WORLD'S FASTEST InGaAs
LINE-SCAN CAMERA

Xenics
EXOSENS GROUP

Manx SQ Series

WORLD'S FASTEST InGaAs LINE-SCAN CAMERA

KEY FEATURES

WORLD'S FASTEST SWIR LINE-SCAN IMAGING UP TO 256 kHz

HIGH RESOLUTION

LOW NOISE, LOW DARK CURRENT

Based on an in-house developed InGaAs linear detector, the Manx square (SQ) is a high-performance short-wave infrared (SWIR) camera providing high speed and quality line-scan imaging. At unprecedented line rates of up to 256 kHz (or 128 kHz), the Manx square (SQ) stands as the fastest line-scan InGaAs camera available in the world.

It presents the lowest noise performance record for a 2048 pixel SWIR linear camera, combined with excellent dynamic range. The use of CoaXPress interfacing enables fast and reliable data transfer. The cameras have standard on-board image correction featuring non-uniformity correction (NUC), bad pixel replacement (BPR) and gain control.

Camera Specifications	Manx 512 SQ CXP 130/260	Manx 1024 SQ CXP 130/260	Manx 2048 SQ CXP 130/260
Mechanical specifications			
Dimensions (width x height x length) [mm]	102 x 102 x 40		
Weight [gr] – excluding lens	900		
Optical interface	C-mount or M42 [M42 to F-mount adapter optional]		
Connector CXP	4 connectors - type DIN 1.0/2.3		
Connector power	Only PoCXP		
Connector trigger	Lemo [unified connector]		
Environmental & power specifications			
Ambient operating temperature range [°C]	From -40 to +60		
Storage temperature [°C]	From -40 to +85		
Power consumption [W]	Up to 11 [without TEC]		
Power supply voltage	DC 24 V [via CoaXPress]		
Shock	40 g, 11 ms, according to MIL-STD810G		
Vibration	5 g [20 to 2000 Hz], according to MIL-STD810G		
IP rating	IP40		
Regulatory compliance	CE, RoHS		
Electro-optical specifications			
Sensor format [pixels]	512	1024	2048
Pixel pitch [µm]	12.5		
Pixel height [µm]	12.5		
Detector type	InGaAs photodiode array with CTIA ROIC		
Sensor temperature stabilization	TE cooler		
Integration type	Snapshot - global shutter		
Optical fill factor	100%		
Spectral range [nm]	900 - 1700		
Quantum efficiency	~80% (typical peak value)		
Gain modes	4 different gain modes selectable: 100x [HG], 20x [MG], 5x [ML], 1x [LG]		
Full well capacities [electrons]	290k; 1.6M; 8.1M; 35M		
Read noise [electrons]	350 [HG]; 700 [MG]; 2600 [ML]; 12000 [LG]		
Dark current [electrons/second]	0.2M [at 20°C sensor temp and 100 mV reverse bias]		
Read out mode	IWR		
Pixel operability	99.6%	99%	98%
Max line rate [kHz]	128 [“130” version], 256 [“260” version]		
Analog-to-Digital [ADC] [bits]	14		
Command and control	CoaXPress		
Digital output format	CoaXPress [16 bit]		
Trigger	Trigger connector: 2 trigger in & 2 trigger out - LVCMOS 3.3 V; CXP trigger: 1 trigger in		
Product selector guide			
Part number	XEN-000651 [130]	XEN-000652 [130]	XEN-000653 [130]
	XEN-000654 [260]	XEN-000655 [260]	XEN-000656 [260]

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