

GigE Vision Camera GD-Series

GD-3400 / GD-3400C/GD-3400UV
(1/3" VGA Dual-tap GigE camera, 217 fps or 300 fps)



*World's Smallest
Gigabit Ethernet Camera from
GEViCAM*

GigE
VISION
also available

Features

- High frame rate: 300 fps (frame per second) or 217 fps
- 1Gigabit/s high speed point-to-point transmission
- No frame grabber required for image capture
- 100m with Gigabit Ethernet cable CAT5e or CAT6
- GigE Vision standard compliant version also available
- Field upgradeable firmware via Ethernet
- Excellent S/N: >50dB for 12-bit, 10-bit or 8-bit output, 12 to 8-bit Gamma conversion and custom LUT
- No-delay asynchronous reset with time stamp and async shutter
- GPIO for local I/O, RS-485 communication for auxiliary devices, Audio I/O, Auto-iris lens drive
- Color (RGB Bayer) versions available
- Miniature, robust package (34 x 34 x 68 mm)
- Industrial Ethernet and GPIO connectors
- Various drivers available for existing machine vision software
- Extensive software developer's kit (SDK)

General Description

The GEViCAM GD-Series is comprised of dual-tap Gigabit Ethernet cameras for industrial applications. They are designed on a common platform and comply with the GigE Vision standard for plug-and-play performance as well as a proprietary high performance SDK. The GD-3400 uses 1/3" VGA (648 x 480) high sensitivity CCD (KAI-340D) with dual 12-bit A/D converters. The normal data output is selectable for 12-bit, 10-bit (MSB), or 8-bit (MSB) at 112 MHz to maintain excellent over-all camera S/N ratio of >50dB at factory default. 217 fps and 300 fps version are available.

For multiple camera applications, it accepts external trigger via GPIO (general purpose I/O) and resets the internal timing with no-delay and a time stamp to provide exact image locations. This eliminates a need for external sync (HD/VD), which tends to generate some PLL jitter.

Streamlined camera designs reduce the component count and make these cameras very compact and low cost, yet high performance. This is an ideal opportunity to upgrade machine vision applications from conventional analog cameras (+ frame grabber) to frame grabber-less systems for

improved cost-performance.

GigE Vision system itself has further advantages over conventional systems. It allows multiple camera operations on the net, multicasting (multiple computers per camera), long cable distance (100m without repeaters), auxiliary device control via GPIO, plug-and-play compatibility with commonly available software and camera systems, common camera control protocol or GUI, etc. The firmware or software is field upgradeable via Ethernet even if the original camera is installed in a remote area.

The GPIO uses a 14-pin MDR connector and interfaces with TTL (trigger and strobe), RS-485 or CAN, opto-isolated I/Os, and digital audio. A user can download the control protocol for a local auxiliary devices such as a PLC or surveillance controls, where the GigE camera then operates as a local server. Audio CODEC is standard for remote audio input and output via Ethernet.

The platform provides full progressive scan, partial scan, various exposure controls, and other special functions. GigE buffer also allows various sizes of images (Region of interest) to captured and transmitted.

GigE Vision Camera GD-3400 / GD-3400C / 3400UV

*Product specifications and features are subject to change without notice.

Specifications

(C:Bayer Color version)

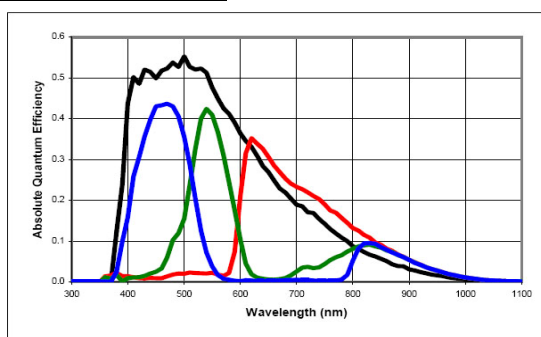
	GD-3400 / 3400C / 3400UV
CCD Imager	1/3" VGA
Active Pixels (data out)	648 x 480
Pixel Size (µm)	7.4 x 7.4
Active Area (mm)	4.74 (H) x 3.55 (V)
Scanning Mode	Progressive scan full Partial and Center scan Two-row binning
Frame Rate	217 fps @ 40 x 2 MHz 300 fps @ 56 x 2 MHz
Data Clock	80 MHz and 112 MHz
Data Output	Gigabit Ethernet
Resolution	648 x 480
S/N Ratio	>50 dB
Minimum Illumination	2.0 lux at 217/300 fps
Gamma	1.0 / 0.45 LUT
Power Requirement	12 V DC ±10%, 6W
Lens Mount	C or CS-mount
Operating Temperature	-10°C to +50°C
Vibration	7Grms
Shock	70G
Size (mm)	34 x 34 x 68
Weight	115 g (4 oz)

Power consumption and Thermal consideration

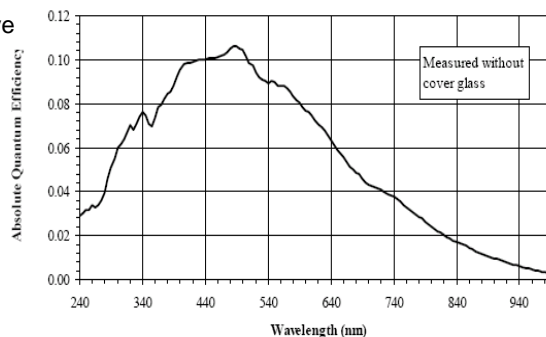
GD-3400 has powerful functionality and high speed dual-tap GigE architecture in a very small package. The power consumption is less than 6 W at 12V. However, heat generation is inevitable for such a high speed device. The camera design includes a heat pipe structure for two critical components, FPGA and PHY, to transfer the junction heat to the base plate. The high-speed CCD generates more heat and is thermally connected to the front-end. Even though internal components keep the junction temperature at reasonable levels, package may get hot. It is highly recommended to mount cameras on relatively large metal mounting stages (brackets) to extract the heat from camera's base plate as efficiently as possible.

KAI-340D Spectral Response

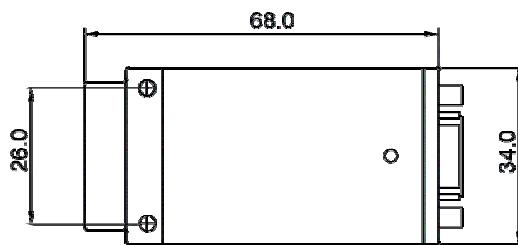
Normal CCD



UV sensitive CCD

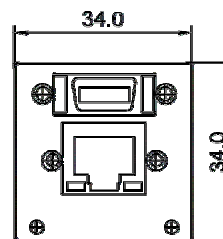
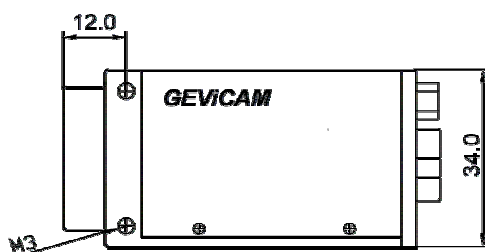
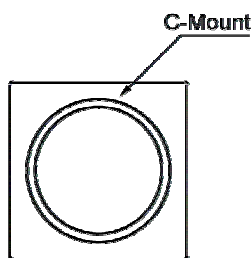


Physical Dimensions



GPIO Pin Assignment

1	12V RTN (GND)	8	Power in 12V
2	GND	9	Trigger in (TTL)
3	Strobe out	10	RS-485 -
4	RS-485 +	11	Opto D1 in -
5	Opto D1 in +	12	Opto D2 out -
6	Opto D2 out +	13	Audio out
7	GND	14	Audio in



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