

# Q-EM High-speed camera



## Q-EM – the ruggedized, compact high speed camera for applications in the most demanding environmental conditions.

### Applications

The Q-EM is particularly suited for all applications where a rugged, shockproof and light sensitive yet compact camera is essential:

- Airborne applications
- Range and ballistic tests
- On-Board MIL vehicle tests
- Harsh industrial and research environments where cameras are exposed to vibration, impacts, dust, moisture and other challenging conditions

### Why the Q-EM

- Ultra-high resolution of 3 MPixel at 500fps
- Compact, fitting into tight spaces like camera pods on aircrafts
- Robust design – designed for many years of industrial handling and harsh environments (milled aluminum housing with heavy duty connectors)
- Autonomous operation – the built-in battery allows you to use the camera without external power cables and power supplies. No risk the camera interferes with the aircrafts power system.
- Simple and easy to integrate – due to its built-in PowerPC, the Q-EM can duplicate the control- and status lines of a film camera. This plus the range of available connectors make the integration into a given environment, i.e. by replacing an older film-based camera, a cinch. Modifications on the aircraft as well as on the test routine are kept to a minimum.

- Tested and certified against MIL standards – as the Q-EM is certified to withstand extreme ambient conditions, it has been tested and certified by an independent test house against the challenging MIL standards (temperatures, shocks, vibrations, altitudes etc. – please refer to the 'technical specs' document for detailed information.

### Unique features

High Sensitivity – the Q-EM offers a light sensitivity greater than in previous cameras models. In many applications and settings, the camera delivers well-lit images without extra illumination, while in others only minimal extra light is necessary.

High light sensitivity also allows for crisper images as motion blur, associated with fast moving objects can be substantially reduced by a shorter shutter time, and depth of field can be extended by stopping down the lens – both parameters are essential to create better, more informative images

Modular concept – you don't have to buy an off-the-shelf product which might or might not suit your application. Have your Q-EM configured for a perfect match by choosing from an extensive range of extensions and accessories

Selectable ROI – the customer can select the most suitable image format (ROI, region of interest) almost without limitations, for best camera performance and image quality



## Versions

**Q-EM** cameras are available in the following versions:

- **Q-EM:** 500fps @ 1696 x 1710 pixels, mono or color, 100'000 fps at reduced resolution

Customized versions of the Q-EM with special extensions and features are available on request

## Accessories

Every Q-EM comes complete with an 'accessory kit', which includes:

- AOS Imaging Studio FULL software
- Power supply and cable
- Data cable (lockable, 5 m)

Users have to supply:

- Control PC (see 'technical specs' for minimal PC specifications)
- Lens with c-mount thread, 1" image diameter

Custom designed camera housings are available for airborne and similar applications where the camera is exposed to extreme environmental conditions (temperature, altitude).

Accessories like lenses and lens cages, lights, tripods, cases etc. are available from AOS.

## Options and extensions

Depending on the application, the Q-EM is available with a range of alternative connectors to make an integration simple.

Several hardware based 'extensions' are available, i.e.

- Video output (SDI, digital, PAL/NTSC, analog)
- Extended Battery pack (2 hours capacity)

These extensions have to be purchased together with the camera.

## Technical key specifications

<b>Sensor (type, resolution)</b>	Progressive CMOS, 1696 x 1710 pixels
<b>Sensor size</b>	13.56 x 13.68 mm, 8 µm pixel size
<b>Light sensitivity (gain setting 1)</b>	ISO 2000 (mono), ISO 1000 (color)
<b>Frame rate at full resolution</b>	500 fps @ 1696 x 1710
<b>Max. frame rate</b>	100,000 fps
<b>Capacity Image memory</b>	2.6 GB (standard), 5.2, 10.4 (optional)
<b>Non volatile memory</b>	Built-in CF interface
<b>Time stamping</b>	IRIG B (122 B2)
<b>Built-in battery, capacity</b>	NiMH, 30 min (up to 2 hours with extended battery pack)
<b>Data Interface</b>	Gigabit Ethernet (1,000 Mb/s)
<b>Size, weight</b>	72 x 72 x 137 mm, 950 gr
<b>In compliance with standards</b>	MIL- and other relevant standards



Q-EM positioned inside pod