



**GigE**  
VGA TO 12 MEGAPIXEL  
**ECO Series**

LED SEQ STT BST PLC

### ECO GigE Vision Cameras

Unsurpassed flexibility with great performance and affordability. This characterizes the ECO series best. You will find all popular CCD-Sensors from ON Semi and Sony in the ECO series. These cameras are available in more than 100 different versions with resolutions from VGA up to 12 megapixels. ECO series cameras are designed to achieve high frame rates while maintaining excellent signal-to-noise ratios and at the same time providing a small footprint. Supporting the standards of GigE Vision™ and GenCam™ the ECO series opens up new dimensions for integration into your application SW-Environment.

#### Special Features of the ECO Series:

- > Progressive Scan CCD sensors
- > Area of Interest modes (AOI)
- > 8/12 Bit video data stream (14 Bit ADI)
- > 64 MB frame buffer
- > White balance for color versions (one push or manual)
- > Wide range Power conditions: 10 - 25 V DC
- > Sequence-Shutter and enhanced Strobe-Functionality
- > Up to 4 x direct drive and control of LED lighting
- > Dimensions [mm]: 38 x 38 x 33/45

|                 |                    |        |             |            |              |       |                       | GigE  | BlackLine |
|-----------------|--------------------|--------|-------------|------------|--------------|-------|-----------------------|-------|-----------|
| ECO Series [MP] | Resolution [Pixel] | Format | Sensor      | Pixel [µm] | Architecture | Mount | max. Frame Rate [fps] | IP 67 |           |
| eco618          | 0.3 656 x 492      | 1/4"   | Sony ICX618 | 5.6        | CCD          | C/CS  | 155                   | ✓     |           |
| eco424          | 0.3 656 x 492      | 1/3"   | Sony ICX424 | 7.4        | CCD          | C/CS  | 124                   | ✓     |           |
| eco414          | 0.3 656 x 492      | 1/2"   | Sony ICX414 | 9.9        | CCD          | C/CS  | 125                   | ✓     |           |
| eco415          | 0.4 780 x 580      | 1/2"   | Sony ICX415 | 8.3        | CCD          | C/CS  | 86                    | ✓     |           |
| eco204          | 0.8 1,024 x 776    | 1/3"   | Sony ICX204 | 4.65       | CCD          | C/CS  | 47                    | ✓     |           |
| eco445          | 1.3 1,296 x 964    | 1/3"   | Sony ICX445 | 3.75       | CCD          | C/CS  | 30                    | ✓     |           |
| eco267          | 1.4 1,392 x 1,040  | 1/2"   | Sony ICX267 | 4.65       | CCD          | C/CS  | 25                    | ✓     |           |
| eco285          | 1.4 1,392 x 1,040  | 2/3"   | Sony ICX285 | 6.45       | CCD          | C     | 34                    | ✓     |           |
| eco274          | 2.1 1,600 x 1,236  | 1/1.8" | Sony ICX274 | 4.4        | CCD          | C/CS  | 26.5                  | ✓     |           |
| eco655          | 5 2,448 x 2,050    | 2/3"   | Sony ICX655 | 3.45       | CCD          | C/CS  | 10                    | ✓     |           |
| eco625          | 5 2,448 x 2,050    | 2/3"   | Sony ICX625 | 3.45       | CCD          | C/CS  | 20                    | ✓     |           |
| eco674          | 2.8 1,920 x 1,460  | 1/2"   | Sony ICX674 | 4.54       | CCD          | C     | 19.9                  | ✓     |           |
| eco695          | 6 2,752 x 2,204    | 1"     | Sony ICX695 | 4.54       | CCD          | C     | 10.1                  | ✓     |           |
| eco815          | 9 3,360 x 2,712    | 1"     | Sony ICX815 | 3.69       | CCD          | C     | 7                     | ✓     |           |
| eco834          | 12 4,224 x 2,838   | 1"     | Sony ICX834 | 3.1        | CCD          | C     | 5.5                   | ✓     |           |

PoE versions on request



**GigE**  
USB3  
12.3 TO 20 MEGAPIXEL  
WITH MFT BAYONET  
**Tracer Series**

LED SEQ STT BST PLC

### Tracer GigE Vision and USB3 Cameras

The lens mount of the Tracer is a Micro Four Thirds (MFT) mount, covering all electric connections to have full control on lens zoom, focus and aperture. The optical lens specification of MFT guarantees best optical results in combination with state-of-the-art CMOS and CCD lenses. The MFT mount opens up a wide range of high-quality lenses for the Tracer. Control options for exposure time, focus, zoom, aperture and strobe lighting through a single GenCam interface. The latest sensors we provide with the Tracer deliver up to 20 MP of resolution with up to 72dB dynamic range.

#### Special Features of the Tracer Series:

- > Micro-Four-Thirds bayonet mount
- > Fast user control of zoom, aperture and focus
- > Lens settings controlled by Ethernet interface or USB3
- > Data interface: GigE or USB3
- > User selectable AOI (Area Of Interest)
- > SDK for Windows (32/64bit) and Linux available
- > Frame buffer: 256 MB
- > Dimensions EXO [mm]: 58 x 58 x 45

|            |      |                    |        |              |            |              |       | USB3                  | GigE |
|------------|------|--------------------|--------|--------------|------------|--------------|-------|-----------------------|------|
| Model      | [MP] | Resolution [Pixel] | Format | Sensor       | Pixel [µm] | Architecture | Mount | max. Frame Rate [fps] |      |
| exo304 TR  | 12.3 | 4,096 x 3,000      | 1.1"   | Sony IMX 304 | 3.45       | CMOS         | MFT   | 10                    |      |
| exo387 TR  | 16.8 | 5,456 x 3,076      | 4/3"   | Sony IMX 387 | 3.45       | CMOS         | MFT   | 7.4                   |      |
| exo367 TR  | 19.6 | 4,416 x 4,428      | 4/3"   | Sony IMX 367 | 3.45       | CMOS         | MFT   | 6.2                   |      |
| exo183 TR* | 20.2 | 5,496 x 3,672      | 1"     | Sony IMX 183 | 2.4        | CMOS         | MFT   | 6                     |      |

\*Rolling Shutter



**GigE**  
Link  
USB3  
1.6 TO 31.4 MEGAPIXEL  
**EXO Series**

LED SEQ STT BST PLC

### The EXO Concept

The EXO series is the perfect choice for system integrators with ever changing tasks. Simple and scalable integration with maximum functionality was our objective. The aluminum unibody housing is precisely machined with excellent thermal and mechanical properties and creates the platform for a complete offering of sensors and interfaces. A wide range of the latest CMOS and CCD sensors from Sony and CMOSIS makes it easy to select the right camera for virtually any application. On the interface side, the choices are GigE Vision, Camera Link Base or USB3.0.

All SVCam models incorporate the same full set of features - a highlight is the ability to control and power independent 4 LED lights - all 4 lights individually controlled by the camera.

#### Special Features of the EXO Series:

- > Sensors from Sony and CMOSIS
- > Global Shutter CCD and CMOS
- > 1.6 to 31 megapixel
- > 4 x direct drive and control of LED lighting
- > GigE Vision, Camera Link and USB3 supported
- > logical trigger functions
- > GenCam compliant
- > Dimensions [mm]: C-mount: 50 x 50 x X (depending on sensor)  
M42: 55 x 55 x X (depending on sensor)
- > Operating temperature [C°]: -10 up to 60

### EXO Camera Link Cameras

EXO Camera Link models let you maintain the existing and proven infrastructure for years to come, while making use of the newest range of image sensors. The serialized interface has gained wide popularity and acceptance thanks to its high bandwidth. The EXO series was the first Camera Link model to include features such as 4 I/O strobe controller and look up table.

- > SVCam Kit Software control
- > 256 MB frame buffer

### EXO GigE Vision Cameras

EXO series cameras with GigE Vision interface give your applications an extremely high scalability. Quick and easy hardware interchangeability results in shorter design cycles and reduced development costs. Further value is added to your application by a virtually limitless feature set. As an example, the 4 I/O LED driver with standardized software control.

- > Cost effective
- > "Off the shelf" industrial-standard plugs and cables
- > Data transfer rate up to 120 MB/s
- > Up to 100 m range without additional switch
- > Wide range of applications in image processing
- > Remote service capability
- > 256 MB frame buffer

### EXO USB3 Vision Cameras

The EXO is one of the most flexible and scalable cameras for the industrial market segment. The USB3 Vision interface is easy to integrate in your system, with a data rate up to effective 350 MB/sec. The time to market for applications is shortened, reducing costs even further. Power and trigger the camera through a single interface connection and reduce cable complexity. EXO provides plug-and-play capability for the whole range of 2.3 to 31 MP resolution.

- > Up to 350 MB/sec effective transfer rate
- > Leverages existing infrastructure for cables and connectors
- > Power camera with up to 4.5 W
- > Cost effective/easy implementation and interfacing
- > 256 MB frame buffer

|            |      |                    |          |                |            |              |       | GigE                  | Camera Link | USB3 |
|------------|------|--------------------|----------|----------------|------------|--------------|-------|-----------------------|-------------|------|
| Model      | [MP] | Resolution [Pixel] | Format   | Sensor         | Pixel [µm] | Architecture | Mount | max. Frame Rate [fps] |             |      |
| exo273     | 1.6  | 1,440 x 1,080      | 1/2.9"   | Sony IMX273    | 3.45       | CMOS         | C     | 79 - -                |             |      |
| exo174     | 2.3  | 1,920 x 1,200      | 1/1.2"   | Sony IMX174    | 5.86       | CMOS         | C     | 52 105 160            |             |      |
| exo249     | 2.3  | 1,920 x 1,200      | 1/1.2"   | Sony IMX249    | 5.86       | CMOS         | C     | 41 - 41               |             |      |
| exo252     | 3.1  | 2,048 x 1,536      | 1/1.8"   | Sony IMX252    | 3.45       | CMOS         | C     | - 78 115              |             |      |
| exo265     | 3.1  | 2,048 x 1,536      | 1/1.8"   | Sony IMX265    | 3.45       | CMOS         | C     | 39 - 55               |             |      |
| exo4000    | 4    | 2,048 x 2,048      | 1"       | CMOSIS CMV4000 | 5.5        | CMOS         | C     | 28 - 74               |             |      |
| exo250     | 5    | 2,448 x 2,048      | 2/3"     | Sony IMX250    | 3.45       | CMOS         | C     | 23 49 72              |             |      |
| exo250 Z** | 5    | 2,448 x 2,048      | 2/3"     | Sony IMX250    | 3.45       | CMOS polar.  | C     | 23 - 72               |             |      |
| exo264     | 5    | 2,448 x 2,048      | 2/3"     | Sony IMX264    | 3.45       | CMOS         | C     | 23 - 35               |             |      |
| exo694     | 6    | 2,752 x 2,200      | 1"       | Sony ICX694    | 4.54       | CCD          | C     | - 25 25               |             |      |
| exo428     | 7.1  | 3,208 x 2,200      | 1.1"     | Sony IMX428    | 4.54       | CMOS         | C     | 16 - 51               |             |      |
| exo255     | 8.8  | 4,096 x 2,160      | 1"       | Sony IMX255    | 3.45       | CMOS         | C     | - 42                  |             |      |
| exo267     | 8.8  | 4,096 x 2,160      | 1"       | Sony IMX267    | 3.45       | CMOS         | C     | 13.5 28 32            |             |      |
| exo814     | 9    | 3,360 x 2,712      | 1"       | Sony ICX814    | 3.69       | CCD          | C     | - 18 18               |             |      |
| exo253     | 12.3 | 4,096 x 3,000      | 1.1"     | Sony IMX253    | 3.45       | CMOS         | C     | - - 30                |             |      |
| exo253 Z** | 12.3 | 4,096 x 3,000      | 1.1"     | Sony IMX253    | 3.45       | CMOS pol.    | C     | 10 - -                |             |      |
| exo304     | 12.3 | 4,096 x 3,000      | 1.1"     | Sony IMX304    | 3.45       | CMOS         | C     | 9 20 23               |             |      |
| exo183*    | 20.2 | 5,496 x 3,672      | 1"       | Sony IMX183    | 2.4        | CMOS         | C     | 5 12 17               |             |      |
| exo541     | 20.3 | 4,504 x 4,504      | 17.45 mm | Sony IMX541    | 2.74       | CMOS         | C     | 6 - 18.4              |             |      |
| exo540     | 24.4 | 5,320 x 4,600      | 19.27 mm | Sony IMX540    | 2.74       | CMOS         | C     | 5 - 15                |             |      |

\* Rolling Shutter \*\* Polarized version of IMX sensor

### EXO USB3 / GigE Cameras with M42 mount

The EXO is expanding its range of resolutions. The new models have fast USB3 / GigE Vision interfaces and provide image resolutions of up to 31 megapixels. The sensors have large 3.45 µm pixels, delivering an excellent dynamic range up to 72 db and high light sensitivity. Due to the sensor size, the cameras come with a M42 mount.

- > SVCam Kit Software control
- > 256 MB frame buffer

|        |      |                    |        |             |            |              |       | GigE                  | Camera Link | USB3 |
|--------|------|--------------------|--------|-------------|------------|--------------|-------|-----------------------|-------------|------|
| Model  | [MP] | Resolution [Pixel] | Format | Sensor      | Pixel [µm] | Architecture | Mount | max. Frame Rate [fps] |             |      |
| exo387 | 16.8 | 5,456 x 3,076      | 4/3    | Sony IMX387 | 3.45       | CMOS         | M42   | 7.4 - - 22            |             |      |
| exo367 | 19.6 | 4,416 x 4,428      | 4/3    | Sony IMX367 | 3.45       | CMOS         | M42   | 6.2 - - 19            |             |      |
| exo342 | 31.4 | 6,464 x 4,852      | 27.9   | Sony IMX342 | 3.45       | CMOS         | M42   | 3.8 - - 12            |             |      |



**new**  
10 GigE  
CoaXPress  
16 TO 24.5 MEGAPIXEL  
**FXO Series**

LED SEQ STT BST PLC

### FXO 10GigE Vision and CoaXPress Cameras

The new 4th generation of sensors of the Pregius series from Sony is the heart of the FXO series. With its new backside illuminated technology, the sensor is even more light sensitive than previous Pregius generations and convinces with low noise. The excellent homogeneity and dynamic range of the image is setting standards. The 2.74µm pixel of the Pregius 5 with global shutter allows inexpensive lenses.

A compact housing, specially milled for each sensor size, and the latest electronics offer the ideal working environment for this fast, high-performance sensor. The FXO combines the excellent image quality of the sensor with fast interfaces, powerful I/Os and camera features.

### Areas of application FXO 10GigE

The modern, powerful 10GigE interface is an extremely economical version of the FXO. Up to 100m cable length and PoE are possible. The control is transparent to GigE Vision.

### Areas of application FXO CoaXPress

The FXO with CoaXPress-12 is suitable for extremely time-critical applications with minimal jitter and extremely constant data flow. PoCXP is supported.

#### Powerful Features of the FXO Series:

- > high resolutions in a small housing
- > C mount
- > Thermally highly optimized milled housing, up to 60°C operating temperature
- > State-of-the-art interfaces 10GigE and CoaXPress-12 with PoE or PoCXP
- > Mono and Color (Bayer) with auto white balance
- > Various trigger and exposure modes, global shutter
- > Auto and manual gain and exposure
- > Various binning modes with performance boost
- > Area of Interest (AOI/ROI)
- > 8 or 12 bit color depth
- > 512 MB Memory
- > Logical trigger functions (PLC)
- > Power output (4-channel strobe controller) with 3A max
- > Electrical and optical inputs
- > Programmable timers and sequencers with logic modules
- > SDK for Windows and Linux (X86, ARM) available
- > GenTL driver, GenCam Standard 3.0

|        |      |                    |         |        |            |              |       | 10GigE                | CoaXPress |
|--------|------|--------------------|---------|--------|------------|--------------|-------|-----------------------|-----------|
| Model  | [MP] | Resolution [Pixel] | Format  | Sensor | Pixel [µm] | Architecture | Mount | max. Frame Rate [fps] |           |
| fxo542 | 16.1 | 5,320 x 5,320      | 16.8 mm | IMX542 | 2.75       | CMOS         | C     | 45 45                 |           |
| fxo541 | 20.3 | 4,504 x 4,504      | 17.5 mm | IMX541 | 2.75       | CMOS         | C     | 35.3 35.3             |           |
| fxo540 | 24.5 | 5,320 x 4,600      | 19.3 mm | IMX540 | 2.75       | CMOS         | C     | 30.1 30.1             |           |



**10 GigE**  
Link  
CoaXPress  
UP TO 122 MEGAPIXEL  
**HR Series**

LED SEQ STT BST PLC

### HR 10GigE Vision Cameras

Excellent image quality at the highest resolutions with the most flexible interface is the domain of the HR series. The new 10GigE interface offers almost ten times the transmission power with unchanged flexibility. Easy integration with GenCam, a flexible M58 mount and robust electronics make the HR series the ideal workhorse for demanding machine vision tasks. It delivers excellent flatness and the best S/N ratio for every sensor.

#### Special Features of the HR GigE Series:

- > 10GigE data interface
- > GigE Vision and GenCam standard compliant
- > Cable lengths up to 100 meters are possible
- > AOI (Area of Interest)
- > SDK for Windows (32/64 bit) and Linux available
- > 512 MB Memory
- > Dimensions [mm]: 70 x 71 x 55

### HR Camera Link Cameras

Our sophisticated sensor knowledge enables the Camera Link versions of the HR series the fast and direct connection to the sensor - often critical to your advantage. Available resolutions are 120 megapixels with the best of the CMOS technology. Newest high-speed CMOS sensors are optimally supported with Camera Link base, medium or full standard.

#### Special Features of the HR Camera Link Series:

- > GenCam compliant
- > Power over Camera Link (PoCL)
- > 512 MB Memory
- > Dimensions [mm]: 70 x 71 x 55

### HR CoaXPress Cameras

Outstanding image quality is the core competence of the HR Series. Nonetheless, the HR Series achieves highest frame rates at highest resolutions. The CoaXPress interface of the HR delivers up to 25 GB/s of image data. Global Shutter and Rolling Shutter models are available. The HR Series is characterized by a high S/N ratio and an exceptionally homogeneous image.

#### Special Features of the HR Camera CXP Series:

- > GenCam compliant
- > Power over CXP
- > 512 MB Memory
- > Long distance interface cables
- > Dimensions [mm]: 70 x 71 x 55

|         |      |                    |          |                   |            |              |       | 10GigE                | Camera Link | CoaXPress |
|---------|------|--------------------|----------|-------------------|------------|--------------|-------|-----------------------|-------------|-----------|
| Model   | [MP] | Resolution [pixel] | Format   | Sensor            | Pixel [µm] | Architecture | Mount | max. Frame Rate [fps] |             |           |
| hr387*  | 16.8 | 5,456 x 3,076      | 21.7 mm  | Sony IMX387       | 3.45       | CMOS         | M58/F | 61.3 - - -            |             |           |
| hr25    | 25   | 5,120 x 5,120      | 32.5 mm  | ON Semi Python25K | 4.5        | CMOS         | M58/F | 42 31 80              |             |           |
| hr342*  | 31.4 | 6,464 x 4,852      | 27.9 mm  | Sony IMX342       | 3.45       | CMOS         | M58/F | 35.4 - - 35.4         |             |           |
| hr51*   | 51   | 8,424 x 6,032      | 35 mm    | GMAX4651          | 4.6        | CMOS         | M58/F | 10 - - 25             |             |           |
| hr455   | 61   | 9,568 x 6,380      | 43.24 mm | Sony IMX455       | 3.76       | CMOS         | M58/F | 17.9 - - 17.9         |             |           |
| hr120** | 122  | 13,272 x 9,176     | APS-H    | Canon             | 2.2        | CMOS         | M58/F | - 6.7 9.3             |             |           |

PoE versions on request, \*Preliminary, \*\*Rolling Shutter,



**CoaXPress**  
10 GigE  
new  
UP TO 151.2 MEGAPIXEL  
**SHR Series**

LED SEQ STT BST PLC

### SHR 10GigE Vision Cameras

The new 10GigE interface allows almost 10 times the transmission speed of a standard GigE Vision line. The convincing advantages such as long data lines, GenCam and the flexibility of GigE Vision are retained and are now also available at high speed. Thus, 10GigE also qualifies for the SHR series, which relies on high bandwidths due to its super high resolution and 12 bit mode for highest dynamic range. With a flexible M72 thread and exceptional image quality, the SHR is ideal for the most demanding image processing tasks.

#### Special Features of the HR GigE Series:

- > 10GigE data interface
- > Cable lengths up to 100 meters are possible
- > AOI (Area of Interest)
- > SDK for Windows (32/64 bit) and Linux available
- > 512 MB Memory
- > Dimensions [mm]: 80 x 80 x 60

### SHR CoaXPress Cameras

The SHR Series offers highest resolutions up to 151 MP with Rolling Shutter sensors and CoaXPress for quality control. Excellent temperature management ensures optimum image quality even with the large sensors. The SHR CoaXPress is one of the most powerful interface standards in industrial image processing and the SHR CXP Series benefits from its high bandwidth with its large images. The sophisticated 4 I/O system is the basis for a fast integration into the application.

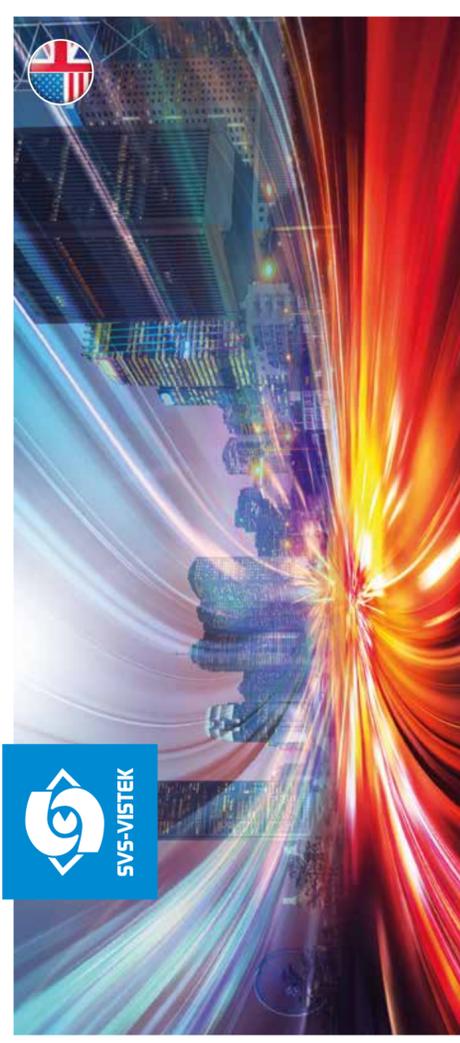
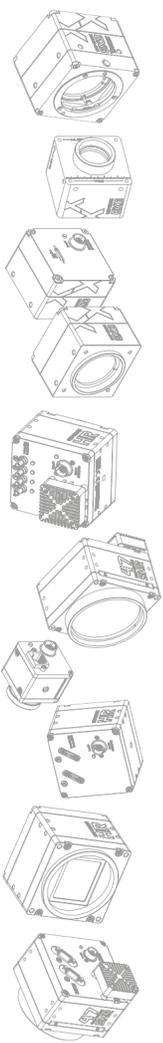
#### Special Features of the CoaXPress SHR Series:

- > Power over CXP (PoCXP)
- > 512 MB Memory

|         |       |                    |         |             |            |              |       | 10GigE                | Camera Link | CoaXPress |
|---------|-------|--------------------|---------|-------------|------------|--------------|-------|-----------------------|-------------|-----------|
| Model   | [MP]  | Resolution [Pixel] | Format  | Sensor      | Pixel [µm] | Architecture | Mount | max. Frame Rate [fps] |             |           |
| shr461* | 101.2 | 11,648 x 8,742     | 55 mm   | Sony IMX461 | 3.76       | CMOS         | M72   | 8.7* - - 8.7          |             |           |
| shr411  | 151.2 | 14,192 x 10,640    | 66.7 mm | Sony IMX411 |            |              |       |                       |             |           |

# Industrial Cameras

July 2020



## Feature List

| ECO  | EXO                | HR                     | SHR              |
|--|--------------------|------------------------|------------------|
| 0.3 to 1/2 Mpixel                                    | 1.6 to 31.4 Mpixel | 16.8 to 122 Mpixel     | up to 151 Mpixel |
| CCD  | CMOS and CCD       | CMOS                   | CMOS             |
| Sony   | Sony and OM3S      | Sony / CANON / Special | Sony             |
| mono and color versions                              |                    |                        |                  |
| progressive scan or global shutter (Image on demand) |                    |                        |                  |

| Camera Hardware Features   |   |                                  |                                    |
|----------------------------|---|----------------------------------|------------------------------------|
| GigE Vision up to 120 MB/s | GigE Vision, Camera Link Base or US3S Vision              | 10GigE Vision or 1 x CoaPress-12 | 10GigE or 2 x CoaPress-6           |
| 64 MB internal memory      | 256 MB internal memory                                    | 512 MB internal memory           | 512 MB internal memory             |
| 8 or 12 bit pixel format   |   |                                  |                                    |
| CoS Mount                  | RoCL (Power over Camera Link) C Mount, M42, MFT, EF Mount | RoE, RoCPE C Mount, EF Mount     | RoE, RoCL, RoCPE C Mount, EF Mount |
|                            | optional Dynamic Lens Control (MLT)                       | Loss Mount, Address available    | M72 Mount (FD) 19.5S, EF Mount     |
| 38 x 38 x 33 / 45 mm       | 50 x 50 x (43-47) mm (M42: 55 x 55)                       | 50 x 50 x 70 mm                  | 70 x 71 x 55 mm                    |
| IP Class up to IP67        |   |                                  | 80 x 80 x 60 mm                    |
|                            |   |                                  | precision machined housing         |
|                            |   |                                  | manual or auto top balancing*      |

| Camera Firmware Features   |  |                    |
|--|--|--------------------|
| 2 x 2 binning  |  |                    |
| horizontal and vertical image flip   |  |                    |
| custom offset pixel crop - "detect pixel map"                              |  |                    |
| AOI / ROI (Area of Interest / Region of Interest)                          |  | shading correction |
| read out control - custom acquisition timing (manual or delayed) GigE only |  |                    |
| white balance (manual / auto)  |  |                    |
| exposure time control (manual, auto or external)                           |  |                    |
| gain (manual or auto)  |  |                    |
| adjustable offset  |  |                    |
| UI* (look up table) - custom pixel mapping                                 |  |                    |
| trigger mode (internal, software or external)                              |  |                    |
| integrated temperature sensor - SDK accessible                             |  |                    |

| I/O Features   |                        |
|--|------------------------|
| up to 4 x open drain outputs   | 4 x open drain outputs |
| stroke controller - in-camera LED light driver/controller, up to 3 A. (depending on series) - easy synchronization |                        |
| sequencer - up to 32 programmable intervals with individual exposure and stroke out                                |                        |
| programmable logic I/O functionality with timers   |                        |
| PWM - high frequency pulse width modulation  |                        |
| signal safe through high-low filter, debouncer and prescaler for trigger input                                     |                        |
| versatile I/O output: 24 V signal levels - RS232 / RS422 differential stand  |                        |

| Standards   |       |
|---|-------|
| GenICam compatible                                  |       |
| compatible with most 3 <sup>rd</sup> party software |       |
| GIG-E   | LINK  |
| US3   | WY    |
| RoCL  | CoS   |
| RoE   | RoCPE |
| M72   |       |

\* not valid for some ECOS

| Color Code     | Pin RJ45 | Pin M12 |
|----------------|----------|---------|
| white / orange | 1        | 1       |
| orange         | 2        | 2       |
| white / green  | 3        | 3       |
| blue           | 4        | 4       |
| white / blue   | 5        | 7       |
| green          | 6        | 4       |
| white / brown  | 7        | 5       |
| brown          | 8        | 6       |

| Pin | Color Code  | Signal                                     |
|-----|-------------|--|
| 1   | brown       | V IN + (0 - 25V)                           |
| 2   | blue        | V IN- (GND)                                |
| 3   | white       | RD (RS232) not available for PoE versions  |
| 4   | green       | TxD (RS232) not available for PoE versions |
| 5   | pink        | IN 1 (0 - 24 V)                            |
| 6   | yellow      | IN 2 (0 - 24 V)                            |
| 7   | black       | OUT 1 (open drain max. 24 V, 0.3 A)        |
| 8   | grey        | OUT 2 (open drain max. 24 V, 0.3 A)        |
| 9   | red         | IN 3 + (RS422)                             |
| 10  | violet      | IN 3 - (RS422)                             |
| 11  | grey / pink | OUT 3 + (RS422)                            |
| 12  | red / blue  | OUT 3 - (RS422)                            |
|     |             | yellow / green                             |
|     |             | Shielding                                  |



### M12 - I/O Connector

| Pin | Signal                                     | Shielding |
|-----|--|-----------|
| 1   | V IN- (GND)                                | Shielding |
| 2   | V IN + (0 - 25V)                           |           |
| 3   | RD (RS232) not available for PoE versions  |           |
| 4   | TxD (RS232) not available for PoE versions |           |
| 5   | IN 1 (0 - 24 V)                            |           |
| 6   | IN 2 (0 - 24 V)                            |           |
| 7   | OUT 1 (open drain)                         |           |
| 8   | OUT 2 (open drain)                         |           |
| 9   | IN 3 + (RS422)                             |           |
| 10  | IN 3 - (open IN -)                         |           |
| 11  | OUT 3 - (RS422)                            |           |
| 12  | OUT 3 + (RS422)                            |           |



### Hirose Pinout



"High-quality cameras, components and expertise from SVS-Vistek from reliable elements of your own application. We are committed to ensuring this and will be pleased to provide experts to support you during the entire design-in process."

## Camera Concept

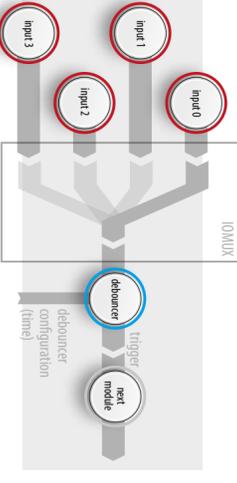


### Solid I/O Concept

- > Hirose and industrial M12 connectors
- > Configurable I/O matrix
- > Up to 4 x power PWM OUT max. 3 A (depending on series)
- > Up to 4 x trigger IN, TTL, 24V
- > Up to 2 x optical IN
- > RS232 or RS422 IN/OUT

- ### Unique Features
- > PWM power drives for LED lights (LED)
  - > Programmable sequencer for shutter and LEDS (SEQ)
  - > Programmable I/O logic (PLC)
  - > Burst mode (BST)
  - > Safe trigger (STT)
  - > Dynamic lens control (MLT)

- ### Software
- > Works with any GenICam camera
  - > Windows and Linux supported (x64, x86, ARM)
  - > Compliant with standards such as US3S Vision, CoaPress, GigE Vision, Camera Link
  - > GenICam transport layer for out-of-the-box compatibility to nearly all Machine Vision software such as CV, HALCON, MVTec, openCV, anVision, eyeVision, COGNEX VisionPro, MatriX, MIL, LabView, VisionBuilder, Streamix, eBUS SDK and many others



|              |               |                         |                  |                  |
|--------------|---------------|-------------------------|------------------|------------------|
| 4 MEGAPixels | 1/2.8" sensor | 2.8mm lens              | 1080p resolution | 30FPS frame rate |
| 1/2" sensor  | 2.8mm lens    | 1080p resolution        | 30FPS frame rate |                  |
| STT          | TRIGGER       | BST                     | RESET            | PLC              |
| debouncer    | TRIGGER       | debouncer configuration | reset module     |                  |

Our sales team will be pleased to assist you with expert advice. Please contact us.

Germany  
**SVS-Vistek GmbH**  
 Mühlabstr. 20  
 82229 Seefeld  
 Tel. +49 (0) 81 52 99 85 0  
 Fax +49 (0) 81 52 99 85 79  
 info@svs-vistek.com

Japan  
**SVS-Vistek K.K.**  
 Yokohama  
 Tel. +81 8070 331 689  
 giga@svs-vistek.com  
 www.svs-vistek.com

USA  
**SVS-Vistek Inc.**  
 Conillon  
 Tel. +1 800 935 6593  
 info@svs-vistek.com  
 www.svs-vistek.com