Evolution
360° Indoor Concealed Camera
Taking the next step in 360° total situational awareness

5-megapixel sensor and no moving parts
- Constant 360° surveillance; no blind spots
- Silent operation as there are no mechanical parts wear and tear
- Light weight enclosure that can be completely concealed behind ceilings or walls voids
- False wall or ceiling thickness of between 3mm (1/4") and 25mm (1")

A truly covert installation with the lowest profile available
- Fully supports IEEE802.3af Class 2 Power over Ethernet (PoE)
- Quick and easy installation
- Professional indoor enclosure
- Pleasing aesthetics in either black or white finish
- Minimum illumination 0.2 lux, providing clarity in low lights
- Convenient flush-mounting enclosure
- Suitable for ceiling, wall or table mounted applications

Onboard SD card and advanced event management
- Onboard SD Card for future local recording feature and advanced event management
- Configurable privacy regions
- Video Motion Detection within defined areas of interest
- Local alarm digital input and output
- Audio microphone input

Fully integrated with multiple VMS platforms to provide live and retrospective dewarping
- Utilising the market leading Oncam Grandeye 3D dewarping software
- Camera features are accessible via VMS platforms
- Optimises bandwidth and storage utilisation
- Simultaneous multiple video streams
- Video streams in multiple resolutions from 528x480 to 2144x1944
- 10 fps typical for full resolution and up to 15 fps for all other resolutions
- H.264/MJPEG streaming with multiple quality levels
- Configurable password protection
- Intuitive web-based interface for viewing and configuration
- Integrated with Digital Sentry version 7.5 and other leading VMS platforms
## Evolution

360° Indoor Concealed Camera

Taking the next step in 360° total situational awareness

<table>
<thead>
<tr>
<th>Model</th>
<th>EVO-05NCD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Field of View</td>
<td>360°</td>
</tr>
<tr>
<td>Image Sensor</td>
<td>5 megapixel; Array Format (Active) 2592H x 1944V = 5,038,848 pixels; 1/2.5-Inch CMOS Sensor</td>
</tr>
<tr>
<td>Angle of View</td>
<td>180° hemisphere</td>
</tr>
<tr>
<td>Lens</td>
<td>185° 1.6mm / F2.0</td>
</tr>
<tr>
<td>Minimum Illumination</td>
<td>0.2 lux = 50 IRE F/2.0 (6500K)</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>10 fps typical at maximum resolution and up to 15 fps for all other resolutions</td>
</tr>
<tr>
<td>Video Motion Detection</td>
<td>12 regions of interest; VMD; configurable response; adjustable characteristics</td>
</tr>
<tr>
<td>External Input</td>
<td>1x contact input</td>
</tr>
<tr>
<td>External Output</td>
<td>1x contact output</td>
</tr>
<tr>
<td>Security</td>
<td>Configurable password protection</td>
</tr>
<tr>
<td>Advanced Event Management</td>
<td>Triggered by motion, external input or HTTP event, Result configurable; external output, FTP/SMTP upload, (Local recording, future feature via firmware update)</td>
</tr>
<tr>
<td>Networking / Supported IP protocol</td>
<td>TCP/IP, HTTP, DHCP, DNS, NTP, FTP, SMTP, RSTP, uPNP</td>
</tr>
<tr>
<td>Privacy</td>
<td>10 configurable privacy regions</td>
</tr>
<tr>
<td>SD Card</td>
<td>Built-in SD Card slot (future feature via firmware update)</td>
</tr>
<tr>
<td>Audio Connections</td>
<td>Audio in; Microphone input via 3.5mm jack; via RTSP using G711 codec (µLaw - 8K sample rate), via ONVIF S</td>
</tr>
<tr>
<td>Analogue Video Out</td>
<td>BNC connection – selectable between PAL or NTSC</td>
</tr>
<tr>
<td>Signal-to-Noise Ratio</td>
<td>45dB</td>
</tr>
<tr>
<td>White Balance Range</td>
<td>Auto White Balance (Range = approx. 2500K–8000K)</td>
</tr>
</tbody>
</table>

### Electrical

| Ports                         | RJ45 for 100Base-TX; 2.1mm DC Input jack; 6-pin 1.5mm Phoenix for external I/O, BNC for test video output |
| Network Cable Type            | CAT5 or better for 100Base-TX |
| Power Input                   | 12V, 1.0A (min) “LPS or NEC Class 2” power supply or Power over Ethernet (PoE), IEEE standard 802.3af |
| Power Consumption             | 8W max |

### Video

| Video Stream 1 & 2 Codec’s   | H.264 High, Level 5 / MJPEG (both streams configurable) |
| Video Stream 1 & 2 Compression Level | Multi-levels of compression adjustment |
| Video Stream 1 & 2 Pixel Resolution | Fisheyes at: ¼ Megapixel (528x480), 1MP (1056x960), 2MP (1488x1360), 4MP (2144x1944) |
| Video Stream 3 Codec         | MJPEG |
| Video Stream 3               | Multi-levels of compression and frame rate adjustment (max 15fps) |
| Video Stream 3 Pixel Resolution | Fisheyes at: ¼ Megapixel (528x480) |
| Image Control                | Settings: brightness/contrast/saturation/exposure compensation; compression quality; wall/ceiling/table mount |
| VMS Supported                | Integrated with Digital Sentry version 7.5 and other leading VMS platforms |
| Web Browser Compatibility    | Internet Explorer IE9 (with ActiveX plug-in, supplied); Firefox 23; Chrome 29; using Quicktime, minimum version 7 |
| Number of Unicast Users Supported | Up to 20 simultaneous users depending on the resolutions settings |
| Bit Rate Control             | Selectable options; constant bit rate control, capped bit rate control, constant quality control |

### Technical Specifications

- **Model:** EVO-05NCD
- **Field of View:** 360°
- **Image Sensor:** 5 megapixel; Array Format (Active) 2592H x 1944V = 5,038,848 pixels; 1/2.5-Inch CMOS Sensor
- **Angle of View:** 180° hemisphere
- **Lens:** 185° 1.6mm / F2.0
- **Minimum Illumination:** 0.2 lux = 50 IRE F/2.0 (6500K)
- **Frame Rate:** 10 fps typical at maximum resolution and up to 15 fps for all other resolutions
- **Video Motion Detection:** 12 regions of interest; VMD; configurable response; adjustable characteristics
- **Security:** Configurable password protection
- **Advanced Event Management:** Triggered by motion, external input or HTTP event, Result configurable; external output, FTP/SMTP upload, (Local recording, future feature via firmware update)
- **Networking / Supported IP protocol:** TCP/IP, HTTP, DHCP, DNS, NTP, FTP, SMTP, RSTP, uPNP
- **Privacy:** 10 configurable privacy regions
- **SD Card:** Built-in SD Card slot (future feature via firmware update)
- **Audio Connections:** Audio in; Microphone input via 3.5mm jack; via RTSP using G711 codec (µLaw - 8K sample rate), via ONVIF S
- **Analogue Video Out:** BNC connection – selectable between PAL or NTSC
- **Signal-to-Noise Ratio:** 45dB
- **White Balance Range:** Auto White Balance (Range = approx. 2500K–8000K)
- **White Balance Range:** Auto White Balance (Range = approx. 2500K–8000K)
- **Power Input:** 12V, 1.0A (min) “LPS or NEC Class 2” power supply or Power over Ethernet (PoE), IEEE standard 802.3af
- **Power Consumption:** 8W max
- **Video Stream 1 & 2 Codec’s:** H.264 High, Level 5 / MJPEG (both streams configurable)
- **Video Stream 1 & 2 Compression Level:** Multi-levels of compression adjustment
- **Video Stream 1 & 2 Pixel Resolution:** Fisheyes at: ¼ Megapixel (528x480), 1MP (1056x960), 2MP (1488x1360), 4MP (2144x1944)
- **Video Stream 3 Codec:** MJPEG
- **Video Stream 3 Compression Level:** Multi-levels of compression and frame rate adjustment (max 15fps)
- **Video Stream 3 Pixel Resolution:** Fisheyes at: ¼ Megapixel (528x480)
- **Image Control Settings:** brightness/contrast/saturation/exposure compensation; compression quality; wall/ceiling/table mount
- **Image Enhancement:** Wide Dynamic range - Greater than 90dB
- **VMS Supported:** Integrated with Digital Sentry version 7.5 and other leading VMS platforms
- **Web Browser Compatibility:** Internet Explorer IE9 (with ActiveX plug-in, supplied); Firefox 23; Chrome 29; using Quicktime, minimum version 7
- **Number of Unicast Users Supported:** Up to 20 simultaneous users depending on the resolutions settings
- **Bit Rate Control:** Selectable options; constant bit rate control, capped bit rate control, constant quality control

### Dimensions

- **Wall/Ceiling:**
  - Min: 3mm (1/8”)
  - Max: 25mm (1”)
- **Face D:** 76mm (3”)
- **Cut out D:** 64mm (2.5”)
- **Locking Nut D:** 100mm (3.94”)

### Other Information

- **RJ45 for 100Base-TX:**
  - 2.1mm DC Input jack
  - 6-pin 1.5mm Phoenix for external I/O, BNC for test video output
- **Network Cable Type:** CAT5 or better for 100Base-TX
- **Power Input:** 12V, 1.0A (min) “LPS or NEC Class 2” power supply or Power over Ethernet (PoE), IEEE standard 802.3af
- **Power Consumption:** 8W max

### Technical Specifications

- **Ports:**
  - RJ45 for 100Base-TX; 2.1mm DC Input jack; 6-pin 1.5mm Phoenix for external I/O, BNC for test video output
  - CAT5 or better for 100Base-TX
- **Power Input:** 12V, 1.0A (min) “LPS or NEC Class 2” power supply or Power over Ethernet (PoE), IEEE standard 802.3af
- **Power Consumption:** 8W max

### Video Specifications

- **Video Stream 1 & 2 Codec’s:**
  - H.264 High, Level 5 / MJPEG (both streams configurable)
  - Multi-levels of compression adjustment
  - Fisheyes at: ¼ Megapixel (528x480), 1MP (1056x960), 2MP (1488x1360), 4MP (2144x1944)
- **Video Stream 3 Codec:**
  - MJPEG
  - Multi-levels of compression and frame rate adjustment (max 15fps)
  - Fisheyes at: ¼ Megapixel (528x480)
- **Image Control Settings:**
  - brightness/contrast/saturation/exposure compensation; compression quality; wall/ceiling/table mount
- **Image Enhancement:**
  - Wide Dynamic range - Greater than 90dB

### VMS Support

- Integrated with Digital Sentry version 7.5 and other leading VMS platforms

### Web Browser Compatibility

- Internet Explorer IE9 (with ActiveX plug-in, supplied); Firefox 23; Chrome 29; using Quicktime, minimum version 7
- Up to 20 simultaneous users depending on the resolutions settings

### Bit Rate Control

- Selectable options; constant bit rate control, capped bit rate control, constant quality control
**Evolution**

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### Technical Specification

#### Minimum System Requirements

<table>
<thead>
<tr>
<th>Component</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor and Memory</td>
<td>Computer with 1Ghz 32-bit (x86) or 64-bit (x64) processor and with minimum of 512 MB</td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows Vista 32-bit with service pack 2 (SP2) of higher / 64-bit with service pack (SP2) of higher</td>
</tr>
<tr>
<td>Hard Drive Space</td>
<td>Windows Vista 32-bit = minimum 70MB / Windows Vista 64-bit = minimum 120MB</td>
</tr>
<tr>
<td>Display</td>
<td>Super VGA (800 x 600) of higher-resolution monitor with 256 colours</td>
</tr>
<tr>
<td>Peripherals</td>
<td>100Mbits or greater network connection, mouse or compatible pointing device, keyboard</td>
</tr>
</tbody>
</table>

#### Mechanical

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Mount</td>
<td>Behind ceiling or wall to conceal the camera module from view via flush mounted adaptor ring</td>
</tr>
<tr>
<td>Weight</td>
<td>0.45kg (0.95lbs)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Die-cast aluminium camera module with polycarbonate mounting adaptor and clamping ring</td>
</tr>
<tr>
<td>Cut Out Required Diameter</td>
<td>64mm (2 ½”), Max / Min ceiling or wall material thickness; 3mm (1/4”) – 25mm (1”)</td>
</tr>
</tbody>
</table>

#### Environmental

<table>
<thead>
<tr>
<th>Feature</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature Range</td>
<td>-40 to +55°C (-40 to +131°F)</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-40 to +70°C (-40 to +158°F)</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>Up to 98% (In accordance with BS EN 60068-2-30)</td>
</tr>
</tbody>
</table>

#### Certifications / Ratings / Patents

<table>
<thead>
<tr>
<th>Feature</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patents</td>
<td>15 patents; 15 patents pending; 20 licensed patents</td>
</tr>
<tr>
<td>Approvals</td>
<td>IEEE802.3af Class 2; EMC: (CISPR Class A) FCC; CE: IECES-003; KCC; SASO; GOST; S-MARK; C-TICK; UL and cUL-UL60950</td>
</tr>
<tr>
<td>Other Related Products</td>
<td>Oncam Grandeye SDK integration pack, Evolution Accessories, IP Configuration Tool, 360-degree Viewer, OnVu360 Mobile Apps (iOS, Android)</td>
</tr>
</tbody>
</table>

#### Frame Rate, Resolution & Storage Needs

**H.264**

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Frame Rate</th>
<th>Constant bit rate settings</th>
<th>Constant bit rate settings 24hrs = 54GB **</th>
</tr>
</thead>
<tbody>
<tr>
<td>4MP</td>
<td>2144 x 1944</td>
<td>10fps</td>
<td>5 Mbits/s</td>
</tr>
<tr>
<td>2MP</td>
<td>1488 x 1360</td>
<td>15fps</td>
<td>3 Mbits/s</td>
</tr>
<tr>
<td>1MP</td>
<td>1056 x 1056</td>
<td>15fps</td>
<td>1.5 Mbits/s</td>
</tr>
<tr>
<td>1/4MP</td>
<td>528 x 480</td>
<td>15fps</td>
<td>0.8 Mbits/s</td>
</tr>
</tbody>
</table>

**MJPEG**

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Frame Rate</th>
<th>Average file size</th>
<th>Average bit rate</th>
<th>Average bit rate 24hrs = 552.96GB **</th>
</tr>
</thead>
<tbody>
<tr>
<td>4MP</td>
<td>2144x1944</td>
<td>10fps</td>
<td>640KB</td>
<td>52.4 Mbits/s</td>
</tr>
<tr>
<td>2MP</td>
<td>1488x1360</td>
<td>15fps</td>
<td>350KB</td>
<td>43.0 Mbits/s</td>
</tr>
<tr>
<td>1MP</td>
<td>1056x1056</td>
<td>15fps</td>
<td>188KB</td>
<td>23.1 Mbits/s</td>
</tr>
<tr>
<td>1/4MP</td>
<td>528x480</td>
<td>15fps</td>
<td>62KB</td>
<td>7.6 Mbits/s</td>
</tr>
</tbody>
</table>

* Factory / Default settings
** Based on the same scene, with constant average light conditions

Notes:

Values for frame rate, size and bandwidth are approximate and are influenced by compression, quality settings, number of simultaneous viewers and the amount of detail as well as any movement in a scene.

### Ordering

**E V O - 0 5 N C D**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>EVO = Evolution Range</td>
</tr>
<tr>
<td>Camera</td>
<td>05 = 5 Megapixel Sensor</td>
</tr>
<tr>
<td>Format</td>
<td>N = Standard (MJPEG/H.264)</td>
</tr>
<tr>
<td>Housing</td>
<td>C = Concealed</td>
</tr>
<tr>
<td></td>
<td>I = Internal (White)</td>
</tr>
<tr>
<td></td>
<td>J = Internal (Black)</td>
</tr>
<tr>
<td></td>
<td>M = External (White)</td>
</tr>
<tr>
<td></td>
<td>N = External (Black)</td>
</tr>
<tr>
<td>Communications</td>
<td>D = RJ45 TCP/IP</td>
</tr>
</tbody>
</table>

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- Hard Drive Space: Windows Vista 32-bit = minimum 70MB / Windows Vista 64-bit = minimum 120MB
- Display: Super VGA (800 x 600) of higher-resolution monitor with 256 colours
- Peripherals: 100Mbits or greater network connection, mouse or compatible pointing device, keyboard

**Environmental**

- Operating Temperature Range: -40 to +55°C (-40 to +131°F)
- Storage Temperature Range: -40 to +70°C (-40 to +158°F)
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**Frame Rate, Resolution & Storage Needs**

- H.264: 24hrs = 54GB **
- MJPEG: 24hrs = 552.96GB **

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