M-VIT 4000 High Speed Camera

Very light sensitive high speed camera HD ready up to 4000 fps

The M-VIT is an ultra-compact high speed camera particularly suited for situations such as on board vehicular crash test applications. The rugged, sealed camera withstands High-G loads and vibrations. With 1 megapixel at 4000 fps, this highly light sensitive sensor provides crisp clear images even in dim light conditions. The camera is optionally equipped with a built-in rechargeable battery.

Unique features and benefits

- **Fast** – with 1280 x 800 pixel of up to 4000 fps the M-VIT 4000 provides highly detailed recordings.
- **Very light sensitive** – using a sensor with cutting edge pixel technology the M-VIT 4000 offers superb light sensitivity.
- **Onboard ready** – the M-VIT 4000 takes shocks of up to 150 g / 11 msec all axis.
Frame rates vs resolution

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Frame Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1280 x 864</td>
<td>3700 fps</td>
</tr>
<tr>
<td>1280 x 800</td>
<td>4000 fps</td>
</tr>
<tr>
<td>1280 x 720</td>
<td>4450 fps</td>
</tr>
<tr>
<td>1280 x 630</td>
<td>5000 fps</td>
</tr>
<tr>
<td>1280 x 512</td>
<td>6200 fps</td>
</tr>
</tbody>
</table>

Resolution and fps may be set individually in the given speed ranges. Gain in fps by reducing the vertical resolution.

Recording time in sec vs memory size

<table>
<thead>
<tr>
<th>Memory Size (GB)</th>
<th>M-VIT @ 1280 x 800 @ 4000 fps (in seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (standard)</td>
<td>1.0</td>
</tr>
<tr>
<td>8</td>
<td>2.0</td>
</tr>
<tr>
<td>16</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Extended recording time by reducing resolution and/or framing speed.

Camera and optical specifications

- **Sensor Type**: CMOS Sensor
- **Pixel Size**: 14 micron
- **Sensor Format**: 1”
- **Light Sensitivity**: ISO 10'000 (mono) ISO 6000 (color) (without gain)
- **Exposure Time**: Global, from 1 / framing speed down to 2 µsec
- **Dynamic Range**: 10 Bit / 30 Bit color
- **Gain**: 3 gain settings available, controlled by software
- **Lens Mount**: C-Mount

Software and camera operation

- **Live Video**: Live Video out via Ethernet or when installed HDMI, WiFi
- **Buffer Type**: Circular buffer, parametrized by software
- **Number of Buffers**: Up to 100 buffers, individually configurable by software
- **Trigger Modes**: Pre-post recording, adjustable in steps of 1 frame, rising falling edge, delayed trigger, trigger debouncing
- **Auto Exposure**: Auto exposure for automatic brightness control
- **Auto Download**: Auto download to PC or CFast card (CFast card optional)
- **Export Formats**: Export in all popular movie and single image formats supported
- **Control SW**: AOS Imaging Studio v4 for parameterization, recording, editing and exporting/converting of recordings included

Data interface

- **Data**: Gigabit Ethernet RJ45 lockable
- **I/O**: Solid 14 pin LEMO connector, compatible with all AOS camera series
- **I/O Tolerance**: TTL compatible I/O, up to 24 V tolerant
- **Trigger In**: Input for start stop recording, falling edge, switch closure
- **Armed Out**: Armed out to indicate camera status ready for recording
- **Triggered Out**: Indicates that trigger is received and camera finishes recording
- **Remote On**: For remote switch on of camera
- **Sync In/Out**: Sync in/out on camera
- **Strobe**: Strobe out for synchronization of LED illumination
- **IRIG-B**: IRIG-B 122b synchronization
- **Power Requirements**: 10...36 V / 28 Watts

Options and add-on

- **Camera Memory**: Optional 4-8-16 GB
- **Battery**: Rechargeable battery for up to 30 minutes operation and/or memory backup
- **Video Out**: HDMI Video out on camera
- **Nonvolatile Memory**: Removable CFast interface with auto download functionality
- **WiFi**: Live view and camera set-up via wireless network
- **ChillBox**: For longer offboard use without passive cooling via metal surface
- **C-F Mount Adapter**: For F-Mount lenses, with dial for F-stop
- **Single Connector Interface**: Single push-pull interface according German “Arbeitskreis” optional

Physical specifications

- **Size & Weight**: width: 75 mm / height: 75 mm / length: 75 mm / 910 gr
- **Operating Temperature**: -10 ... + 45 °C / +14 ... +113 °F
- **Storage Temperature**: -40 ... +70 °C / -40 ... +158 °F
- **Shock Resistance**: 150 G / 11 msec all axis, spikes up to 200 G according EN 60068-2-27:2009
- **I/O Connector**: LEMO type ref. FG6.28.314.CLAD72Z (cable type)
- **CE**: In compliance with relevant standards
- **Mounting**: 1/4” UNC thread, bottom / M6 mounting threads on 4 sides

System configuration and optional extensions

<table>
<thead>
<tr>
<th>Model/Extension</th>
<th>M-VIT 4000</th>
<th>M-VIT 4000 with battery</th>
<th>M-VIT 4000 with CFast/ HDMI output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Time</td>
<td>No backup battery</td>
<td>30 min</td>
<td>20 min</td>
</tr>
<tr>
<td>Size</td>
<td>75 x 75 x 75 mm</td>
<td>75 x 75 x 107 mm</td>
<td>75 x 75 x 124 mm</td>
</tr>
</tbody>
</table>

Specifications are subject to change without prior notice – v09.2019