



## Datasheet

### Gigasetix S90 Series

The 90° angled evolution of the Standard Gigasetix Camera Series

The S90 series is the 90° angled evolution of the standard Gigasetix camera series from SMARTEK Vision. The fully GigE Vision compliant hardware and driver interface combined with a compact housing at 35x35mm footprint allows for seamless integration in existing cost-sensitive systems. SMARTEK Vision offers superior image quality with minimal noise and a comprehensive feature set combined with a fine selection of 4

Aptina CMOS, 10 Sony and 3 Truesense Imaging CCD image sensors. Top-of-class trigger latency of ~2 $\mu$ s allows for optimal synchronization of camera arrays with strobe illumination. Throughout the design of these cameras, utilization of industrial standards (C-mount, Hirose-plug, RJ45-plug for CAT5e or CAT6 cables) enables significant reduction of the total costs of your machine vision system significantly.

#### Key Benefits & Features:

- 90° angled housing with small dimension in optical axis
- Wide selection of high-end CCD/CMOS sensors from Aptina, Sony and Truesense Imaging
- Compact footprint 35x35x75 mm
- Exposure time programmable from 10 $\mu$ s to 10s
- Trigger latency of just ~2 $\mu$ s, jitter <0.5 $\mu$ s
- Partial scan and area of interest features
- Horizontal and vertical binning
- Minimal thermal noise, low power consumption
- Excellent shock and vibration resistance
- Precise mount to image sensor alignment
- Fully GigE Vision and Gen<i>Cam compliant hardware and software
- Firmware updates via Ethernet
- Industrial standard connectors: Hirose 12 pin and RJ45 with screw lock
- Ethernet cables allow for operating distances up to 100m
- Plug & Play, attach the camera to your Ethernet network and start working
- Anodized aluminum housing
- Standard C-Mount lens adapter
- Sealed image sensor
- Opto-isolated inputs and outputs

**GIG**<sup>®</sup>  
VISION    **GEN< i >CAM**

## Model Overview:

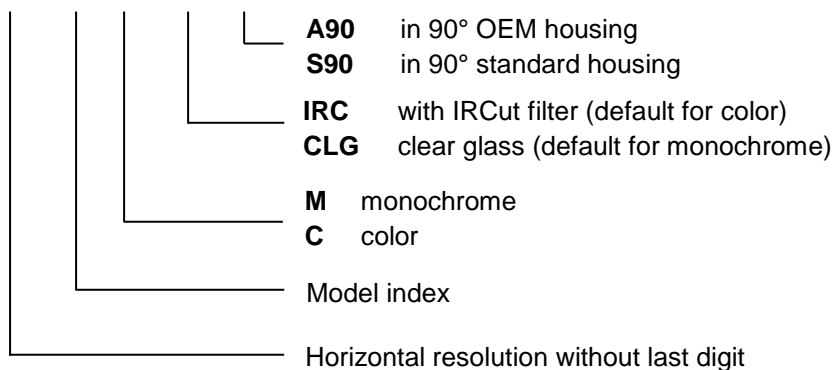
	Sensor	Sensor Technology	Resolution	Frame Rate [fps]	Sensor Size [inch]	Pixel Size [µm]	Exposure Time	Power Cons. [W]	ADC [bit]
<b>GC1281M-S90</b>	Aptina MT9M001	CMOS, Rolling shutter	1280x1024 1.3 MP	30	1/2"	5.2	32µs - 0.5s	2.3	8
<b>GC2041C-S90</b>	Aptina MT9T031	CMOS, Rolling shutter	2048x1536 3.1 MP	12	1/2"	3.2	53µs - 10s	2.2	8
<b>GC2591M-S90</b> <b>GC2591C-S90</b>	Aptina MT9P031	CMOS, Rolling shutter	2592x1944 5.0 MP	14	1/2.5"	2.2	36µs - 10s	2.2	8
<b>GC3851M-S90</b> <b>GC3851C-S90</b>	Aptina MT9J003	CMOS, Rolling shutter	3848x2762 10.7 MP	7	1/2.3"	1.67	36µs - 10s	2.5	8
<b>GC651M-S90</b> <b>GC651C-S90</b>	Sony ICX618	CCD, Progressive scan	656x492 0.33 MP	120	1/4"	5.6	10µs - 10s	2.3	8, 14
<b>GC652M-S90</b> <b>GC652C-S90</b>	Sony ICX424	CCD, Progressive scan	656x492 0.33 MP	97	1/3"	7.4	10µs - 10s	2.6	8, 14
<b>GC653M-S90</b> <b>GC653C-S90</b>	Sony ICX414	CCD, Progressive scan	656x492 0.33 MP	97	1/2"	9.9	10µs - 10s	2.6	8, 14
<b>GC781M-S90</b> <b>GC781C-S90</b>	Sony ICX415	CCD, Progressive scan	776x580 0.45 MP	68	1/2"	8.3	10µs - 10s	2.6	8, 14
<b>GC1031M-S90</b> <b>GC1031C-S90</b>	Sony ICX204	CCD, Progressive scan	1032x778 0.81 MP	30	1/3"	4.65	10µs - 10s	2.2	8, 14
<b>GC1291M-S90</b> <b>GC1291C-S90</b>	Sony ICX445	CCD, Progressive scan	1288x964 1.3 MP	30	1/3"	3.75	10µs - 10s	2.5	8, 14
<b>GC1391M-S90</b> <b>GC1391C-S90</b>	Sony ICX267	CCD, Progressive scan	1384x1038 1.4 MP	20	1/2"	4.65	10µs - 10s	2.5	8, 14
<b>GC1392M-S90</b> <b>GC1392C-S90</b>	Sony ICX285	CCD, Progressive scan	1384x1038 1.4 MP	32	2/3"	6.45	10µs - 10s	2.8	8, 14
<b>GC1621M-S90</b> <b>GC1621C-S90</b>	Sony ICX274	CCD, Progressive scan	1624x1234 2.0 MP	25	1/1.8"	4.4	10µs - 10s	2.7	8, 14
<b>GC2441M-S90</b> <b>GC2441C-S90</b>	Sony ICX625	2 Tap CCD, Progressive scan	2448x2056 5.0MP	15	2/3"	3.45	10µs - 10s	3.6	8, 14*
<b>GC1021M-S90</b> <b>GC1021C-S90</b>	Truesense Imaging KAI-01050	2 Tap CCD, Progressive scan	1024x1024 1.0 MP	61	1/2"	5.5	10µs - 10s	3.4	8, 14*
<b>GC1601M-S90</b> <b>GC1601C-S90</b>	Truesense Imaging KAI-02050	2 Tap CCD, Progressive scan	1600x1200 1.9 MP	35	2/3"	5.5	10µs - 10s	3.5	8, 14*
<b>GC1921M-S90</b> <b>GC1921C-S90</b>	Truesense Imaging KAI-02150	2 Tap CCD, Progressive scan	1920x1080 2.1 MP	33	2/3"	5.5	10µs - 10s	3.6	8, 14*

\*adjustable via firmware

Further customizations also for low quantities.

## Ordering Information:

**GC<XXX><N><Y><G><A>**



## Accessories (sold separately):

Our team assists you in finding the optimal accessories (lenses etc.) for your camera.

Cabling:	Standard I/O cables with flying leads and end ferrules Ethernet CAT5e/6 with straight RJ45 plugs and screw lock All cables are also available with angled plugs, and in chain / hi-flex versions
Power supply:	12V wall mount power supply
Strobe controller:	SMARTEK Vision IP Strobe Controller with 1, 2 and 4 Channels (up to 200V@20A)

## Further Specifications:

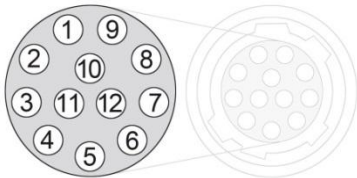
Video interface:	Gigabit Ethernet 1000BASE-T
Video format:	Mono 8/16, Bayer 8/16
Synchronization:	Via external trigger, single shot or free run
Exposure control:	Freely programmable via GigE Vision interface
Optical filters:	IR-cut default for color models
Digital input:	2 input channels
Digital output:	2 output channels
Power supply:	10-24V DC
Mount:	C-Mount
Operating temp.:	from -5°C/+23°F up to +45°C/+113°F

## Software Environment:

Firmware update:	via Ethernet
Client software:	SMARTEK Vision GigEVisionClient Camera stream display and image capturing, intuitive graphical user interface for the adjustment of all available settings, GigE Vision and Gen<i>Cam compliant
Driver:	GigE Vision compliant Giganetix IP filter driver for all Windows™ and Linux platforms
SDK:	Giganetix GEV SDK with documented API, freely applicable for most GigE Vision compliant cameras
Interoperability:	Validated with Halcon™, Vision Pro™, Matrox Imaging Library™, LabView™ and others

## Power and I/O Interface:

EIAJ (Hirose compatible) 12 pin



1 – Power GND  
 2 – 10-24V DC input  
 3 – Output 1 -  
 4 – Output 1 +

5 – Input 2 -  
 6 – Input 2 +  
 7 – Input 1 +  
 8 – Input 1 -

9 – Output 2 -  
 10 – Output 2 +  
 11 – Input 1 +  
 12 – Input 1 -

## Dimensions in mm / [inch]:

Housing (without mount and plugs): 35x35x75 mm

