STATE-OF-THE-ART
THERMAL IMAGING CORE

Xenics
EXOSENS GROUP

Dione XP S 640 CAM (NEW)

STATE-OF-THE-ART THERMAL IMAGING CORE

KEY FEATURES

- **FAST TIME TO FIRST CORRECTED IMAGE**
- **ENHANCED DETECTION: CONTOUR MODE FOR CLEAR TARGET VISIBILITY**
- **EMBEDDED OPTIMIZED LOCAL CONTRAST ENHANCEMENT**
- **STABLE IMAGING: AUTO CALPACKS ADAPTS TO TEMPERATURE CHANGES**
- **UNCOOLED WITH MECHANICAL SHUTTER**

The Dione XP (Extreme Performance) S 640 CAM series is a high-performance LWIR uncooled thermal imaging core featuring a 640x480 microbolometer with 12 µm pixel pitch, offering NETD <35 mK or <40 mK. Designed for M24/M34 lenses, it delivers sharp imaging via (XLIE (Xenics Local Image Enhancement) algorithms, local AGC, and contour mode.

With fast start-up, <100 µs latency, auto calpack switching, and GenICam compliance, it ensures seamless integration and reliable performance in harsh environments.

Camera Specifications	Dione XP S 640 CAM 35 mK	Dione XP S 640 CAM 40 mK
Mechanical specifications		
Approx. camera dimensions (width x height x length) [mm]	37.4 x 37.4 x 28.4 (M24 - 16bit DV); 42 x 42 x 30.3 (M34 - 16bit DV); 37.5 x 37.5 x 32.25 (M24 - MIPI CSI-2, USB); 42 x 42 x 35.25 (M34 - MIPI CSI-2, USB);	
Optical interface (optional)	M24x0.5 or M34x 0.5	
Camera weight [gr]	49 (M24 – USB); 50 (M24 – 16bit DV); 55 (M34 – 16bit DV, USB)	
Connector general I/O	SAMTEC ST5-30-1.50-L-D-P-TR [16bit DV]; 22-pin FFC/FPC connector (Molex) [MIPI CSI-2]; Type B USB 3.0 [USB]	
Environmental & power specifications		
Operating temperature range (housing temperature) [°C]	From -40 to +70 (16bit DV, USB); From -30 to +70 (MIPI CSI-2)	
Storage temperature [°C]	From -45 to +85 (16bit DV, UVC); From -40 to +85 (USB); From -30 to +85 (MIPI CSI-2)	
Power consumption [W]	0.750 (60 Hz operation; 16bit DV); < 1.1 (MIPI CSI-2); <1.32 (UVC); < 1.3 (USB)	
Power supply voltage	DC 5 V	
Shock	40 g, 11 ms, according to MIL-STD810G	
Vibration	5 g (20 to 2000 Hz), according to MIL-STD810G	
Regulatory compliance	RoHS	
Electro-optical specifications		
Image format [pixels]	640x480	
Pixel pitch [µm]	12	
Integration type	Rolling shutter	
Active area and diagonal [mm]	7.68 x 5.76 (diagonal 9.6)	
Detector NETD (Noise Equivalent Temperature Difference) [mK]	<35 (at 30 Hz, 300 K, F/1)	<40 (at 30Hz, 300K, F/1)
Spectral range [µm]	8-14	
Pixel operability	>99.5% (excluding 3 peripheral rows and columns)	
Max frame rate [Hz] [full frame]	60	
Integration time range [µs]	20 - 65 recommended (1 - 100 is possible)	
Analog-to-Digital [ADC] [bits]	14	
Command and control	via SAMTEC ST5 connector [16bit DV]; I2C (or via SAMTEC ST5 connector on Dione XP 640) [MIPI CSI-2]; GenCP over virtual COM port enumerated over the USB interface [USB]	
Digital output format	16bit DV, MIPI-CSI-2, UVC, USB	
Trigger	via SAMTEC ST5 connector (16bit DV); via Molex connector (USB); NA (MIPI CSI-2)	
Product selector guide		
Part number	XEN-001004 (Dione XP S 640 CAM 35 mK)	XEN-001005 (Dione XP S 640 CAM 40 mK)

advancedimaging@exosens.com

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