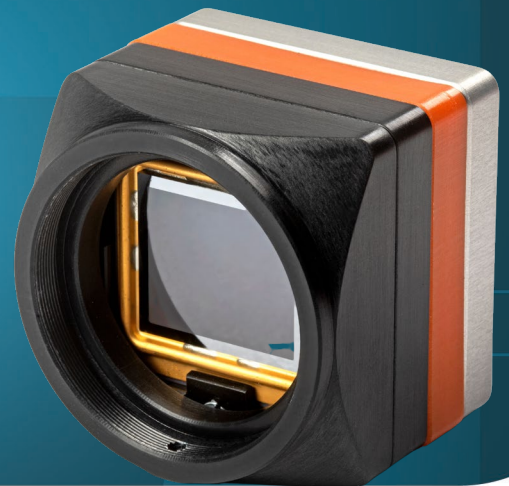


STATE-OF-THE-ART THERMAL
IMAGING CORE

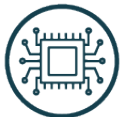
Xenics
EXOSENS GROUP

Dione 1024 CAM Series



STATE-OF-THE-ART THERMAL IMAGING CORE

KEY FEATURES



**STATE-OF-THE-ART MICROBOLOMETER
DETECTOR WITH 12 μm PIXEL PITCH**



FRAME RATES UP TO 80 Hz



**INDUSTRY LEADING LOW SWaP
(SIZE, WEIGHT AND POWER)**

The Dione 1024 CAM series is based on the Dione 1024 OEM thermal imaging core with a 1024x768 pixel resolution and 12 μm pitch. The detector NETD is less than 40 mK (available upon request) or 50 mK. The maximum frame rate is 80 Hz.

Dione 1024 CAM is a LWIR uncooled thermal imaging core with housing supporting M34/M45 lens (optional).

Moreover, GenICam compliance and availability of multiple lenses add flexibility for integration programs in the target markets like defense and surveillance, transportation and industrial process monitoring.



Dione 1024 CAM Series



KEY PERFORMANCES

Image format / Pixel pitch	1024 x 768 pixels / 12 μ m
Integration type	Rolling shutter
Spectral range	8 - 14 μ m
Max frame rate (full frame)	80 Hz
Power consumption	2.1 W (at 60 Hz); 1.9 W (at 30 Hz)
Power supply voltage	DC 5 V
Optical interface (optional)	M34x0.5 or M45x0.75

FUNCTIONS & INTERFACES

Digital output format	16bit DV
Operating temperature range	From -40 °C to +70 °C
Storage temperature	From -45 °C to +85 °C
Detector NETD	<40 mK [at 30 Hz, 300K, F/1], available upon request or <50 mK [at 30 Hz, 300K, F/1]
Shock / Vibration	40 g, 11 ms, MIL-STD810G / 5 g (20 to 2000 Hz), MIL-STD810G

PRODUCT SELECTOR GUIDE

XEN-000796 (Dione 1024 CAM 40 mK)	XEN-000794 (Dione 1024 CAM 50 mK)
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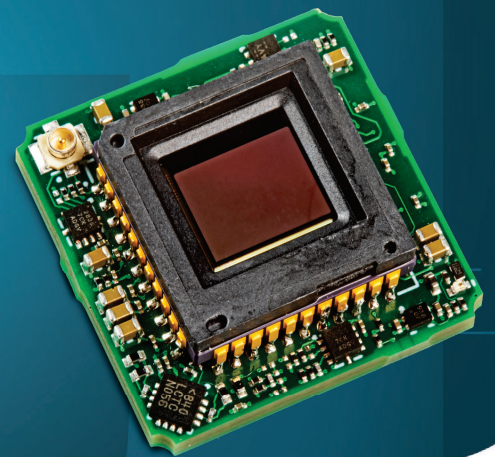
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STATE-OF-THE-ART THERMAL
IMAGING CORE

Xenics
EXOSENS GROUP

Dione 640 OEM Series



STATE-OF-THE-ART THERMAL IMAGING CORE

KEY FEATURES



**STATE-OF-THE-ART MICROBOLOMETER
DETECTOR WITH 12 μm PIXEL PITCH**



**INDUSTRY LEADING LOW SWaP
(SIZE, WEIGHT AND POWER)**



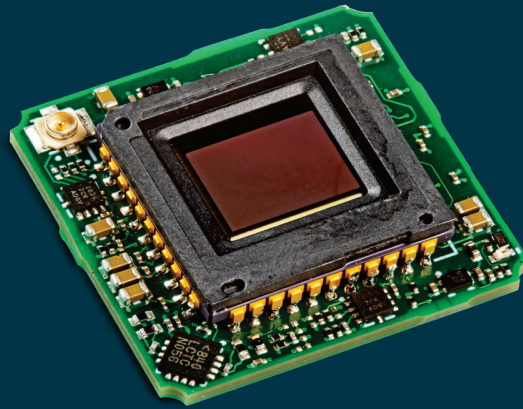
FRAME RATES UP TO 60 Hz

The Dione 640 OEM series is based on an uncooled microbolometer detector with a 640x480 pixel resolution and 12 μm pixel pitch. The Dione 640 OEM benefits from Xenics image enhancement for advanced image processing while keeping power consumption low.

All Dione 640 versions are GenICam compliant. The ultra-compact Dione 640 OEM series find application in safety and security systems, as well as in industrial thermal imaging systems.



Dione 640 OEM Series



KEY PERFORMANCES

Image format / Pixel pitch	640 x 480 pixels / 12 μ m
Integration type	Rolling shutter
Spectral range	8 - 14 μ m
Max frame rate (full frame)	60 Hz
Power consumption	0.750 W (16bit DV); < 1.1 W (MIPI CSI-2); < 1.32 W (UVC); < 1.3 W (USB)
Power supply voltage	DC 5 V

FUNCTIONS & INTERFACES

Digital output format	16bit DV, MIPI-CSI-2, UVC, USB
Operating temperature range	From -40 °C to +70 °C (16bit DV, UVC and USB); From -30 °C to +70 °C (MIPI CSI-2)
Storage temperature	From -45 °C to +85 °C (16bit DV, UVC); From -40 °C to +85 °C (USB); From -30 °C to +85 °C (MIPI CSI-2)
Detector NETD	<40 mK (at 30 Hz, 300K, F/1), available upon request or <50 mK (at 30 Hz, 300K, F/1)
Shock / Vibration	40 g, 11 ms, MIL-STD810G / 5 g (20 to 2000 Hz), MIL-STD810G

PRODUCT SELECTOR GUIDE

XEN-000734 (Dione 640 OEM 40 mK)	XEN-000733 (Dione 640 OEM 50 mK)
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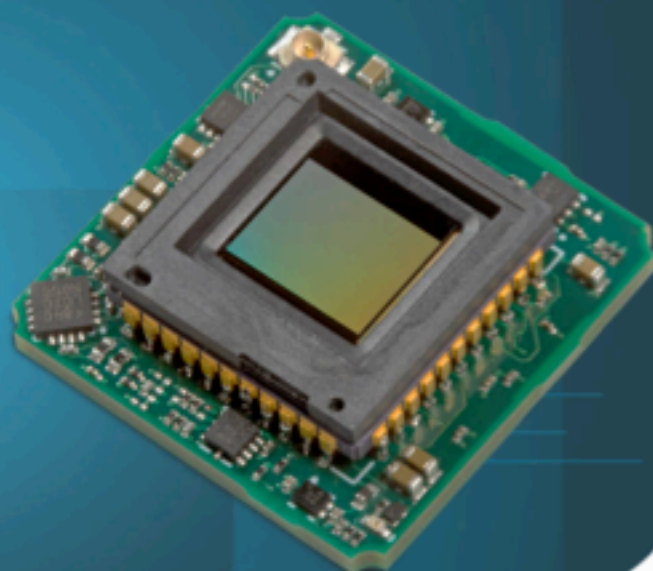
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**STATE-OF-THE-ART
THERMAL IMAGING CORE**

Xenics
EXOSENS GROUP

Dione XP 640 OEM (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**

The Dione XP (Extreme Performance) 640 OEM features a 640x480 uncooled microbolometer with 12 μm pixel pitch, powered by the XLIE (Xenics Local Image Enhancement) Algorithm for sharp contrast and dynamic range. With low latency, fast start-up, contour mode, and local AGC, it enhances detection and fusion. Compact, GenICam compliant, and SWaP-optimized, it integrates easily into security, surveillance, and search-and-rescue systems.



Camera Specifications	Dione XP 640 OEM 40 mK	Dione XP 640 OEM 35 mK
Mechanical specifications		
Dimensions (width x height x length) [mm]	25 x 25 x 10 (16bit DV); 25 x 25 x 16.5 (MIPI CSI-2); 25 x 25 x 16 (UVC); 25 x 25 x 18 (USB)	
Weight [gr]	6 (16bitDV); 9 (MIPI CSI-2); 10 (USB, UVC)	
Optical interface	-	
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]	
Environmental & power specifications		
Operating temperature range (housing temperature) [°C]	From -40 to +70 (16bit DV, UVC and 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]	<40 (at 30 Hz, 300K, F/1)	<35 (at 30 Hz, 300 K, 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 and MIPI CSI-2)	
Product selector guide		
Part number	XEN-001001 (Dione XP 640 OEM 40 mK)	XEN-001000 (Dione XP 640 OEM 35 mK)



**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]	0.800 (60 Hz operation; 16bitDV); < 1.3 (USB); <1.0 (MIPI CSI-2)	
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 and 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)

