

# shr411CCX

SHR CoaXPress



## Highest resolution made in Germany

The SHR series combines large pixel structures with highest resolutions. The physical characteristics of large pixels guarantee outstanding image quality. High-quality harmonisation of the pixels with defect pixel correction provides a noise-free image. The camera offers the highest structural precision in sensor adjustment in a massive, thermally highly optimised housing. The large M72 lens mount can be adapted to any lens. This makes the SHR the camera for the most demanding optical tasks.

The high-performance CoaXPress interface enables the fastest high-speed data transfer with excellent latency behaviour. The camera is equipped with a comprehensive I/O interface with galvanic interface separation, sequencer and integrated multi-channel LED light control.

## Technical Highlights

- > Outstanding image quality
- > High color depth
- > High dynamic range
- > Excellent image homogeneity
- > User defined lens shading correction
- > User defined pixel correction
- > High-speed CXP-6 and CXP-12 quad interfaces
- > Safe signal with Schmitt-trigger, debouncer
- > Industrial I/O concept: up to 24 V signal voltage
- > GenICam interface
- > Industrial TTL-24V I/O interface with SafeTrigger, programmable logic functions, sequencer, timer, RS232

## CoaXPress specific features

- > Quad CoaXPress-6 or CoaXPress-12
- > Power over CoaXPress

The SHR offers excellent properties for inspection tasks in the wafer, flat panel or solar panel business. The CoaXPress version provides the benefit of long distance data cables.

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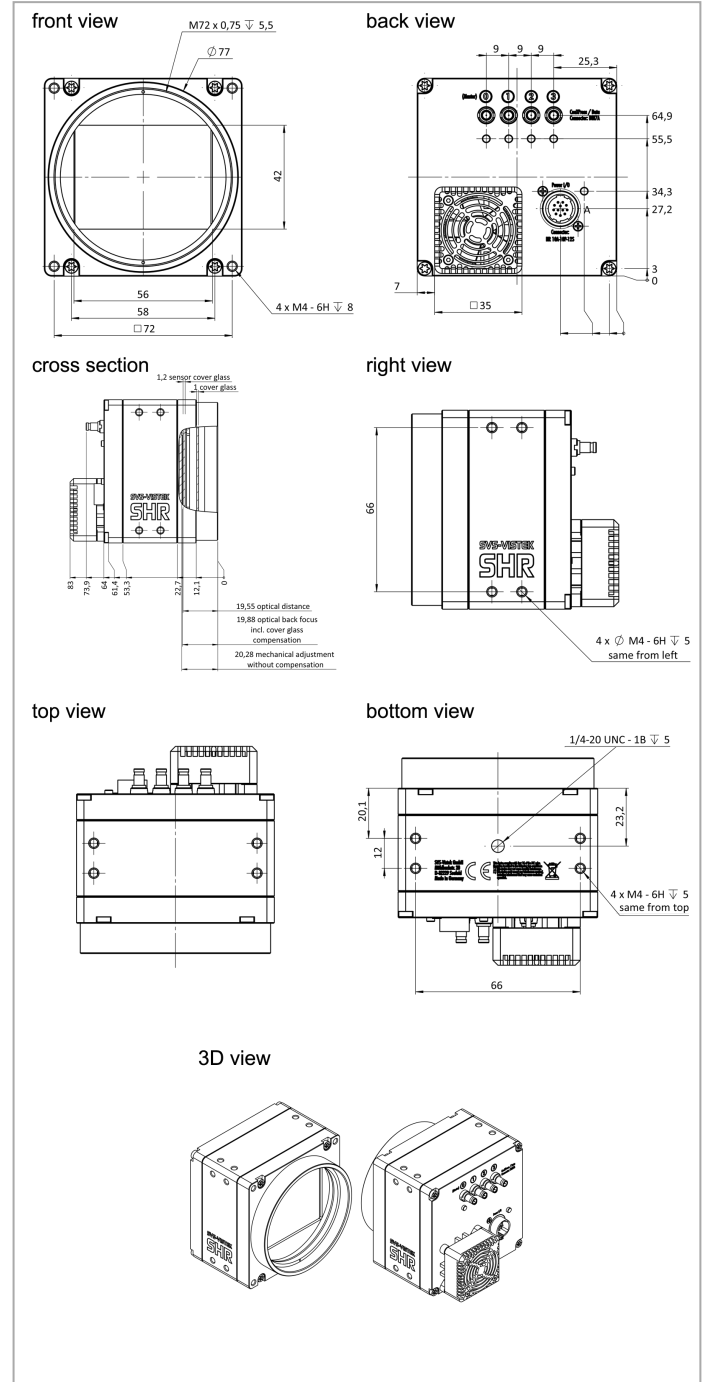
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## SHR Series

## shr411CCX

Resolution [MP]	151 MP
Resolution (h x v)	14192 x 10640 px
Frame rate (max.)	6.1 fps
Chroma	color
Interface	4 CXP-6 Connections
<b>Sensor</b>	
Sensor	IMX411AQR
Manufacturer	Sony
Sensor type	Area CMOS
Shutter type	rolling shutter
Sensor size (h x v)	53.36 x 40.01 mm
Optical diagonal	66.69 mm
Sensor format	Medium Format
Pixel size (h x v)	3.76 x 3.76 $\mu\text{m}$
<b>Camera</b>	
Exposure modes	MANUAL;AUTO
Trigger modes	INTERNAL;SOFTWARE;EXTERNAL
Exposure time (min)	60 $\mu\text{s}$
Exposure time (max)	1 sec
Pixel format / max	bayer8, bayer10, bayer12, bayer16 / 16 bit
Gain modes / max	manual, auto / 36 dB
S/N ratio (max)	46.7 dB (dep. on environment)
Dynamic range (max)	82 dB (dep. on environment)
Internal memory	512 MB SDRAM, 160 MB Flash
<b>Feature Set</b>	
Manual white balance	yes
Automatic white balance	yes
AOI	yes
LUT	yes
Offset	yes
Binning	yes
Image flip	yes
Shading correction	yes (external)
Defect pixel correction	yes
Sequencer	yes
<b>Housing</b>	
Lens mount	M72x0.75
Dimensions (w x h x d)	80 x 80 x 83 mm
Weight	600 g
Operating temperature (housing)	-10 to 70 °C
Ambient humidity	10 to 90 % (non-condensing)
Protection class	IP30
<b>I/O-Interfaces</b>	
Input up to 24V	2 x
Input OPTO	1 x

## Dimensions [mm]

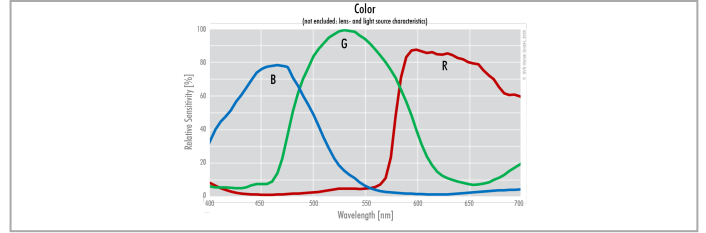


## Pinout Mating Connector

Hirose 12 Pin	1	VIN - (GND)	7	OUT 1 (open drain)
	2	VIN + (10 V to 25 V DC)	8	OUT 2 (open drain)
	3	IN 4 (RXD RS232)	9	IN 3 + (opto In +)
	4	OUT 4 (TXD RS232)	10	IN 3 - (opto In -)
	5	IN 1 (0-24V)	11	OUT 3 (open drain)
	6	IN 2 (0-24V)	12	OUT 0 (open drain)

## Spectral Response \*

Output open drain	4 x
I/O RS-232	1 x
Power supply	10 to 25 V (DC)
Power consumption	14 W (dep. on operating mode)



\* Sensor data – excludes camera cover- or IR-cut filter characteristics