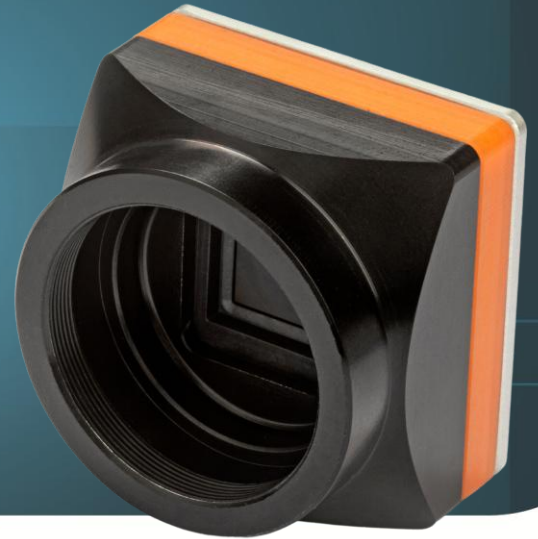


ULTRA-COMPACT, UNCOOLED  
THERMAL IMAGING CORE

**EXOSSENS**  
REVEAL THE INVISIBLE

# Dione XP 640 CAM



ULTRA-COMPACT, UNCOOLED  
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**

The Dione XP (Extreme Performance) 640 CAM series is a high-performance LWIR uncooled thermal imaging solution, delivering 640x480 resolution with a 12  $\mu\text{m}$  pixel pitch and NETD down to <35 mK or <40 mK. Optimized for demanding defense use, it features advanced image enhancement algorithms for exceptional dynamic range and image contrast. Housed for M24/M34 lenses, it ensures stable imaging across wide temperature ranges with automatic calpack selection.

With ultra-low latency (<100  $\mu\text{s}$ ), fast time to first image, and contour mode, it simplifies fusion and enhances detection. Local AGC and advanced image processing improve scene dynamics and clarity, while its compact SWaP design and versatile interface options enable seamless integration.

Camera Specifications	Dione XP 640 CAM 35 mK	Dione XP 640 CAM 40 mK
<b>Mechanical specifications</b>		
Approx. camera dimensions (width x height x length) [mm]	31 x 31 x 22 (M24 - 16bit DV); 40 x 40 x 24 (M34 - 16bit DV); 31 x 31 x 30 (M24 - MIPI CSI-2); 40 x 40 x 32 (M34 - MIPI CSI-2); 31 x 31 x 29 (M24 - UVC); 40 x 40 x 31 (M34 - UVC); 31 x 31 x 31 (M24 - USB); 40 x 40 x 33 (M34 - USB)	
Optical interface (optional)	M24x0.5 or M34x 0.5	
Camera weight [gr]	27 (M24 - 16bit DV); 30 (M34 - 16bit DV); 37 (M24 - MIPI CSI-2, USB); 40 (M34 - MIPI CSI-2); 36 (M24 - UVC); 39 (M34 - UVC); 42 (M34 - 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]; 80-pin Hirose DF40C-80DP-0.4V (51) [UVC]; Type B USB 3.0 [USB]	
<b>Environmental &amp; power specifications</b>		
Operating temperature range (housing temperature) [°C]	From -40 to +70 (16bit DV, UVC, 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	
<b>Electro-optical specifications</b>		
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 protocol over COM port [UVC]; 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 development Header (UVC); via Molex connector (USB); NA (MIPI CSI-2)	
<b>Product selector guide</b>		
Part number	XEN-001002 (Dione XP 640 CAM 35 mK)	XEN-001003 (Dione XP 640 CAM 40 mK)

