

# MACHINE VISION LENS

## PRODUCT GUIDE



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**computerar**®

# NEW PRODUCTS

## MPY Series

V0828-MPY



V1228-MPY



V1628-MPY



V2528-MPY



V3528-MPY



V5028-MPY



### 1.1" 12 MEGAPIXEL C-MOUNT LENS

- 8, 12, 16, 25, 35, 50mm. 6 Lens Series
- Compatible with 1.1" ( $\phi$  17.6mm)  
Large Format Sensor
- Ultra-High Resolution 12MP
- Compact 1.1" Design  
(smallest 12MP lens in the industry)
- Locking Screw for Focus and Iris

## MPW2 Series

M0824-MPW2



M1224-MPW2



M1620-MPW2



M2518-MPW2



M3520-MPW2



### 5 MEGAPIXEL C-MOUNT LENS

- Ultra low distortion.
- Higher relative illumination rate
- Compact design
- Locking screws for focus and iris.
- JIA Standard 5 megapixel A-rank.

## TEC Series

TEC-V7X



TEC-M55MPW



TEC-M55



### TELECENTRIC LENS

- Low distortion
- For large sensor format (2/3" and 1.1")
- Higher relative illuminance.

*Specifications are subject to change without notice*

## Introduction

When setting up your vision system, the lens may be one of the last components you choose. Once your system is up and running, however, **your data flows from the lens first**. That makes lens choice one of the most impactful decisions that will determine how well your vision system works for you. With the success of your next project on the line, turn to a partner with over 40 years of experience in precision-engineered optics.

Computar's Factory Automation line of lenses is engineered to meet the challenges of the most demanding vision systems. Featuring an unrivaled compact form factor, ultra-low distortion optics and a robust design meant to last decades, Computar lenses are quality you can count on. And with multiple format, resolution and iris options, Computar has the right fit for your application.

Don't let the lens be the weak link in your system. Choosing a great lens tailored to your system's needs can be daunting, but that's what we're here for. Talk to a lens specialist at Computar today and find out how we can assist in selecting the correct lens that will not only work with your system, but expand its potential.

In addition to high-quality products, we focus on creating an unparalleled service experience for our customers. Our sales and technical support staff operate across a vast network; meaning day or night a lens expert is a phone call away in a town near you. This, combined with our first-class inventory system, allows you to rapidly select, receive and integrate Computar lenses into your application.

With a solid foundation based on Japanese engineering and agile production facilities spanning the globe, we operate under a dual mandate to create the highest-quality optics products at an economical price point that works within your budget.

In the following pages, you'll find out more about the product family that has made Computar the gold standard in optics across a variety of industries.

We encourage you to contact us about any of our products, and find out for yourself how choosing Computar will enable your application to **See Everything. Clearly.**

## CONTENTS

2/3" MEGAPIXEL LENS (MP / MP2 Series)	03
2/3" 5 MEGAPIXEL ULTRA LOW DISTORTION LENS (MPW / MPW2 Series)	07
1.1" 12 MEGAPIXEL LENS (MPY Series)	11
1" 2 MEGAPIXEL LENS (MP Series)	14
MACRO ZOOM / TELECENTRIC LENS	17
ACCESSORIES	22
SWIR / ITS LENS	23
MEGAPIXEL BOARD LENS	27
TECHNICAL INFORMATION	29

C-MOUNT  
1/2" 2/3"  
1.5 MP

## MEGAPIXEL LENS

### MACHINE VISION LENSES

- Captures full resolution of megapixel cameras
- Low distortion (Less than 1.0%)
- Locking set screws for focus and iris

- High contrast & sharp picture in all areas of the screen
- Compact design-Diameter 33.5mm (H0514-MP : 44.5mm)

## H0514-MP2



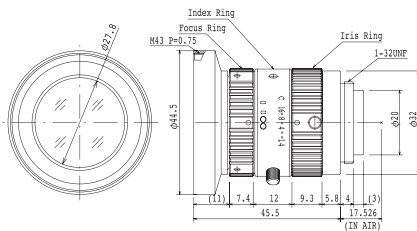
1/2"

1.5MP

FIX

MANUAL

WIDE



Focal Length		5mm			
Max. Aperture Ratio		1:1.4			
Max. Image Format		6.4mm x 4.8mm (ø 8mm)			
Operation Range	Iris	F1.4 - F16C			
	Focus	0.1m - 0.9m			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.		15.0(H)cm x 11.1(V)cm 1/2"			
Angle of View	D	1/2"	76.7°	1/3"	62.3°
	H		65.5°		51.4°
	V		51.4°		39.5°
Operating Temperature		-10°C ~ +50°C			

Distortion	1/2"	-0.48% (y=4.0)	1/3"	-2.26% (y=3.0)
Back Focal Length	10.8mm (WD=900mm)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M43 P=0.75mm			
Dimensions	φ 44.5mm x 45.5mm			
Weight	102g			

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)			
			1/2"		1/3"	
			H	V	H	V
900	0.006X	-	1179.8	882.3	882.3	657.2
850	0.006X	-	1115.4	834.2	834.2	621.3
800	0.006X	-	1051.0	786.0	786.0	585.4
750	0.007X	-	986.6	737.8	737.8	549.5
700	0.007X	-	922.3	689.6	689.6	513.6
650	0.008X	-	857.9	641.4	641.4	477.7
600	0.008X	-	793.5	593.2	593.2	441.8
550	0.009X	-	729.1	545.0	545.0	405.9
500	0.010X	-	664.7	496.9	496.9	370.0
450	0.011X	-	600.3	448.7	448.7	334.1
400	0.012X	-	535.9	400.5	400.5	298.2
350	0.014X	-	471.5	352.3	352.3	262.3
300	0.016X	-	407.1	304.1	304.1	226.4
250	0.019X	-	342.7	255.9	255.9	190.5
200	0.024X	-	278.4	207.8	207.8	154.6
150	0.031X	-	214.0	159.6	159.6	118.7
100	0.044X	-	149.6	111.4	111.4	82.8

Field of View = CCD Size / Optical Magnification

## M0814-MP2

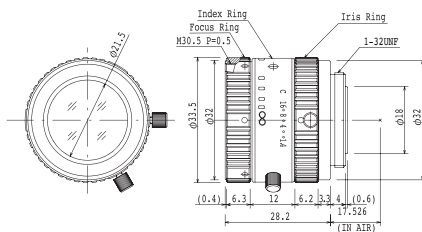


2/3"

1.5MP

FIX

MANUAL



Focal Length		8mm			
Max. Aperture Ratio		1:1.4			
Max. Image Format		8.8mm x 6.6mm (φ 11mm)			
Operation Range	Iris	F1.4 - F16C			
	Focus	0.1m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.		12.1(H)cm x 9.0(V)cm 2/3"			
Angle of View	D	2/3"	67.1°	1/2"	51.9°
	H		56.3°		42.5°
	V		43.7°		32.4°
Operating Temperature		- 1 0° C ~ +50° C			

Distortion	2/3"	-0.1% (y=5.5)	1/2"	-1.1% (y=4.0)
Back Focal Length	13.1mm (Inf)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 28.2mm			
Weight	63g			

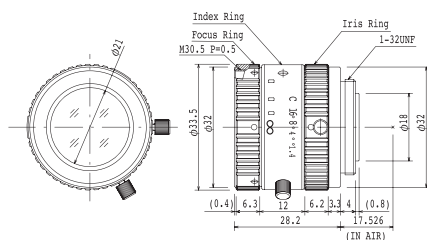
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.009X	-	976.8	731.5	709.1	530.1
850	0.010X	-	923.3	691.4	670.2	501.0
800	0.010X	-	869.8	651.3	631.4	471.9
750	0.011X	-	816.3	611.2	592.5	442.8
700	0.012X	-	762.8	571.1	553.6	413.8
650	0.013X	-	709.3	531.0	514.7	384.7
600	0.014X	-	655.8	490.9	475.8	355.6
550	0.015X	-	602.3	450.8	437.0	326.5
500	0.016X	-	548.8	410.7	398.1	297.5
450	0.018X	-	495.3	370.6	359.2	268.4
400	0.020X	-	441.8	330.5	320.3	239.3
350	0.023X	-	388.3	290.4	281.4	210.2
300	0.027X	-	334.8	250.3	242.6	181.2
250	0.032X	-	281.2	210.2	203.7	152.1
200	0.039X	-	227.7	170.0	164.8	123.0
150	0.052X	-	174.2	129.9	125.9	93.9
100	0.075X	-	120.7	89.8	87.0	64.9

Field of View = CCD Size / Optical Magnification

## M1214-MP2



MANUAL



Focal Length		12mm		
Max. Aperture Ratio		1:1.4		
Max. Image Format		8.8mm x 6.6mm (φ 11mm)		
Operation Range	Iris	F1.4 - F16C		
	Focus	0.15m - Inf.		
Control	Iris	Manual		
	Focus	Manual		
Object Dimension at M.O.D.		12.1(H)cm x 9.0(V)cm 2/3"		
Angle of View	D	2/3"	49.2°	37.0°
	H		40.4°	30.0°
	V		30.8°	22.7°
Operating Temperature		-10° C ~ +50° C		

Distortion	2/3' -0.1% (y=5.5)	1/2" -0.35% (y=4.0)
BackFocal Length	13.1mm (Inf)	
Flange Back Length	17.526mm	
Mount	C-Mount	
Filter Size	M30.5 P=0.5mm	
Dimensions	φ 33.5mm x 28.2mm	
Weight	62g	

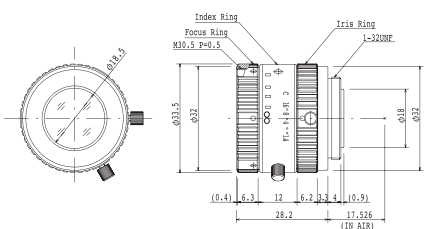
Working Distance	Optical Magnification	Extension Ring	Field of View(mm)			
			2/3"		1/2"	
(mm)		(mm)	H	V	H	V
900	0.013 X	-	672.7	504.0	488.7	366.0
850	0.014 X	-	635.9	476.4	461.9	345.9
800	0.015 X	-	599.1	448.9	435.2	325.9
750	0.016 X	-	562.4	421.3	408.4	305.9
700	0.017 X	-	525.6	393.7	381.7	285.8
650	0.018 X	-	488.8	366.1	355.0	265.8
600	0.020 X	-	452.1	338.5	328.2	245.7
550	0.021 X	-	415.3	311.0	301.5	225.7
500	0.023 X	-	378.5	283.4	274.7	205.7
450	0.026 X	-	341.7	255.8	248.0	185.6
400	0.029 X	-	305.0	228.2	221.2	165.6
350	0.033 X	-	268.2	200.6	194.5	145.6
300	0.038 X	-	231.4	173.0	167.7	125.5
250	0.046 X	-	194.7	145.5	141.0	105.5
200	0.056 X	-	157.9	117.9	114.3	85.4
150	0.074 X	-	121.1	90.3	87.5	65.4
100	0.106 X	0.5	84.3	62.7	60.8	45.4

$$\text{Field of View} = \text{CCD Size} / \text{Optical Magnification}$$

## M1614-MP2



MANUAL



Focal Length		16mm			
Max. Aperture Ratio		1:1.4			
Max. Image Format		8.8mm x 6.6mm (φ 11mm)			
Operation Range	Iris	F1.4 - F16C			
	Focus	0.3m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.		17.2(H)cm x 12.9(V)cm 2/3"			
Angle of View	D	2/3"	38.0°	1/2"	28.2°
	H		30.8°		22.7°
	V		23.4°	17.1°	
Operating Temperature		-10° C ~ +50° C			

Distortion	2/3" -0.1% (y=5.5)	1/2" -0.3% (y=4.0)
BackFocalLength	13.1mm (Inf)	
RangeBackLength	17.526mm	
Mount	C-Mount	
Filter Size	M30.5 P=0.5mm	
Dimensions	φ 33.5mm x 28.2mm	
Weight	60g	

Working Distance	Optical Magnification	Extension Ring	Field of View(mm)			
			2/3"		1/2"	
(mm)		(mm)	H	V	H	V
900	0.018X	-	503.2	376.8	365.4	273.7
850	0.019X	-	475.6	356.2	345.3	258.6
800	0.020X	-	448.0	335.5	325.3	243.6
750	0.021X	-	420.4	314.8	305.2	228.6
700	0.023X	-	392.8	294.1	285.2	213.6
650	0.024X	-	365.2	273.4	265.1	198.5
600	0.026X	-	337.6	252.8	245.1	183.5
550	0.029X	-	310.0	232.1	225.0	168.5
500	0.031X	-	282.5	211.4	204.9	153.5
450	0.035X	-	254.9	190.7	184.9	138.4
400	0.039X	-	227.3	170.0	164.8	123.4
350	0.044X	-	199.7	149.4	144.8	108.4
300	0.052X	-	172.1	128.7	124.7	93.4
250	0.061X	-	144.5	108.0	104.7	78.3
200	0.076X	-	116.9	87.3	84.6	63.3
150	0.100X	0.5	89.3	66.6	64.6	48.3
100	0.145X	1.0	61.7	45.9	44.5	33.2

$$\text{Field of View} = \text{CCD Size} / \text{Optical Magnification}$$

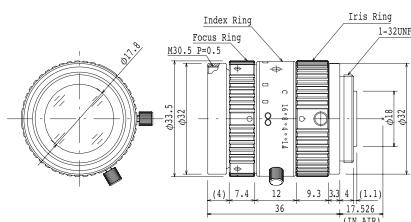
C-MOUNT  
2/3" 1.5 MP

# MEGAPIXEL LENS

## MACHINE VISION LENSES

### M2514-MP2

2/3"  
1.5MP  
FIX  
MANUAL



Focal Length		25mm		
Max. Aperture Ratio		1:1.4		
Max. Image Format		8.8mm x 6.6mm (φ 11mm)		
Operation Range	Iris	F1.4 - F16C		
	Focus	0.3m - Inf.		
Control	Iris	Manual		
	Focus	Manual		
Object Dimension at M.O.D.		10.6(H)cm x 7.9(V)cm 2/3"		
Angle of View	D	24.9°	1/2"	18.2°
	H	20.0°		14.6°
	V	15.1°		11.0°
Operating Temperature		-10° C ~ +50° C		

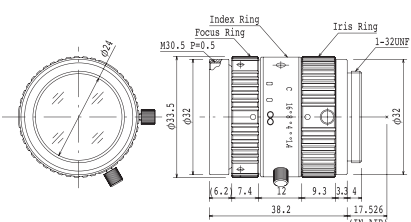
Distortion	2/3" -0.3% (y=5.5)	1/2" -0.1% (y=4.0)
Back Focal Length	13.1mm (Inf)	
Flange Back Length	17.526mm	
Mount	C-Mount	
Filter Size	M30.5 P=0.5mm	
Dimensions	φ 33.5mm x 36.0mm	
Weight	71g	

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.028X	-	317.5	237.7	230.5	172.7
850	0.029X	-	299.9	224.5	217.7	163.1
800	0.031X	-	282.3	211.3	204.8	153.5
750	0.033X	-	264.6	198.1	192.0	143.9
700	0.036X	-	247.0	184.9	179.2	134.3
650	0.039X	-	229.4	171.6	166.4	124.7
600	0.042X	-	211.8	158.4	153.6	115.1
550	0.046X	-	194.1	145.2	140.8	105.5
500	0.050X	-	176.5	132.0	128.0	95.9
450	0.056X	-	158.9	118.8	115.2	86.3
400	0.063X	-	141.2	105.6	102.4	76.7
350	0.072X	-	123.6	92.4	89.6	67.1
300	0.084X	-	106.0	79.2	76.8	57.5
250	0.100X	-	88.3	66.0	63.9	47.9
200	0.126X	-	70.7	52.7	51.1	38.3
150	0.168X	-	53.0	39.5	38.3	28.7
100	0.253X	1.5	35.3	26.3	25.5	19.0

Field of View = CCD Size / Optical Magnification

### M3514-MP

2/3"  
1.5MP  
FIX  
MANUAL



Focal Length		35mm			
Max. Aperture Ratio		1:1.4			
Max. Image Format		8.8mm×6.6mm (ø 11mm)			
Operation Range	Iris	F1.4 - F16C			
	Focus	0.3m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.		8.1(H)cm × 6(V)cm 2/3"			
Angle of View	D	2/3"	17.3°	1/2"	12.6°
	H		13.9°		10.1°
	V		10.4°		7.6°
Operating Temperature		-10° C ~ +50° C			

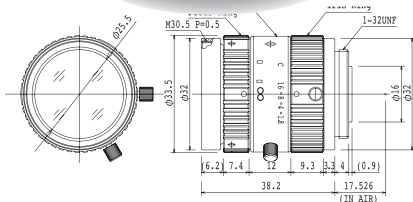
Distortion	2/3" -0.8% (y=5.5)	1/2" -0.4% (y=4.0)
Back Focal Length	17.1mm (WD=400mm)	
Flange Back Length	17.526mm	
Mount	C-Mount	
Filter Size	M30.5 P=0.5mm	
Dimensions	φ 33.5mm x 38.2mm	
Weight	87g	

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.037	-	236.2	176.9	171.5	128.6
850	0.040	-	223.2	167.2	162.1	121.5
800	0.042	-	210.3	157.5	152.7	114.5
750	0.045	-	197.3	147.8	143.3	107.4
700	0.048	-	184.3	138.1	133.9	100.3
650	0.052	-	171.4	128.4	124.5	93.3
600	0.056	-	158.4	118.6	115.0	86.2
550	0.061	-	145.5	108.9	105.6	79.1
500	0.067	-	132.5	99.2	96.2	72.1
450	0.074	-	119.6	89.5	86.8	65.0
400	0.083	-	106.6	79.8	77.4	58.0
350	0.094	-	93.7	70.1	67.9	50.9
300	0.110	-	80.7	60.4	58.5	43.8
250	0.131	1	67.7	50.6	49.1	36.8
200	0.162	2	54.7	40.9	39.7	29.7
150	0.213	5	41.8	31.2	30.2	22.6
100	0.310	7	28.7	21.4	20.8	15.5

Field of View = CCD Size / Optical Magnification

# M5018-MP2

- 2/3"
- 1.5MP
- FIX
- MANUAL



Focal Length		50mm		
Max. Aperture Ratio		1:1.8		
Max. Image Format		8.8mm x 6.6mm (φ 11mm)		
Operation Range	Iris	F1.8 - F16C		
	Focus	0.5m - Inf.		
Control	Iris	Manual		
	Focus	Manual		
Object Dimension at M.O.D.		8.7(H)cm x 6.5(V)cm 2/3"		
Angle of View	D	2/3"	13.1°	9.5°
	H		10.5°	7.6°
	V		7.9°	5.7°
Operating Temperature		-10°C ~ +50°C		

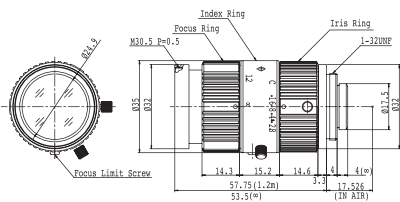
Distortion	2/3"	-0.3% (y=5.5)	1/2"	-0.2% (y=4.0)
Back Focal Length	13.1mm (Inf)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 38.2mm			
Weight	85g			

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.055X	-	160.8	120.4	116.7	87.5
850	0.058X	-	151.6	113.5	110.1	82.5
800	0.062X	-	142.4	106.6	103.4	77.5
750	0.066X	-	133.2	99.7	96.7	72.5
700	0.071X	-	124.0	92.9	90.0	67.5
650	0.077X	-	114.8	86.0	83.4	62.5
600	0.084X	-	105.6	79.1	76.7	57.5
550	0.092X	-	96.5	72.2	70.1	52.5
500	0.101X	-	87.3	65.3	63.3	47.5
450	0.113X	0.5	78.1	58.4	56.7	42.5
400	0.128X	1.5	68.9	51.6	50.0	37.5
350	0.148X	2.5	59.7	44.7	43.3	32.5
300	0.175X	3.5	50.5	37.8	36.6	27.4
250	0.214X	5.5	41.3	30.9	30.0	22.4
200	0.276X	8.5	32.1	24.0	23.3	17.4
150	0.387X	14.0	22.9	17.1	16.6	12.4
100	0.647X	26.5	13.6	10.2	9.9	7.4

Field of View = CCD Size / Optical Magnification

# M7528-MP

- 2/3"
- 1.5MP
- FIX
- MANUAL
- TELE



Focal Length		75mm		
Max. Aperture Ratio		1:2.8		
Max. Image Format		8.8mm x 6.6mm (φ11mm)		
Operation Range	Iris	F2.8 - F16C		
	Focus	0.3m - Inf. ( ※ )		
Control	Iris	Manual		
	Focus	Manual		
Object Dimension at M.O.D.		4.1(H)cm x 3.1(V)cm 2/3"		
Angle of View	D	2/3"	8.5°	6.2°
	H		6.8°	5°
	V		5.1°	3.7°
Operating Temperature		-10° C ~ +50° C		

Distortion	2/3"	-0.4% (y=5.5)	1/2"	-0.2% (y=4.0)
Back Focal Length	21.5mm (WD=400mm)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 35mm x 57.75mm			
Weight	113g			

※ Factory setting is 0.3-12m. Focus can be adjusted to infinity by removing 'Focus Limit Screw'.

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)			
			2/3"		1/2"	
			H	V	H	V
900	0.077	-	113.8	85.4	82.8	62.1
850	0.082	-	107.8	80.8	78.4	58.8
800	0.086	-	101.7	76.3	74.0	55.5
750	0.092	-	95.7	71.8	69.6	52.2
700	0.098	-	89.6	67.2	65.2	48.9
650	0.105	-	83.6	62.7	60.8	45.6
600	0.114	-	77.6	58.1	56.4	42.3
550	0.123	-	71.5	53.6	52.0	39.0
500	0.135	-	65.5	49.1	47.6	35.7
450	0.148	-	59.4	44.5	43.2	32.4
400	0.165	-	53.4	40.0	38.8	29.1
350	0.187	-	47.3	35.4	34.4	25.8
300	0.214	-	41.3	30.9	30.0	22.5
250	0.251	5	35.2	26.4	25.6	19.1
200	0.304	7	29.2	21.8	21.2	15.8
150	0.384	13	23.1	17.3	16.8	12.5
100	0.522	23	17.1	12.7	12.3	9.2

Field of View = CCD Size / Optical Magnification

C-MOUNT  
2/3" 5 MP

# MEGAPIXEL ULTRA LOW DISTORTION LENS

MACHINE VISION LENSES

- Ultra low distortion (optical distortion 0.1% or less)
- Higher relative illumination rate
- Compact design

- Locking set screws for focus and iris

## M0824-MPW2

2/3"

5MP

FIX

MANUAL



Focal Length	8mm				
Max. Aperture Ratio	1:2.4				
Max. Image Format	8.8mm x 6.6mm ( ϕ 11mm)				
Operation Range	Iris	F2.4 - F16.0			
	Focus	0.05m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.	5.4cm x 7.4cm 2/3"				
Angle of View	D	2/3"	69.32°	56.90°	53.23°
	H		57.80°	1/1.8" 46.72°	1/2" 43.74°
	V		44.36°	35.75°	33.23°
Operating Temperature	-10° C ~ +50° C				

Distortion	2/3"	1.87%(y=5.5)	1/1.8"	-1.55%(y=4.32)	1/2"	-1.42%(y=4.0)
Back Focal Length	13.7mm(WD=300mm)					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M30.5 P=0.5mm					
Dimensions	φ 32mm x 45.71mm					
Weight	80g					

Field of View = CCD Size / Optical Magnification

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			2/3"		1/1.8"		1/2"	
			H	V	H	V	H	V
900	-0.009	-	1011.1	755.4	791.6	591.5	732.2	547.3
850	-0.009	-	956.0	714.2	748.5	559.3	692.3	517.4
800	-0.010	-	900.9	673.0	705.3	527.0	652.3	487.6
750	-0.011	-	845.8	631.8	662.1	494.7	612.4	457.7
700	-0.011	-	790.7	590.6	618.9	462.5	572.5	427.8
650	-0.012	-	735.6	549.4	575.8	430.2	532.5	398.0
600	-0.013	-	680.4	508.2	532.6	397.9	492.6	368.1
550	-0.014	-	625.3	467.0	489.4	365.6	452.6	338.3
500	-0.016	-	570.0	425.6	446.0	333.2	412.6	308.2
450	-0.017	-	515.0	384.4	403.0	301.0	372.6	278.4
400	-0.019	-	459.8	343.2	359.8	268.8	332.6	248.6
350	-0.022	-	404.6	302.0	316.6	236.4	292.8	218.8
300	-0.026	-	349.6	260.8	273.4	204.2	252.8	188.8
250	-0.030	-	294.4	219.6	230.2	171.8	212.8	159.0
200	-0.037	-	239.4	178.4	187.0	139.6	173.0	129.2
150	-0.049	-	184.2	137.2	143.8	107.4	133.0	99.2
100	-0.070	-	129.0	96.0	100.6	75.0	93.0	69.4
50	-0.127	-	71.4	52.9	55.5	41.3	51.3	38.2

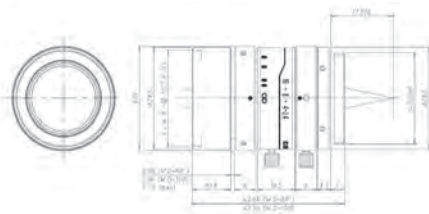
## M1224-MPW2

2/3"

5MP

FIX

MANUAL



Focal Length		12mm					
Max. Aperture Ratio		1:2.4					
Max. Image Format		8.8mm x 6.6mm ( ϕ 11mm)					
Operation Range	Iris	F2.4 - F16.0					
	Focus	0.1m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at M.O.D.		6.4cm x 8.5cm 2/3"					
Angle of View	D	2/3"	48.6°		39.1°	36.5°	
	H		39.8°	1/1.8"	31.7°	1/2"	29.5°
	V		30.4°		24.0°		22.3°
Operating Temperature		-10° C ~ +50° C					

Distortion	2/3"	-0.05%(y=5.5)	1/1.8"	-0.34%(y=4.32)	1/2"	-0.35%(y=4.0)
Back Focal Length	14.4mm(WD=300mm)					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M27.0 P=0.5mm					
Dimensions	φ 29mm x 42.68mm					
Weight	72g					

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			2/3"		1/1.8"		1/2"	
			H	V	H	V	H	V
900	-0.0131	-	671.2	503.7	527.5	395.5	488.4	366.1
850	-0.0138	-	634.6	476.2	498.7	373.9	461.8	346.1
800	-0.0147	-	598.0	448.7	469.9	352.3	435.1	326.1
750	-0.0157	-	561.4	421.2	441.1	330.7	408.4	306.1
700	-0.016	-	524.7	393.7	412.3	309.1	381.8	286.1
650	-0.018	-	488.1	366.2	383.5	287.5	355.1	266.1
600	-0.019	-	451.5	338.7	354.7	265.9	328.4	246.1
550	-0.021	-	414.8	311.2	325.9	244.3	301.7	226.1
500	-0.022	-	378.2	283.7	297.2	222.7	275.1	206.2
450	-0.026	-	341.6	256.2	268.4	201.1	248.4	186.2
400	-0.029	-	305.0	228.7	239.6	179.5	221.8	166.2
350	-0.033	-	268.3	201.2	210.8	157.9	195.1	146.2
300	-0.038	-	231.7	173.7	182.0	136.3	168.4	126.2
250	-0.045	-	195.1	146.2	153.2	114.7	141.8	106.2
200	-0.056	-	158.5	118.7	124.4	93.1	115.1	86.2
150	-0.073	-	121.8	91.2	95.6	71.5	88.4	66.2
100	-0.104	-	85.2	63.7	66.8	50.0	61.8	46.2

Field of View = CCD Size / Optical Magnification

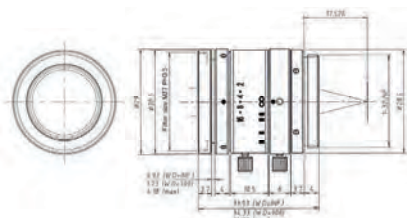
## M1620-MPW2

2/3"

5MP

FIX

MANUAL



Focal Length		16mm					
Max. Aperture Ratio		1:2.0					
Max. Image Format		8.8mm x 6.6mm (ϕ 11mm)					
Operation Range	Iris	F2.0 - F16.0					
	Focus	0.2m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at M.O.D.		8.8cm x 11.74cm 2/3"					
Angle of View	D		37.7°		30.1°		28.0°
	H	2/3"	30.7°	1/1.8"	24.3°	1/2"	22.6°
	V		23.3°		18.5°		17.1°
Operating Temperature		-10° C ~ +50° C					

Distortion	2/3"	0.09%(y=5.5)	1/1.8" -0.06%(y=4.32)	1/2" -0.07%(y=4.0)
Back Focal Length	14.7mm (WD=300mm)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M27.0 P=0.5mm			
Dimensions	φ 29mm x 33.53mm			
Weight	53g			

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			2/3"		1/1.8"		1/2"	
			H	V	H	V	H	V
900	-0.018	-	501.2	376.4	393.5	296.7	365.0	273.9
850	-0.019	-	473.8	355.8	372.0	280.5	345.1	258.9
800	-0.020	-	446.4	335.2	350.4	264.2	325.1	243.9
750	-0.021	-	418.9	314.6	328.9	248.0	305.1	228.9
700	-0.022	-	391.5	294.0	307.4	231.7	285.1	213.9
650	-0.024	-	364.1	273.4	285.8	215.5	265.2	198.9
600	-0.026	-	336.7	252.8	264.3	199.3	245.2	183.9
550	-0.028	-	309.3	232.2	242.8	183.0	225.2	168.9
500	-0.031	-	281.9	211.6	221.2	166.8	205.2	153.9
450	-0.035	-	254.5	191.0	199.7	150.5	185.2	138.9
400	-0.039	-	227.1	170.4	178.2	134.3	165.3	124.0
350	-0.044	-	199.7	149.8	156.6	118.0	145.3	109.0
300	-0.0511	-	172.2	129.2	135.1	101.8	125.3	94.0
250	-0.061	-	144.8	108.6	113.6	85.6	105.1	79.2
200	-0.075	-	117.4	88.0	92.0	69.3	85.3	64.0
150	-0.098	0.5	90.0	67.4	70.5	53.1	65.3	49.0
100	-0.142	1	62.5	46.8	48.9	36.8	45.4	34.0

Field of View = CCD Size / Optical Magnification

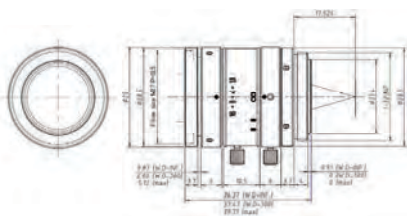
## M2518-MPW2

2/3"

5MP

FIX

MANUAL



Focal Length		25mm					
Max. Aperture Ratio		1:1.8					
Max. Image Format		8.8mm x 6.6mm (ϕ 11mm)					
Operation Range	Iris	F1.8 - F16.0					
	Focus	0.2m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at M.O.D.		5.48cm x 7.31cm 2/3"					
Angle of View	D		24.6°		19.5°		18.1°
	H	2/3"	19.9°	1/1.8"	15.7°	1/2"	14.5°
	V		15.0°		11.8°		10.9°
Operating Temperature		-10° C ~ +50° C					

Distortion	2/3"	0.03%(y=5.5)	1/1.8" -0.02%(y=4.32)	1/2" -0.02%(y=4.0)
Back Focal Length	13.8mm (WD=300mm)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M27.0 P=0.5mm			
Dimensions	φ 29mm x 36.37mm			
Weight	60g			

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			2/3"		1/1.8"		1/2"	
			H	V	H	V	H	V
900	-0.028	-	318.2	238.9	249.8	188.4	231.7	173.9
850	-0.029	-	300.7	225.8	236.0	178.0	219.0	164.3
800	-0.031	-	283.2	212.6	222.3	167.6	206.2	154.7
750	-0.033	-	265.7	199.5	208.5	157.2	193.5	145.2
700	-0.035	-	248.2	186.3	194.8	146.9	180.7	135.6
650	-0.038	-	230.7	173.2	181.0	136.5	168.0	126.0
600	-0.041	-	213.2	160.0	167.3	126.1	155.2	116.4
550	-0.045	-	195.7	146.9	153.6	115.8	142.5	106.9
500	-0.049	-	178.2	133.7	139.8	105.4	129.7	97.3
450	-0.055	-	160.7	120.6	126.1	95.0	116.9	87.7
400	-0.061	-	143.2	107.4	112.3	84.7	104.2	78.1
350	-0.070	-	125.7	94.3	98.6	74.3	91.4	68.6
300	-0.081	-	108.2	81.1	84.8	63.9	78.7	59.0
250	-0.097	-	90.7	68.0	71.1	53.5	65.9	49.4
200	-0.121	-	73.1	54.8	57.3	43.2	53.1	39.8
150	-0.159	1	55.6	41.6	43.5	32.8	40.4	30.3
100	-0.233	5	38.0	28.5	29.8	22.4	27.6	20.7

Field of View = CCD Size / Optical Magnification

C-MOUNT  
2/3" 5 MP

## 5 MEGAPIXEL ULTRA LOW DISTORTION LENS MACHINE VISION LENSES

- Ultra low distortion (optical distortion 0.1% or less)
- Higher relative illumination rate

- Compact design
- Locking set screws for focus and iris

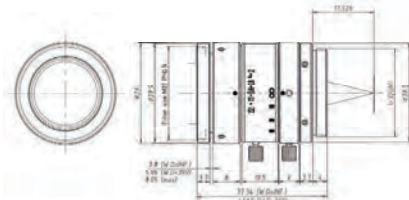
### M3520-MPW2

2/3"

5MP

FIX

MANUAL



Focal Length		35mm					
Max. Aperture Ratio		1:2.0					
Max. Image Format		8.8mm x 6.6mm (φ 11mm)					
Operation Range	Iris	F2.0 - F22.0					
	Focus	0.2m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at MOD.		3.48cm x 4.63cm 2/3"					
Angle of View	D	2/3"	17.8°	14.0°	13.0°		
	H		14.3°	1/1.8"	11.2°	1/2"	10.4°
	V		10.7°	8.5°	7.8°		
Operating Temperature		-10° C ~ +50° C					

Distortion	2/3" 0.011%(y=5.5)	1/1.8" 0.010%(y=4.32)	1/2" 0.009%(y=4.0)
Back Focal Length	18.0mm (WD=300mm)		
Flange Back Length	17.526mm		
Mount	C-Mount		
Filter Size	M27.0 P=0.5mm		
Dimensions	φ 29mm x 37.34mm		
Weight	59g		

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			2/3"		1/1.8"		1/2"	
			H	V	H	V	H	V
900	-0.040	-	221.8	166.4	174.0	131.2	161.4	121.1
850	-0.042	-	209.3	157.0	164.2	123.8	152.3	114.2
800	-0.045	-	196.7	147.6	154.3	116.3	143.2	107.4
750	-0.048	-	184.2	138.2	144.5	108.9	134.0	100.6
700	-0.051	-	171.7	128.8	134.7	101.5	124.9	93.7
650	-0.055	-	159.2	119.4	124.8	94.1	115.8	86.9
600	-0.060	-	146.6	110.0	115.0	98.7	106.7	80.0
550	-0.066	-	134.1	100.6	105.2	79.3	97.6	73.2
500	-0.072	-	121.6	91.2	95.3	71.9	88.4	66.3
450	-0.081	-	109.0	81.8	85.5	64.5	79.3	59.5
400	-0.091	-	96.5	72.4	75.7	57.0	70.2	52.7
350	-0.105	-	84.0	63.0	65.8	49.6	61.1	45.8
300	-0.123	-	71.4	53.6	56.0	42.2	52.0	39.0
250	-0.150	-	58.9	44.2	46.2	34.8	42.8	32.1
200	-0.190	-	46.3	34.8	36.3	27.4	33.7	25.3
150	-0.261	5	33.8	25.3	26.5	20.0	24.6	18.4
100	-0.417	10	21.2	15.9	16.6	12.5	15.4	11.5

Field of View = CCD Size / Optical Magnification

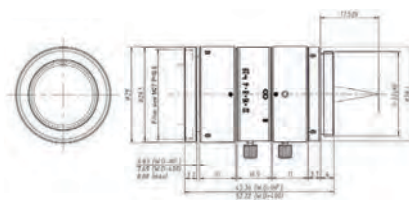
### M5028-MPW2

2/3"

5MP

FIX

MANUAL



Focal Length		50mm				
Max. Aperture Ratio		1:2.8				
Max. Image Format		8.8mm x 6.6mm (ϕ 11mm)				
Operation Range	Iris	F2.8 - F32.0				
	Focus	0.4m - Inf.				
Control	Iris	Manual				
	Focus	Manual				
Object Dimension at M.O.D.		4.78cm x 6.38cm 2/3"				
Angle of View	D	2/3"	12.5°	1/1.8"	9.9°	9.1°
	H		10.0°		7.9°	7.3°
	V		7.5°		5.9°	5.5°
Operating Temperature		-10° C ~ +50° C				

Distortion	2/3" 0.027%(y=5.5)	1/1.8" 0.017%(y=4.32)	1/2" 0.015%(y=4.0)
Back Focal Length	27.7mm (WD=400mm)		
Flange Back Length	17.526mm		
Mount	C-Mount		
Filter Size	M27.0 P=0.5mm		
Dimensions	φ 29mm x 45.36mm		
Weight	69g		

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			2/3"		1/1.8"		1/2"	
			H	V	H	V	H	V
900	-0.058	-	151.7	113.8	118.9	89.6	110.3	82.7
850	-0.062	-	142.9	107.2	112.0	84.4	103.9	77.9
800	-0.066	-	134.1	100.6	105.1	79.2	97.5	73.1
750	-0.070	-	125.3	94.0	98.2	74.0	91.1	68.3
700	-0.075	-	116.5	87.4	91.3	68.9	84.7	63.6
650	-0.082	-	107.7	80.8	84.5	63.7	78.3	58.8
600	-0.089	-	98.9	74.2	77.6	58.5	71.9	54.0
550	-0.098	-	90.1	67.6	70.7	53.3	65.6	49.2
500	-0.108	-	81.3	61.0	63.8	48.1	59.2	44.4
450	-0.121	-	72.6	54.4	56.9	42.9	52.8	39.6
400	-0.138	-	63.8	47.8	50.0	37.7	46.4	34.8
350	-0.160	1	55.0	41.2	43.1	32.5	40.0	30.0
300	-0.191	5	46.2	34.6	36.2	27.3	33.6	25.2
250	-0.235	5	37.4	28.1	29.3	22.1	27.2	20.4
200	-0.308	10	28.6	21.5	22.4	16.9	20.8	15.6
150	-0.445	20	19.8	14.9	15.5	11.7	14.4	10.8
100	-0.801	40	11.0	8.2	8.6	6.5	8.0	6.0

Field of View = CCD Size / Optical Magnification

## M2518-MPW

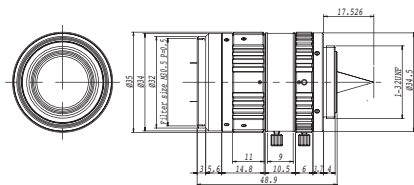
2/3"

5MP

FIX

MANUAL

FLOATING



Focal Length		25mm					
Max. Aperture Ratio		1:1.8					
Max. Image Format		8.8mm x 6.6mm (φ 11mm)					
Operation Range	Iris	F1.8 - F16.0					
	Focus	0.15m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at M.O.D.		4.10cm x 5.48cm 2/3"					
Angle of View	D		25.4°		20.1°		18.6°
	H	2/3"	20.5°	1/1.8"	16.1°	1/2"	15.0°
	V		15.4°		12.2°		11.3°
Operating Temperature		-10° C ~ +50° C					

Distortion	2/3"	0.03%(γ=5.5)	1/1.8"	-0.02%(γ=4.32)	1/2"	-0.02%(γ=4.0)
Back Focal Length	14.0mm (WD=300mm)					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M30.5 P=0.5mm					
Dimensions	φ 35mm x 48.90mm					
Weight	102g					

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			2/3"		1/1.8"		1/2"	
			H	V	H	V	H	V
900	-0.027	-	325.4	243.4	254.5	191.9	236.1	177.1
850	-0.029	-	306.2	229.9	240.3	181.2	222.9	167.3
800	-0.030	-	288.2	216.3	226.1	170.5	209.8	157.4
750	-0.033	-	270.2	202.8	212.0	159.8	196.7	147.5
700	-0.035	-	252.1	189.3	197.8	149.2	183.5	137.7
650	-0.038	-	234.1	175.7	183.7	138.5	170.4	127.8
600	-0.041	-	216.1	162.2	169.5	127.8	157.3	118.0
550	-0.044	-	198.1	148.7	155.4	117.1	144.2	108.1
500	-0.049	-	180.1	135.1	141.3	106.5	131.0	98.3
450	-0.054	-	162.1	121.6	127.1	95.8	117.9	88.5
400	-0.061	-	144.1	108.1	113.0	85.2	104.8	78.6
350	-0.070	-	126.1	94.6	98.9	74.5	91.7	68.8
300	-0.081	-	108.2	81.1	84.8	63.9	78.7	59.0
250	-0.098	-	90.3	67.7	70.8	53.3	65.6	49.2
200	-0.122	-	72.4	54.3	56.8	42.8	52.6	39.5
150	-0.161	-	54.8	41.0	42.9	32.3	39.8	29.8
100	-0.236	5	37.5	28.1	29.4	22.1	27.2	20.4

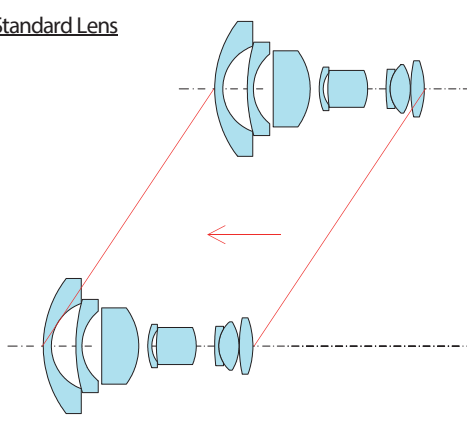
Field of View = CCD Size / Optical Magnification

## FLOATING

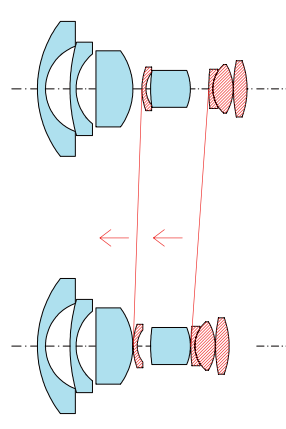
Basically, lens is designed to show the best performance at a certain working distance. Due to this design, a curvature of field\* is caused at other working distances, and the picture deteriorates at the corners. This curvature of field is able to be modified by a method called Floating, which makes 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.

Standard Lens



Floating Lens



C-MOUNT  
1.1" 12 MP

# 12 MEGAPIXEL C-MOUNT LENS

MACHINE VISION LENSES

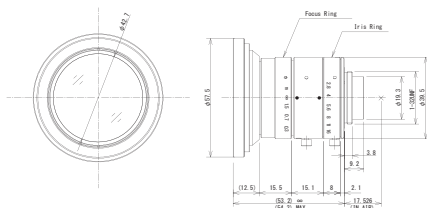
- 8, 12, 16, 25, 35, 50mm. 6 Lens Series
- Compatible with 1.1" (φ 17.6mm) Large Format Sensor

- Ultra-High Resolution 12MP
- Compact 1.1" Design (smallest 12MP lens in the industry)

**NEW**

## V0828-MPY

1.1"  
12MP  
FIX  
MANUAL  
FLOATING



Focal Length		8mm					
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	0.2m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at M.O.D.		375.6(H)mm x 273.3(V)mm 1.1"					
Angle of View	D	1.1"	93.9°	1"	89.3°	2/3"	69.0°
	H		83.0°		77.3°		57.3°
	V		66.0°		61.7°		44.2°
Operating Temperature		-10°C ~ +50°C					

Distortion	1.1"	-0.6%(y=8.0)	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	ϕ 75mm x 54mm					
Weight	155g					

\*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 P22.

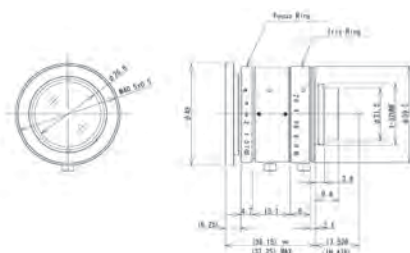
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.008	-	1790.8	1310.2	1617.6	1206.7	1103.1	820.5
950	0.009	-	1702.4	1245.4	1537.7	1147.0	1048.6	780.0
900	0.009	-	1614.2	1180.9	1458.0	1087.5	994.2	739.5
850	0.010	-	1525.9	1116.2	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

**NEW**

## V1228-MPY

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					
Object Dimension at M.O.D.		351.6(H)mm x 257.0(V)mm 1.1"					
Angle of View	D	1.1"	71.1°	66.4°	2/3"	48.6°	
	H		60.5°	55.5°		39.6°	
	V		46.2°	42.9°		30.1°	
Operating Temperature		-10°C ~ +50°C					

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	98g					

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

NEW

## V1628-MPY

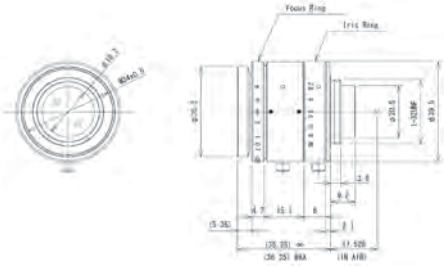
1.1"

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					
Object Dimension at M.O.D.		264.6(H)/mm x 193.8(V)/mm 1.1"					
Angle of View	D		57.9°		53.4°		38.2°
	H	1.1 "	48.2°	1"	43.9°	2/3"	30.9°
	V		36.2°		33.6°		23.4°
Operating Temperature		-10°C ~ +50°C					

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	91g					

Field of View = CCD Size / Optical Magnification

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

NEW

## V2528-MPY

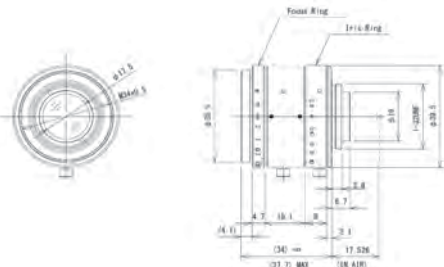
1.1"

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					
Object Dimension at M.O.D.		158.7(H)mm x 116.2(V)mm 1.1"					
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					

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

C-MOUNT  
1.1" 12MP

# 1.1" 12 MEGAPIXEL C-MOUNT LENS

MACHINE VISION LENS

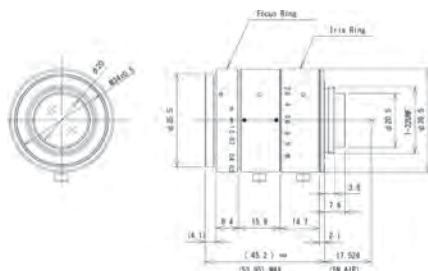
- 8, 12, 16, 25, 35, 50mm. 6 Lens Series
- Compatible with 1.1" (φ 17.6mm) Large Format Sensor

- Ultra-High Resolution 12MP
- Compact 1.1" Design (smallest 12MP lens in the industry)

**NEW**

## V3528-MPY

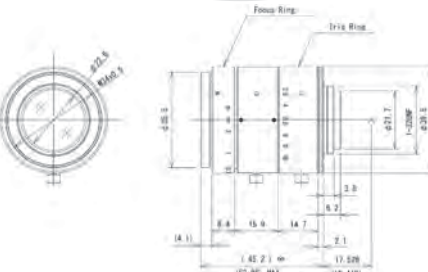
1.1"  
12MP  
FIX  
MANUAL  
FLOATING



**NEW**

## V5028-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			
Object Dimension at M.O.D.		109.3(H)mm x 80.1(V)mm 1.1"			
Angle of View	D	28.2°	25.8°	17.9°	
	H	22.9°	20.7°	14.3°	
	V	16.9°	15.6°	10.8°	
Operating Temperature		-10°C ~ +50°C			

Distortion	1.1"	0.1%(y=8.8)	1"	0.0%(y=8.0)	2/3"	0.0%(y=5.5)
Back Focal Length	11.7mm					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M34.0 P=0.5mm					
Dimensions	φ 39.5mm x 45.2mm					
Weight	103g					

Field of View = CCD Size / Optical Magnification

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

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					
Object Dimension at M.O.D.		115.9(H)mm x 84.8(V)mm 1.1"					
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					

Distortion	1.1"	0.1%(y=8.8)	1"	0.1%(y=8.0)	2/3"	0.1%(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 45.1mm					
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

# 1" 2 MEGA PIXEL LENS

MACHINE VISION LENS

C-MOUNT  
1" 2MP

• 8, 12, 16, 25, 50mm. 5 Lens Series • Compatible with 1" (φ 16mm) Large Format Sensor • High Resolution 2 Megapixel

NEW

## V0814-MP

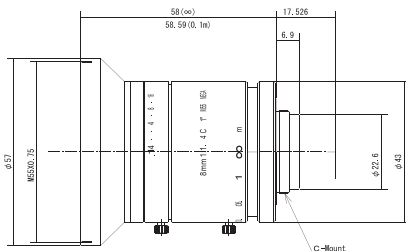


1"

2MP

FIX

MANUAL



Focal Length		8mm				
Max. Aperture Ratio		1:1.4				
Max. Image Format		12.8mm x 9.6mm ( φ 16mm)				
Operation Range	Iris	F1.4 - F16.0				
	Focus	0.1m - Inf.				
Control	Iris	Manual				
	Focus	Manual				
Object Dimension at M.O.D.		19.5cm x 14.2cm 1"				
Angle of View	D	92.4°	82.4°	70.7°		
	H	79.7°	43.9°	58.3°		
	V	63.0°	47.9°	44.7°		
Operating Temperature		-10°C ~ +50°C				

Distortion	1"	7.07%(y=8.0)	1/1.2"	7.30%(y=6.7)	2/3"	6.03%(y=5.5)
Back Focal Length	11.65mm					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M55.0 P=0.75mm					
Dimensions	φ 57mm x 58mm					
Weight	250g					

Field of View = CCD Size / Optical Magnification

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1"		1/1.2"		2/3"	
			H	V	H	V	H	V
1000	0.007	-	1,947.9	1,423.4	1,712.1	1,075.8	1,333.3	1,000.0
950	0.007	-	1,850.5	1,352.2	1,637.7	1,029.0	1,275.4	956.5
900	0.007	-	1,753.1	1,281.1	1,548.0	972.6	1,205.5	904.1
850	0.008	-	1,655.7	1,209.9	1,467.5	922.1	1,142.9	857.1
800	0.008	-	1,558.3	1,138.7	1,378.1	865.9	1,073.2	804.9
750	0.009	-	1,460.9	1,067.6	1,284.1	806.8	1,000.0	750.0
700	0.009	-	1,363.5	996.4	1,202.1	755.3	936.2	702.1
650	0.010	-	1,266.1	925.2	1,118.8	703.0	871.3	653.5
600	0.011	-	1,168.7	854.0	1,027.3	645.5	800.0	600.0
550	0.012	-	1,071.4	782.9	949.6	596.6	739.5	554.6
500	0.013	-	974.0	711.7	862.6	542.0	671.8	503.8
450	0.015	-	876.6	640.5	774.0	486.3	602.7	452.1
400	0.016	-	779.2	569.4	689.0	432.9	536.6	402.4
350	0.019	-	681.8	498.2	601.1	377.7	468.1	351.1
300	0.022	-	584.4	427.0	516.0	324.2	401.8	301.4
250	0.026	-	487.0	355.9	429.7	270.0	334.6	251.0
200	0.033	-	389.6	284.7	343.5	215.8	267.5	200.6
150	0.044	-	292.2	213.5	258.0	162.1	200.9	150.7
100	0.066	-	194.8	142.3	170.0	103.0	129.6	95.4

NEW

## V1214-MP

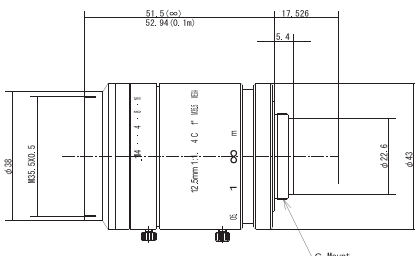


1"

2MP

FIX

MANUAL



Focal Length		12.5mm					
Max. Aperture Ratio		1:1.4					
Max. Image Format		12.8mm x 9.6mm ( ϕ 16mm)					
Operation Range	Iris	F1.4 - F16.0					
	Focus	0.1m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at M.O.D.		11.9cm x 8.8cm 1"					
Angle of View	D	1"	67.6°	1/1.2"	58.0°	2/3"	48.4°
	H		56.5°		49.6°		39.1°
	V		42.5°		31.7°		29.5°
Operating Temperature		-10°C ~ +50°C					

Distortion	1"	5.93%(y=8.0)	1/1.2"	4.9%(y=6.7)	2/3"	3.63%(y=5.5)
Back Focal Length	12.55mm					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M35.5 P=0.5mm					
Dimensions	φ 38mm x 51.5mm					
Weight	175g					

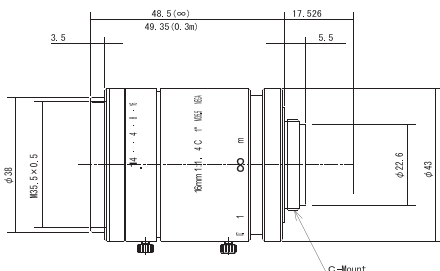
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1"		1/1.2"		2/3"	
			H	V	H	V	H	V
1000	0.011	-	1,192.7	877.6	1,056.1	663.6	822.4	616.8
950	0.011	-	1,133.1	833.7	1,000.0	628.3	778.8	584.1
900	0.012	-	1,073.4	789.8	949.6	596.6	739.5	554.6
850	0.013	-	1,013.8	746.0	896.8	563.5	698.4	523.8
800	0.013	-	954.2	702.1	843.3	529.9	656.7	492.5
750	0.014	-	894.5	658.2	790.2	496.5	615.4	461.5
700	0.015	-	834.9	614.3	738.6	464.1	575.2	431.4
650	0.017	-	775.3	570.4	684.9	430.3	533.3	400.0
600	0.018	-	715.6	526.6	631.3	396.7	491.6	368.7
550	0.020	-	656.0	482.7	579.5	364.1	451.3	338.5
500	0.022	-	596.4	438.8	525.6	330.2	409.3	307.0
450	0.024	-	536.7	394.9	474.8	298.3	369.8	277.3
400	0.027	-	477.1	351.0	421.6	264.9	328.4	246.3
350	0.031	-	417.5	307.2	368.1	231.3	286.6	215.0
300	0.036	-	357.0	262.7	314.8	197.8	245.1	183.8
250	0.043	-	298.2	219.4	263.4	165.5	205.1	153.9
200	0.054	-	238.5	175.5	210.4	132.2	163.9	122.9
150	0.072	-	178.9	131.6	158.0	99.3	123.1	92.3
100	0.107	-	119.3	87.8	104.3	64.1	80.1	59.5

Field of View = CCD Size / Optical Magnification

## MACHINE VISION LENS

**NEW**

1"  
2MP  
FIX  
MANUAL



Focal Length		16mm					
Max. Aperture Ratio		1:1.4					
Max. Image Format		12.8mm x 9.6mm ( $\phi$ 16mm)					
Operation Range	Iris	F1.4 - F16.0					
	Focus	0.3m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at M.O.D.		25.2cm x18.7cm 1"					
Angle of View	D	1"	54.4°	1/1.2"	46.2°	2/3"	38.3°
	H		44.3°		39.3°		30.3°
	V		33.6°		24.9°		23.2°
Operating Temperature		-10°C ~ +50°C					

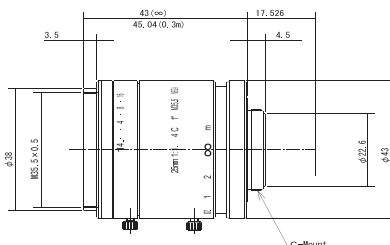
Distortion	1"	-3.84%(y=8.0)	1/1.2"	-3.0%(y=6.7)	2/3"	-2.24%(y=5.5)
Back Focal Length	12.14mm					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M 35.5 P=0.5mm					
Dimensions	φ 38mm x 48.5mm					
Weight	170g					

$$\text{Field of View} = \text{CCD Size} / \text{Optical Magnification}$$

Working Distance	Optical Magnification	Extension Ring	Field of View(mm)					
			1"		1/1.2"		2/3"	
(mm)		(mm)	H	V	H	V	H	V
1000	0.015	-	840.4	622.5	743.4	467.1	579.0	434.2
950	0.016	-	798.4	591.3	706.3	443.8	550.0	412.5
900	0.017	-	756.4	560.2	668.6	420.1	520.7	390.5
850	0.018	-	714.3	529.1	631.3	396.7	491.6	368.7
800	0.019	-	672.3	498.0	594.7	373.7	463.2	347.4
750	0.020	-	630.3	466.9	556.7	349.8	433.5	325.1
700	0.022	-	588.3	435.7	518.4	325.7	403.7	302.8
650	0.023	-	546.3	404.6	482.9	303.4	376.1	282.1
600	0.025	-	504.2	373.5	444.9	279.5	346.5	259.8
550	0.028	-	462.2	342.4	407.9	256.3	317.7	238.3
500	0.031	-	420.2	311.2	370.5	232.8	288.5	216.4
450	0.034	-	378.2	280.1	334.3	210.1	260.4	195.3
400	0.038	-	336.2	209.3	296.6	186.4	231.0	173.2
350	0.044	-	294.1	217.9	259.8	163.2	202.3	151.7
300	0.051	-	252.1	186.7	221.2	137.0	170.7	127.2
250	0.070	1.0	182.4	136.8	161.0	101.1	125.4	94.0
200	0.090	1.5	142.9	107.3	126.3	79.3	98.3	73.7
150	0.124	2.0	103.4	77.6	91.4	57.4	71.1	53.4
100	0.200	3.0	63.9	48.0	56.4	35.5	44.0	33.0

**NEW**

1"  
2MP  
FIX  
MANUAL



Focal Length		25mm				
Max. Aperture Ratio		1:1.4				
Max. Image Format		12.8mm x 9.6mm ( $\phi$ 16mm)				
Operation Range	Iris	F1.4 - F16.0				
	Focus	0.3m - Inf.				
Control	Iris	Manual				
	Focus	Manual				
Object Dimension at M.O.D.		16.1cmx11.9cm 1"				
Angle of View	D	36.6°		30.7°		25.2°
	H	29.3°	1/1.2"	25.9°	2/3"	20.2°
	V	22.0°		16.3°		15.1°
Operating Temperature		-10°C ~ +50°C				

Distortion	1"	-3.14%(y=8.0)	1/1.2"	-2.2%(y=6.7)	2/3"	-1.48%(y=5.5)
Back Focal Length	15.71mm					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M35.5 P=0.5mm					
Dimensions	ø 38mm x 43mm					
Weight	150g					

$$\text{Field of View} = \text{CCD Size} / \text{Optical Magnification}$$

Working Distance	Optical Magnification	Extension Ring	Field of View(mm)					
			1"		1/1.2"		2/3"	
(mm)		(mm)	H	V	H	V	H	V
1000	0.024	-	536.3	401.7	472.8	297.1	368.2	276.2
950	0.025	-	509.5	382.5	450.2	282.9	350.6	263.0
900	0.027	-	482.6	362.3	426.4	267.9	332.1	249.1
850	0.028	-	455.8	341.6	402.1	252.7	313.2	234.9
800	0.030	-	429.0	322.2	379.2	238.3	295.3	221.5
750	0.032	-	402.2	301.9	355.4	223.3	276.7	207.6
700	0.034	-	375.4	281.5	331.4	208.2	258.1	193.6
650	0.037	-	348.6	261.6	307.9	193.5	239.8	179.8
600	0.040	-	321.8	241.2	283.9	178.4	221.1	165.8
550	0.043	-	295.0	221.2	260.4	163.6	202.8	152.1
500	0.048	-	268.1	201.3	236.9	148.9	184.5	138.4
450	0.053	-	241.3	181.1	213.2	134.0	166.0	124.5
400	0.060	-	214.5	160.8	189.3	118.9	147.4	110.6
350	0.068	-	187.7	140.8	165.7	104.1	129.0	96.8
300	0.080	-	160.9	119.2	141.2	87.6	109.1	81.3
250	0.106	2.5	120.7	90.6	106.6	67.0	83.0	62.3
200	0.135	3.5	95.1	71.3	84.0	52.8	65.4	49.0
150	0.184	4.5	69.5	52.2	61.4	38.6	47.8	35.9
100	0.291	7.5	43.9	32.9	38.8	24.4	30.2	22.7

# 1" 2 MEGA PIXEL LENS

MACHINE VISION LENS

C-MOUNT  
1" 2MP

• 8, 12, 16, 25, 50mm. 5 Lens Series • Compatible with 1" (φ 16mm) Large Format Sensor • High Resolution 2 Megapixel

NEW

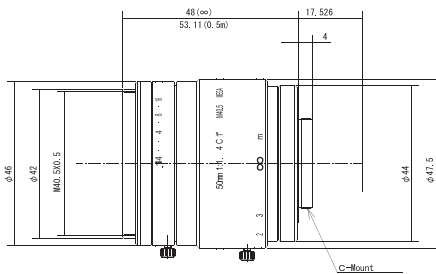
## V5014-MP

1"

2MP

FIX

MANUAL



Focal Length		50mm					
Max. Aperture Ratio		1:1.4					
Max. Image Format		12.8mm x 9.6mm ( ϕ 16mm)					
Operation Range	Iris	F1.4 - F16.0					
	Focus	0.5m - Inf.					
Control	Iris	Manual					
	Focus	Manual					
Object Dimension at M.O.D.		12.6cmx9.4cm 1"					
Angle of View	D		18.0°		15.1°		9.1°
	H	1"	14.5°	1/1.2"	12.8°	2/3"	7.3°
	V		10.9°		8.1°		5.5°
Operating Temperature		-10°C ~ +50°C					

Distortion	1"	0.82%(y=8.0)	1/1.2"	0.7%(y=6.7)	2/3"	0.51%(y=5.5)
Back Focal Length	14.55mm					
Flange Back Length	17.526mm					
Mount	C-Mount					
Filter Size	M40.5 P=0.5mm					
Dimensions	φ 46mm x 48mm					
Weight	200g					

Field of View = CCD Size / Optical Magnification

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1"		1/1.2"		2/3"	
			H	V	H	V	H	V
1000	0.051	-	251.5	188.2	222.1	139.5	172.9	129.7
950	0.054	-	239.0	178.8	211.0	132.6	164.3	123.2
900	0.057	-	226.4	169.4	199.9	125.6	155.6	116.7
850	0.060	-	213.8	160.0	188.8	118.6	147.0	110.2
800	0.064	-	201.2	150.6	177.7	111.6	138.4	103.8
750	0.068	-	188.7	141.2	166.6	104.7	129.7	97.3
700	0.073	-	176.1	131.8	155.5	97.7	121.1	90.8
650	0.078	-	163.5	122.3	144.3	90.7	112.4	84.3
600	0.085	-	150.9	112.9	133.2	83.7	103.8	77.8
550	0.093	-	138.3	103.5	122.1	76.7	95.1	71.3
500	0.102	-	125.8	94.1	110.9	69.5	86.2	64.2
450	0.113	5.5	113.0	84.7	99.7	62.7	77.7	58.3
400	0.128	6.5	100.2	75.1	88.4	55.6	68.9	51.6
350	0.147	7.5	87.4	65.5	77.1	48.5	60.1	45.1
300	0.172	8.5	74.6	55.9	65.8	41.4	51.3	38.4
250	0.207	10.5	61.8	46.3	54.5	34.3	42.5	31.9
200	0.261	13.0	49.0	36.7	43.2	27.2	33.7	25.3
150	0.354	17.5	36.2	27.1	31.9	20.1	24.9	18.7
100	0.548	25.5	23.4	17.5	20.6	13.0	16.1	12.1

# MEGA PIXEL VARIFOCAL LENS

MACHINE VISION LENS

C-MOUNT  
2/3" 1MP

• Useful range of focal length for Machine Vision: f=12mm - 36mm • Locking set screws for zoom, focus and iris

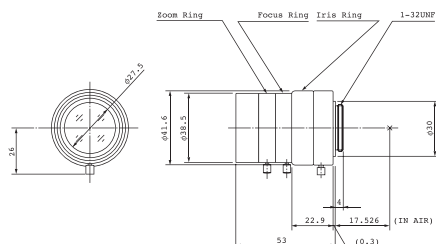
## M3Z1228C-MP

2/3"

1MP

VARI

MANUAL



Focal Length		12mm - 36mm			
Max. Aperture Ratio		1:2.8			
Max. Image Format		8.8mm x 6.6mm ( ϕ 11mm)			
Operation Range	Iris	F2.8 - F16C			
	Focus	0.2m - Inf.(Tele) 0.05m - Inf.(Wide)			
	Zoom	12mm - 36mm			
Control	Iris	Manual			
	Focus	Manual			
	Zoom	Manual			
Object Dimension at M.O.D.	12mm	4.0(H)cm x 3.0(V)cm 2/3"			
	36mm	4.8(H)cm x 3.6(V)cm 2/3"			
Angle of View	D	2/3"	50.4° - 16.8°	1/2"	37.5° - 12.5°
	H		41.0° - 13.6°		30.2° - 10.0°
	V		31.2° - 10.4°		22.8° - 7.6°
Operating Temperature		-10°C ~ +50°C			

※ Please note M3Z1228C-MP is produced to order

Effective Lens Aperture	Front	ϕ 27.2mm			
	Rear	ϕ 12.1mm			
Back Focal Length	Tele	13.5mm			
	Wide	14.7mm			
Distortion	Tele	2/3"	+3.5%(y=5.5)	1/2"	+1.7%(y=4.0)
	Wide		-2.6% (y=5.5)		-1.9%(y=4.0)
Flange Back Length		17.526mm			
Mount		C-Mount			
Filter Size		M35.5 P=0.5mm			
Dimensions		ϕ 41.6mm x 53			
Weight		105g			

MACRO ZOOM LENS  
MACHINE VISION LENS

- Wide zoom range for general inspection, documentation, and visual aid applications

# MLH-10X



1/2"

MACRO



MANUAL

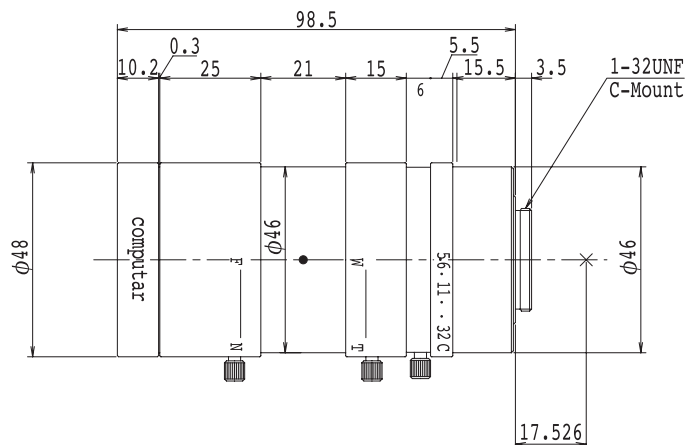
Optical Magnification		0.084X - 0.84X					
Max. Magnification		0.084mm - 0.84mm					
Max. Aperture Ratio		1:5.6					
Max. Image Format		6.4mm x 4.8mm (φ 8mm)					
Operation Range	Iris	F5.6 - F32C					
	Focus	0.15m - 0.45m					
Control	Iris	Manual					
	Focus	Manual					
	Zoom	Manual					
Angle of View	D		21.6° - 4.5°		17.0° - 3.3°		13.0° - 2.5°
	H	1/2"	18.0° - 3.6°	1/3"	13.8° - 2.7°	1/4"	10.6° - 2.0°
	V		13.8° - 2.7°		10.6° - 2.0°		8.0° - 1.5°
Operating Temperature		-10°C ~ +50°C					

Distortion	1/2"	+0.9% at 0.084X (y=4.0)
		+1.6% at 0.84X (y=4.0)
Back Focal Length	23.29mm	
Flange Back Length	17.526mm	
Mount	C-Mount	
Filter Size	M46 P=0.75mm	
Dimensions	φ 48mm x 98.5mm	
Weight	260g	

Working Distance		Optical Magnification	Field of View(mm)											
			1/2"				Magnification on Monitor	1/3"				Magnification on Monitor	1/4"	
(mm)			H	V	D		H	V	D		H	V	D	
150	Wide	0.084X	76.2	57.1	95.2	3.73X	57.1	42.9	71.4	4.98X	42.9	32.1	53.6	6.64X
	Middle	0.19X	33.5	25.2	42.3	8.47X	25.2	18.9	31.4	11.29X	18.9	14.2	23.6	15.06X
	Tele	0.84X	7.6	5.7	9.5	37.34X	5.7	4.3	7.1	49.78X	4.3	3.2	5.4	66.38X
200	Wide	0.06X	106.7	80.0	133.3	2.67X	80.0	60.0	100.0	3.56X	60.0	45.0	75.0	4.74X
	Middle	0.13X	47.8	36.1	59.4	5.87X	36.1	27.2	44.9	7.83X	27.2	20.4	33.9	10.44X
	Tele	0.60X	10.7	8.0	13.3	26.67X	8.0	6.0	10.0	35.56X	6.0	4.5	7.5	47.41X
250	Wide	0.045X	142.2	106.7	177.8	2.00X	106.7	80.0	133.3	2.67X	80.0	60.0	100.0	3.56X
	Middle	0.101X	62.3	47.1	77.0	4.49X	47.1	35.5	58.5	5.99X	35.5	26.7	44.2	7.98X
	Tele	0.45X	14.2	10.7	17.8	20.00X	10.7	8.0	13.3	26.67X	8.0	6.0	10.0	35.56X
300	Wide	0.036X	177.8	133.3	222.2	1.60X	133.3	100.0	166.7	2.13X	100.0	75.0	125.0	2.84X
	Middle	0.082X	76.8	58.2	94.8	3.63X	58.2	43.8	72.2	4.84X	43.8	33.0	54.6	6.46X
	Tele	0.36X	17.8	13.3	22.2	16.00X	13.3	10.0	16.7	21.34X	10.0	7.5	12.5	28.45X
350	Wide	0.03X	213.3	160.0	266.7	1.33X	160.0	120.0	200.0	1.78X	120.0	90.0	150.0	2.37X
	Middle	0.069X	91.4	69.3	112.7	3.05X	69.3	52.2	85.9	4.07X	52.2	39.3	65.0	5.42X
	Tele	0.30X	21.3	16.0	26.7	13.34X	16.0	12.0	20.0	17.78X	12.0	9.0	15.0	23.71X
400	Wide	0.025X	256.0	192.0	320.0	1.11X	192.0	144.0	240.0	1.48X	144.0	108.0	180.0	1.98X
	Middle	0.06X	106.0	80.3	130.7	2.63X	80.3	60.6	99.7	3.5X	60.6	45.6	75.4	4.67X
	Tele	0.25X	25.6	19.2	32.0	11.11X	19.2	14.4	24.0	14.82X	14.4	10.8	18.0	19.76X
450	Wide	0.022X	290.9	218.2	363.6	0.98X	218.2	163.6	272.7	1.30X	163.6	122.7	204.5	1.74X
	Middle	0.05X	120.7	91.5	148.7	2.31X	91.5	69.0	113.5	3.08X	69.0	51.9	85.9	4.1X
	Tele	0.22X	29.1	21.8	36.4	9.78X	21.8	16.4	27.3	13.04X	16.4	12.3	20.5	17.38X

Field of View : Horizontal (mm) x Vertical (mm) x Diagonal (mm)

Monitor Magnification on 14inch Monitor

$$\text{Magnification on Monitor} = \text{Optical Magnification} \times \text{Monitor Size} / \text{CCD Size}$$


# MEGAPIXEL MACRO ZOOM LENS

MACHINE VISION LENS

MACRO  
ZOOM

- Captures full resolution of megapixel cameras
- High contrast & sharp picture in all areas of the screen
- Compact design-Diameter 36.5mm
- Locking set screws for zoom, focus, and iris
- Low distortion
- High resolution macro zoom lens
- 3.3X magnification
- Attachment of fiber ring light can be installed (Ring Guide: M34 P=0.5)

## MLM-3XMP

2/3"

1MP

MACRO

ZOOM

MANUAL



Max. Magnification	0.3X - 1.0X		
Max. Aperture Ratio	1:4.5		
Max. Image Format	8.8mm x 6.6mm (φ 11mm)		
Operation Range	Iris	F4.5 - F22C	
	Focus	90mm	
Control	Iris	Manual	
	Focus	Manual	
	Zoom	Manual	
Angle of View	D	14.88° - 2.84°	10.70° - 2.72°
	H	2/3" 11.80° - 2.78°	1/2" 8.48° - 2.18°
	V	8.74° - 2.24°	6.38° - 1.64°
Operating Temperature	-10° C ~ +50° C		

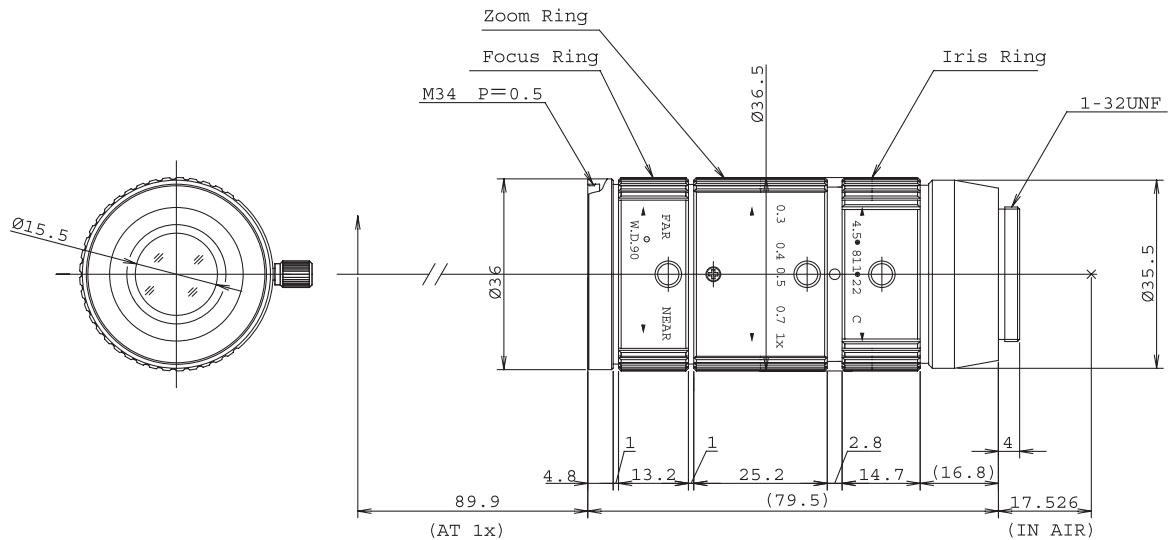
Distortion	2/3"	+0.12% at 0.3X (y=5.5)	1/2"	-0.12% at 0.3X (y=4.0)
		+1.78% at 1.0X (y=5.5)		+0.77% at 1.0X (y=4.0)
Back Focal Length	20.4mm			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M34 P=0.5mm			
Dimensions	φ 36.5mm x 79.5mm			
Weight	150g			

Monitor Magnification on 14inch Monitor

Working Distance: 90mm

Magnification on Monitor = Optical Magnification x Monitor Size / CCD Size

Optical Magnification	Field of View(mm)											
	2/3"			Magnification on Monitor	1/2"			Magnification on Monitor	1/3"			Magnification on Monitor
	H	V	D		H	V	D		H	V	D	
0.3X	29.3	22.0	36.7	9.7X	21.3	16.0	26.7	13.3X	16.0	12.0	20.0	17.8X
0.4X	22.0	16.5	27.5	12.9X	16.0	12.0	20.0	17.8X	12.0	9.0	15.0	23.7X
0.5X	17.6	13.2	22.0	16.2X	12.8	9.6	16.0	22.2X	9.6	7.2	12.0	29.6X
0.6X	14.7	11.0	18.3	19.4X	10.7	8.0	13.3	26.7X	8.0	6.0	10.0	35.6X
0.7X	12.6	9.4	15.7	22.6X	9.1	6.9	11.4	31.1X	6.9	5.1	8.6	41.5X
0.8X	11.0	8.3	13.8	25.9X	8.0	6.0	10.0	35.6X	6.0	4.5	7.5	47.4X
0.9X	9.8	7.3	12.2	29.1X	7.1	5.3	8.9	40.0X	5.3	4.0	6.7	53.3X
1.0X	8.8	6.6	11.0	32.3X	6.4	4.8	8.0	44.5X	4.8	3.6	6.0	59.3X



# 5 MEGAPIXEL TELECENTRIC MACRO ZOOM LENS

## MACHINE VISION LENS

- 5 megapixel resolution for a 1.1-inch sensor
- 7.1X magnification (0.5X - 0.07X)
- Relative Illumination rate is more than 70%

- Adjustable W.D. (182mm - 577.2mm)
- Telecentric design at 0.25X - 0.5X

### TEC-V7X



1.1"

5MP

TELECEN

MACRO

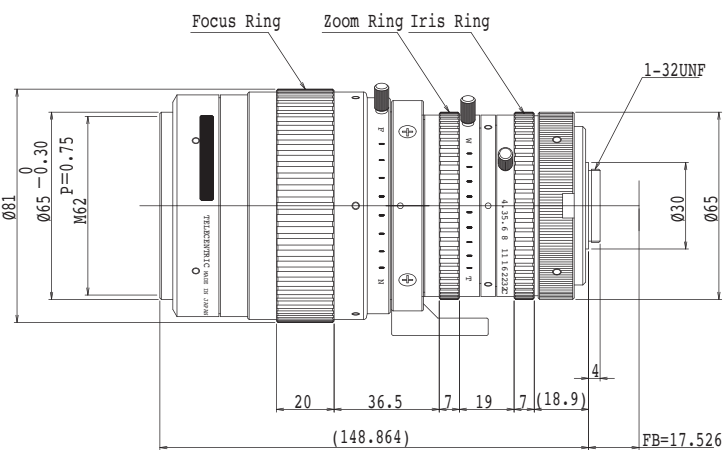
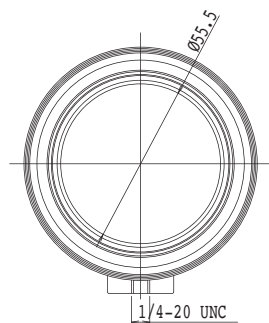
ZOOM

MANUAL

Optical Magnification	0.07X - 0.5X
Max. Aperture Ratio	1 : 4.3
Max. Image Format	12.3mm x 12.3mm ( $\phi$ 17.4mm)
Operation Range	Iris F4.3 - F32
	Focus 182mm - 577.2mm
Control	Iris Manual operation
	Focus Manual operation
	Zoom Manual operation
Operating Temperature	-10° C ~ 50° C

Optical distortion	tele	1.1"	1.0%	1"	0.84%	2/3"	0.39%
	wide		-1.7%		-1.45%		-0.7%
BackFocal Length	tele	39.53mm					
	wide	49.78mm					
Flange Back Length	17.526mm						
Mount	C Mount						
Filter Size	M62 P=0.75mm						
Dimensions	ϕ 61 x 152.86mm						
Weight	1.4kg						

Working Distance(mm)		Optical Magnification	Field of View(mm)								
			1.1"			1"			2/3"		
(mm)			H	V	D	H	V	D	H	V	D
182	Wide	0.2525	48.74	48.74	69.12	50.32	38.06	63.28	34.88	26.16	43.6
	Middle	0.3643	33.64	33.64	47.33	34.72	26.3	43.6	24.12	18.1	30.11
	Tele	0.5	24.6	24.6	34.75	25.4	19.246	31.88	17.65	13.26	22
200	Wide	0.2258	54.52	54.62	76.94	56.3	42.56	70.84	39	29.24	48.76
	Middle	0.3258	37.62	37.62	52.95	38.83	29.4	48.78	26.96	20.24	33.67
	Tele	0.4451	27.5	27.5	38.68	28.38	21.51	35.64	19.72	14.81	24.62
300	Wide	0.1413	87.48	87.48	124.06	90.34	68.18	114.1	62.46	46.8	78.178
	Middle	0.2037	60.24	60.24	85.34	62.18	47.06	78.18	42.15	32.38	53.898
	Tele	0.2784	44	44	61.94	45.42	34.3	57.46	31.55	23.69	39.38
400	Wide	0.1037	119.47	119.47	169.98	123.4	93.02	156.05	85.2	63.82	106.71
	Middle	0.1495	82.15	82.15	115.97	84.8	64.16	106.72	58.82	44.12	73.48
	Tele	0.2042	59.99	59.99	84.52	61.92	46.89	77.82	43	32.28	53.7
500	Wide	0.082	151.25	151.25	215.44	156.25	117.67	197.8	107.78	80.68	135.04
	Middle	0.1183	103.92	103.92	146.82	107.28	81.12	135	74.37	55.78	92.94
	Tele	0.1617	75.84	75.84	106.89	78.29	59.28	98.4	54.36	40.8	67.88
577.5	Wide	0.0708	175.21	175.21	250.66	181.4	136.35	229.82	125.08	93.62	156.76
	Middle	0.102	120.57	120.57	170.44	124.47	94.1	156.74	86.28	64.72	107.84
	Tele	0.1398	87.99	87.99	124.04	90.8	68.75	114.16	63.06	47.32	78.74



# 5 MEGAPIXEL TELECENTRIC LENS

MACHINE VISION LENS

TELECEN  
MACRO

- Compact body design, compatible with 5MP sensors
- Optical magnification 0.057x - 0.5x

- Relative Illuminance more than 80%
- Low distortion, less than 1%

## TEC-M55MPW



2/3"

5MP

TELECEN

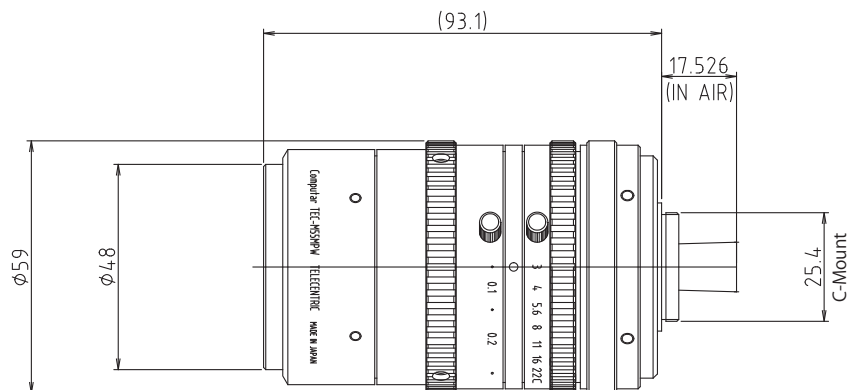
MACRO

ZOOM

MANUAL

Focal length	55mm ( at 0.057X) 51mm ( at 0.5X)		Distortion	2/3"	+0.52% at 0.057x (y=5.5) +0.6% at 0.5x (y=5.5)
Max Aperture Ratio	1:3.0		Back focal length	17.0mm	
Max. Image Format	8.8mm x 6.6mm (φ11mm)		Flange Back Length	17.526mm	
Operation Iris	F3.0-F22C		Mount	C-Mount	
Range Focus	139mm - 1000mm		Filter Size	M46.0 P=0.75mm	
Magnification	0.057x - 0.5x		Dimention's	φ 59.0mm x 93.1mm	
Relative Illumination	94% ( at 0.057x) 81% ( at 0.5x)		Weight	470g	
Control	Iris	Manual			
	Focus	Manual			
Object Diment at M.O.D	1.7(H)cm x 1.3(V)cm 2/3"				
Operation Temperature	-10° C ~ 50° C				

Working Distance(mm)	Optical Magnification (X)	Field of View(mm)					
		2/3"		1/2"		1/3"	
(mm)	(X)	H	V	H	V	H	V
1000	0.057	154.4	115.8	112.3	84.2	84.2	63.2
950	0.060	146.7	110.0	106.7	80.0	80.0	60.0
900	0.064	137.5	103.1	100.0	75.0	75.0	56.3
850	0.067	131.3	98.5	95.5	71.6	71.6	53.7
800	0.072	122.2	91.7	88.9	66.7	66.7	50.0
750	0.077	114.3	85.7	83.1	62.3	62.3	46.8
700	0.083	106.0	79.5	77.1	57.8	57.8	43.4
650	0.089	98.9	74.2	71.9	53.9	53.9	40.4
600	0.097	90.7	68.0	66.0	49.5	49.5	37.1
550	0.106	83.0	62.3	60.4	45.3	45.3	34.0
500	0.118	74.6	55.9	54.2	40.7	40.7	30.5
450	0.132	66.7	50.0	48.5	36.4	36.4	27.3
400	0.150	58.7	44.0	42.7	32.0	32.0	24.0
350	0.173	50.9	38.2	37.0	27.7	27.7	20.8
300	0.204	43.1	32.4	31.4	23.5	23.5	17.6
250	0.251	35.1	26.3	25.5	19.1	19.1	14.3
200	0.323	27.2	20.4	19.8	14.9	14.9	11.1
150	0.456	19.3	14.5	14.0	10.5	10.5	7.9
140	0.504	17.5	13.1	12.7	9.5	9.5	7.1



# TELECENTRIC LENS

## MACHINE VISION LENS

- Very low distortion compared to standard macro lens
- Wide depth of field
- Working distance: 140mm - Infinity

- Suitable for use as a telephoto lens and macro lens
- Fast F2.8 F-stop at Infinity

### TEC-M55



2/3"

TELECENTRIC

MACRO

ZOOM

MANUAL

Focal Length	55mm
Max. Aperture Ratio	1:2.8
Max. Image Format	8.8mm x 6.6mm (φ 11mm)
Operation Range	Iris F2.8 - F32C
	Focus 0.14m - Inf.
Magnification	Inf. - 0.5X (Max 1.0X at 140mm with 2X Converter)
Relative Illumination	78.5% (at 0.5X)
Depth of Field 1/2"	3.5mm (at 0.5X F2.8), 6.0mm (at 0.5X F5.6)
Control	Iris Manual
	Focus Manual
Object Dimension at M.O.D	1.7(H)cm x 1.3(V)cm 2/3"
Operating Temperature	-10°C ~ +50°C

Distortion	2/3"	+0.2% at 0.2X (y=5.5) +0.6% at 0.5X (y=5.5)	1/2"	+0.1% at 0.2X (y=4.0) +0.3% at 0.5X (y=4.0)
Back Focal Length	29.8mm			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M43 P=0.75mm			
Dimensions	φ 53.0mm x 92.9mm (Max. at 0.5X)			
Weight	320g			

TEC-M55

Working Distance (mm)	Optical Magnification	Field of View(mm)					
		2/3"		1/2"		1/3"	
		H	V	H	V	H	V
5000	0.011X	796.2	597.8	579.7	435.0	435.0	326.3
4000	0.014X	636.1	477.6	463.1	347.5	347.5	260.7
3000	0.018X	476.0	357.4	346.6	260.1	260.1	195.1
2000	0.028X	315.9	237.2	230.0	172.6	172.6	129.5
1500	0.037X	235.9	177.1	177.1	128.9	128.9	96.7
1000	0.056X	155.8	117.0	113.4	85.1	85.1	63.9
950	0.059X	147.8	111.0	107.6	80.7	80.7	60.6
900	0.063X	139.8	105.0	101.8	76.4	76.4	57.3
850	0.067X	131.8	99.0	96.0	72.0	72.0	54.0
800	0.071X	123.8	92.9	90.1	67.6	67.6	50.7
750	0.076X	115.8	86.9	84.3	63.2	63.2	47.4
700	0.081X	107.8	80.9	78.5	58.9	58.9	44.2
650	0.088X	99.8	74.9	72.6	55.5	54.5	40.9
600	0.096X	91.8	68.9	66.8	50.1	50.1	37.6
550	0.105X	83.8	62.9	61.0	45.8	45.8	34.3
500	0.116X	75.8	56.9	55.2	41.4	41.4	31.0
450	0.130X	67.8	50.9	49.3	37.0	37.0	27.8
400	0.147X	59.8	44.9	43.5	32.6	32.6	24.5
350	0.170X	51.8	38.8	37.7	28.3	28.3	21.2
300	0.201X	43.8	32.8	31.8	23.9	23.9	17.9
250	0.246X	35.7	26.8	26.0	19.5	19.5	14.6
200	0.317X	27.7	20.8	20.2	15.1	15.1	11.4
150	0.446X	19.7	14.8	14.3	10.8	10.8	8.1
140	0.486X	18.1	13.6	13.2	9.9	9.9	7.4

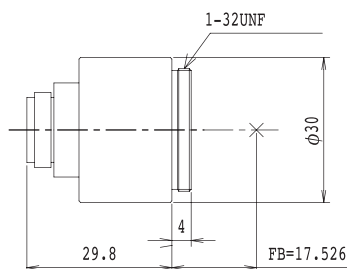
TEC-M55 with 0.75X Converter

Working Distance (mm)	Optical Magnification	Field of View(mm)					
		2/3"		1/2"		1/3"	
		H	V	H	V	H	V
5000	0.008X	1066.2	797.6	773.3	579.2	579.2	434.0
4000	0.010X	851.9	637.3	617.8	462.7	462.7	346.8
3000	0.014X	637.6	476.9	462.4	346.3	346.3	259.5
2000	0.021X	423.2	316.6	306.9	229.9	229.9	172.3
1500	0.028X	316.1	236.4	229.2	171.7	171.7	128.6
1000	0.423X	208.9	156.2	151.5	113.4	113.4	85.0
950	0.045X	198.2	148.2	143.7	107.6	107.6	80.6
900	0.047X	187.4	140.2	135.9	101.8	101.8	76.3
850	0.050X	176.7	132.2	128.1	96.0	96.0	71.9
800	0.053X	166.0	124.2	120.4	90.1	90.1	67.5
750	0.057X	155.3	116.1	112.6	84.3	84.3	63.2
700	0.061X	144.6	108.1	104.8	78.5	78.5	58.8
650	0.066X	133.8	100.1	97.0	72.7	72.7	54.5
600	0.072X	123.1	92.1	89.3	66.8	66.8	50.1
550	0.079X	112.4	84.1	81.5	61.0	61.0	45.7
500	0.087X	101.7	76.0	73.7	55.2	55.2	41.4
450	0.097X	90.9	68.0	65.9	49.4	49.4	37.0
400	0.110X	80.2	60.0	58.2	43.6	43.6	32.6
350	0.127X	69.5	52.0	50.4	37.7	37.7	28.3
300	0.151X	58.7	43.9	42.6	31.9	31.9	23.9
250	0.184X	48.0	35.9	34.8	26.1	26.1	19.5
200	0.238X	37.3	27.9	27.0	20.2	20.2	15.2
150	0.334X	26.5	19.8	19.2	14.4	14.4	10.8
140	0.363X	24.4	18.2	17.7	13.2	13.2	9.9

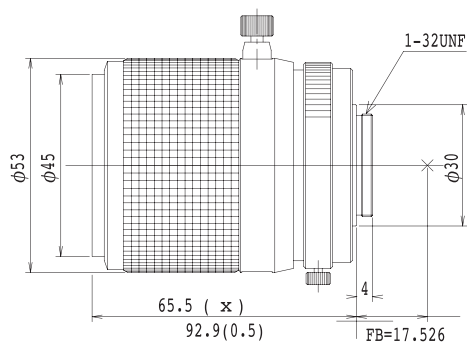
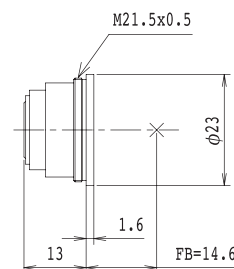
TEC-M55 with 2X Converter

Working Distance (mm)	Optical Magnification	Field of View(mm)					
		2/3"		1/2"		1/3"	
		H	V	H	V	H	V
5000	0.019X	453.1	340.3	330.0	247.7	247.7	185.8
4000	0.024X	362.0	271.9	263.6	197.9	197.9	148.5
3000	0.032X	270.9	203.4	197.3	148.1	148.1	111.1
2000	0.049X	179.8	135.0	130.9	98.3	98.3	73.7
1500	0.065X	134.3	100.8	97.8	73.4	73.4	55.0
1000	0.098X	88.7	66.6	64.6	48.5	48.5	36.4
950	0.104X	84.1	63.2	61.3	46.0	46.0	34.5
900	0.110X	79.6	59.8	58.0	43.5	43.5	32.6
850	0.116X	75.0	56.3	54.6	41.0	41.0	30.8
800	0.124X	70.5	52.9	51.3	38.5	38.5	28.9
750	0.133X	65.9	49.5	48.0	36.0	36.0	27.0
700	0.142X	61.4	46.1	44.7	33.5	33.5	25.2
650	0.154X	56.8	42.7	41.4	31.0	31.0	23.3
600	0.167X	52.3	39.2	38.1	28.6	28.6	21.4
550	0.183X	47.7	35.8	34.7	26.1	26.1	19.6
500	0.203X	43.2	32.4	31.4	23.6	23.6	17.7
450	0.227X	38.6	29.0	28.1	21.1	21.1	15.8
400	0.257X	34.0	25.6	24.8	18.6	18.6	14.0
350	0.297X	29.5	22.1	21.5	16.1	16.1	12.1
300	0.352X	24.9	18.7	18.2	13.6	13.6	10.2
250	0.431X	20.4	15.3	14.8	11.1	11.1	8.4
200	0.558X	15.8	11.9	11.5	8.7	8.7	6.5
150	0.789X	11.3	8.5	8.2	6.2	6.2	4.6
140	0.861X	10.4	7.8	7.6	5.7	5.7	4.3

2X Converter



0.75X Converter



## ACCESSORIES

ACCESSORIES



MODEL NO.	EX1.5CS
Description	1.5X Extender for CS-mount
Application	Attached between lens and camera - Makes focal length 1.5X



MODEL NO.	EX1.5C
Description	1.5X Extender for C-mount
Application	Attached between lens and camera - Makes focal length 1.5X



MODEL NO.	EX2CS
Description	2X Extender for CS-mount
Application	Attached between lens and camera - Makes focal length 2X



MODEL NO.	EX2C
Description	2X Extender for C-mount
Application	Attached between lens and camera - Makes focal length 2X



MODEL NO.	VM100
Description	Extension Tube Kit 40, 20, 10, 5, 1, 0.5mm
Application	Attached between lens and camera - Reduces minimum focusing distance



MODEL NO.	VM400
Description	5mm Adapter Ring
Application	Attached between lens and camera - Adapts C-mount lens to CS-mount camera



MODEL NO.	M55-0.75X
Description	Rear converter 0.75X (Designed for TEC-M55)
Application	Makes focal length 0.75X



MODEL NO.	M55-2.0X
Description	Rear converter 2.0X (Designed for TEC-M55)
Application	Makes focal length 2.0X



MODEL NO.	VM0811
Description	Filter holder for V0828-MPY (M72 P=0.75)
Application	Attached between filter and lens for 1.1" sensor camera



MODEL NO.	VM0810
Description	Filter holder for V0828-MPY (M67 P=0.75)
Application	Attached between filter and lens for 1" sensor camera

## SWIR LENS

MACHINE VISION / SECURITY LENS

- Designed for SWIR (800-1700nm) range
- Compact & Light weight

- Low F-stop
- Covers 640 x 512, 15μm Sensor

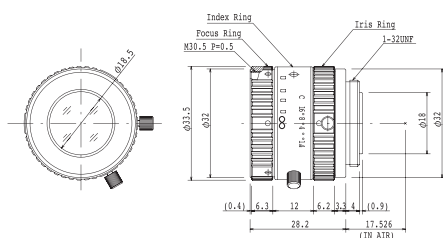
## M1614-SW

2/3"

SWIR

FIX

MANUAL



Focal Length		16mm			
Max. Aperture Ratio		1:1.4			
Max. Image Circle		ϕ 12.3mm			
Operation Range	Iris	F1.4 - F16C			
	Focus	0.3m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.		17.0(H)cm x 12.7(V)cm 2/3"			
Angle of View	D	2/3"	37.7°	1/2"	27.9°
	H		30.6°		22.5°
	V		23.2°		16.9°
Operating Temperature		- 10° C ~ +50° C			

Distortion	2/3"	-0.5% (y=5.5)	1/2"	-0.5% (y=4.0)
Back Focal Length	13.3mm (Inf)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 28.2mm			
Weight	60g			

Angle of View (InGaAs Detector)	D	640 x 512 (Pixel Pitch : 15μm)	41.7°	320 x 256 (Pixel Pitch : 25μm)	35.3°	320 x 256 (Pixel Pitch : 20μm)	28.6°
	H	H9.60mm x V7.68mm	33.2°	H8.00mm x V6.40mm	27.9°	H6.40mm x V5.12mm	22.5°
	V		26.8°		22.5°		18.0°

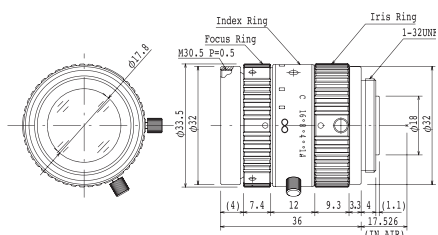
## M2514-SW

2/3"

SWIR

FIX

MANUAL



Focal Length		25mm			
Max. Aperture Ratio		1:1.4			
Max. Image Circle		φ 12.3mm			
Operation Range	Iris	F1.4 - F16C			
	Focus	0.3m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.		10.5(H)cm x 7.8(V)cm 2/3"			
Angle of View	D	2/3"	24.7°	1/2"	18.1°
	H		19.8°		14.5°
	V		14.9°		10.9°
Operating Temperature		-10° C ~ +50° C			

Distortion	2/3"	-0.5% (y=5.5)	1/2"	-0.2% (y=4.0)
Back Focal Length	13.4mm (Inf)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 36.0mm			
Weight	71.2g			

Angle of View (InGaAs Detector)	D	640 x 512 (Pixel Pitch : 15μm)	27.6°	320 x 256 (Pixel Pitch : 25μm)	23.0°	320 x 256 (Pixel Pitch : 20μm)	18.5°
	H	H9.60mm x V7.68mm	21.6°	H8.00mm x V6.40mm	18.1°	H6.40mm x V5.12mm	14.5°
	V		17.3°		14.5°		11.6°

- Designed for SWIR (800-1700nm) range
- Compact & light weight

- Low F-stop
- Covers 640 x 512, 15μm sensor

### M3514-SW

2/3"

SWIR

FIX

MANUAL



Focal Length		35mm			
Max. Aperture Ratio		1:1.4			
Max. Image Circle		φ 12.3mm			
Operation Range	Iris	F1.4 - F16C			
	Focus	0.3m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.		8.0(H)cm x 6.0(V)cm 2/3"			
Angle of View	D	2/3"	18.4°	1/2"	13.4°
	H		14.7°		10.7°
	V		11.1°		8.1°
Operating Temperature		-10°C ~ +50°C			

Distortion	2/3"	-0.1% (y=5.5)	1/2"	-0% (y=4.0)
Back Focal Length	14.6mm			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 38.2mm			
Weight	87g			

Angle of View (InGaAs Detector)	D	640 x 512 (Pixel Pitch : 15μm)	20.5°	320 x 256 (Pixel Pitch : 25μm)	17.1°	320 x 256 (Pixel Pitch : 20μm)	13.7°
	H	H9.60mm x V7.68mm	16.0°	H8.00mm x V6.40mm	13.4°	H6.40mm x V5.12mm	10.7°
	V		12.9°		10.7°		8.6°

### M5018-SW

2/3"

SWIR

FIX

MANUAL



Focal Length		50mm			
Max. Aperture Ratio		1:1.8			
Max. Image Circle		φ 12.3mm			
Operation Range	Iris	F1.8 - F16C			
	Focus	0.6m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.		10.4(H)cm x 7.8(V)cm 2/3"			
Angle of View	D	2/3"	13.0°	1/2"	9.5°
	H		10.4°		7.6°
	V		7.8°		5.7°
Operating Temperature		-10° C ~ +50° C			

Distortion	2/3"	-0.3% (y=5.5)	1/2"	-0.1% (y=4.0)
Back Focal Length	13.6mm			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 38.2mm			
Weight	85g			

Angle of View (InGaAs Detector)	D	640 x 512 (Pixel Pitch : 15μm)	14.5°	320 x 256 (Pixel Pitch : 25μm)	12.1°	320 x 256 (Pixel Pitch : 20μm)	9.7°
	H	H9.60mm x V7.68mm	11.3°	H8.00mm x V6.40mm	9.5°	H6.40mm x V5.12mm	7.6°
	V		9.1°		7.6°		6.1°

## 5 MP Lens for ITS

INTELLIGENT TRANSPORTATION SYSTEM LENS

- 3-Iris type. Manual, DC and P-iris
- Wide Variety range, 9mm, 12mm, 16mm, 25mm

- High resolution for 5MP sensors

M0918FIC-MP

M1218FIC-MP

M1616FIC-MP

M2514FIC-MP

2/3"  
5MP  
FIX  
MANUAL



MG0918KC-MP

MG1218KC-MP

MG1616KC-MP

MG2514KC-MP

2/3"  
5MP  
FIX  
P-iris



### ITS LENS

	Model Name	Format	Mount	Focal length (mm)	Aperture (F)
Manual Iris	M0918FIC-MP	2/3	C	9	1.8-16C
	M1218FIC-MP	2/3	C	12	1.8-16C
	M1616FIC-MP	2/3	C	16	1.6-16C
	M2514FIC-MP	2/3	C	25	1.4-16C
DC Iris	MG0918FC-MP	2/3	C	9	1.8-360C
	MG1218FC-MP	2/3	C	12	1.8-360C
	MG1616FC-MP	2/3	C	16	1.6-360C
	MG2514FC-MP	2/3	C	25	1.4-360C
P Iris	MG0918KC-MP	2/3	C	9	1.8-16C
	MG1218KC-MP	2/3	C	12	1.8-16C
	MG1616KC-MP	2/3	C	16	1.6-16C
	MG2514KC-MP	2/3	C	25	1.4-16C



# 5 MP Lens for ITS (IR Compatible)

INTELLIGENT TRANSPORTATION SYSTEM LENS

ITS

- 3-Iris type. Manual, DC and P-iris
- Compatible with CMOSIS sensor "CMV2000"

- High resolution for 5MP sensors
- IR Compatible

M2514FIC-MPIR



M3518FIC-MPIR



M5020FIC-MPIR



MG2514KC-MPIR



MG3518KC-MPIR



MG5020KC-MPIR



ITS LENS (IR Compatible)

	Model Name	Format	Mount	Focal length (mm)	Aperture (F)
Manual Iris	M2514FIC-MPIR	2/3	C	25	1.4-16C
	M3518FIC-MPIR	2/3	C	35	1.9-16C
	M5020FIC-MPIR	2/3	C	50	2.0-16C
DC Iris	MG2514FC-MPIR	2/3	C	25	1.4-360C
	MG3518FC-MPIR	2/3	C	35	1.8-360C
	MG5020FC-MPIR	2/3	C	50	2.0-360C
P Iris	MG2514KC-MPIR	2/3	C	25	1.4-16C
	MG3518KC-MPIR	2/3	C	35	1.8-16C
	MG5020KC-MPIR	2/3	C	50	2.0-16C



## MEGAPIXEL BOARD LENS

MACHINE VISION LENS

**NEW**

## 4K BOARD LENS

1/1.8"

4K

IR

FIX

BOARD

• Compatible with 1/1.8" Sensor • IR Corrected • 4K Ultra-High Resolution.



E3828KRW

No.	Model Name	Format Inch	Mount	Pitch	Focal Length (mm)	Aperture (F)	Angle of view at INF(degrees)			Angle of view at INF(degrees)			Angle of view at INF(degrees)		
							1/1.8"			1/2"			1/3"		
							D	H	V	D	H	V	D	H	V
1	E3828KRW	1/1.8	M12	0.5	3.8mm	F2.8	133	107	80.7	120	96.2	72.4	90.3	72.4	54.3
2	E5228KRW	1/1.8	M12	0.5	5.2mm	F2.8	100	78.6	58.2	89.0	70.1	52.0	65.5	52.0	38.8

**NEW**

## 2 MEGAPIXEL BOARD LENS

1/2.8"

2MP

IR

FIX

BOARD

• Compatible with 1/2.8" Sensor • IR Corrected • Metal Housing



T2820KF3P

No.	Model Name	Format Inch	Mount	Pitch	Focal Length (mm)	Aperture (F)	Angle of view at INF(degrees)			Angle of view at INF(degrees)			Angle of view at INF(degrees)			IRCF
							1/2.8"			1/3"			1/4"			
							D	H	V	D	H	V	D	H	V	
1	T2820KP	1/2.8	M12	0.5	2.8mm	F2.0	139	116	71.2	129.0	102	75.3	94.8	75.3	56.2	×
2	T2820KF3P	1/2.8	M12	0.5	2.8mm	F2.0	139	116	71.2	129.0	102	75.3	94.8	75.3	56.2	○

1/2"

1MP

FIX

BOARD

## 1 MEGAPIXEL BOARD LENS

• Compatible with 1/2" Sensor • Tough and compact design • M12, P0.5 mount



H0320KP

H0624KP

No.	Model Name	Format Inch	Mount	Pitch	Focal Length (mm)	Aperture (F)	Distortion	Angle of view at INF(degrees)			Angle of view at INF(degrees)			Angle of view at INF(degrees)		
								1/2"			1/3"			1/4"		
								D	H	V	D	H	V	D	H	V
1	H0320KP	1/2	M12	0.5	3mm	F2.0	-37.5%	125.3	104.3	80.5	98.6	80.5	61.3	75.8	61.3	46.3
2	H0624KP	1/2	M12	0.5	6mm	F2.4	-9.0%	72.5	59.1	45.0	55.6	45.0	34.0	42.3	34.0	25.6
3	H0924KP	1/2	M12	0.5	9mm	F2.4	-1.6%	48.6	39.6	30.1	37.3	30.1	22.7	28.3	22.7	17.1
4	H1620KP	1/2	M12	0.5	16mm	F2.0	0.4%	27.9	22.6	17.0	21.2	17.0	12.8	16.0	12.8	9.6
5	H2520KP	1/2	M12	0.5	25mm	F2.0	1.0%	18.0	14.5	10.9	13.6	10.9	8.2	10.3	8.2	6.2

1/1.8"

3MP

FIX

BOARD

## 3 MEGAPIXEL ULTRA LOW DISTORTION BOARD LENS

• Ultra low distortion (optical distortion 0.1% or less) • Compatible with 1/1.8" Sensor  
• M12, P0.5 mount • Tough and compact design



E1220KV

E2520KV

No.	Model Name	Format Inch	Mount	Pitch	Focal Length (mm)	Aperture (F)	Distortion	Angle of view at INF(degrees)			Angle of view at INF(degrees)			Angle of view at INF(degrees)		
								1/1.8"			1/2"			1/3"		
								D	H	V	D	H	V	D	H	V
1	E1220KV	1/1.8	M12	0.5	12.0mm	F2.0	0.04%	39.5	32.1	24.4	36.8	29.8	22.6	28.1	22.6	17.1
2	E1620KV	1/1.8	M12	0.5	16.0mm	F2.0	-0.07%	30.0	24.3	18.4	27.9	22.6	17.0	21.2	17.0	12.8
3	E2520KV	1/1.8	M12	0.5	25.0mm	F2.0	0.02%	19.5	15.7	11.9	18.1	14.6	11.0	13.7	11.0	8.2

# MEGAPIXEL FISHEYE BOARD LENS

MACHINE VISION LENS

FISHEYE  
BOARD  
LENS

**NEW**

## 4K FISHEYE BOARD LENS

1/1.7"

4K

IR

FIX

FISHEYE

- Compatible with 1/1.7" Sensor • IR Corrected • 12MP Ultra-High Resolution
- ImmerVision enables Compatibles (E1222KRY, E1222KF3RY)



No.	Model Name	Format Inch	Mount	Pitch	Focal Length (mm)	Aperture (F)	Angle of view at INF(degrees)			Angle of view at INF(degrees)			Angle of view at INF(degrees)			IRCF
							1/1.7"			1/3"			1/4"			
							D	H	V	D	H	V	D	H	V	
1	E1628KRY	1/1.7	M12	0.5	1.6mm	F2.8	190.0			190.0	168.2	11.6	157.3	125.5	94.2	×
2	E1222KRY	1/1.7	M12	0.5	1.2mm	F2.2	185.0			185.0	171.5	139.5	164.2	139.5	110.3	×
3	E1628KF3RY*	1/1.7	M12	0.5	1.6mm	F2.8	190.0			190.0	168.2	11.6	157.3	125.5	94.2	○
4	E1222KF3RY*	1/1.7	M12	0.5	1.2mm	F2.2	185.0			185.0	171.5	139.5	164.2	139.5	110.3	○

\*Please note E1628KF3RY and E1222KF3RY are produced to order.

## MEGAPIXEL FISHEYE BOARD LENS

1/2"

1MP

FIX

FISHEYE

- Compatible with 1/2" Sensor • 2MP High Resolution • ImmerVision enables Compatibles



No.	Model Name	Format Inch	Mount	Pitch	Focal Length (mm)	Aperture (F)	Angle of view at INF(degrees)			Angle of view at INF(degrees)			Angle of view at INF(degrees)		
							1/2"			1/3"			1/4"		
							D	H	V	D	H	V	D	H	V
1	H1328KP	1/2	M12	0.5	1.3mm	F2.8	180.0			180.0		151.0	177.3	151.0	117.6

## 5 MEGAPIXEL FISHEYE BOARD LENS

1/2.5"

5MP

IR

FIX

FISHEYE

- Compatible with 1/2.5" Sensor • IR Corrected • 5MP High Resolution • IP66 (L1028KDRW) • ImmerVision enables Compatibles



No.	Model Name	Format Inch	Mount	Pitch	Focal Length (mm)	Aperture (F)	Angle of view at INF(degrees)			Angle of view at INF(degrees)			Angle of view at INF(degrees)			Water Proof	
							1/2.5"			1/3"			1/4"				
							D	H	V	D	H	V	D	H	V		
1	L1028KRW	1/2.5	M12	0.5	1.05mm	F2.8	180.0			180.0			163.2	180.0	163.2	130.2	
2	L1028KDRW	1/2.5	M12	0.5	1.05mm	F2.8	180.0			180.0			163.2	180.0	163.2	130.2	○

## 3 MEGAPIXEL FISHEYE BOARD LENS

1/3"

3MP

IR

FIX

FISHEYE

- Compatible with 1/3" Sensor • IR Corrected • 3MP High Resolution • ImmerVision enables Compatibles



No.	Model Name	Format Inch	Mount	Pitch	Focal Length (mm)	Aperture (F)	Angle of view at INF(degrees)			Angle of view at INF(degrees)			Angle of view at INF(degrees)		
							1/2"			1/3"			1/4"		
							D	H	V	D	H	V	D	H	V
1	T0928KRW	1/3	M12	0.5	0.95mm	F2.8	-			180.0			180.0		145.2

## TECHNICAL INFORMATION

### 1. Calculation of Working Distance (WD)

Distance from lens to object (WD) is calculated by putting the size of a camera's imaging device, focal length and an object size into the following formula:

<Formula>

$$WD = H1 + y \times f / y'$$

[ Ex ]

When 2/3" camera with M2514-MP films an object whose vertical size is 120 mm.

f : 25 mm

H1 : 26.77mm

y : 120mm

y' : 6.6mm

Distance from lens to object=

$$WD = 26.77 + 120 \times 25 / 6.6 = 481.32 \text{ mm}$$

### 2. Calculation of Focal Length

When choosing size of a camera's imaging device, the object size and WD are fixed, focal length can be calculated by the following formula. You can select appropriate lens from the focal length.

<Formula>

$$f = y' \times WD / y$$

f = focal length of lens

WD = distance from lens to object

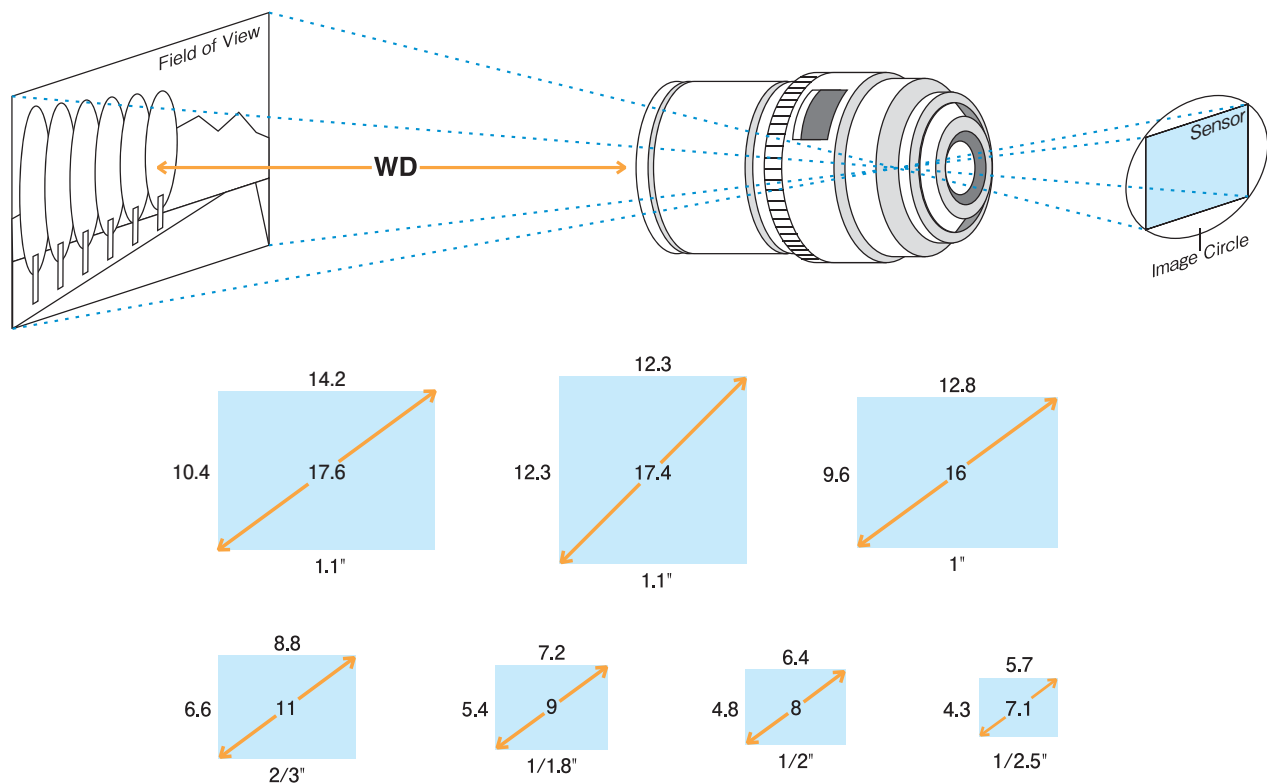
H1 : first principal point

y : vertical size of object

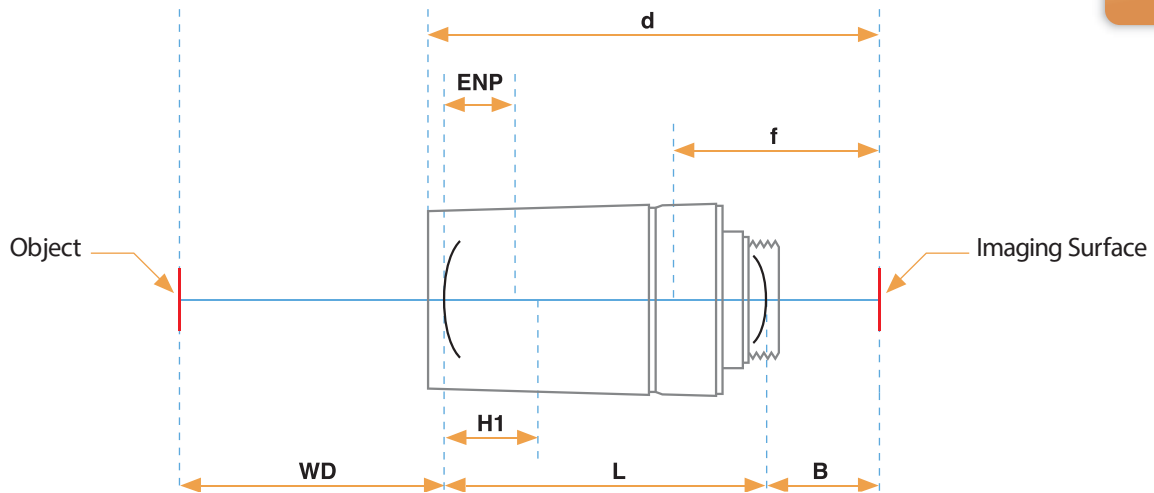
y' : vertical size of camera's imaging device

### CAMERA FORMAT

The size of camera's imaging device also affects the angle of view, with the smaller devices creating narrower angles of view when used on the same lens. The format of the lens, however is irrelevant to the angle of view, it merely needs to project an image which will cover the device, i.e.; the same format of the camera or larger. This also means that 1/3" cameras can utilize the entire range of lenses from 1/3" to 2/3", with a 1/3" 8mm lens giving the same angle as a 2/3" 8mm lens. The latter combination also provides increased resolution and picture quality as only the center of the lens is being utilized, where the optics can be ground more accurately.



## OPTICAL DATA



		Focal Length	First Principal Point	Total Length	Back Focus	Entrance Pupil Diameter	Entrance Pupil Position	Distortion	Extension	Length
		(f)	(H1)	(L)	(B)		(ENP)			(d)
MEGAPIXEL LENS										
H0514-MP2		5.1	20.2	50.5	10.8	3.5	15.0	-0.7	0.1	63.0
M0814-MP2		8.3	19.5	30.7	13.1	5.8	12.4	-0.1	0.2	45.7
M1214-MP2		12.0	24.7	28.7	13.1	8.4	17.7	0.1	0.4	45.7
M1614-MP2		16.0	26.2	29.7	13.1	11.2	14.3	-0.1	0.8	45.7
M2514-MP2		25.0	23.8	29.3	13.1	17.5	12.8	-0.3	2.0	53.5
M3514-MP		34.0	43.7	37.6	15.2	24.0	37.3	-0.3	4.9	55.7
M5018-MP2		48.0	22.1	40.9	13.1	25.9	52.8	-0.3	4.8	55.6
M7528-MP		72.6	111.5	55.2	13.7	24.8	47.8	0.2	15.5	71.0
M0824-MPW2		8.0	20.0	42.4	13.7	3.4	13.5	-1.87	-0.3	59.0
M1224-MPW2		12.0	23.5	39.0	14.4	5.1	16.0	-0.02	1.75	58.0
M1620-MPW2		16.0	23.9	27.9	14.7	8.0	15.8	0.09	3.3	47.0
M2518-MPW2		25.0	27.4	28.3	13.8	13.9	20.8	0.03	4.3	49.0
M3520-MPW2		35.0	14.0	25.7	18.0	17.5	20.4	0.01	7.3	50.9
M5028-MPW2		50.0	7.4	27.8	27.7	17.9	21.3	0.03	7.3	58.9
M2518-MPW		25.0	27.4	27.1	13.9	13.9	20.8	0.03	6.2	61.7
V0828-MPY		8.2	22.7	69.8	8.6	2.9	16.1	-0.6	0.8	71.5
V1228-MPY		12.4	22.3	51.8	8.4	4.3	13.3	-0.5	0.9	53.7
V1628-MPY		16.0	19.9	48.6	9.4	5.6	11.6	-0.5	1.1	53.8
V2528-MPY		25.0	18.0	37.5	11.3	8.7	12.9	0.3	3.5	51.5
V3528-MPY		35.0	15.6	46.7	11.7	12.2	17.3	-0.1	4.8	62.7
V5028-MPY		50.0	9.5	54.2	11.9	17.3	23.2	0.1	8.6	62.7
V0814-MP		8.25	24.3	74.1	11.7	5.7	17.1	-7.1	0.6	75.5
V1214-MP		12.7	25.2	67.4	12.6	8.8	14.7	-5.9	1.4	69.0
V1614-MP		16.2	25.3	57.3	12.1	11.3	10.8	-3.8	0.9	66.0
V2514-MP		25.0	30.9	49.2	15.7	17.2	18.3	-3.1	2.0	60.1
V5014-MP		50.0	38.8	62.2	14.6	34.7	66.5	0.8	5.1	65.5
MACRO ZOOM LENS										
MLH-10X	0.15m wide	18.8	91.3	87.2	23.4	3.8	3.8	2.5	-	116.0
	0.15m Tele	68.7	-0.1	87.2	23.4	20.1	20.1	2.9	-	116.0
MEGAPIXEL MACRO ZOOM LENS										
MLM-3XMP	Wide	30.2	30.2	61.6	20.5	9.5	38.9	0.4	-	97.0
	Tele	29.1	44.7	61.6	20.5	61.4	313.8	2.3	-	97.0
TELECENTRIC LENS										
TEC-M55		54.8	27.8	47.3	31.4	20.1	75.1	0.4	27.4	83.0
x0.75		41.2	51.6	64.0	14.7	19.8	73.8	-0.9	27.4	83.0
x2.0		95.7	83.7	68.8	24.9	19.8	73.8	0.4	27.4	83.0
TEC-M55MPW		55.0	17.3	67.6	17.0	19.6	71.4	0.52	-	110.6
TELECENTRIC MACRO ZOOM LENS										
TEC-V7X	Tele	106.3	-136.1	122.4	39.5	53.6	375.0	1.0	-	166.4
	Wide	47.7	-143.1	112.1	49.8	11.0	126.9	-1.7	-	166.4

\* First principal point and entrance pupil position are calculated from front lens

Specifications are subject to change without notice



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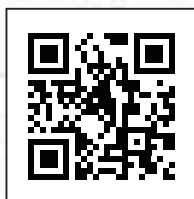
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