Datasheet

Giganetix Series

Business Class GigE Vision Cameras at Economy Prices

With SMARTEK Vision's new camera series, you have all the trumps in your hand to master your demanding machine vision applications. 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 ~2µs 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 – without any compromise in quality!

Key Benefits & Features:

- Wide selection of high-end CCD/CMOS sensors from Aptina, Sony and Truesense Imaging
- Compact footprint 35x35x48 mm
- Exposure time programmable from 10µs to 10s
- Trigger latency of just ~2µs, jitter <0.5µs
- Partial scan and area of interest features
- Horizontal and vertical binning
- Minimal thermal noise, low power consumption
- Excellent shock and vibration resistance
- Firmware updates via Ethernet
- Precise mount to image sensor alignment
- Fully GigE Vision and Gen<i>Cam compliant hardware and software
- 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

Model Overview:

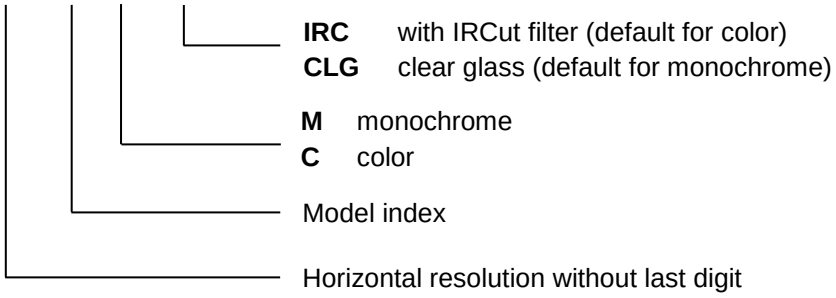
	Sensor	Sensor Technology	Resolution	Frame Rate [fps]	Sensor Size [inch]	Pixel Size [µm]	Exposure Time	Power Cons. [W]	ADC [bit]
GC1281M	Aptina MT9M001	CMOS, Rolling shutter	1280x1024 1.3 MP	30	1/2"	5.2	32µs - 0.5s	2.3	8
GC2041C	Aptina MT9T031	CMOS, Rolling shutter	2048x1536 3.1 MP	12	1/2"	3.2	53µs - 10s	2.2	8
GC2591M GC2591C	Aptina MT9P031	CMOS, Rolling shutter	2592x1944 5.0 MP	14	1/2.5"	2.2	36µs - 10s	2.2	8
GC3851M GC3851C	Aptina MT9J003	CMOS, Rolling shutter	3856x2764 10.7 MP	7	1/2.3"	1.67	36µs - 10s	2.5	8
GC651M GC651C	Sony ICX618	CCD, Progressive scan	658x494 0.33 MP	120	1/4"	5.6	10µs - 10s	2.3	8, 14
GC652M GC652C	Sony ICX424	CCD, Progressive scan	658x494 0.33 MP	97	1/3"	7.4	10µs - 10s	2.6	8, 14
GC653M GC653C	Sony ICX414	CCD, Progressive scan	658x494 0.33 MP	97	1/2"	9.9	10µs - 10s	2.6	8, 14
GC781M GC781C	Sony ICX415	CCD, Progressive scan	782x582 0.45 MP	68	1/2"	8.3	10µs - 10s	2.6	8, 14
GC1031M GC1031C	Sony ICX204	CCD, Progressive scan	1034x778 0.81 MP	30	1/3"	4.65	10µs - 10s	2.2	8, 14
GC1291M GC1291C	Sony ICX445	CCD, Progressive scan	1296x966 1.3 MP	30	1/3“	3.75	10µs - 10s	2.5	8, 14
GC1391M GC1391C	Sony ICX267	CCD, Progressive scan	1392x1040 1.4 MP	20	1/2"	4.65	10µs - 10s	2.5	8, 14
GC1392M GC1392C	Sony ICX285	CCD, Progressive scan	1392x1040 1.4 MP	32	2/3"	6.45	10µs - 10s	2.8	8, 14
GC1621M GC1621C	Sony ICX274	CCD, Progressive scan	1628x1236 2.0 MP	25	1/1.8"	4.4	10µs - 10s	2.7	8, 14
GC2441M GC2441C	Sony ICX625	2 Tap CCD, Progressive scan	2448x2058 5.0MP	15	2/3“	3.45	10µs - 10s	3.6	8, 14*
GC1021M GC1021C	Truesense Imaging KAI-01050	2 Tap CCD, Progressive scan	1024x1024 1.0 MP	61	1/2“	5.5	10µs - 10s	3.4	8, 14*
GC1601M GC1601C	Truesense Imaging KAI-02050	2 Tap CCD, Progressive scan	1600x1200 1.9 MP	35	2/3“	5.5	10µs - 10s	3.5	8, 14*
GC1921M GC1921C	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

All cameras also available as 90° angled variants. Further customizations also for low quantities.

Ordering Information:

GC<XXX><N><Y>-<G>



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)
Mounting plates:	Tripod mount adapter for standard 1/4" tripod mounts

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

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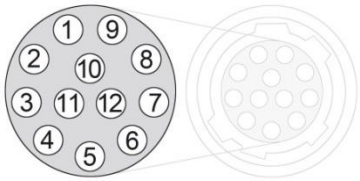
Power and I/O Interface:

EIAJ (Hirose compatible) 12 pin



1 – Power GND	5 – Input 2 -	9 – Output 2 -
2 – 10-24V DC input	6 – Input 2 +	10 – Output 2 +
3 – Output 1 -	7 – Input 1 +	11 – Input 1 +
4 – Output 1 +	8 – Input 1 -	12 – Input 1 -

Dimensions in mm / [inch]:

Housing (without mount and plugs): 35x35x48 mm