



# MACHINE VISION LENS

## PRODUCT GUIDE



**computer**  
**star**<sup>®</sup>

# 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



M5028-MPW2



## TEC series

TEC-V7X



TEC-M55MPW



TEC-M55



### 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.

### TELECENTRIC LENS

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

## 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.**

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

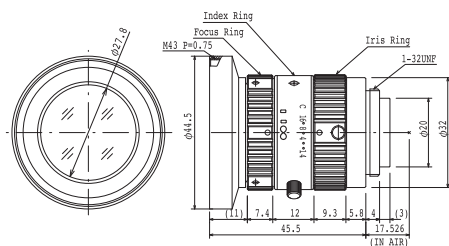
# MEGAPIXEL LENS

MACHINE VISION LENS

- 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 ( $\phi$ 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	76.7°	62.3°
		51.4°	39.5°
	H	1/2"	1/3"
		V	
Operating Temperature	-10° C ~ +50° C		

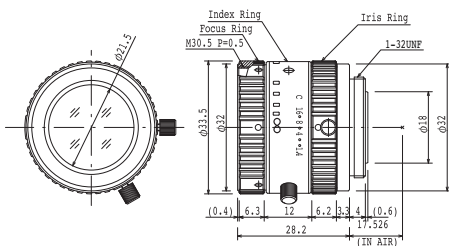
Distortion	1/2"	-0.48% (y=4.0)	1/3"	-2.26% (y=3.0)
BackFocal Length	10.8mm (WD=900mm)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M43 P=0.75mm			
Dimensions	$\phi$ 44.5mm x 45.5mm			
Weight	102g			

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 ( $\phi$ 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	67.1°	51.9°
		43.7°	32.4°
	H	2/3"	1/2"
		V	
Operating Temperature	-10° C ~ +50° C		

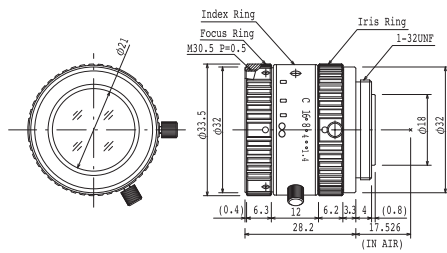
Distortion	2/3"	-0.1% (y=5.5)	1/2"	-1.1% (y=4.0)
BackFocal Length	13.1mm (Inf)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	$\phi$ 33.5mm x 28.2mm			
Weight	63g			

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

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



Focal Length	12mm		
Max. Aperture Ratio	1:1.4		
Max. Image Format	8.8mm x 6.6mm (φ11mm)		
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	49.2°	37.0°
	H	2/3" 40.4°	1/2" 30.0°
	V	30.8°	22.7°
Operating Temperature	-10° C ~ +50° C		

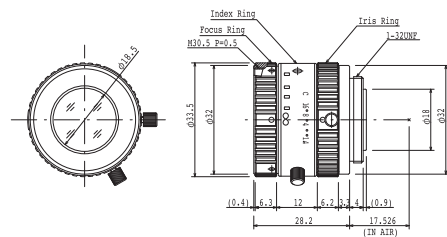
Distortion	2/3"	-0.1% (y=5.5)	1/2"	-0.35% (y=4.0)
BackFocal Length	13.1mm (Inf)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 28.2mm			
Weight	62g			

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

Field of View = CCD Size / Optical Magnification

# M1614-MP2

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



Focal Length	16mm		
Max. Aperture Ratio	1:1.4		
Max. Image Format	8.8mm x 6.6mm (φ11mm)		
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	38.0°	28.2°
	H	2/3" 30.8°	1/2" 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)
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	60g			

Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)			
			2/3"		1/2"	
			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

Field of View = CCD Size / Optical Magnification

C-MOUNT  
2/3" 1.5MP

# MEGAPIXEL LENS

MACHINE VISION LENS

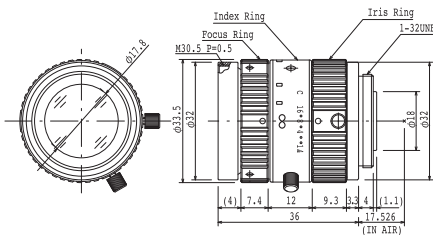
## M2514-MP2

2/3"

1.5MP

FIX

MANUAL



Focal Length	25mm		
Max. Aperture Ratio	1:1.4		
Max. Image Format	8.8mm x 6.6mm (φ11mm)		
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	2/3"	18.2°
		1/2"	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)
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 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

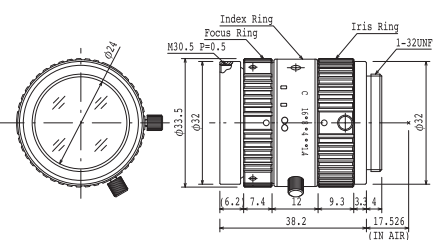
## M3514-MP

2/3"

1.5MP

FIX

MANUAL



Focal Length	35mm		
Max. Aperture Ratio	1:1.4		
Max. Image Format	8.8mm x 6.6mm (φ11mm)		
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 x 6(V)cm 2/3"		
Angle of View	D	2/3"	12.6°
		1/2"	10.1°
	V	10.4°	7.6°
Operating Temperature	-10°C ~ +50°C		

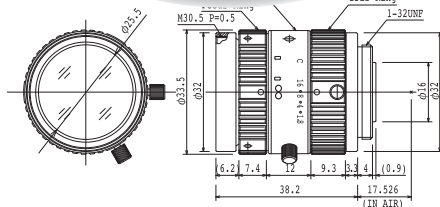
Distortion	2/3"	-0.8% (y=5.5)	1/2"	-0.4% (y=4.0)
BackFocal Length	17.1mm (WD=400mm)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 38.2mm			
Weight	87g			

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 (φ11mm)		
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	13.1°	9.5°
	H	2/3" 10.5°	1/2" 7.6°
	V	7.9°	5.7°
Operating Temperature	-10°C ~ +50°C		

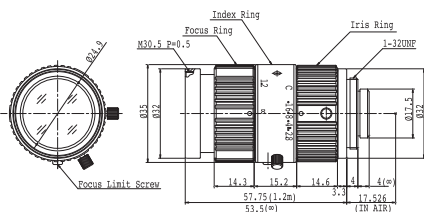
Distortion	2/3"	-0.3% (y=5.5)	1/2"	-0.2% (y=4.0)
Back Focal Length	13.1mm (Inf)			
Flange Back Length	17.526mm			
Mount	C-Mount			
Filter Size	M30.5 P=0.5mm			
Dimensions	φ 33.5mm x 38.2mm			
Weight	85g			

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	8.5°	6.2°
	H	2/3" 6.8°	1/2" 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 0.3-1.2m. 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" 5MP

# 5 MEGAPIXEL ULTRA LOW DISTORTION LENS

MACHINE VISION LENS

- 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

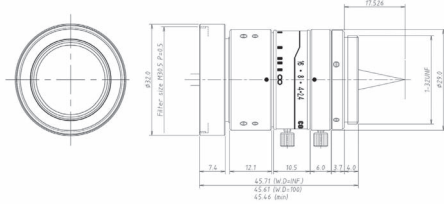


Focal Length	8mm	
Max. Aperture Ratio	1:2.4	
Max. Image Format	8.8mm x 6.6mm (φ 11mm)	
Operation Range	Iris	F2.4 - F16.0
	Focus	0.05m - Inf.
Control	Iris	Manual
	Focus	Manual
Object Dimension at M.O.D.	5.4cm x 7.4cm 2/3"	
Angle of View	D	69.32°
	H	57.80°
	V	44.36°

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 45.71 mm		
Weight	80g		

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

Field of View = CCD Size / Optical Magnification



## M1224-MPW2

2/3"

5MP

FIX

MANUAL

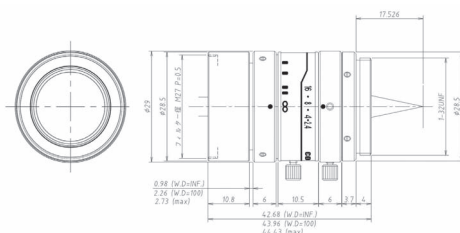


Focal Length	12mm	
Max. Aperture Ratio	1:2.4	
Max. Image Format	8.8mm x 6.6mm (φ 11mm)	
Operation Range	Iris	F2.4 - F16.0
	Focus	0.1m - Inf.
Control	Iris	Manual
	Focus	Manual
Object Dimension at M.O.D.	6.4cm x 8.5cm 2/3"	
Angle of View	D	48.6°
	H	39.8°
	V	30.4°

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

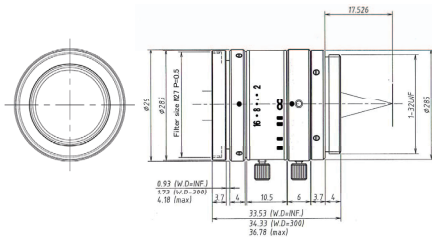
Field of View = CCD Size / Optical Magnification





# 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°
	H	30.7°
	V	23.3°

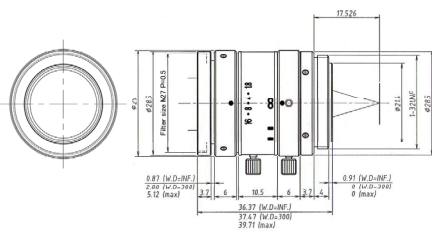
Distortion	2/3" 0.09%(y=5.5)	1/1.8" -0.06%(y=4.32)	1/2" -0.07%(y=4.0)
Back Focal Length	14.7mm (WD=300mm)		
Flange Back Length	17.526mm		
Mount	C-Mount		
Filter Size	M27.0 P=0.5mm		
Dimensions	φ 29mm x 33.53mm		
Weight	53g		

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°
	H	19.9°
	V	15.0°

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" 5MP

# 5 MEGAPIXEL ULTRA LOW DISTORTION LENS

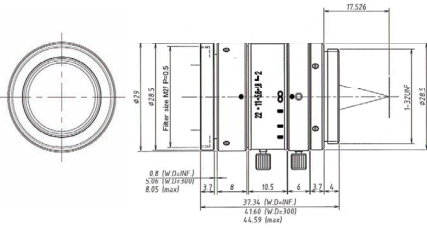
MACHINE VISION LENS

- 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	17.8°
	H	14.3°
	V	10.7°
Operating Temperature	1/1.8"	14.0°
	1/2"	10.4°
		7.8°

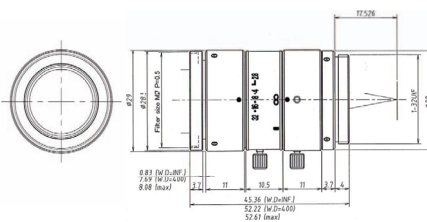
Distortion	2/3" 0.011%(y)=-5.5)	1/1.8" 0.010%(y)=-4.32)	1/2" 0.009%(y)=-4.0)
BackFocal Length	18.0mm (WD=300mm)		
FlangeBack Length	17.526mm		
Mount	C-Mount		
Filter Size	M27.0 P=0.5mm		
Dimensions	φ 29mm x 37.34mm		
Weight	59g		

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 MOD.	4.78cm x 6.38cm 2/3"	
Angle of View	D	12.5°
	H	10.0°
	V	7.5°
Operating Temperature	1/1.8"	9.9°
	1/2"	7.3°
		5.5°

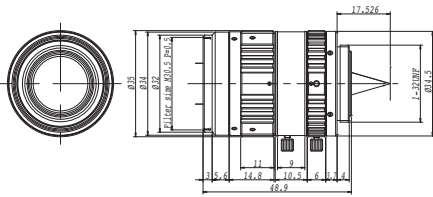
Distortion	2/3" 0.027%(y)=-5.5)	1/1.8" 0.017%(y)=-4.32)	1/2" 0.015%(y)=-4.0)
BackFocal Length	27.7mm (WD=400mm)		
FlangeBack Length	17.526mm		
Mount	C-Mount		
Filter Size	M27.0 P=0.5mm		
Dimensions	φ 29mm x 45.36mm		
Weight	69g		

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%(y=5.5)	1/1.8" -0.02%(y=4.32)	1/2" -0.02%(y=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		

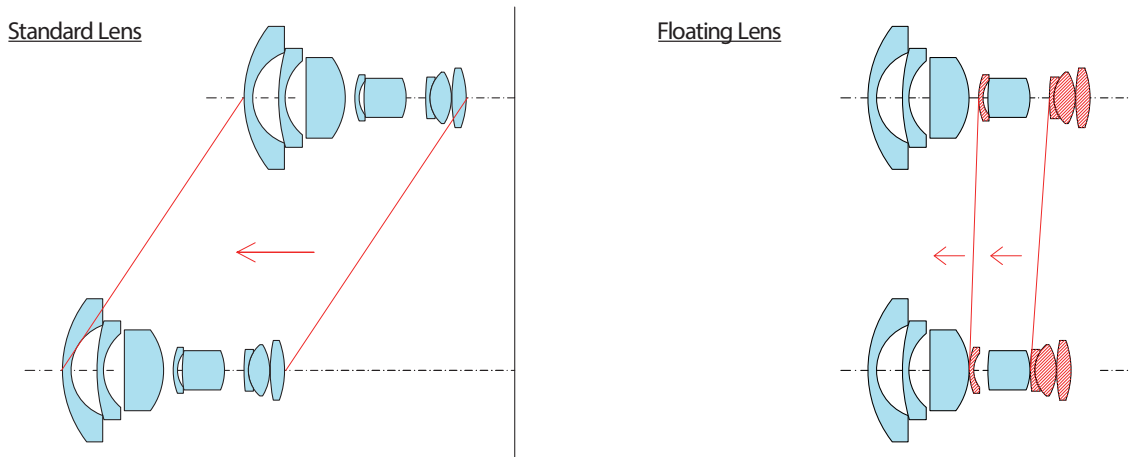
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			2/3"		1/1.8"		1/2"	
			H	V	H	V	H	V
900	-0.027	-	325.4	243.4	254.5	191.9	236.1	177.1
850	-0.029	-	306.2	229.9	240.3	181.2	222.9	167.3
800	-0.030	-	288.2	216.3	226.1	170.5	209.8	157.4
750	-0.033	-	270.2	202.8	212.0	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



C-MOUNT  
1.1" 12MP

# 1.1" 12 MEGAPIXEL C-MOUNT LENS

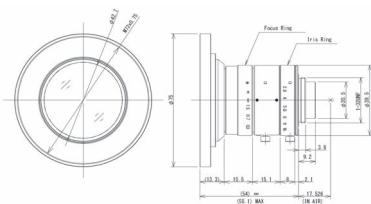
MACHINE VISION LENS

- 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**

## 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	93.9°	89.3°
	H	1.1" 83.0°	1" 77.3°
	V	66.0°	61.7°
Operating Temperature	-10°C ~ +50°C		

Distortion	1.1" -0.6%(γ=8.8)	1" -1.7%(γ=8.0)	2/3" -2.8%(γ=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.

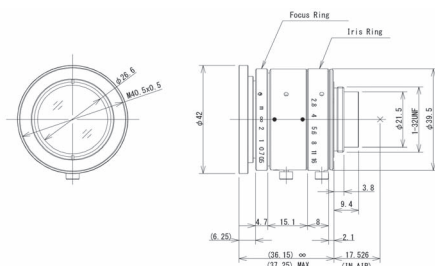
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.008	-	1790.8	1310.2	1617.6	1206.7	1103.1	820.5
950	0.009	-	1702.4	1245.4	1537.7	1147.0	1048.6	780.0
900	0.009	-	1614.2	1180.9	1458.0	1087.5	994.2	739.5
850	0.010	-	1525.9	1116.2	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	71.1°	66.4°
	H	1.1" 60.5°	1" 55.5°
	V	46.2°	42.9°
Operating Temperature	-10°C ~ +50°C		

Distortion	1.1" -0.5%(γ=8.8)	1" -1.0%(γ=8.0)	2/3" -1.4%(γ=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		

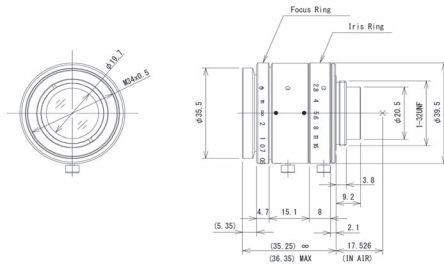
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.012	-	1167.9	854.2	1053.4	787.5	720.9	538.6
950	0.013	-	1109.5	811.4	1000.7	748.1	684.8	511.6
900	0.014	-	1051.2	768.8	948.2	708.8	648.9	484.8
850	0.015	-	992.9	726.1	895.5	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		

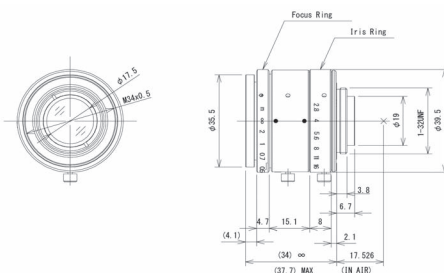
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.016	-	890.1	651.4	802.4	601.0	550.7	412.4
950	0.017	-	845.4	618.7	762.1	570.9	523.0	391.7
900	0.018	-	800.7	586.0	721.8	540.7	495.4	371.0
850	0.019	-	756.2	553.5	681.7	510.7	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

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

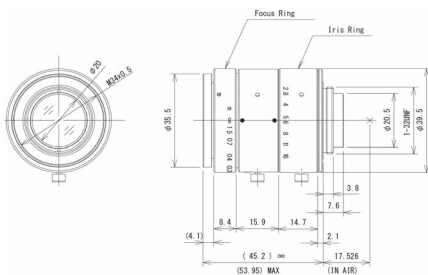
- 8, 12, 16, 25, 35, 50mm. 6 Lens Series
- Compatible with 1.1" (φ 17.6mm) Large Format Sensor

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

**NEW**

## V3528-MPY

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



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°	17.9°
	H	22.9°	14.3°
	V	16.9°	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 45.1mm		
Weight	103g		

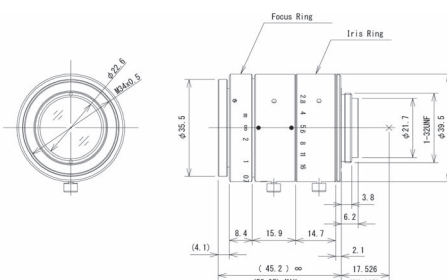
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1.1"		1"		2/3"	
			H	V	H	V	H	V
1000	0.036	-	393.4	288.2	354.6	266.0	243.9	182.9
950	0.038	-	373.0	273.2	336.2	252.2	231.2	173.4
900	0.040	-	352.7	258.4	317.9	238.5	218.6	164.0
850	0.043	-	332.4	243.5	299.6	224.7	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

**NEW**

## 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	
Object Dimension at M.O.D.	115.9(H)mm x 84.8(V)mm 1.1"		
Angle of View	D	20.0°	12.6°
	H	16.2°	10.1°
	V	11.9°	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

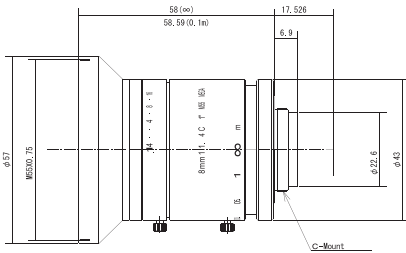
C-MOUNT  
1" 2MP

• 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°	1/1.2" 43.9°	2/3" 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					

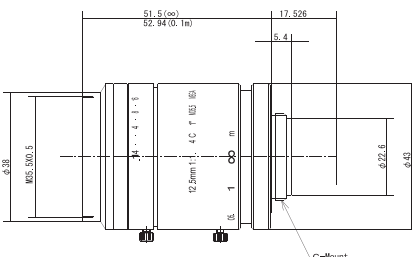
Working Distance (mm)	Optical Magnification	Extension Ring (mm)	Field of View(mm)					
			1"		1/1.2"		2/3"	
			H	V	H	V	H	V
1000	0.007	-	1,947.9	1,423.4	1,712.1	1,075.8	1,333.3	1,000.0
950	0.007	-	1,850.5	1,352.2	1,637.7	1,029.0	1,275.4	956.5
900	0.007	-	1,753.1	1,281.1	1,548.0	972.6	1,205.5	904.1
850	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

Field of View = CCD Size / Optical Magnification

**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	67.6°	58.0°	48.4°
	H	56.5°	1/1.2" 49.6°	2/3" 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

C-MOUNT  
1" 2MP

# 1" 12 MEGAPIXEL LENS

MACHINE VISION LENS

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

NEW

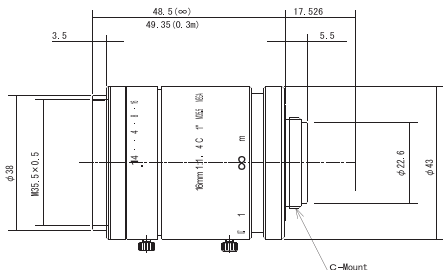
## V1614-MP

1"

2MP

FIX

MANUAL



Focal Length	16mm			
Max. Aperture Ratio	1:1.4			
Max. Image Format	12.8mm x 9.6mm (φ 16mm)			
Operation Range	Iris F1.4 - F16.0			
	Focus 0.3m - Inf.			
Control	Iris Manual			
	Focus Manual			
Object Dimension at M.O.D.	25.2cm x 18.7cm 1"			
Angle of View	D	54.4°	46.2°	38.3°
	H	1" 44.3°	1/1.2" 39.3°	2/3" 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					

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	0.015	-	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	249.3	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

Field of View = CCD Size / Optical Magnification

NEW

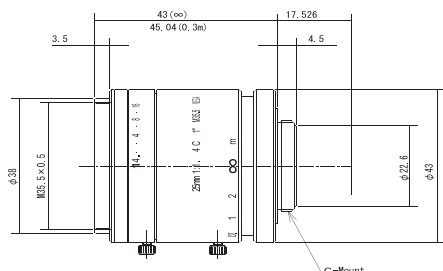
## V2514-MP

1"

2MP

FIX

MANUAL



Focal Length	25mm			
Max. Aperture Ratio	1:1.4			
Max. Image Format	12.8mm x 9.6mm (φ 16mm)			
Operation Range	Iris F1.4 - F16.0			
	Focus 0.3m - Inf.			
Control	Iris Manual			
	Focus Manual			
Object Dimension at M.O.D.	16.1cm x 11.9cm 1"			
Angle of View	D	36.6°	30.7°	25.2°
	H	1" 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	φ 38mm x 43mm					
Weight	150g					

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	0.024	-	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

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**

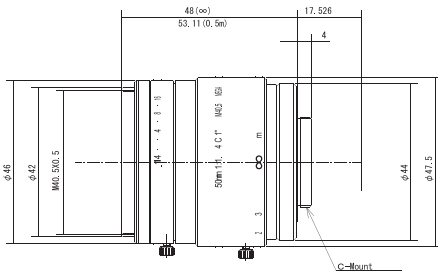
## V5014-MP

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.	12.6cm x 9.4cm 1"	
Angle of View	D	18.0° 15.1° 9.1°
	H	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					

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

Field of View = CCD Size / Optical Magnification

# MEGA PIXEL VARI-FOCAL 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

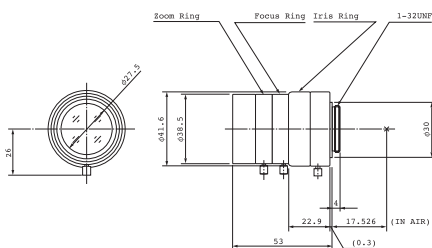
## M3Z1228C-MP

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	50.4° - 16.8° 37.5° - 12.5°
	H	2/3" 41.0° - 13.6° 1/2" 30.2° - 10.0°
	V	31.2° - 10.4° 22.8° - 7.6°
Operating Temperature	-10°C ~ +50°C	

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				

※ Please note M3Z1228C-MP is produced to order

MACRO  
ZOOM

# MACRO ZOOM LENS

MACHINE VISION LENS

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

## MLH-10X

- 1/2"
- MACRO
- ZOOM
- MANUAL

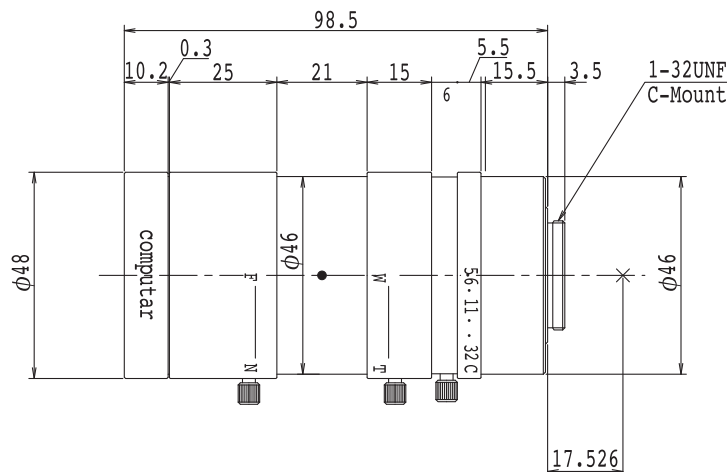


Optical Magnification	0.084X - 0.84X			
Max. Magnification	0.084mm - 0.84mm			
Max. Aperture Ratio	1:5.6			
Max. Image Format	6.4mm x 4.8mm (φ 8mm)			
Operation Range	Iris	F5.6 - F32C		
	Focus	0.15m - 0.45m		
Control	Iris	Manual		
	Focus	Manual		
	Zoom	Manual		
Angle of View	D	21.6° - 4.5°	17.0° - 3.3°	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 (mm)	Optical Magnification	Field of View(mm)												
		1/2"			Magnification on Monitor	1/3"			Magnification on Monitor	1/4"			Magnification on Monitor	
		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  
 Magnification on Monitor = Optical Magnification x Monitor Size / 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)

2/3"

1MP

MACRO

ZOOM

MANUAL

## MLM-3XMP



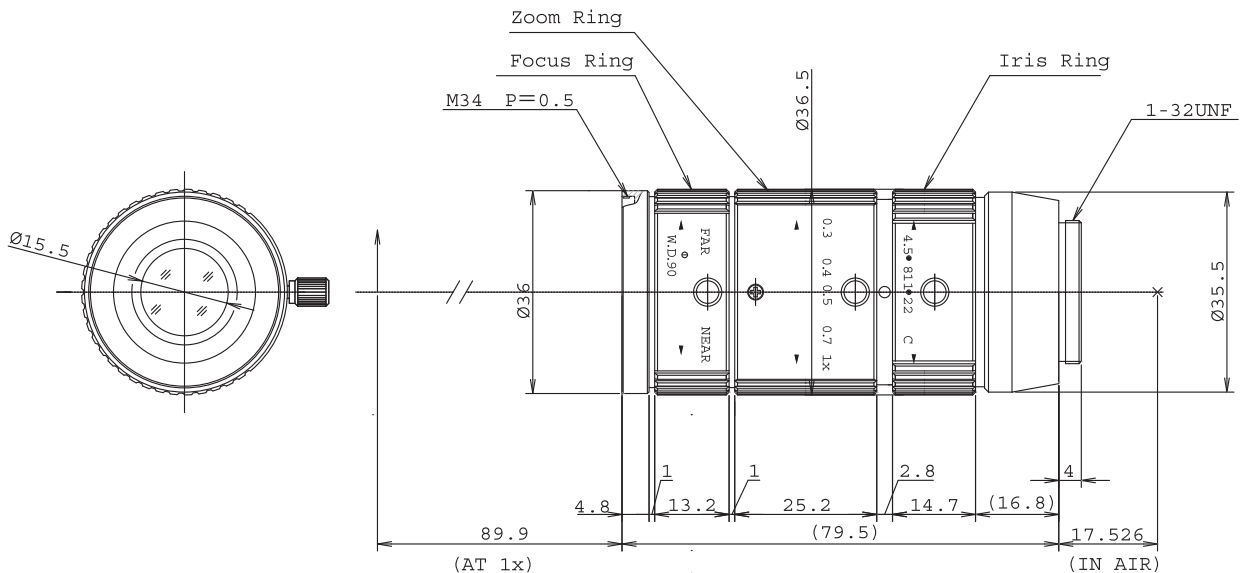
Max. Magnification	0.3X - 1.0X			Distortion	2/3"	+0.12% at 0.3X (y=5.5)	-0.12% at 0.3X (y=4.0)	
Max. Aperture Ratio	1:4.5					+1.78% at 1.0X (y=5.5)	+0.77% at 1.0X (y=4.0)	
Max. Image Format	8.8mm x 6.6mm (φ 11mm)			Back Focal Length	20.4mm			
Operation Range	Iris	F4.5 - F22C			Flange Back Length	17.526mm		
	Focus	90mm			Mount	C-Mount		
Control	Iris	Manual			Filter Size	M34 P=0.5mm		
	Focus	Manual			Dimensions	φ 36.5mm x 79.5mm		
	Zoom	Manual			Weight	150g		
Angle of View	D	14.88° - 2.84°	1/2"	10.70° - 2.72°				
	H	11.80° - 2.78°		8.48° - 2.18°				
	V	8.74° - 2.24°		6.38° - 1.64°				
Operating Temperature	-10° C ~ +50° C							

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

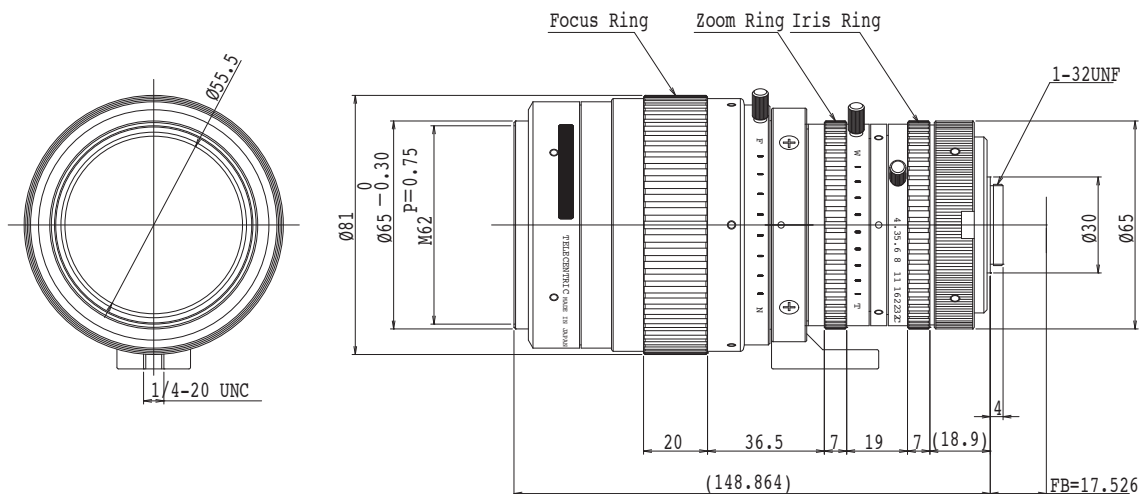
- 1.1"
- 5MP
- TELECEN
- MACRO
- ZOOM
- MANUAL



Optical Magnification	0.07X - 0.5X
Max. Aperture Ratio	1 : 4.3
Max. Image Format	12.3mm x 12.3mm (φ 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	1.0%	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 x P0.75					
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



# 5MP TELECENTRIC LENS

MACHINE VISION LENS

TELECEM  
MACRO  
ZOOM

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

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

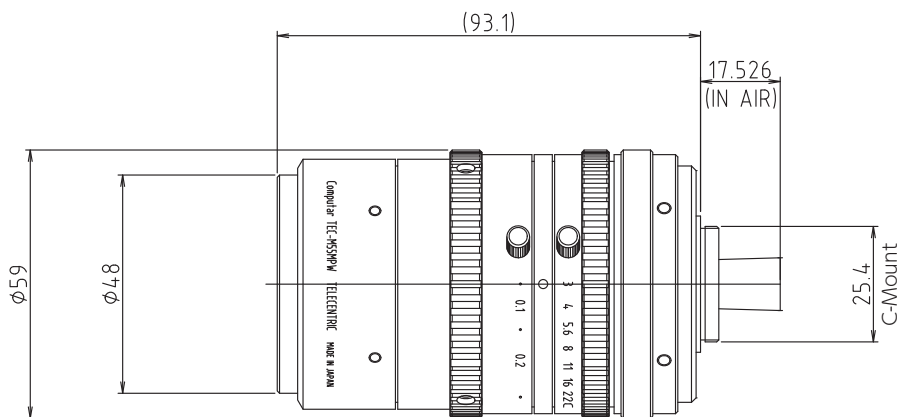
## TEC-M55MPW

- 2/3"
- 5MP
- TELECEM
- 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 Range	F3.0-F22C	Mount	C-Mount	
Focus	139mm - 1000mm	Filter Size	Focal length	
Magnification	0.057x - 0.5x	Dimensions	φ59.0mm x 93.1mm	
Relative Illumination	94% (at 0.057x) 81% (at 0.5x)	Weight	470g	
Control Iris	Manual			
Control Focus	Manual			
Object Dimension 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





# 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

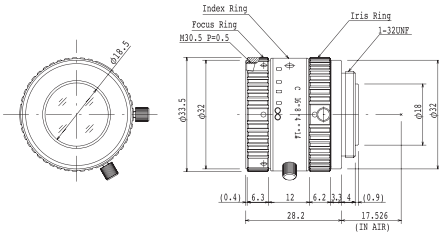
MACHINE VISION / SECURITY LENS

- 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



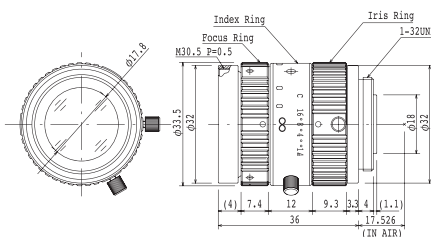
Focal Length	16mm		
Max. Aperture Ratio	1:1.4		
Max. Image Circle	φ 12.3mm		
Operation Range	Iris	F1.4 - F16C	
	Focus	0.3m - Inf.	
Control	Iris	Manual	
	Focus	Manual	
Object Dimension at M.O.D.	17.0(H)cm x 12.7(V)cm 2/3"		
Angle of View	D	37.7°	27.9°
	H	2/3" 30.6°	1/2" 22.5°
	V	23.2°	16.9°
Operating 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	24.7°	18.1°
	H	2/3" 19.8°	1/2" 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°

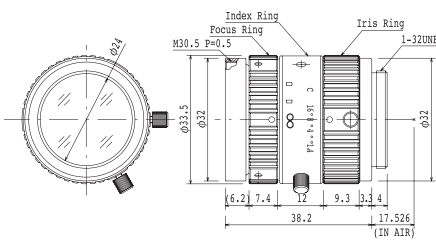


- Designed for SWIR (800-1700nm) range
- Compact & light weight

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

### M3514-SW

- 2/3"
- SWIR
- FIX
- MANUAL



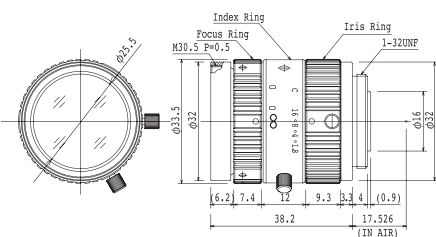
Focal Length	35mm				
Max. Aperture Ratio	1:1.4				
Max. Image Circle	φ 12.3mm				
Operation Range	Iris	F1.4 - F16C			
	Focus	0.3m - Inf.			
Control	Iris	Manual			
	Focus	Manual			
Object Dimension at M.O.D.	8.0(H)cm x 6.0(V)cm 2/3"				
Angle of View	D	18.4°		13.4°	
	H	2/3"	14.7°	1/2"	10.7°
	V		11.1°		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		13.0°		9.5°
	H	2/3"	10.4°	1/2"	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°



# 5MP Lens for ITS

INTELLIGENT TRANSPORT 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



# 5MP Lens for ITS (IR Compatible)

INTELLIGENT TRANSPORT SYSTEM LENS



- 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

- 2/3"
- 5MP
- IR
- FIX
- MANUAL



## MG2514KC-MPIR

## MG3518KC-MPIR

## MG5020KC-MPIR

- 2/3"
- 5MP
- IR
- FIX
- P-iris



### 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

FIX

BOARD

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



E3828KRW



E5228KRW

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

FIX

BOARD

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



T2820KP

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	T2820KFP	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 MEGAPIXEL BOARD LENS

1/2"

1MP

FIX

BOARD

• 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

## 3 MEGAPIXEL ULTRA LOW DISTORTION BOARD LENS

1/1.8"

3MP

FIX

BOARD

• 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



**NEW**

## 4K FISHEYE BOARD LENS

1/1.7" 4K FIX FISHEYE

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



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)		
							1/1.7"			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		

## 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 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 IP66
							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 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					

### 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

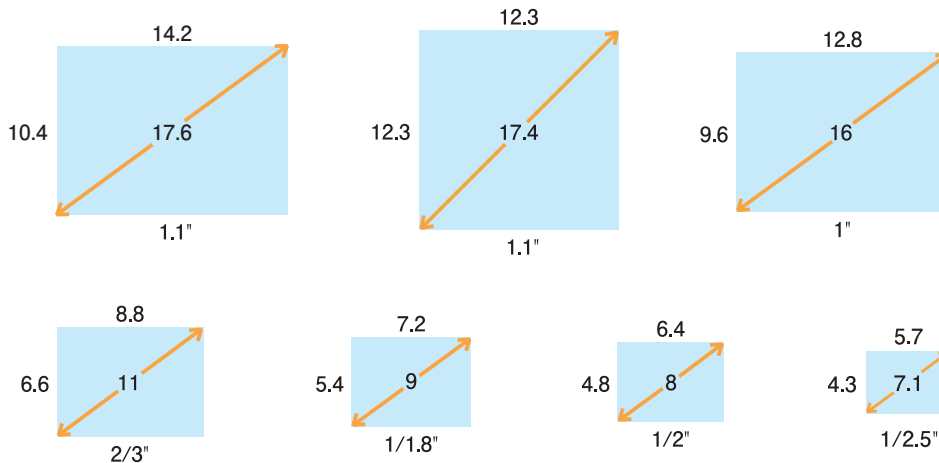
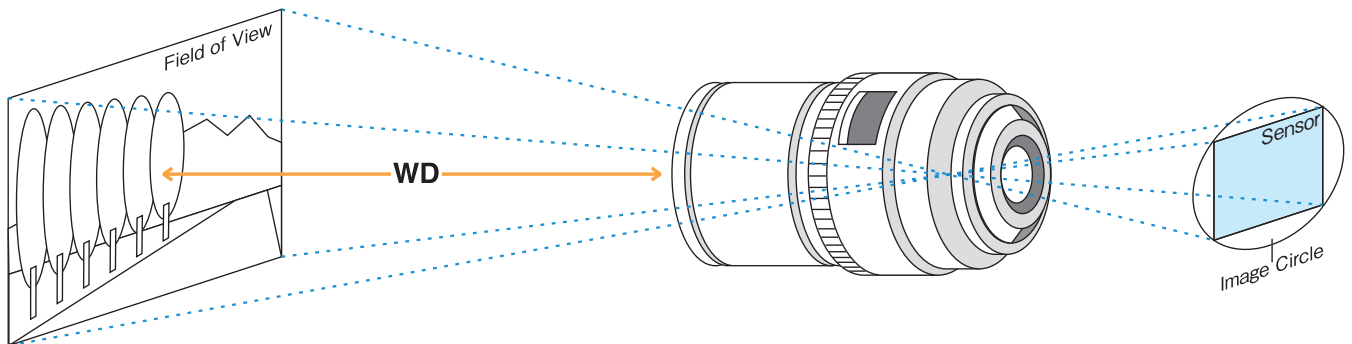
When choosing size of a camera's imaging device, the object size and WD are fixed, focal length can be calculated by the following formula. You can select appropriate lens from the focal length.

<Formula>  
 $f = y' \times WD / y$

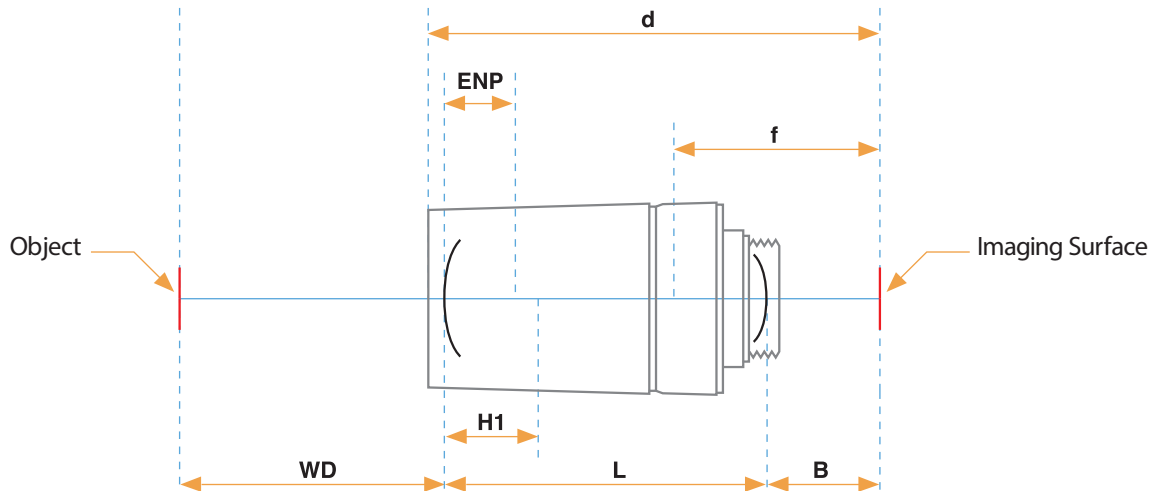
f = focal length of lens  
 WD = distance from lens to object  
 H1 : first principal point  
 y : vertical size of object  
 y' : vertical size of camera's imaging device

### 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 centre 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)	
<b>MEGAPIXEL LENS</b>										
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	
<b>MACRO ZOOM LENS</b>										
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
<b>MEGAPIXEL MACRO ZOOM LENS</b>										
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
<b>TELECENTRIC LENS</b>										
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	
<b>TELECENTRIC MACRO ZOOM LENS</b>										
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

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2017.04



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