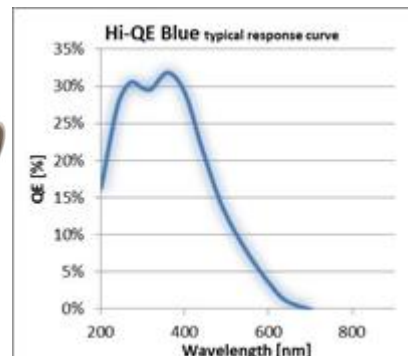


General Description

18 mm MCP based intensified camera with a Hi-QE Blue photocathode on a Glass input window. Direct fiber bonded to a Photonis NOCTURN. HD-SDI interface through HD-BNC connector. The I-NOCTURN features single photon sensitivity. Compact, lightweight design with C-mount lens interface.



Supply Voltages

Input voltage USB powered or external +5 to +15 VDC
 Power (typical) 60/50 fps mode : < 1.8 W
 EGAC External gain control via 12-pin camera connector 0 to 50 kOhm

Image Intensifier section

Optical Specification at 20°C and nominal operating conditions and within effective aperture

Input window: Quartz
 Photocathode type: Hi-QE Blue
 MCP: High resolution
 Output window: Fiber-optic
 Phosphor type: P43

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Optical Specification *continued*

		<u>Minimal</u>	<u>Typical</u>	<u>Maximal</u>	<u>Unit</u>
Input useful diameter		17.5			mm
Effective aperture			9.9 x 12.4		mm
Photocathode sensitivity					
Quantum efficiency	@200nm	12	16		%
	@270nm	27	30		%
	@400nm	27	30		%
Single photon response	% pixel well cap.		10		%
Max Output Brightness	% pixel well cap.	100			%
Resolution			51		lp/mm
Dark rate			35		c/s
Non-uniformity				40	%

Image Quality

Dark spots

The number of spots, exceeding a contrast with their surrounding area of 20%, is less or equal to the number indicated in the table below. The size of non-circular spots is determined on the basis of equal area to circular spots. When the distance between two spots is less than the maximum dimension of either spot, the two spots are considered to be one spot.

Maximal number of spots allowed
 within effective aperture

Size of spots	for reference	
> 150 μm	> 10 pixels	0
80 - 150 μm	8 - 15 pixels	3
50 - 80 μm	5 - 8 pixels	3
30 - 50 μm	3 - 5 pixels	20
< 30 μm	< 3 pixels	minimal

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Image Quality *continued*

Bright spots

There shall be no bright spots in the active area.

External Gain Control (EGAC)

The gain of the image intensifier is adjustable by means of an external variable resistor from its factory pre-set maximum value ($R_c = 0 \text{ k}\Omega$) down to a value which is at least a factor of 100 lower ($R_c = 50 \text{ k}\Omega$). The variable resistor can be connected to the 12-pin camera connector.

I-NOCTURN camera section

Magnification

Magnification of coupling fiber typical 1.00

Image Sensor

Type	LYNX
Image area	12.4 mm (H) x 9.9 mm (V). Pixel pitch 9.7 μm (H) x 9.7 μm (V)
Resolution	1280 x 1024 Pixels, 1.3 Mpx
Read Noise	< 4 e ⁻ median @ 60 fps
Frame Rate	50 or 60 fps with full field resolution (set on user request)
Shutter mode	Rolling

Camera electronics

Dynamic Range	60 dB
Image Lag	< 0.1%

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Features

Imaging Start Up Time	< 5 s
Image Correction	Bad pixel replacement and 2 points non-uniformity correction (NUC)
Gain Control	Automatic gain and exposure control or manual
On-Screen Display	Full on-screen display capability with text, standard geometrical shapes and graphics
Digital Zoom	Up to 8x (0.0001 increment resolution)
Contrast Enhancement	Histogram stretching, equalization and adaptive equalization

Housing

Dimensions W x H x L	34/37 x 37 x 85 mm excluding connectors
Weight	< 170 g

Environmental Conditions (*preliminary*)

	<u>Minimum</u>	<u>Typical</u>	<u>Maximum</u>	<u>Unit</u>
Operating temperature	-10	20	55	°C
Storage temperature (4 h max)	-10	20	65	°C
Storage temperature (long term)	-10	20	35	°C

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