

JUPITER *Specification*

GENERAL CHARACTERISTICS

Product number	JUPITER 1.0
Imaging device	sCMOS v3.0
Number of pixels	4432 x 2368
Sensor format	4/3"
Pixel size	4.6 μm x 4.6 μm
Effective area	20387 μm x 10892 μm
Quantum efficiency (typ)	85,5 % max @ 500 nm
Full well capacity (typ)	20 000 e ⁻
Readout noise (standard)	< 1.0 e ⁻
Readout noise (quiet)	< 0.7 e ⁻
Dynamic range (FWC/R_quite)	28 000:1
Pixel color depth	16 bit
Dark current	< 2 e ⁻
Dark current (cooled)	< 1 e ⁻
Dark signal non uniformity (typ)	3 LSB
Photo response non uniformity (PRNU) (typ)	< 3 %
Linearity error	< 1 %

COOLING

Air sensor ambient 25 °C	30 °C sensor
Air sensor cooled 25 °C	0 °C sensor

READOUT

Readout modes	Full resolution, digital binned (arbitrary), sub array (up to 3 regions)
Frame rate @ full resolution	120 FPS (standard speed)
Frame rate @ Quiet speed full resolution	5 FPS
Exposure time: Standard	6.92 μs to infinity
Exposure time: Quiet	6.92 μs to infinity
Shutter modes:	Rolling, global reset

EXTERNAL CONTROLS

Trigger input	External edge/start, sequence, global reset edge/level/readout start Software edge/start, global reset edge & readout start Trigger delay: 0 s to 30 s in 5 ns steps
Trigger output	Time multiplexed frame (10 channels) Flash start Readout start Any-row exposure Trigger ready High/low

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Pulses:

- Free running, start trigger, bursts
 - 10 ns to 30 s in 5 ns steps interval, length from 5 ns to 30 s
 - Burst from 0 to 4 Bio
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DATA OUTPUT

Image output	32 bit after correction, 16 bit raw output
Image processing function	Hot/cold pixel correction, gain calibration, dark current calibration, black-white image correction
Emulation mode	Webcam/Windows camera interface

INTERFACES

Electrical Interface	1x Thunderbolt (data/power/control) 1x GPIO
Trigger input/output	8x Data interface 3.3 V TTL
Lens mount	F-mount, C-mount, 60 mm cage, custom mount available
Power supply	USB-C PD 5 V 3 A
Power consumption	Approx. 10 W (ambient), 15 W (cooled)
Ambient operating temperature	0-30 °C
Ambient operating humidity	0-80 % non-condensating
Ambient storage temperature	-10 – 60 °C non-condensating, dry (< 0 °C)
Ambient storage humidity	0-90 % non-condensating

SOFTWARE

Software	Sensific Apollo interface (Windows, Linux*, Mac OS-X*). SDK for C, C++, C#, Python
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OPTIONS

JUPITER-BOX	Breakout box for GPIO to 8x SMB
JUPITER-F	F-mount
JUPITER-C	C-mount
JUPITER-USB-3	3 m data cable
JUPITER-USB-1	1 m data cable
JUPITER-COOL	Cooling option
