



C-VIT – the rugged, ultra-compact high speed camera

Hi-G-rated for 150+ G, ready to be used in the most severe environments. A robust high resolution camera for demanding applications in research and development.

The C-VIT is particularly suited for all applications where a compact, portable, high resolution and robust camera is essential. The highly light-sensitive sensor and on-the-fly image processing in the camera covers the most ambitious application. The C-VIT is designed and certified to withstand G-forces in excess of 150 G/10 msec (all axes) and spikes of up to 250 G. Offering a wide range of signals for external control or feedback on camera status during tests, the C-VIT is a genuine all-in-one camera. To round it all up, the comprehensive Imaging Studio software allows easy piloting from PC, laptop or tablet PC.

Unique features and benefits

- **Superior image quality** – C-VIT built-in on-the-fly image processing provides crisp clear images.
- **Ultra compact and all in one** – C-VIT is an ultra-compact camera ready to shoot in rugged environments.
- **WLAN** – C-VIT is available with WLAN connectivity.
- **Extensions** – Extensions such as CFast Flash Disk, microSD, or HDMI output on camera are available.

C-VIT – Key Specifications

Typical frame rates vs resolution

| | | | | | | | | | |
|------|------|------|------|------|------|------|-------|-------|-------|
| | 2048 | 1920 | 1280 | 1024 | 900 | 800 | 640 | 512 | 256 |
| 2048 | 570 | 610 | 840 | 990 | 1140 | 1220 | 1450 | 1770 | 2650 |
| 1080 | 1080 | 1160 | 1590 | 1890 | 2150 | 2320 | 2740 | 3340 | 4990 |
| 1024 | 1140 | 1220 | 1670 | 1990 | 2270 | 2440 | 2880 | 3520 | 5250 |
| 900 | 1290 | 1390 | 1910 | 2260 | 2580 | 2780 | 3280 | 4000 | 5970 |
| 800 | 1450 | 1570 | 2140 | 2540 | 2900 | 3120 | 3680 | 4490 | 6690 |
| 720 | 1620 | 1740 | 2380 | 2820 | 3220 | 3470 | 4090 | 4990 | 7420 |
| 700 | 1660 | 1790 | 2440 | 2900 | 3310 | 3560 | 4200 | 5120 | 7620 |
| 600 | 1940 | 2090 | 2850 | 3380 | 3860 | 4150 | 4900 | 5970 | 8870 |
| 480 | 2420 | 2610 | 3560 | 4220 | 4810 | 5180 | 6100 | 7420 | 11010 |
| 512 | 2270 | 2440 | 3330 | 3950 | 4500 | 4850 | 5710 | 6950 | 10320 |
| 320 | 3620 | 3890 | 5300 | 6280 | 7150 | 7690 | 9050 | 11000 | 16210 |
| 256 | 4500 | 4850 | 6600 | 7800 | 8890 | 9550 | 11230 | 13610 | 20000 |

Table shows typical resolution vs. fps, Resolution is freely adjustable within limitations of camera/sensor

Recording time (modulated)

| | | | | |
|-----------------------------|--------|--------|--------|---------|
| Memory Size | 1.3 GB | 2.6 GB | 5.2 GB | 10.4 GB |
| 1920 x1080 @1000 fps | 1 sec | 2 sec | 3 sec | 4 sec |

Optical/Sensor specifications

| | |
|--------------------------|---|
| Image Sensor | CMOS Sensor |
| Pixel Size | 6.3 micron |
| Light Sensitivity | ISO 2100 (monochrome), ISO 1400 (color) |
| Dynamic Range | 8 Bit |
| HDR Mode | High Dynamic Range Mode (HDR) up to 10 Bit, user adjustable by slider in control software |
| Pixel Correction | Built-in pixel correction and in-camera processing for highest image accuracy |
| Shutter Type | Global, independent of frame rate |
| Exposure Time | Free adjustable from 2 µsec to 1 / framing rate by software |
| Lens Mount | C-Mount or optional F-Mount |

Camera and control features

| | |
|--------------------------------------|---|
| Image Memory | Standard: 1.3 GB, optional 2.6 / 5.2 / 10.4 GB |
| Nonvolatile Memory | Optional CFast flash card interface and micro SD disk slot. Camera can save image data on flash disk w/o PC attached, ideal when using WiFi for piloting camera |
| Power | 10–36 VDC / 17–20 Watts depending on options and extensions |
| I/O Tolerance | TTL level, all I/O are 0–24 V tolerant |
| LED Control | LEDs on back and front indicates camera status |
| Reset | Reset function to reset camera status w/o affecting image memory |
| Power On/Off | Switch on/off, Remote Switch on |
| Battery 180° Version | Re-chargeable NiMH battery inside for up to 30 min autonomous operation of camera, depending on options installed |
| Trigger Delay | Programmable up to 65 sec |
| Trigger Windowing/De-bouncing | User programmable trigger window to eliminate false triggering by external devices |
| Trigger Modes, Positions | Pre-post recording, freely adjustable in steps of 1% of total camera memory |
| Timing | High precision time base, temperature compensated |
| Multi-Buffer | Split buffer for up to 32 individual sub-buffers |
| Auto-Download | Auto download to PC for 24/7 recording or automatic download to optional flash card until flash card full |
| Pre-Program of Camera | C-VIT may be pre-programmed with a specific set of commands. Ideal when camera can no longer be accessed before test and switch on is possible only by remote switch on |
| OSD | Information on camera, recording features, time stamp, and event marker may be added in image data. Position of OSD is set by user |

Imaging studio features

| | |
|--------------------------------|--|
| Imaging Studio | Software suite to parameterize and control camera, handle data download and conversion of native files into most common single images and movie formats. Runs on Win 7/10, 32/64 Bit |
| Parameterization | Set all camera parameters for recording by convenient and easy-to-use software interface supports graphical setting of resolution |
| Display | Display multiple cameras simultaneously |
| Editing | Play back, edit and save sequences after recording with few clicks |
| OSD (on screen display) | OSD with camera parameters |
| Overlay | Overlay of recorded image with user adjustable opacity |
| Point & click | Easy point and click measurement and manual tracking features |
| Export | Export of AOS native file format to avi, mpeg, mpeg4, bmp, tif, png, jpg |
| Image Processing | Manual or automatic color correction and white balance functionality |
| Batch Converter | Convert native files to movie files using off-line batch conversion |

Data interface

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|-------------------------|--|
| Data Interface | Gigabit Ethernet (10/100/1000) with lockable RJ45 connector Optional: Ethernet on 8 pin LEMO connector |
| WiFi | Optional: Wireless interface to setup and pilot camera 2,4 Ghz / 5 Ghz, 802.11a/g/n |
| I/O Interface | Solid 14 pin LEMO connector |
| Synchronization | Sync in / Sync out for phase-locked master-slave operation with other cameras or synchronization to external frequency |
| Armed Out | Armed out indicates camera is in recording mode and ready to receive trigger |
| Trigger In | Trigger input, rising, falling edge, TTL, switch closing/opening |
| Triggered Out | Indicates camera is triggered |
| Set_To_Rec | Used to set the camera from idle mode into recording |
| Remote Switch On | Switch on camera by simple 2 wire connection over a distance of up to 100 m (300 feet) |
| Event Marker | Event marker to record/mark events during image data acquisition |
| Strobe | Strobe out to synchronize external equipment to camera. Pulse width represents shutter time |
| HDMI | HDMI interface for live view on camera |

Physical specifications

| | |
|------------------------------|--|
| Size & Weight | width: 67 mm / height: 71 mm / length: 84 mm / 750 gr width: 2.63" / height: 2.79" / length: 3.30" / 1.5 lb |
| Operating Temperature | -10 ... +45 °C / +14 ... +113 °F |
| Storage Temperature | -40 ... +70 °C / -40 ... +158 °F |
| Shock Resistance | 150 G / 10 msec all axis, spikes up to 200 G |
| I/O Connector | LEMO type ref. FGG.2B.314.CLAD72Z (cable type) |
| CE | In compliance with relevant standards |
| Mounting | ¼" UNC thread, bottom / M6 mounting threads on 4 sides |

Optional extensions (change of camera size)

| | | |
|-------------------------------------|--|---|
| IRIG-B | IRIG-B 122 input | size unchanged |
| Non-volatile storage devices | CFast flash card interface Micro SD card slot | width / height / length: 67 mm / 71 mm / 100 mm 2.63" / 2.79" / 3.93" |
| WiFi Interface | Wireless interface to setup and piloting of camera | width / height / length: 67 mm / 71 mm / 100 mm 2.63" / 2.79" / 3.93" |
| HDMI | HDMI interface on camera | width / height / length: 67 mm / 71 mm / 100 mm 2.63" / 2.79" / 3.93" |
| Extended Temperature Range | Extended temperature range treatment and test for -40 °C ... +55 °C (-40 °F ... +130 °F) operation | Size unchanged regardless of extensions Installed |

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