98g
V1628-MPY2		16mm		0.3m-Inf.	91g
V2528-MPY		25mm		0.3m-Inf.	78g
V3528-MPY		35mm		0.3m-Inf.	103g
V5028-MPY		50mm		0.5m-Inf.	107g

MPY Series Corner Resolution  
NEAR



INF



## V0828-MPY2

1.1"

12MP

FIX

MANUAL

FLOATING



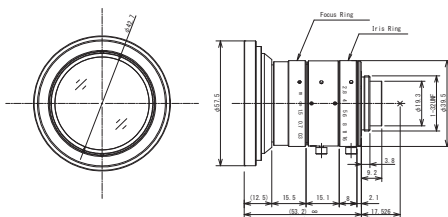
Focal Length	8mm				
Max. Aperture Ratio	1:2.8				
Max. Image Format	14.2mm x 10.4mm ( $\varnothing$ 17.6mm)				
Operation Range	Iris	F2.8 - F16.0			
	Focus	0.2m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Angle of View	D	93.9°	89.3°	69.0°	
	H	1.1" 83.0°	1" 77.3°	2/3" 57.3°	
	V	66.0°	61.7°	44.2°	
Operating Temperature	-10°C ~ +50°C				

Optical Distortion	1.1" -0.6%(y=8.8)	1" -1.7%(y=8.0)	2/3" -2.8%(y=5.5)		
Back Focal Length	8.6mm				
Flange Back Length	17.526mm				
Mount	C-Mount				
Filter Size	M72 P=0.75mm (with VM0811)*				
	M67 P=0.75mm (with VM0810)*				
Dimensions	$\varnothing$ 75mm x 54mm				
Weight	157g				

\*There is no filter mount on the top of the lens.  
For using filters, please attach either VM0811 or VM0810.  
For more detail, please refer to P40.

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.008	-	1790.8	1310.2	1617.6	1206.7	1103.1	820.5
950	0.009	-	1702.4	1245.4	1537.7	1147.0	1048.6	780.0
900	0.009	-	1614.2	1180.9	1458.0	1087.5	994.2	739.5
850	0.010	-	1525.9	1116.2	1378.2	1027.9	939.7	699.0
800	0.010	-	1437.5	1051.4	1298.3	968.3	885.2	658.4
750	0.011	-	1348.8	986.4	1218.0	908.3	830.4	617.6
700	0.012	-	1260.1	921.4	1137.9	848.5	775.7	576.9
650	0.013	-	1172.0	856.8	1058.2	789.0	721.3	536.5
600	0.014	-	1083.5	792.0	978.3	729.3	666.7	495.9
550	0.015	-	995.2	727.3	898.5	669.7	612.2	455.3
500	0.016	-	906.4	662.2	818.2	609.8	557.4	414.6
450	0.018	-	817.8	597.3	738.1	550.0	502.8	373.9
400	0.020	-	729.5	532.6	658.3	490.4	448.3	333.3
350	0.023	-	641.0	467.7	578.3	430.7	393.6	292.7
300	0.027	-	552.1	402.6	497.9	370.6	338.8	251.9
250	0.032	-	463.7	337.9	418.0	311.0	284.3	211.3
200	0.039	-	375.6	273.3	338.4	251.6	229.9	170.9
150	0.051	0.2	287.1	208.5	258.4	191.9	175.3	130.3
100	0.075	0.2	198.5	143.7	178.4	132.2	120.8	89.7

Field of View = CCD Size / Optical Magnification

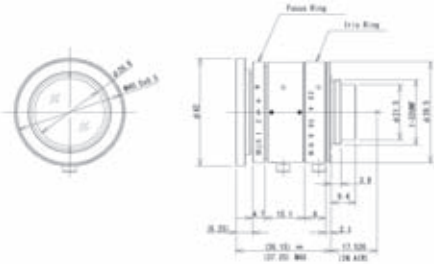


# 1.1" 12 MEGAPIXEL FIXED FOCAL LENS (MPY Series)

1.1" 12MP  
MPY

## V1228-MPY2

- 1.1"
- 12MP
- FIX
- MANUAL
- FLOATING



Focal Length	12mm				
Max. Aperture Ratio	1:2.8				
Max. Image Format	14.2mm x 10.4mm (φ 17.6mm)				
Operation Range	Iris	F2.8 - F16.0			
	Focus	0.3m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Angle of View	D		71.1°		48.6°
	H	1.1"	60.5°	1"	55.5°
	V		46.2°		42.9°
Operating Temperature	-10°C ~ +50°C				

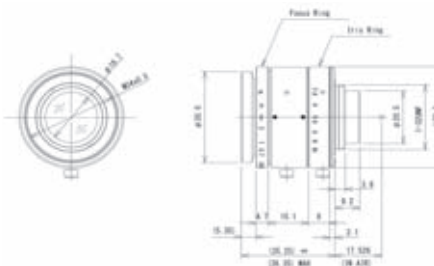
Optical Distortion	1.1"	-0.5%(y=8.8)	1"	-1.0%(y=8.0)	2/3"	-1.4%(y=5.5)
Back Focal Length	8.4mm					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M40.5 P=0.5mm					
Dimensions	φ 42.0mm x 36.1mm					
Weight	97g					

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.012	-	1167.9	854.2	1053.4	787.5	720.9	538.6
950	0.013	-	1109.5	811.4	1000.7	748.1	684.8	511.6
900	0.014	-	1051.2	768.8	948.2	708.8	648.9	484.8
850	0.015	-	992.9	726.1	895.5	669.4	612.8	457.8
800	0.015	-	934.6	683.4	842.9	630.1	576.8	430.9
750	0.016	-	876.4	640.9	790.4	590.9	540.9	404.1
700	0.018	-	818.0	598.1	737.7	551.5	504.8	377.1
650	0.019	-	759.7	555.5	685.1	512.2	468.8	350.3
600	0.021	-	701.5	512.9	632.7	472.9	432.9	323.4
550	0.022	-	643.0	470.2	579.9	433.5	396.8	296.5
500	0.025	-	584.7	427.5	527.3	394.2	360.8	269.6
450	0.027	-	526.5	384.9	474.8	354.9	324.9	242.7
400	0.031	-	468.2	342.3	422.2	315.6	288.9	215.8
350	0.035	-	409.9	299.7	369.6	276.3	252.9	189.0
300	0.041	-	351.6	257.0	317.0	237.0	216.9	162.1
250	0.048	0.5	303.1	221.0	273.0	203.7	186.4	139.2
200	0.060	0.5	242.7	177.0	218.6	163.1	149.3	111.5
150	0.079	0.5	182.5	133.1	164.3	122.6	112.2	83.8
100	0.115	1.0	126.3	91.9	113.6	84.7	77.5	57.8

Field of View = CCD Size / Optical Magnification

## V1628-MPY2

- 1.1"
- 12MP
- FIX
- MANUAL
- FLOATING



Focal Length	16mm				
Max. Aperture Ratio	1:2.8				
Max. Image Format	14.2mm x 10.4mm (φ 17.6mm)				
Operation Range	Iris	F2.8 - F16.0			
	Focus	0.3m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Angle of View	D		57.9°		38.2°
	H	1.1"	48.2°	1"	43.9°
	V		36.2°		33.6°
Operating Temperature	-10°C ~ +50°C				

Optical Distortion	1.1"	-0.5%(y=8.8)	1"	-0.6%(y=8.0)	2/3"	-0.6%(y=5.5)
Back Focal Length	9.4mm					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M34.0 P=0.5mm					
Dimensions	φ 39.5mm x 35.2mm					
Weight	89g					

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.016	-	890.1	651.4	802.4	601.0	550.7	412.4
950	0.017	-	845.4	618.7	762.1	570.9	523.0	391.7
900	0.018	-	800.7	586.0	721.8	540.7	495.4	371.0
850	0.019	-	756.2	553.5	681.7	510.7	467.9	350.5
800	0.020	-	711.5	520.8	641.5	480.5	440.3	329.8
750	0.021	-	666.9	488.1	601.2	450.4	412.7	309.1
700	0.023	-	622.2	455.4	560.9	420.2	385.0	288.4
650	0.025	-	577.4	422.7	520.6	390.0	357.4	267.7
600	0.027	-	532.7	390.0	480.3	359.9	329.7	247.0
550	0.029	-	488.1	357.3	440.0	329.7	302.1	226.3
500	0.032	-	443.4	324.6	399.8	299.6	274.5	205.6
450	0.036	-	398.7	291.9	359.5	269.4	246.9	184.9
400	0.040	-	353.9	259.2	319.2	239.2	219.2	164.2
350	0.046	-	309.3	226.5	278.9	209.1	191.6	143.5
300	0.054	-	264.6	193.8	238.6	178.9	163.9	122.8
250	0.063	1.0	227.8	166.3	205.1	153.3	140.5	105.1
200	0.079	1.0	181.4	132.5	163.4	122.2	111.9	83.8
150	0.106	1.0	135.1	98.8	121.7	91.1	83.5	62.5
100	0.156	2.0	92.1	67.2	82.9	61.9	56.7	42.5

Field of View = CCD Size / Optical Magnification

1.1" 12MP  
MPY

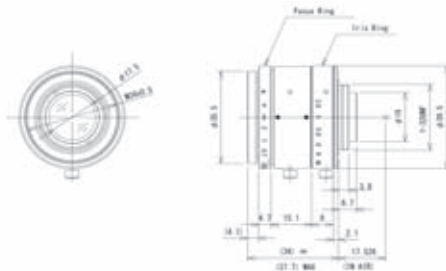
# 1.1" 12 MEGA PIXEL FIXED FOCAL LENS (MPY Series)

- 8, 12, 16, 25, 35, 50mm 6 lens series
- Compatible with 1.1" (φ 17.6mm) large format sensor
- Vibration resistance up to 5G

- Ultra-high resolution 12MP
- Compact 1.1" design (smallest 12MP lens in the industry)

## V2528-MPY

- 1.1"
- 12MP
- FIX
- MANUAL
- FLOATING



Focal Length	25mm			
Max. Aperture Ratio	1:2.8			
Max. Image Format	14.2mm x 10.4mm (φ 17.6mm)			
Operation Range	Iris	F2.8 - F16.0		
	Focus	0.3m - Inf.		
Control	Iris	Manual		
	Focus	Manual		
Angle of View	D	38.7°	35.4°	24.8°
	H	1.1" 31.7°	1" 28.7°	2/3" 20.0°
	V	23.5°	21.7°	15.0°
Operating Temperature	-10°C ~ +50°C			

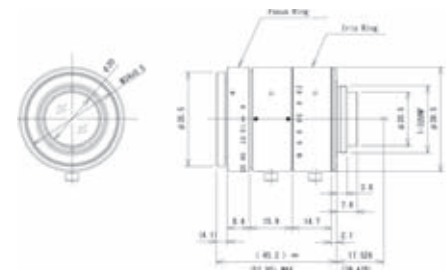
Optical Distortion	1.1" 0.3%(y=8.8)	1" 0.2%(y=8.0)	2/3" 0.1%(y=5.5)
Back Focal Length	11.3mm		
Flange Back Length	17.526mm		
Mount	C-Mount		
Filter Size	M34.0 P=0.5mm		
Dimensions	φ 39.5mm x 34mm		
Weight	78g		

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.026	-	555.5	407.0	500.8	375.7	344.4	258.3
950	0.027	-	527.3	386.3	475.4	356.6	326.9	245.2
900	0.028	-	499.0	365.6	449.9	337.5	309.3	232.0
850	0.030	-	470.7	344.8	424.4	318.3	291.8	218.9
800	0.032	-	442.4	324.1	398.8	299.1	274.2	205.7
750	0.034	-	414.1	303.3	373.3	280.0	256.6	192.5
700	0.037	-	385.7	282.5	347.7	260.8	239.0	179.3
650	0.040	-	357.4	261.7	322.1	241.6	221.5	166.1
600	0.043	-	329.0	240.9	296.6	222.4	203.9	152.9
550	0.047	-	300.7	220.2	271.0	203.2	186.3	139.7
500	0.052	-	272.2	199.3	245.3	184.0	168.6	126.5
450	0.058	-	243.9	178.5	219.8	164.8	151.1	113.3
400	0.066	-	215.5	157.7	194.2	145.6	133.4	100.1
350	0.076	-	187.1	136.9	168.6	126.4	115.8	86.9
300	0.090	-	158.7	116.2	143.0	107.2	98.3	73.7
250	0.108	0.5	131.9	96.5	118.8	89.0	81.6	61.2
200	0.135	1.5	105.6	77.2	95.1	71.3	65.3	48.9
150	0.183	2.5	78.0	57.0	70.3	52.6	48.2	36.1
100	0.281	5.0	50.9	37.2	45.8	34.3	31.4	23.5

Field of View = CCD Size / Optical Magnification

## V3528-MPY

- 1.1"
- 12MP
- FIX
- MANUAL
- FLOATING



Focal Length	35mm			
Max. Aperture Ratio	1:2.8			
Max. Image Format	14.2mm x 10.4mm (φ 17.6mm)			
Operation Range	Iris	F2.8 - F16.0		
	Focus	0.3m - Inf.		
Control	Iris	Manual		
	Focus	Manual		
Angle of View	D	28.2°	25.8°	17.9°
	H	1.1" 22.9°	1" 20.7°	2/3" 14.3°
	V	16.9°	15.6°	10.8°
Operating Temperature	-10°C ~ +50°C			

Optical Distortion	1.1" -0.1%(y=8.8)	1" 0.0%(y=8.0)	2/3" 0.0%(y=5.5)
Back Focal Length	11.9mm		
Flange Back Length	17.526mm		
Mount	C-Mount		
Filter Size	M34.0 P=0.5mm		
Dimensions	φ 39.5mm x 45.2mm		
Weight	103g		

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.036	-	393.4	288.2	354.6	266.0	243.9	182.9
950	0.038	-	373.0	273.2	336.2	252.2	231.2	173.4
900	0.040	-	352.7	258.4	317.9	238.5	218.6	164.0
850	0.043	-	332.4	243.5	299.6	224.7	206.0	154.5
800	0.046	-	312.1	228.6	281.3	211.0	193.5	145.1
750	0.049	-	291.8	213.8	263.1	197.3	180.9	135.7
700	0.052	-	271.6	198.9	244.8	183.6	168.3	126.3
650	0.057	-	251.3	184.1	226.5	169.9	155.8	116.8
600	0.061	-	231.0	169.2	208.2	156.2	143.2	107.4
550	0.067	-	210.7	154.3	189.9	142.5	130.6	98.0
500	0.075	-	190.4	139.5	171.6	128.8	118.0	88.6
450	0.083	-	170.1	124.6	153.4	115.1	105.5	79.1
400	0.095	-	149.8	109.8	135.1	101.3	92.9	69.7
350	0.110	-	129.5	94.9	116.8	87.6	80.3	60.3
300	0.130	-	109.3	80.1	98.5	73.9	67.8	50.8
250	0.157	1.5	90.4	66.2	81.5	61.1	56.0	42.0
200	0.201	3.0	70.9	51.9	63.9	47.9	43.9	32.9
150	0.277	6.0	51.6	37.7	46.5	34.8	31.9	23.9
100	0.435	15.0	32.9	24.0	29.6	22.2	20.3	15.2

Field of View = CCD Size / Optical Magnification

# 1.1" 12 MEGAPIXEL FIXED FOCAL LENS (MPY Series)

1.1" 12MP  
MPY

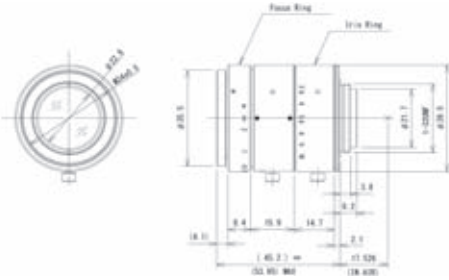
## V5028-MPY

- 1.1"
- 12MP
- FIX
- MANUAL
- FLOATING



Focal Length	50mm				
Max. Aperture Ratio	1:2.8				
Max. Image Format	14.2mm x 10.4mm (φ 17.6mm)				
Operation Range	Iris	F2.8 - F16.0			
	Focus	0.5m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Angle of View	D	20.0°	18.2°	12.6°	
	H	1.1" 16.2°	1" 14.6°	2/3" 10.1°	
	V	11.9°	11.0°	7.6°	
Operating Temperature	-10° C ~ +50° C				

Optical Distortion	1.1" 0.1% (γ=8.8)	1" 0.1% (γ=8.0)	2/3" 0.1% (γ=5.5)
Back Focal Length	11.9mm		
Flange Back Length	17.526mm		
Mount	C-Mount		
Filter Size	M34.0 P=0.5mm		
Dimensions	φ 39.5mm x 45.1mm		
Weight	107g		



Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View (mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.055	-	257.9	188.9	232.5	174.4	159.8	119.9
950	0.058	-	243.7	178.5	219.7	164.7	151.0	113.3
900	0.062	-	229.5	168.1	206.9	155.1	142.2	106.7
850	0.066	-	215.3	157.6	194.0	145.5	133.4	100.0
800	0.071	-	201.1	147.2	181.2	135.9	124.6	93.4
750	0.076	-	186.9	136.8	168.4	126.3	115.8	86.8
700	0.082	-	172.7	126.4	155.6	116.7	107.0	80.2
650	0.090	-	158.5	116.0	142.8	107.1	98.2	73.6
600	0.099	-	144.2	105.6	130.0	97.5	89.4	67.0
550	0.109	-	130.0	95.2	117.2	87.9	80.6	60.4
500	0.123	-	115.9	84.8	104.4	78.3	71.8	53.8
450	0.138	1.0	103.1	75.4	92.9	69.6	63.8	47.9
400	0.158	2.0	89.9	65.8	81.0	60.7	55.7	41.7
350	0.181	5.0	78.5	57.4	70.7	53.0	48.6	36.4
300	0.222	6.0	64.2	47.0	57.8	43.3	39.7	29.8
250	0.276	10.0	51.7	37.8	46.6	34.9	32.0	24.0
200	0.373	15.0	38.2	27.9	34.4	25.8	23.6	17.7
150	0.583	25.0	24.5	17.9	22.1	16.5	15.1	11.3
100	1.255	61.5	11.3	8.3	10.2	7.7	7.0	5.3

Field of View = CCD Size / Optical Magnification

### FLOATING

Basically, lens is designed to show the best performance at a certain working distance. Due to this design, a curvature of field\* is caused at other working distances, and the picture deteriorates at the corners. This curvature of field is able to be modified by a method called Floating, which makes several lens element groups move differently and controls aberration. It can provide stable picture quality from short object distances to infinity.

\*Curvature of field: Phenomenon caused by the gap of the focal point between center and corner

