

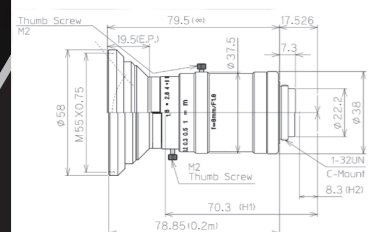


Quality of Light

# go SWIR

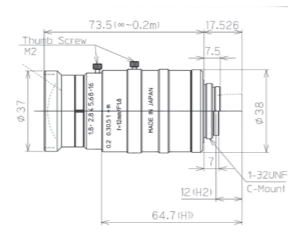
SEE WHAT CANNOT BE SEEN

## LM8HC-VIS-SW



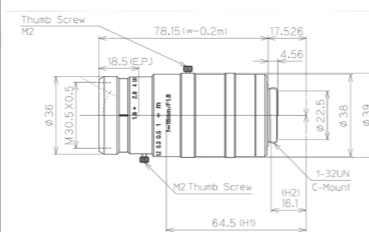
F: 18.75mm C		1"	2/3"	1/1.8"
FOCAL LENGTH	F=18.75	F=25.4	F=25.4	F=17.8
F-NUMBER	F=1.5	F=1.5	F=1.5	F=1.5
PICTURE SIZE	9.6x12.8mm	6.6x8.8mm	6.6x8.8mm	5.4x7.2mm
ANGLE OF VIEW	VER ANGLE 42.8°	31.0°	25.5°	36.9°
HR ANGLE	61.3°	38.7°	28.6°	48.6°
DI ANGLE	56.2°	37.6°	28.5°	45.9°
DISTORTION (TV)	-3.7%	-2.4%	-1.8%	-1.8%
FIELD OF VIEW	VER 27.2mm	19.0mm	14.6mm	22.2mm
HR 38.7mm	24.7mm	18.0mm	13.8mm	19.8mm
MINIMUM FOCUS DISTANCE	DA 49.0mm	31.7mm	23.9mm	31.7mm
MINIMUM FOCUS DISTANCE	0.2m			
FLANGE BACK	17.526mm in air			
BACK FOCUS	11.9mm in air			
FILTER SREW SIZE	M3x0.5			
FRONT/REAR EFFECTIVE DIA.	FRONT #12.8mm REAR #15.0mm			
NO. OF ELEMENTS	4			
TEMPERATURE RANGE	-10~+50°C			
STORAGE TEMPERATURE RANGE	-20~+60°C			
RESOLUTION (CENTER/CORNER)	CENTER 160lp/mm CORNER 100lp/mm			
WEIGHT	2.3g			

## LM12HC-VIS-SW



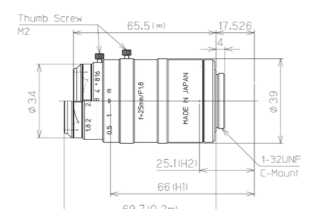
F: 18.75mm C		1"	2/3"	1/1.8"
FOCAL LENGTH	F=18.75	F=25.4	F=25.4	F=17.8
F-NUMBER	F=1.5	F=1.5	F=1.5	F=1.5
PICTURE SIZE	9.6x12.8mm	6.6x8.8mm	6.6x8.8mm	5.4x7.2mm
ANGLE OF VIEW	VER ANGLE 42.8°	31.0°	25.5°	36.9°
HR ANGLE	61.3°	38.7°	28.6°	48.6°
DI ANGLE	56.2°	37.6°	28.5°	45.9°
DISTORTION (TV)	-3.7%	-2.4%	-1.8%	-1.8%
FIELD OF VIEW	VER 27.2mm	19.0mm	14.6mm	22.2mm
HR 38.7mm	24.7mm	18.0mm	13.8mm	19.8mm
MINIMUM FOCUS DISTANCE	DA 49.0mm	31.7mm	23.9mm	31.7mm
MINIMUM FOCUS DISTANCE	0.2m			
FLANGE BACK	17.526mm in air			
BACK FOCUS	11.9mm in air			
FILTER SREW SIZE	M3x0.5			
FRONT/REAR EFFECTIVE DIA.	FRONT #12.8mm REAR #14.7mm			
NO. OF ELEMENTS	4			
TEMPERATURE RANGE	-10~+50°C			
STORAGE TEMPERATURE RANGE	-20~+60°C			
RESOLUTION (CENTER/CORNER)	CENTER 160lp/mm CORNER 100lp/mm			
WEIGHT	1.7g			

## LM16HC-VIS-SW



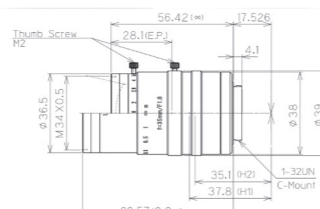
F: 18.75mm C		1"	2/3"	1/1.8"
FOCAL LENGTH	F=18.75	F=25.4	F=25.4	F=17.8
F-NUMBER	F=1.5	F=1.5	F=1.5	F=1.5
PICTURE SIZE	9.6x12.8mm	6.6x8.8mm	6.6x8.8mm	5.4x7.2mm
ANGLE OF VIEW	VER ANGLE 42.8°	31.0°	25.5°	36.9°
HR ANGLE	61.3°	38.7°	28.6°	48.6°
DI ANGLE	56.2°	37.6°	28.5°	45.9°
DISTORTION (TV)	-3.7%	-2.4%	-1.8%	-1.8%
FIELD OF VIEW	VER 27.2mm	19.0mm	14.6mm	22.2mm
HR 38.7mm	24.7mm	18.0mm	13.8mm	19.8mm
MINIMUM FOCUS DISTANCE	DA 49.0mm	31.7mm	23.9mm	31.7mm
MINIMUM FOCUS DISTANCE	0.2m			
FLANGE BACK	17.526mm in air			
BACK FOCUS	11.9mm in air			
FILTER SREW SIZE	M3x0.5			
FRONT/REAR EFFECTIVE DIA.	FRONT #12.8mm REAR #14.7mm			
NO. OF ELEMENTS	4			
TEMPERATURE RANGE	-10~+50°C			
STORAGE TEMPERATURE RANGE	-20~+60°C			
RESOLUTION (CENTER/CORNER)	CENTER 160lp/mm CORNER 100lp/mm			
WEIGHT	1.7g			

## LM25HC-VIS-SW



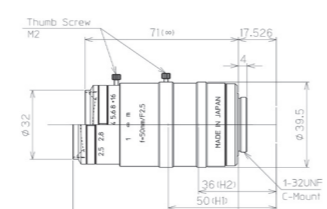
F: 18.75mm C		1"	2/3"	1/1.8"
FOCAL LENGTH	F=18.75	F=25.4	F=25.4	F=17.8
F-NUMBER	F=1.5	F=1.5	F=1.5	F=1.5
PICTURE SIZE	9.6x12.8mm	6.6x8.8mm	6.6x8.8mm	5.4x7.2mm
ANGLE OF VIEW	VER ANGLE 29.2°	20.9°	16.5°	22.3°
HR ANGLE	35.4°	23.9°	20.6°	28.6°
DI ANGLE	30.4°	22.9°	20.6°	26.6°
DISTORTION (TV)	-0.97%	-0.25%	-0.19%	-0.14%
FIELD OF VIEW	VER 8.1mm	5.6mm	4.6mm	6.1mm
HR 10.9mm	7.4mm	6.1mm	4.9mm	6.5mm
MINIMUM FOCUS DISTANCE	DA 130mm	93mm	74mm	93mm
MINIMUM FOCUS DISTANCE	0.2m			
FLANGE BACK	17.526mm in air			
BACK FOCUS	24.4mm in air			
FILTER SREW SIZE	M2.7x0.5			
FRONT/REAR EFFECTIVE DIA.	FRONT #18.9mm REAR #18.7mm			
NO. OF ELEMENTS	4			
TEMPERATURE RANGE	-10~+50°C			
STORAGE TEMPERATURE RANGE	-20~+60°C			
RESOLUTION (CENTER/CORNER)	CENTER 160lp/mm CORNER 100lp/mm			
WEIGHT	160g			

## LM35HC-VIS-SW



F: 18.75mm C		1"	2/3"	1/1.8"
FOCAL LENGTH	F=18.75	F=25.4	F=25.4	F=17.8
F-NUMBER	F=1.5	F=1.5	F=1.5	F=1.5
PICTURE SIZE	9.6x12.8mm	6.6x8.8mm	6.6x8.8mm	5.4x7.2mm
ANGLE OF VIEW	VER ANGLE 19.4°	14.2°	11.5°	15.5°
HR ANGLE	20.2°	15.0°	11.5°	15.5°
DI ANGLE	17.2°	12.8°	10.3°	14.2°
DISTORTION (TV)	-0.47%	-0.21%	-0.19%	-0.14%
FIELD OF VIEW	VER 5.1mm	3.6mm	2.9mm	3.9mm
HR 6.8mm	4.7mm	3.8mm	3.8mm	5.0mm
MINIMUM FOCUS DISTANCE	DA 96mm	59mm	48mm	63mm
MINIMUM FOCUS DISTANCE	0.2m			
FLANGE BACK	17.526mm in air			
BACK FOCUS	16.6mm in air			
FILTER SREW SIZE	M3x0.5			
FRONT/REAR EFFECTIVE DIA.	FRONT #23.7mm REAR #14.3mm			
NO. OF ELEMENTS	4			
TEMPERATURE RANGE	-10~+50°C			
STORAGE TEMPERATURE RANGE	-20~+60°C			
RESOLUTION (CENTER/CORNER)	CENTER 160lp/mm CORNER 100lp/mm			
WEIGHT	170g			

## LM50HC-VIS-SW



F: 25.25mm C		1"	2/3"	1/1.8"
FOCAL LENGTH	F=25.25	F=35.0	F=35.0	F=25.4
F-NUMBER	F=1.5	F=1.5	F=1.5	F=1.5
PICTURE SIZE	9.6x12.8mm	6.6x8.8mm	6.6x8.8mm	5.4x7.2mm
ANGLE OF VIEW	VER ANGLE 11.0°	7.9°	6.4°	8.6°
HR ANGLE	14.6°	10.9°	8.9°	12.0°
DI ANGLE	10.9°	7.7°	6.3°	8.4°
DISTORTION (TV)	-0.11%	-0.06%	-0.04%	-0.04%
FIELD OF VIEW	VER 3.2mm	2.3mm	1.9mm	2.5mm
HR 4.2mm	3.1mm	2.5mm	2.0mm	2.7mm
MINIMUM FOCUS DISTANCE	DA 120mm	87mm	71mm	93mm
MINIMUM FOCUS DISTANCE	0.2m			
FLANGE BACK	17.526mm in air			
BACK FOCUS	34.9mm in air			
FILTER SREW SIZE	M3x0.5			
FRONT/REAR EFFECTIVE DIA.	FRONT #23.3mm REAR #17.7mm			
NO. OF ELEMENTS	4			
TEMPERATURE RANGE	-10~+50°C			
STORAGE TEMPERATURE RANGE	-20~+60°C			
RESOLUTION (CENTER/CORNER)	CENTER 160lp/mm CORNER 100lp/mm			
WEIGHT	190g			



Quality of Light

Search Kowa lenses



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HC-VIS-SW  
LENS SERIES

1"

12  
MP

3.1µm

Kowa Vis-SWIR-Corrected

# HC-VIS-SW

## Vis-SWIR-Corrected Lens Series

1" 12 MP 3.1μm



8 mm 12 mm 16 mm 25 mm 35 mm 50 mm

Image size	1" (Φ16)
Mount	C-mount
Resolution	12 MP (3.1μm)
F No.	F1.8 (50mm lens is F 2.5)
Wavelength	Visible-2000nm



Watch video

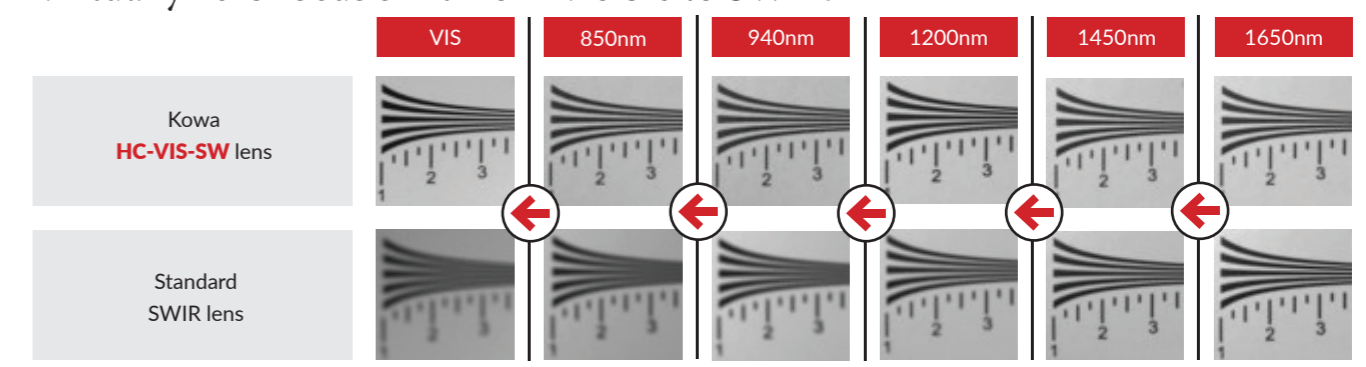


Technical data and marketing materials

PERFECT PARTNERS FOR  
SONY IMX990/991  
SENSORS

- > **Virtually zero focus shift** from visible to 2000nm wavelength range.
- > Utilizes **ultra wideband multi-coatings** to increase transmission.
- > **Special extra low dispersion (XD) glass** significantly reduces chromatic aberration, otherwise known as color fringing.
- > Includes Kowa's signature **floating mechanism** design that eliminates optical aberrations from close distance to infinity.
- > A maximum of **12 megapixel and 3.1μm performance** can be found at select wavelength ranges.
- > **Low distortion.**

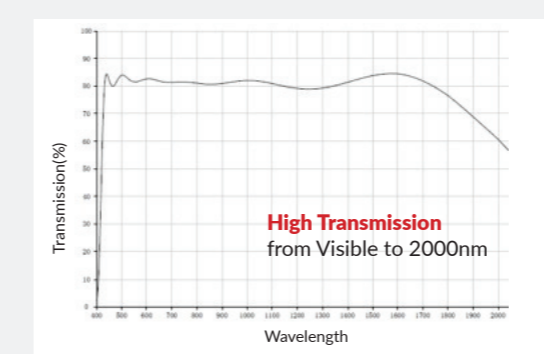
### Virtually zero focus shift from Visible to SWIR



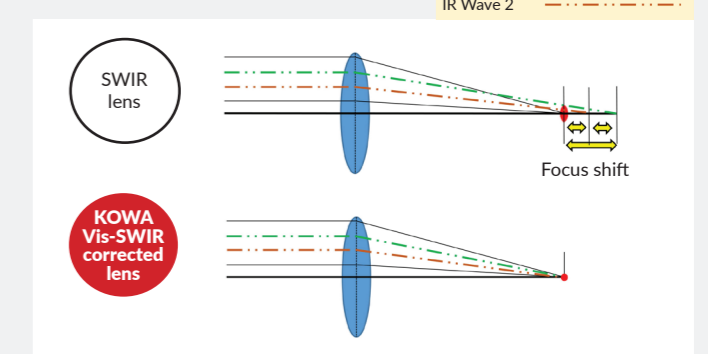
\*Focus is fixed at 1650nm and switch the wavelength

The primary benefit for Vis-SWIR Correction is that it allows an image to remain in focus even when the wavelength changes from visible to infrared or vice versa. With a standard visible, NIR or SWIR lens, a focus shift will occur due to differences in the refractive index if the wavelength fluctuates. However, by incorporating extra low dispersion (XD) glass and carefully aligning all internal lens elements, such focus shift problems are eliminated.

### Kowa ultra wideband multi-coating



### Eliminating focus shift



### Application

