S-PRI*plus* High Speed Camera

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 with option 1)
Gain control	Low-, mid- and high gain (user selectable with option 1)
Dynamic range	5-, 8- or 10 bit (optional, user selectable)
Sensitivity	ISO 3200 (monochrome), ISO 1600 (color)
Image Resolution	800 x 600 pixels / 900 x 700 pixels (1280 x 1024 pixels with option 2)
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 1,000 fps @ 900 x 700 pixels
Max. frame rate	1,250 fps (16'500 fps with option 3)
ROI	800 x 600, 900 x 700 or 400 x 300 (200 x 150, option 3) Free selectable (option 2)
Shutter type	Global electronic shutter
Shutter exposure times	4 µsec to 1/frame rate

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	2.8 secs @ 800 x 600/1000 fps (1.3 GB image memory) 5.6 secs @ 800 x 600/1000 fps (2.6 GB image memory) 11.1 secs @ 800 x 600/1000 fps (5.2 GB image memory) 22.2 secs @ 800 x 600/1000 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) 3 additional Event Markers (option 4)

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

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 1	Gain control
Option 2	Full resolution (1280 x 1024 pixels) HD720 resolution (1280 x 720 @ 710fps) User selectable ROI
Option 3 PRI	Extended speed (16'500 fps)
Option 4	3 additional Event Markers (total of 4)
Option 5	Frame synchronization (sync in / sync out) Multi camera operation
Option 6	AOS Imaging Studio FULL version, incl. – Image tab (image control functions) – auto download – image cropping – MPEG4 data format
Option 11	Auto Exposure
Option 12	Motion Detection

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)

Certifications

CE	In compliance with relevant standards

Spectral response
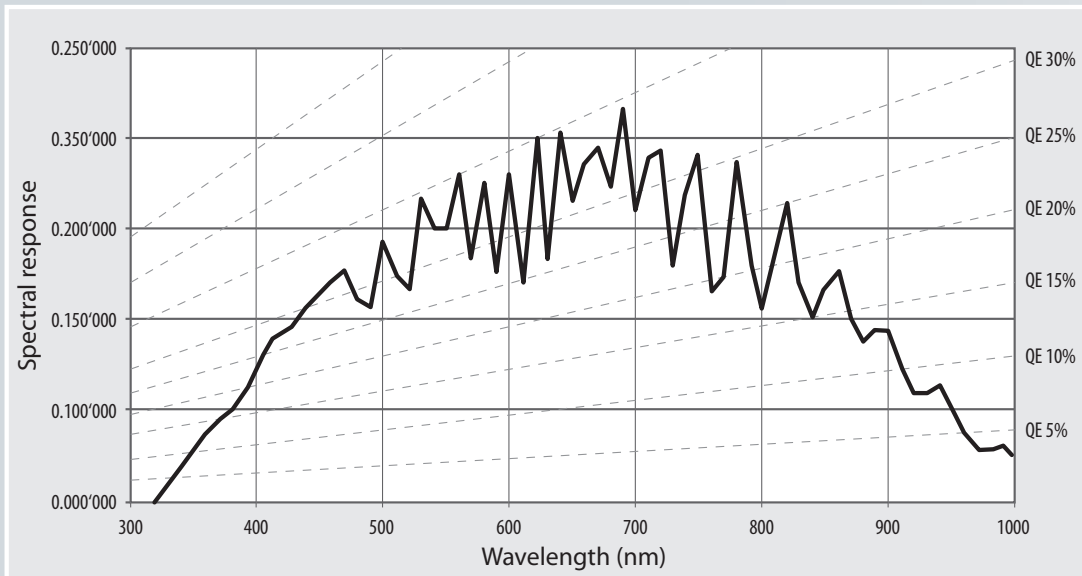
Connectors

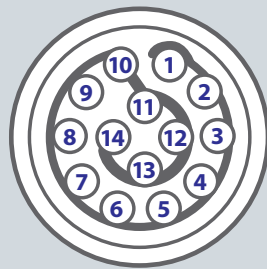| Data Connector	
1 BI_DA+ 2 BI_DA− 3 BI_DB+ 4 BI_DC+ 5 BI_DC− 6 BI_DB− 7 BI_DD+ 8 BI_DD−	
Connector type:	RJ45
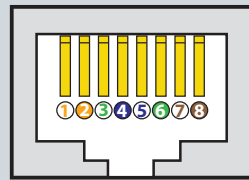
I/O Connector	
1 GND (-) 2 V In (In) 3 Remote On (In) 4 Sync In (In) * 5 Sync Out (Out) * 6 Set-to-Rec (In) 7 Trigger (In) 8 Strobe (Out) 9 Armed (Out) 10 Triggered (Out) 11 Event Marker 1 12 Event Marker 2 * 13 Event Marker 3 * 14 Event Marker 4 * * optional	
Connector type:	**LEMO** Type: FGG.2B.314.CLAD82Z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

Environmental conditions

Shock resistance	Robust design, but not designed/built to withstand severe shocks
Operating temperature	0 … +45 ºC (32 …113 ºF)
Storage temperature	-40 … +70 ºC (-40 …158 ºF)
Operating humidity	max. 80 %, non condensing, at 45 ºC (113 ºF) for 8 hours
Storage humidity	max. 40 %, non condensing, at 70 ºC (158 ºF) for 48 hours

Control PC – minimum requirements

CPU	Pentium Dual Core, 2 GHz
DRAM	2 GB
HDD	60 GB
Interfaces	GigE
OS	MS Windows 2000, XP PRO, VISTA, Windows7

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-PRI offers frame rate s up to 1'250fps. It can be extended with 'option 3' to 16,000fps.

'Option 2' offers a full image resolution of up to 1280 x 1024 pixels plus a free selection of the 'Region of Interest' within the given frame rates.

Image resolution	Frame rate (fps)
800 x 600	1'250
900 x 700	1'000
400 x 300	3'000 (with option 3)
180 x 120	16'500 (with option 3)

Dimensions / weight / mechanics

Dimension (w/o options)	72 x 72 x 122 mm (w/o lens and extensions)
Weight	900 gr (w/o lens and extensions)
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 $^3/_8$" thread with $^1/_4$" brass insert

Dimension / Mounting

UNC 3/8"

36.0

72.0

72.0

72.0

side view

x

72.0

18.766

24.659

53.9
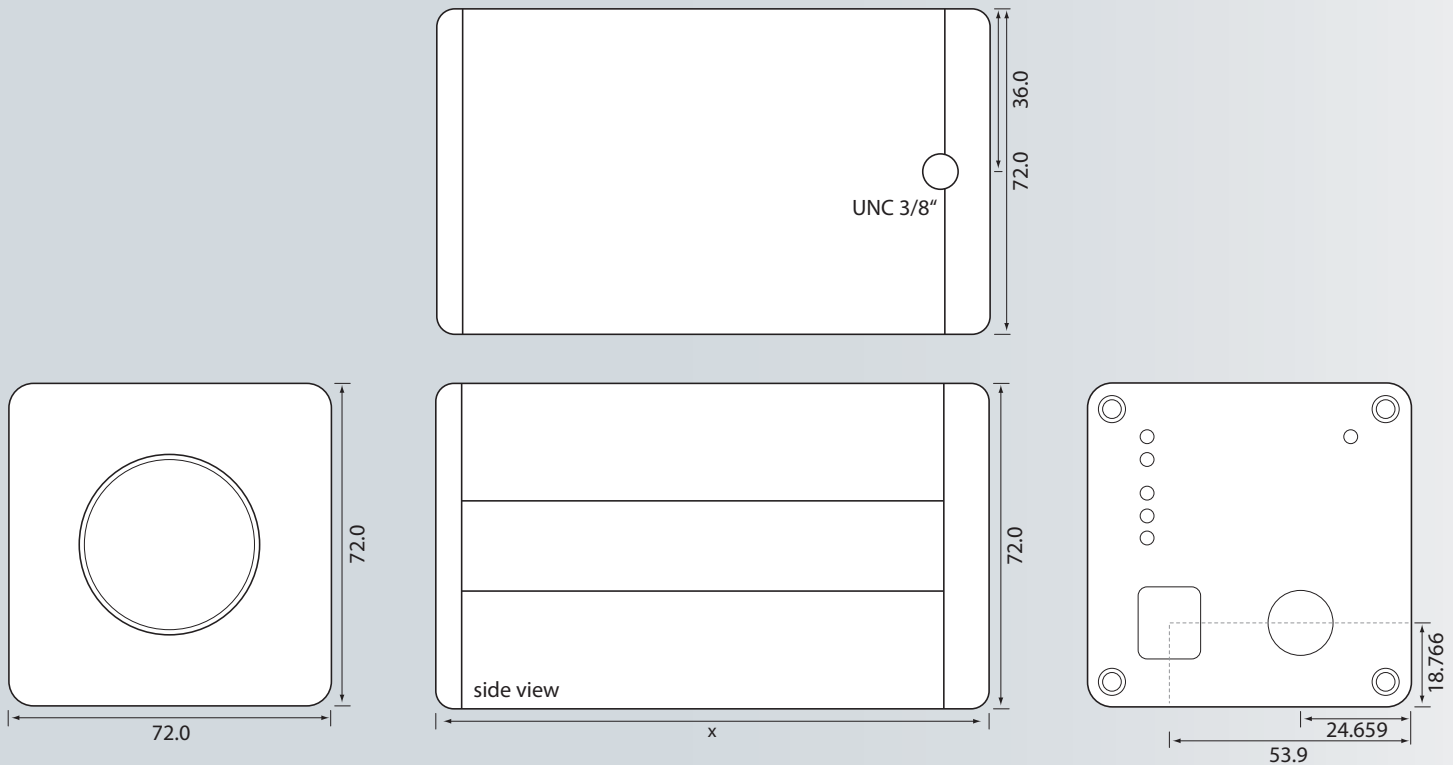
x = Lenght (standard): 122 mm
Length (with CF interface): 137 mm
Length (with Video Interface): 129 mm
Length (with CF- and Video Interface): 144 mm

AOS
Technologies AG

AOS Technologies AG, Taefernstrasse 20,
CH-5405 Baden-Daettwil
Tel. +41 (56) 483 3488, Fax + 41 (56) 483 3489
info@aostechnologies.com
www.aostechnologies.com

Your local AOS Partner: