Technical specifications

Product type	Digital high speed camera

Image Sensor	CMOS APS Sensor
Image Sensor	Monochrome or color (with Bayer pattern)
Pixel size	14 µm
Dynamic range	5-, 8- or 10 bit (user selectable)
Gain control	Low-, mid- and high gain (user selectable)
Sensitivity	ISO 3200 (monochrome), ISO 1600 (color)
Image Resolution	1280 x 1024 pixels
Image size	800 x 600: 11.2 x 8.4 mm (= approx. 1" image format) 1280 x 1024: 18.2 x 14.5 mm (exceeding 1" format)
Frame rate	1,250 fps @ 800 x 600 pixels
Max. frame rate	100,000 fps
ROI	Free selectable
Shutter type	Global electronic shutter
Shutter exposure times	4 µsec to 1/frame rate
Frame synchronization Multi-camera operation	Sync in, sync out (TTL)

Image memory	Built-in, DRAM
Standard capacity	1.3 GB
Optional	2.6, 5.2, 10.4 GB
Memory upgrade	Possible, factory upgrade
Sequence length	2.2 secs @ 800 x 600/1250 fps (1.3 GB image memory) 4.5 secs @ 800 x 600/1250 fps (2.6 GB image memory) 8.9 secs @ 800 x 600/1250 fps (5.2 GB image memory) 17.7 secs @ 800 x 600/1250 fps (10.4 GB image memory) Sequence length can be extended by reducing the image resolution resp. frame rate

Data Interface	Gigabit Ethernet
Video Interface	Optional, see below
Memory Interface	Optional, see below
Event Markers	1 (TTL, input)
Frame synchronization Multi-camera operation	Sync in, sync out (TTL)

Power supply	12 VDC (9…16 VDC)
Power consumption	20 W
Battery	Built-in, rechargeable NiMH battery allowing 30 minutes camera operation

Extensions

Extensions are additional hardware components, to be ordered with the camera.

Video Interface	Video out (digital SDI, or analog PAL / NTSC)
CF Interface	For CF memory cards (Silicone Drive)
IRIG B Interface	IRIG B time stamping (requires external IRIG-B122, amplitude modulated signal)
24 V Interface	Voltage range (24 – 36 V DC)
Ext. temp range	-40…+50 ºC (-40…+120 ºF)
Coating	To protect electronics against humidity

Options

Options are software-based upgrades to extend the cameras performance and functionality. They can be purchased together with a new camera, or at any time later. Options for existing cameras will be sent electronically and can be installed by the operator within minutes.

Option 11	Auto Exposure
Option 12	Motion Detection

Spectral response
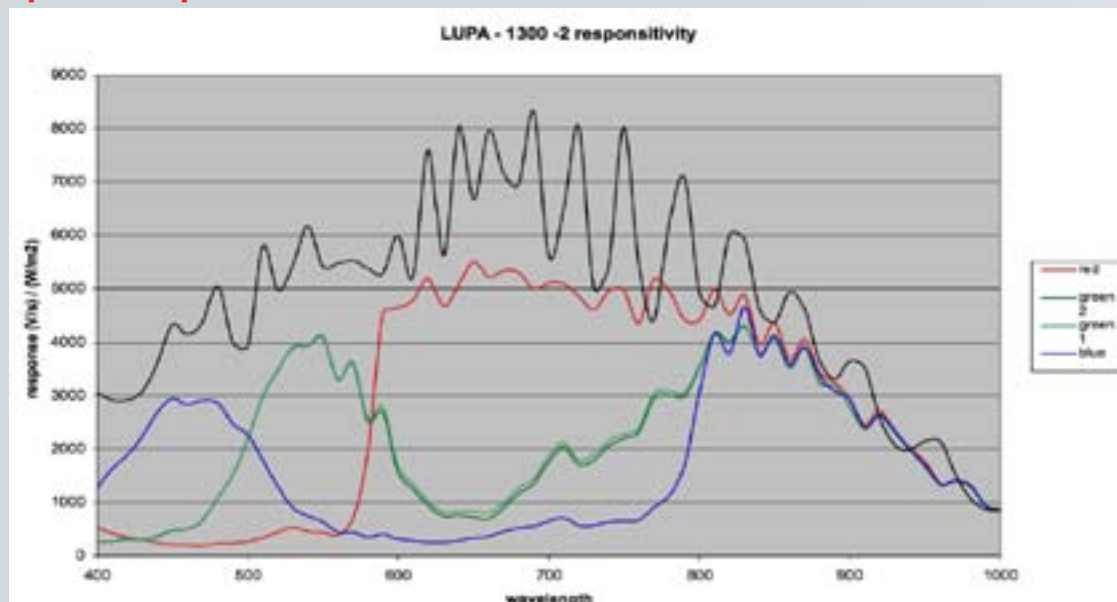
Connectors

Data Connector	
1 BI_DA+	
2 BI_DA−	
3 BI_DB+	
4 BI_DC+	
5 BI_DC−	
6 BI_DB−	
7 BI_DD+	
8 BI_DD−	
Connector type:	**RJ45** (lockable)
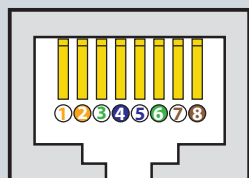
I/O Connector	
1 GND (-)	
2 V In (In)	
3 Remote On (In)	
4 Sync In (In)	
5 Sync Out (Out)	
6 Set-to-Rec (In)	
7 Trigger (In)	
8 Strobe (Out)	
9 Armed (Out)	
10 Triggered (Out)	
11 Event Marker 1	
12 Event Marker 2	
13 Event Marker 3	
14 Event Marker 4	
Connector type:	**LEMO** Type: FGG.2B.314.CLAD82Z
	ODU Type: S22LOC-P14MFG0-8200

Environmental conditions

Operating temperature	0 … +45 °C (32 …113 °F)
Storage temperature	-40 … +70 °C (-40 …158 °F)
Operating humidity	max. 80 %, non condensing, at 45 °C (113 °F) for 8 hours
Storage humidity	max. 40 %, non condensing, at 70 °C (158 °F) for 48 hours

Control PC – minimum requirements

CPU	Pentium Dual Core, 2 GHz
DRAM	2 GB
HDD	60 GB
Interfaces	GigE
OS	MS Windows XP PRO, VISTA, Windows7 32- and 64-bit versions

The control PC for an AOS high speed camera has to meet or exceed these minimum requirements for a reliable, convenient camera performance. PC's with lower specifications may result in a camera performance below the indicated ones.

Resolution vs. frame rate

The S-VIT offers a frame rate of 500fps at the full image resolution of 1280 x 1024 pixels. The following configurations can be selected via the included AOS Imaging Studio control software, other settings are possible too within the sensor limitations:

Image resolution	Frame rate (fps)
1280 x 1024	500
900 x 700	1'000
800 x 600	1'250
640 x 480	1'925
512 x 512	2'100
512 x 256	4'182
400 x 300	4'319
360 x 240	5'844
256 x 256	6'686
200 x 150	12'442
128 x 128	17'505
200 x 24	50'000
160 x 10	100'000

Dimensions / weight / mechanics

Dimension (w/o options)	71 x 71 x 122 mm (w/o lens and extensions)
Weight	900 gr (w/o lens and extensions)
Shock resistance	100 G for 15 msec, 3 axis
Lens mount	c-mount, adjustable backfocus 1" lens format covers image format at 800 x 600 Full format of 1280 x 1024 (option 2) requires lenses with an image size larger than 1" (i.e. F-mount lenses with adapter)
Camera mount	Standard UMC $^3/_8$" threads on all 4 sides M6 threads for camera plate

Certifications

CE	In compliance with relevant standards
Shock	Tested and certified with 100 G /15 msec / 3 axis

Dimension / Mounting
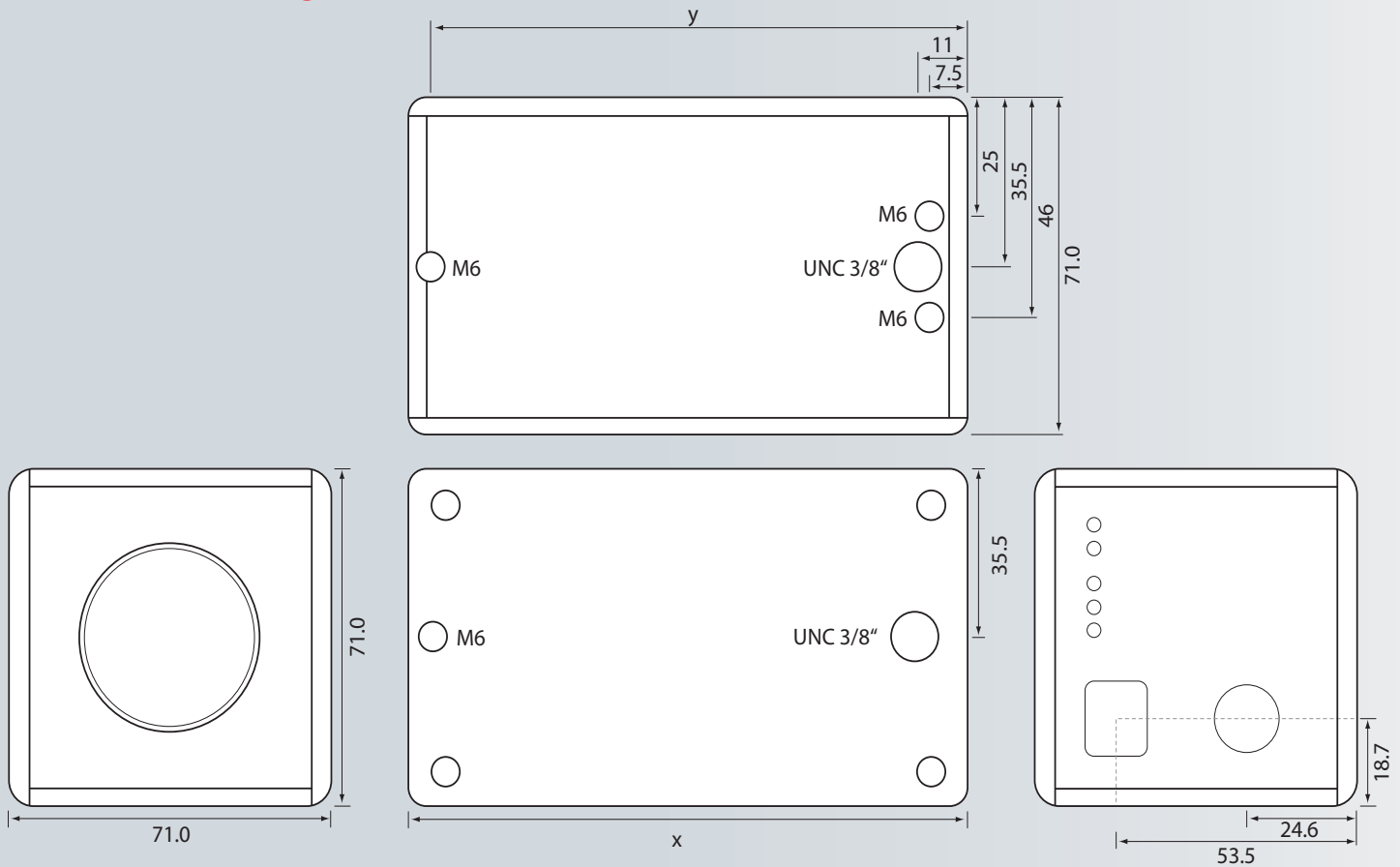
Length (standard): x = 122 mm, y = 118.5 mm
Lenght (with CF interface): x = 137 mm, y = 133.5 mm
Lenght (with Video Interface): x = 129 mm, y = 125.5 mm
Length (with CF- and Video Interface): x = 144 mm, y = 140.5 mm

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