

Big Family

Digital Cameras by
Allied Vision Technologies





Allied Vision Technologies

Leading in the world of digital cameras

Founded in 1989, Allied Vision Technologies (AVT) has established itself as a worldwide leading manufacturer of digital cameras for a large variety of machine vision applications including industrial inspection, medical and scientific imaging, logistics, security and traffic surveillance and even multimedia and interactive entertainment.

AVT's camera portfolio

AVT offers one of the largest camera portfolios with both leading digital camera interfaces: FireWire (IEEE 1394) and Gigabit Ethernet (GigE Vision®). More than ten camera families provide a very wide selection of imaging options:

- Monochrome, color or near infrared (NIR) sensitive
- High-quality sensors with a wide choice of resolutions from VGA (0.3 Megapixels) up to 16 Megapixels.
- Fast image transmission with up to 200 frames per second (VGA)
- Various form factors including ultra-compact housings, board level versions and periscope-type architecture
- Rich set of AVT Smart Features for image and camera performance optimization

Allied Vision Technologies is also recognized in the market as the expert for flexible camera customization for special requirements. Thanks to the AVT Modular Concept, a wide range of modifications such as angled heads, medical housings or alternative cable outlets are available "à la carte" for many camera families. AVT also owns a strong expertise in specific OEM camera development.

AVT cameras come with powerful software development kits (SDKs) that ensure optimal performance and an easy implementation with the most popular operating systems and third party libraries.

The AVT Advantage

- AVT is your trusted partner since 1989
- Represented in more than 30 countries
- The largest choice of FireWire and GigE Vision cameras
- High-quality engineering and manufacturing
- Modular concept/OEM cameras
- Excellent customer service

FireWire and GigE



GEN<i>CAM

Gigabit Ethernet, also called GigE, is a network standard that has very high bandwidth and allows for very long cable lengths (up to 100 m with Cat5e standard cables and even more using fiber optics). It offers a low cost interface that is widely used in standard computer networking hardware. With the new Prosilica GX, **a sustained maximum data rate of 240 MB/s is possible.**

FireWire, or IEEE 1394, provides high-speed, deterministic data transmission. AVT's FireWire cameras offer many more real-time functions (Smart Features) than specified in the IIDC standards – they can even emulate traditional Frame Grabber functions.

One of the main advantages of GigE Vision and FireWire is their standardized camera communication protocol. **Both GigE Vision and FireWire provide a plug & play interface standard.**

AVT's GigE cameras are **GigE Vision 1.2 and Genicam compliant**. AVT's FireWire cameras are compliant to the IIDC (former DCAM) standard and **can easily be integrated into your application.**

The right camera for every application

Entry Level Simple & Easy

Economical price • VGA to 5 Megapixels • Sony CCDs, Aptina CMOS sensors



Guppy – IEEE 1394a



Guppy PRO – IEEE 1394b



Manta – GigE Vision

Industrial Smart & Flexible

Versatile, flexible cameras • VGA to 5 Megapixels • Sony CCDs, Aptina CMOS sensors



Prosilica GC – GigE Vision



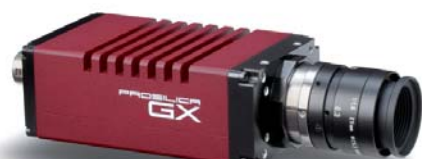
Stingray – IEEE 1394b



Prosilica GS – GigE Vision

High-End Fast & Sharp

High data rates, high speed • VGA to 16 Megapixels • Kodak and Sony CCD sensors



Prosilica GX – GigE Vision Double Speed



Pike – IEEE 1394b



Prosilica GE – GigE Vision

Entry Level Simple & Easy

Guppy - Guppy PRO - Manta



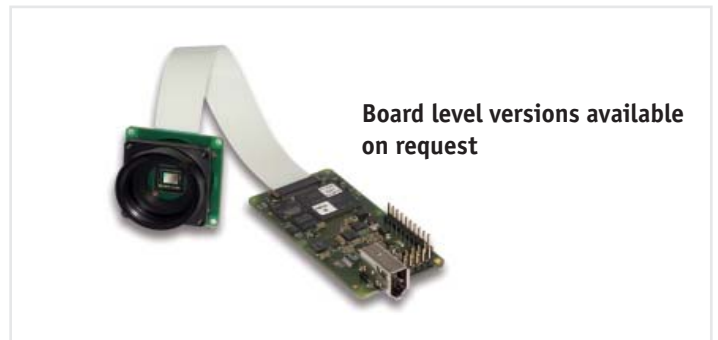
Guppy 

- Small
- Lightweight
- Large choice of CCD and CMOS sensors
- High sensitivity with interlaced sensors (2 models*)

Guppy									
L x W x H = 48.2 x 30 x 30 mm incl. connectors, w/o tripod and lens. Mass 50 g									
Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
F-033B/C	1394a	656 x 494	> VGA	0.3	58 fps	1/3 CCD	Sony ICX424	10 bits	n/a
F-036B/C	1394a	752 x 480	> WVGA	0.4	64 fps	1/3 CMOS	Aptina MT9V022	10 bits	n/a
F-038B/C*	1394a	768 x 492	EIA/NTSC	0.4	30 fps	1/2 CCD	Sony ICX418	12 bits	n/a
F-044B/C*	1394a	752 x 580	CCIR/PAL	0.4	25 fps	1/2 CCD	Sony ICX419	12 bits	n/a
F-046B/C	1394a	780 x 582	> WVGA	0.5	49 fps	1/2 CCD	Sony ICX415	12 bits	n/a
F-080B/C	1394a	1032 x 778	> XGA	0.8	30 fps	1/3 CCD	Sony ICX204	12 bits	n/a
F-146B/C	1394a	1392 x 1040	> XGA-2	1.4	17 fps	1/2 CCD	Sony ICX267	12 bits	n/a
F-503B/C	1394a	2592 x 1944	> QWXGA	5	6 fps	1/2.5 CMOS	Aptina MT9P031	12 bits	n/a

* interlaced sensors - also available: versions with enhanced NIR sensitivity

"The Guppy is a small, lightweight, inexpensive FireWire camera. Guppy cameras are equipped with a large variety of renowned CCD and CMOS sensors. Two interlaced models with ultra sensitive sensors (Guppy F-038B/C and F-044B/C) ensure an easy, cost-effective move from analog to digital cameras."



Smart Features

- AOI (true partial scan)
- Separate AOI for auto features (except for interlaced cameras F-038B/C and F-044B/C)
- Programmable LUT
- Gain
- Exposure (except for Guppy F-036B/C, F-503B/C)
- Image mirror (only Guppy F-036B/C, F-503B/C)
- Binning (b/w) (only Guppy F-036B/C, F-503B/C)
- HDR (High Dynamic Range Mode, only Guppy F-036)
- Sub-sampling, defect pixel correction, multi-shot, separate AOI for auto features (only Guppy F-503B/C)

Options

- Board level versions on request
- Modular concept:
 - Various IR cut/pass filters
 - CS-/M12-Mount adapters (M12 only for sensors < 1/2)
 - White medical housing
- F-038B/C NIR and F-044B/C NIR with enhanced NIR sensitivity

Power requirements	DC 8 V - 36 V (via 1394 cable or HIROSE)
Power consumption	< 2.0 W (@ 12 V DC)
Operating temperature	+0 ... +45° Celsius ambient temp.
Storage temperature	- 10 ... + 70° Celsius ambient temp.
Regulations	CE, FCC Class B, RoHS (2002/95/EC)



New

Guppy PRO



- Very attractive price
- Very small
- Lightweight
- Opto-coupled 12-pin I/O

All technical data are preliminary and subject to revision

Guppy PRO

L x W x H = 44.8 x 29 x 29 mm incl. connectors, w/o tripod and lens. Mass 80 g

Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
F-031B/C	1394b	656 x 492	> VGA	0.3	136 fps	1/4 CCD	Sony ICX618	14 bits	n/a
F-032B/C	1394b	656 x 492	> VGA	0.3	80 fps	1/3 CCD	Sony ICX424	12 bits	n/a
F-125B/C	1394b	1292 x 964	> XGA-2	1.2	30 fps	1/3 CCD	Sony ICX445	14 bits	n/a
F-146B/C	1394b	1388 x 1038	> XGA-2	1.4	16 fps	1/2 CCD	Sony ICX267	12 bits	n/a
F-201B/C	1394b	1624 x 1234	> UXGA	2	14 fps	1/1.8 CCD	Sony ICX274	12 bits	n/a
F-503B/C	1394b	2592 x 1944	> QWXGA	5	13 fps	1/2.5 CMOS	Aptina MT9P031	12 bits	n/a



Standard 12-pin connector
with opto-coupled I/Os

"The Guppy PRO is the smallest FireWire camera! It is equipped with a fast 1394b interface and a 12 bit or 14 bit ADC. Like all other AVT cameras, the Guppy PRO has a very robust metal housing with locking screw connectors. Guppy PRO cameras have an outstanding price/performance ratio."

Smart Features

- AOI (true partial scan), separate AOI for auto features
- Programmable LUT, Gamma
- Debayering, color correction
- Gain
- Exposure
- Binning (b/w)
- Sub-sampling (b/w)
- Defect pixel correction (only Guppy PRO F-503)
- Image mirror (only Guppy PRO F-503)



Options

- Modular concept:
 - Various IR cut/pass filters
 - White medical housing

Power requirements	DC 8 V - 36 V (via 1394 cable or HIROSE)
Power consumption	typ. 3 W (@ 12 V DC)
Operating temperature	+5 ... +45° Celsius ambient temp.
Storage temperature	- 10 ... + 70° Celsius ambient temp.
Regulations	CE, FCC Class B, RoHS (2002/95/EC)



Manta GigE VISION

- Very economical price
- Extra robust housing
- Board level versions available
- Modular design, large choice of variants

New

*All technical data are preliminary and subject to revision

Manta									
L x W x H = 86.4 x 44 x 29 mm incl. connectors, w/o tripod and lens. Mass < 200 g									
Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
G-032B/C	GigE	656 x 492	> VGA	0.3	80 fps	1/3 CCD	Sony ICX424	12 bits	32 MB
G-033B/C*	GigE	656 x 492	> VGA	0.3	88 fps	1/2 CCD	Sony ICX414	14 bits	32 MB
G-046B/C	GigE	780 x 580	> XGA	0.5	67 fps	1/2 CCD	Sony ICX415	14 bits	32 MB
G-125B/C	GigE	1292 x 964	> XGA	1.2	30 fps	1/3 CCD	Sony ICX445	14 bits	32 MB
G-145B/C	GigE	1388 x 1038	> XGA-2	1.4	16 fps	2/3 CCD	Sony ICX285	14 bits	32 MB
G-146B/C	GigE	1388 x 1038	> XGA-2	1.4	17 fps	1/2 CCD	Sony ICX267	14 bits	32 MB
G-201B/C	GigE	1624 x 1234	> UXGA	2	14 fps	1/1.8 CCD	Sony ICX274	14 bits	32 MB
G-504B/C*	GigE	2452 x 2054	> UXGA	5	9 fps	2/3 CCD	Sony ICX655	14 bits	32 MB

"The Manta is a very economically priced GigE camera. Its robust metal housing features optimal quality to ensure a long lifetime. The color versions include the same sophisticated debayering algorithms as AVT's Stingray cameras. On request, board level versions as well as modular options are available."



Board level versions available

Smart Features

- ROI (Region of Interest Readout)
- Exposure
- White balance
- Hue, Saturation, Sharpness
- Gamma 0.5
- Gain
- DSP subregion (selectable ROI for auto features)
- Binning
- Image hold
- StreamBytesPerSecond (easy bandwidth control)
- On-board debayering (color decoding)
- Recorder mode (pre/post trigger recording)
- Storable user sets

Options

- Board level versions available
- Modular concept:
 - Various IR cut/pass filters
 - CS/M12-Mount adapters
 - Angled head
 - White medical housing

Power requirements	DC 8 V - 30 V via 12-pin HIROSE
Power consumption	< 3.8 W (@ 12 V DC)
Operating temperature	+0 ... + 45° Celsius ambient temp.
Storage temperature	- 10 ... + 70° Celsius ambient temp.
Regulations	CE, FCC Class B, RoHS (2002/95/EC)

Industrial Smart & Flexible

Prosilica GC - Stingray - Prosilica GS/GB



Prosilica GC

- Fast frame rates
- Ultra-compact, lightweight housing
- Large choice of CCD and CMOS sensors
- Fits a wide range of applications

Prosilica GC									
L x W x H = 51-59 x 46 x 33-43 mm incl. connectors, w/o tripod and lens. Mass < 112 g									
Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
GC650	GigE	659 x 493	> VGA	0.3	90 fps	1/3 CCD	Sony ICX424	12 bits	16 MB
GC655	GigE	659 x 493	> VGA	0.3	90 fps	1/2 CCD	Sony ICX414	12 bits	16 MB
GC660	GigE	659 x 493	> VGA	0.3	119 fps	1/4 CCD	Sony ICX618	12 bits	16 MB
GC750*	GigE	752 x 480	n/a	0.4	60 fps	1/3 CMOS	Aptina MT9V022	10 bits	16 MB
GC780	GigE	782 x 582	n/a	0.3	64 fps	1/2 CCD	Sony ICX415	12 bits	16 MB
GC1020	GigE	1024 x 768	XGA	0.8	33 fps	1/3 CCD	Sony ICX204	12 bits	16 MB
GC1280**	GigE	1280 x 1024	SXGA	1.3	27 fps	2/3 CMOS	Cypress IBIS5B	10 bits	16 MB
GC1290	GigE	1280 x 960	XGA	1.2	32 fps	1/3 CCD	Sony ICX445	12 bits	16 MB
GC1350	GigE	1360 x 1024	XGA-2	1.4	20 fps	1/2 CCD	Sony ICX205	12 bits	16 MB
GC1380	GigE	1360 x 1024	XGA-2	1.4	20 fps	2/3 CCD	Sony ICX285	12 bits	16 MB
GC1380H	GigE	1360 x 1024	XGA-2	1.4	30 fps	2/3 CCD	Sony ICX285	12 bits	16 MB
GC1600	GigE	1620 x 1220	UXGA	2	15 fps	1/1.8 CCD	Sony ICX274	12 bits	16 MB
GC1600H	GigE	1620 x 1220	UXGA	2	25 fps	1/1.8 CCD	Sony ICX274	12 bits	16 MB
GC2450	GigE	2448 x 2050	n/a	5	15 fps	2/3 CCD	Sony ICX625	12 bits	16 MB

*Standard version with CS-Mount ** monochrome only

"The Prosilica GC is a GigE camera with an ultra-compact, lightweight housing, fast frame rates and auto-iris control. It offers a large choice of CCD and CMOS sensors up to 5 Megapixels and fits a wide range of applications."

Smart Features

- Video-type auto-iris
- ROI (Region of Interest Readout)
- Exposure
- White balance
- Gain
- DSP subregion
- Binning (only CCD cameras)
- Image hold
- StreamBytesPerSecond (easy bandwidth control)
- On-board debayering (color decoding)
- Recorder mode (pre/post trigger recording)
- Storable user sets

Options

- CS-Mount adapters (CS-Mount not applicable for type 2/3 sensors and larger)
- IR cut filter on monochrome cameras

Power requirements	DC 5 V - 16 V via 12-pin HIROSE
Power consumption	< 4.0 W (@ 12 V DC)
Operating temperature	+0 ... + 50° Celsius ambient temp.
Storage temperature	- 10 ... + 70° Celsius ambient temp.
Regulations	CE, FCC Class A, RoHS (2002/95/EC)



Stingray

- Excellent image quality
- Advanced feature set
- Modular design: Large choice of variants
- Board level versions available

Stingray									
L x W x H = 72.9 x 44 x 29 mm incl. connectors, w/o tripod and lens. Mass 92 g									
Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
F-033B/C	1394b	656 x 492	> VGA	0.3	84 fps	1/2 CCD	Sony ICX414	14 bits	32 MB
F-046B/C	1394b	780 x 580	> WVGA	0.5	61 fps	1/2 CCD	Sony ICX415	14 bits	32 MB
F-080B/C	1394b	1032 x 776	> XGA	0.8	31 fps	1/3 CCD	Sony ICX204	14 bits	32 MB
F-125B/C	1394b	1292 x 964	> XGA	1.2	30 fps	1/3 CCD	Sony ICX445	14 bits	32 MB
F-145B/C	1394b	1388 x 1038	> XGA-2	1.4	16 fps	2/3 CCD	Sony ICX285	14 bits	32 MB
F-146B/C	1394b	1388 x 1038	> XGA-2	1.4	15 fps	1/2 CCD	Sony ICX267	14 bits	32 MB
F-201B/C	1394b	1624 x 1234	> UXGA	2	14 fps	1/1.8 CCD	Sony ICX274	14 bits	32 MB
F-504B/C	1394b	2452 x 2056	> UXGA	5	9 fps	2/3 CCD	Sony ICX655	14 bits	64 MB

“The Stingray is a versatile, powerful camera even for challenging applications. Its modular and flexible design provides a large choice of variants. Stingray cameras have an excellent image quality and incorporate an advanced set of real-time features.”



Medical design for Stingray and other AVT cameras available on request

Smart Features

- AOI (true partial scan), separate AOI for auto features
- Programmable LUT, white balance, hue, saturation
- Gain, exposure
- Debayering, color correction
- Shading correction
- High SNR mode (up to 24 dB better signal-to-noise ratio)
- Sub-sampling, binning (b/w)
- Low noise binning mode
- Defect pixel correction
- Sequence mode (changes the camera settings on the fly)
- Image mirror
- Deferred image transport
- SIS (Secure Image Signature, enhanced time stamp)
- Storable user settings

Options

- Board level versions on request
- Modular concept:
 - Various IR cut/pass filters
 - F/CS/M12-Mount (M12 only for sensors < 1/2)
 - Angled head
 - Hirose power: out
 - 1394b connectors: 2 x copper or 1 x GOF, 1 x copper
 - Compact housing version
 - White medical housing

Power requirements	DC 8 V - 36 V (via 1394 cable or HIROSE)
Power consumption	Typ. < 4 W (@ 12 V DC)
Operating temperature	+5 ... +45° Celsius ambient temp.
Storage temperature	- 10 ... +70° Celsius ambient temp.
Regulations	CE, FCC Class B, RoHS (2002/95/EC)



Prosilica GS GigE VISION

- Periscope-type GigE camera, very compact housing
- Fast frame rates
- Landscape or portrait sensor orientation
- Single-board version: Prosilica GB series

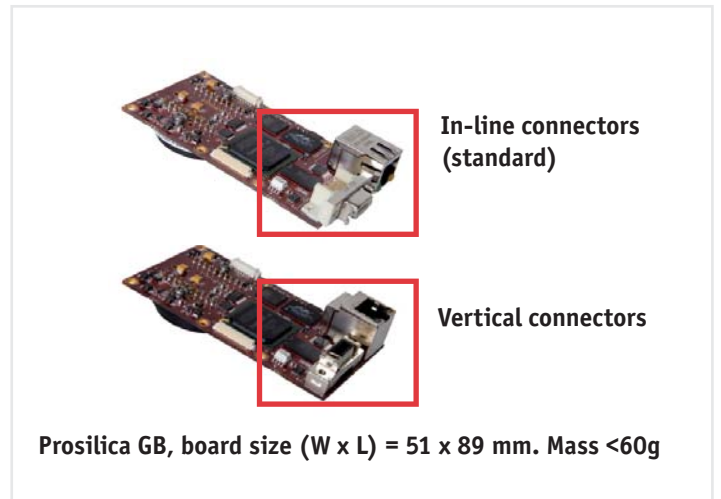
Prosilica GS/Prosilica GB

L x W x H = 96 x 26 x 56 mm incl. connectors, w/o tripod and lens. Mass < 186 g (GS)

Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
GS/GB650	GigE	659 x 493	> VGA	0.3	120 fps	1/3 CCD	Sony ICX424	14 bits	16 MB
GS/GB660	GigE	659 x 493	> VGA	0.3	119 fps	1/4 CCD	Sony ICX618	14 bits	16 MB
GS/GB1380	GigE	1360 x 1024	> XGA-2	1.4	30 fps	2/3 CCD	Sony ICX285	14 bits	16 MB
GS/GB2450	GigE	2448 x 2050	n/a	5	15 fps	2/3 CCD	Sony ICX625	14 bits	16 MB



“The Prosilica GS is a rugged GigE camera with fast frame rates and a unique periscope-type form factor. Some models are available with landscape or portrait sensor orientation. The credit-card sized single-board version camera (Prosilica GB) is also available with flexible connector orientation.”



Smart Features

- ROI (Region of Interest Readout)
- Exposure
- White balance
- Gain
- DSP subregion (selectable ROI for auto features)
- Binning
- Image hold
- StreamBytesPerSecond (easy bandwidth control)
- On-board debayering (color decoding)
- Recorder mode (pre/post trigger recording)
- Storable user sets

Options

- CS-Mount
- Landscape or portrait sensor orientation (GS/GB 650 and 1380)
- In-line connectors or vertical connectors (GB cameras)
- IR cut filter on monochrome cameras
- White medical housing (only GS cameras)



Landscape (standard)



Portrait

Power requirements	DC 5 V - 25 V via 12-pin HIROSE
Power consumption	< 3.9 W (@ 12 V DC)
Operating temperature	+0 ... +50° Celsius ambient temp.
Storage temperature	- 10 ... +70° Celsius ambient temp.
Regulations	CE, FCC Class A, RoHS (2002/95/EC)

High End Sharp & Fast

Prosilica GX - Pike - Prosilica GE



New

Prosilica GX GiGE VISION

- High resolution with very fast frame rates
- LAG (Link Aggregation Group) technology
- 3-axis motorized lens control and auto-iris controls
- Latest Kodak and Sony CCD sensors

Prosilica GX		L x W x H = 107 x 53 x 33 mm incl. connectors, w/o tripod and lens. Mass = 270-365 g							
Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
GX1050	GigE*	1024 x 1024	n/a	1	112 fps	1/2 CCD	Kodak KAI-01050	14 bits	128 MB
GX1660	GigE*	1600 x 1200	UXGA	2	66 fps	2/3 CCD	Kodak KAI-02050	14 bits	128 MB
GX1910	GigE*	1920 x 1080	HD	2	63 fps	2/3 CCD	Kodak KAI-02150	14 bits	128 MB
GX1920	GigE*	1936 x 1456	HD	2.8	TBD	2/3 CCD	Sony ICX674	14 bits	128 MB
GX2300	GigE*	2336 x 1752	n/a	4	32 fps	1.0 CCD	Kodak KAI-04050	14 bits	128 MB
GX3300**	GigE*	3296 x 2472	n/a	8	17 fps	4/3 CCD	Kodak KAI-08050	14 bits	128 MB

*Double-speed GigE Vision interface (240 MB/s)

**Housing with F-Mount, note: larger dimensions including the mount (diameter = 60 mm, L = 136 mm)



GX-R periscope camera with LAG GigE interface and lens control port

"The Prosilica GX, with its double-speed GigE interface, is the first GigE Vision camera to feature LAG technology. Additional features include 3-axis motorized lens control as well as video-type auto-iris controls."

LAG = Link Aggregation Group (IEEE 802.3ad)

The LAG technology has been used in IT networking for years and is supported by a wide range of standard Ethernet hardware (switches, interface cards, etc.).

When the camera is connected by two cables to the host computer, it sees the camera as one connection at twice the normal speed (240 MB/s). The Prosilica GX can also operate using a single standard CAT-5e Ethernet cable at 120 MB/s.

Smart Features

- LAG Technology - 240 MB/s
- High Resolution with fast frame rate
- 3-axis motorized lens control
- Video-type autoiris
- ROI (Region of Interest Readout)
- Exposure
- White balance
- Gain
- DSP subregion (selectable ROI for auto features)
- Binning
- Image hold
- StreamBytesPerSecond (easy bandwidth control)
- On-board debayering (color decoding)
- Recorder mode (pre/post trigger recording)
- Storable user sets

Options

- CS-Mount (only GX1050)
- F-Mount (only GX1050, GX1660, GX1910, GX1920, GX2300)
- EF-Mount adapter
- Taped cover glass w/o or with micro-lenses (not for GX1050 and GX1920)
- IR cut filter on monochrome cameras
- GX-R periscope option

Power requirements	DC 5 V - 24 V via 12-pin HIROSE
Power consumption	< 7.2 W (@ 12 V DC)
Operating temperature	+0 ... + 50° Celsius ambient temp.
Storage temperature	- 10 ... + 70° Celsius ambient temp.
Regulations	CE, FCC Class A, RoHS (2002/95/EC)



- VGA to 16 Megapixels
- Fast frame rates
- Advanced feature set
- Modular design: Large choice of variants

Pike									
L x W x H = 96.8 x 44 x 44 mm incl. connectors, w/o tripod and lens. Mass = 250 g									
Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
F-032B/C	1394b	640 x 480	VGA	0.3	208 fps	1/3 CCD	Kodak KAI-0340	14 bits	64 MB
F-100B/C	1394b	1000 x 1000	> WXGA	1	60 fps	2/3 CCD	Kodak KAI-1020	14 bits	64 MB
F-145B/C	1394b	1388 x 1038	> XGA-2	1.4	30 fps	2/3 CCD	Sony ICX285	14 bits	64 MB
F-210B/C	1394b	1920 x 1080	HD	2	31 fps	1.0 CCD	Kodak KAI-2093	14 bits	64 MB
F-421B/C	1394b	2048 x 2048	n/a	4.2	16 fps	1.2 CCD	Kodak KAI-04022	14 bits	64 MB
F-505B/C	1394b	2452 x 2054	n/a	5	15 fps	2/3 CCD	Sony ICX625	14 bits	64 MB



Pike									
L x W x H = 137 x 60 x 60 mm incl. connectors, w/o tripod and lens. Mass = 380 g									
Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
F-1100B/C*	1394b	4008 x 2672	n/a	11	5 fps	35 mm CCD	Kodak KAI-11002	14 bits	256 MB
F-1600B/C*	1394b	4872 x 3248	n/a	16	3 fps	35 mm CCD	Kodak KAI-16000	14 bits	256 MB

*Larger dimensions due to F-Mount housing

“Pike cameras include fast Kodak sensors and a rich set of advanced real-time features. The Pike is a fast IEEE 1394b camera for demanding applications. Pike cameras are available both with daisy-chain copper ports and with copper/GOF (glass optical fiber) ports.”

Smart Features

- Switchable tap readout (only Pike F-1100 and Pike F-1600)
- AOI (true partial scan), separate AOI for auto features
- Programmable LUT
- White balance, hue, saturation
- Gain, exposure
- Color correction
- Shading correction
- Defect pixel correction (only Pike F-1100 and Pike F-1600)
- High SNR mode (up to 24 dB better signal-to-noise ratio)
- Smear reduction
- Sub-sampling, 2x – 8x binning (b/w)
- Sequence mode (changes the image settings on the fly)
- Image mirror
- Deferred image transport
- SIS (Secure Image Signature, enhanced time stamp)
- Storable user settings

Options

- Modular concept:
 - Various IR cut/pass filters
 - F/M39-Mount (F-032 only: CS-Mount, M12-Mount)
 - Pike F-1100/F-1600: M42/M58-Mount
 - Angled head, white medical housing
 - Hirose power: out
 - 1394b connectors: 2 x copper or 1 x GOF, 1 x copper
- Sensor variants: Taped cover glass w/o microlenses, fixed quartz cover glass w/o microlenses available for some models

Power requirements	DC 8 V - 36 V (via 1394 cable or HIROSE)
Power consumption	Typ. < 4 W (@ 12 V DC), < 6 W (11/16 MP)
Operating temperature	+5 ... + 50° Celsius housing temp.
Storage temperature	- 10 ... + 70° Celsius ambient temp.
Regulations	CE, FCC Class B, RoHS (2002/95/EC)



Prosilica GE GIGEVISION

- Fast frame rates
- VGA to 16 Megapixels
- Large choice of Kodak sensors
- Flexible binning up to 8 x 1000

Prosilica GE									
L x W x H = 80 x 51 x 39 mm incl. connectors, w/o tripod and lens. Mass < 180g (C-Mount)									
Model	Interface	Resolution	Standard	Megapixels	Frame rate	Sensortype	Sensor	A/D	Onboard memory
GE680	GigE	640 x 480	VGA	0.3	205 fps	1/3 CCD	Kodak KAI-0340	12 bits	32 MB
GE1050	GigE	1024 x 1024	n/a	1	59 fps	1/2 CCD	Kodak KAI-01050	12 bits	32 MB
GE1650	GigE	1600 x 1200	UXGA	2	32 fps	1.0 CCD	Kodak KAI-2020	12 bits	32 MB
GE1660	GigE	1600 x 1200	UXGA	2	34 fps	2/3 CCD	Kodak KAI-02050	12 bits	32 MB
GE1900	GigE	1920 x 1080	HD	2	30 fps	1.0 CCD	Kodak KAI-2093	12 bits	32 MB
GE1910	GigE	1920 x 1080	HD	2	32 fps	2/3 CCD	Kodak KAI-02150	12 bits	32 MB
GE2040	GigE	2040 x 2048	n/a	4	15 fps	1.2 CCD	Kodak KAI-04022	12 bits	32 MB
GE4000*	GigE	4008 x 2672	n/a	11	5 fps	35 mm CCD	Kodak KAI-11002	12 bits	32 MB
GE4900*	GigE	4872 x 3248	n/a	16	3 fps	35 mm CCD	Kodak KAI-16000	12 bits	32 MB

“Prosilica GE cameras offer very fast frame rates, flexible binning options (up to 8 x 1000) and programmable Mini-SMB connectors on the back, which facilitate triggering in multi-camera applications.”



* F-Mount housing, L x W x H = 111 x 66 x 66 mm. Mass < 369 g

Smart Features

- ROI (Region of Interest Readout)
- Exposure
- White balance
- Gain
- DSP subregion (selectable ROI for auto features)
- Binning
- Image hold
- StreamBytesPerSecond (easy bandwidth control)
- On-board debayering (color decoding)
- Recorder mode (pre/post trigger recording)
- Storable user sets

Options

- CS-Mount (only GE680, GE1050)
- F-Mount (except for GE4000, GE4900)
- Taped cover glass (except for GE1050), for some models available with or without microlenses
- EF-Mount adapter (only GE4000, GE4900)
- IR cut filter on monochrome cameras
- Kodak Class 1 and Class 0 sensors (only GE4000/4900)

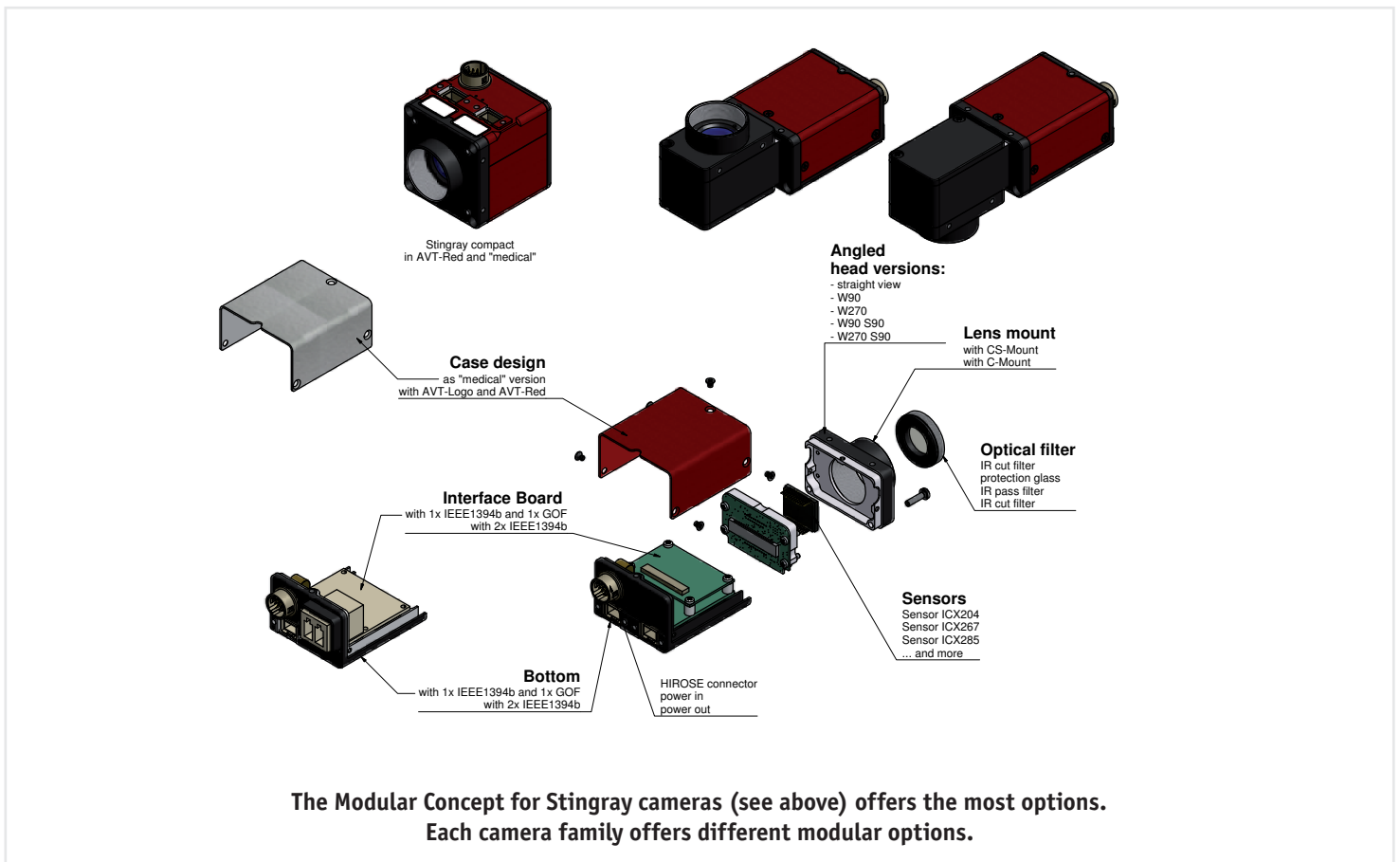
Power requirements	DC 5 V - 24 V via 12-pin HIROSE
Power consumption	< 3.0 W (@ 12 V DC)
Operating temperature	+0 ... + 50° Celsius ambient temp.
Storage temperature	- 10 ... + 70° Celsius ambient temp.
Regulations	CE, FCC Class A, RoHS (2002/95/EC)

The AVT Modular Concept

In addition to a comprehensive selection of standard cameras, Allied Vision Technologies also offers customized cameras. Many customizing requirements can be covered by the Modular Concept. It provides a list of options to change the camera's form factor and optical filters. The Modular Concept is available for all AVT cameras. **Each camera family offers different modular options.**

Using the options of the Modular Concept is beneficial because it:

- Avoids customizing effort
- Permits immediate orders
- Leads to quick delivery times
- Offers transparent pricing



Optional: GOF ports for Stingray and Pike cameras

Stingray and Pike cameras are optionally available with a GOF (glass optical fiber) port. GOF cables have been used in the broadcast industry for decades, since they reliably transmit even

high-resolution video signals over long distances. Allied Vision Technologies offers GOF cables that meet industrial standards and sustain considerable mechanical stress.



Stingray with GOF port



Pike with GOF port

Advantages of GOF:

- 800 Mbit/s over 400 meters and more
- No additional repeaters required
- Transmission of light instead of electricity:
No ground problems, no interference with electromagnetic fields

Features Guideline

Data for Guppy PRO are preliminary

	Guppy	Guppy PRO	Stingray/ Pike	Prosilica GC	Manta	Prosilica GE	Prosilica GB, GS	Prosilica GX
Interface	1394a	1394b	1394b	GigE	GigE	GigE	GigE	GigE*
Output modes								
Mono modes	8/-/-	8/12/16	8/12/16	8/16	8/16	8/16	8/16	8/12/16
RAW modes	8/-/-	8/12/16	8/12/16	8/16	8/16	8/16	8/16	8/12/16
Color modes: YUV411/422/444	-/-/-	•/•/-	•/•/-	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•
RGB24/BGR24	-/-	•/-	•/-	•/•	•/•	•/•	•/•	•/•
Bit depth	8	8-14	8-16	8-12	8-12	8-12	8-12	8-12
Inputs, Outputs								
RS232/Inputs/Outputs	•/1/3	-/1/3	•/2/4	•/2/2**	-/2/2	•/1/3	•/2/2**	•/3/3**
Trigger modes								
Edge/level	•/•	•/•	•/•	•/•	•/•	•/•	•/•	•/•
Software/software broadcast	•/•	•/•	•/•	•/-	•/•	•/-	•/-	•/-
Single/bulk trigger	•/•	•/•	•/•	•/•	•/•	•/•	•/•	•/•
GPI/GPO	1/3	1/3	2/4	2/2	2/2	1/3	2/2	1/3
Sync modes								
Strobe output/trigger ready	•/-	•/•	•/•	•/•	•/•	•/•	•/•	•/•
Image pre-processing modes								
AOI with speed increase	•	•	•	•	•	•	•	•
Programmable LUT/Gamma	•/•	•/•	•/•	-/-	-/•	-/-	-/-	-/-
Shading correction	-	-	•	-	-	-	-	-
Binning up to...	n/a	2 x 2	8 x 8	8 x 14	8 x 8	8 x 1000	8 x 14	8 x 1080
Subsampling, up to...	n/a	2 x 8	8 x 8	n/a	n/a	n/a	n/a	n/a
Gain control (man., auto, 1push)	•/•/-	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•
Exp. contr. (man., auto, 1push)	•/•/-	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•
White balance (man, auto, 1push)	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•	•/•/•
Hue/saturation/color corr.	-/-/-	•/•/•	•/•/•	-/-/-	•/•/•	-/-/-	-/-/-	-/-/-
High SNR mode	-	-	•	-	-	-	-	-
Image stamp (SIS)	-	-	•	-	-	-	-	-
Image mirror (H/V)	-/-	-/-	•/-	-/-	-/-	-/-	-/-	-/-
Image hold/bandwidth limiter***	-/•	-/•	•/•	•/•	•/•	•/•	•/•	•/•
Sequence mode	-	-	•	-	-	-	-	-
Storable user sets	•	•	•	•	•	•	•	•
Board level/modular concept	•/•	-/•	• (Sting.)/•	-/-	•/-	-/-	•/•	-/-

Please note: This list is only a guideline and does not represent a detailed specification. Some functions are only valid for monochrome or color cameras, or are not valid for all models of a camera family. The cameras have additional functions which are not listed here. For a detailed specification, please refer to the data sheet or the Technical Manual and visit our website www.alliedvisiontec.com

Design and specifications of the described products are subject to change without notice.

* Double speed GigE Vision interface (240 MB/s)

** Video-auto-iris, GX with video-autoiris and lens control

*** GigE: StreamBytesPerSecond, 1394: Packet size

Software by Allied Vision Technologies

AVT Software Packages

All software development kit (SDK) packages provided by AVT are **free of charge** and contain the following components:

- The required drivers to integrate the cameras into your system
- An easy to use driver installation tool
- An application programming interface (API) for camera control and image acquisition
- A viewer application to test the cameras and evaluate features
- Examples based on the SDKs provided APIs

AVT Software Philosophy

Our worldwide customers use every conceivable software paradigm. Whatever your software requirement or preference, AVT has one or more options that fit.

AVT software options include:

- High-End APIs
- Direct Show
- ActiveX Control
- TWAIN
- 3rd party software solutions
- Open standards like the libdc1394

AVT Software Selector Guide

To find the right software package for integrating AVT FireWire or GigE cameras into your application, we recommend using the AVT **Software Selector Guide** on our website:

<http://www.alliedvisiontec.com/emea/products/software.html>

What's this guide about?

When a camera is to be connected to a PC, one has to ask "how?" before resolution or camera features can even be looked at. How do parameters get into the camera? How is the camera started? How do the images get into the PC? How do you plan to process the images?

AVT offers several software packages and library interfaces which help the user to develop powerful applications quickly and easily. This interactive guide will help you to find the right AVT package for integrating AVT cameras into your application.



Operating Systems

Allied Vision Technologies provides software packages for all common operating systems. Besides Windows, SDKs for Linux, Mac OS X and even for QNX are available.

3rd Party Solutions

AVT's FireWire cameras can easily be integrated into any 3rd party vision software solution that supports the IIDC standard.

The GigE Vision cameras conform to the AIA GigE Vision standard and are compatible with all GigE Vision-compliant software solutions.

There is a wide range of 3rd party software solutions compatible with AVT's FireWire and GigE cameras, such as libraries, SDKs, integrated development environments, vision applications and tools, and drivers. Allied Vision Technologies works in close cooperation with its certified partners to assure AVT camera users tested compatibility, easy installation, and strong support.

The AVT Online Camera Configurator

The Camera Configurator is a convenient online tool for displaying and sorting AVT's cameras according to your criteria.

For example if you are looking for a certain sensor model, the Online Camera Configurator shows all AVT cameras with this sensor at one glance.

Among others, it is also possible to show all cameras within a resolution range (e.g. 3 to 6 Megapixels), or to display all available cameras with a type 2/3 sensor.

Additionally, all of your preferred searching criteria may be combined as requested.

Online Camera Configurator on alliedvisiontec.com
<http://alliedvisiontec.com/emea/camera-configurator.html>

Contact & Expert Advice



For expert advice which camera fits your application best, our experienced staff will be happy to help you choose the right camera. Allied Vision Technologies is represented in more than 30 countries worldwide. Please find the AVT branch office and the distributor sales network in your region on our website:

www.alliedvisiontec.com

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