

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 μ m 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.

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Dione 1024 CAM Series



KEY PERFORMANCES

Image format / Pixel pitch	1024 x 768 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
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 /

PRODUCT SELECTOR GUIDE

XEN-000796 (Dione 1024 CAM 40 mK)

XEN-000794 (Dione 1024 CAM 50 mK)

5 g (20 to 2000 Hz), MIL-STD810G

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Dione 1024 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 80 Hz

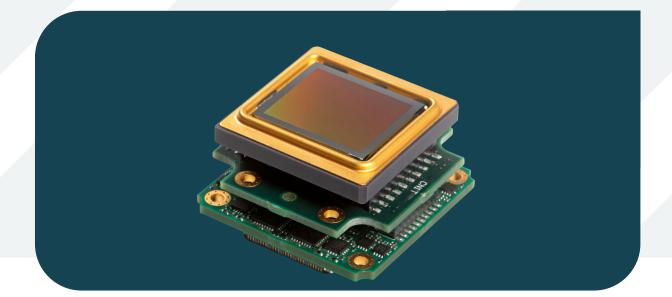
The Dione 1024 OEM series is based on an uncooled microbolometer detector with a 1024x768 pixel resolution and 12 μm pitch. The detector NETD is less than 40 mK (available upon request) or 50 mK. The maximum frame rate is 80 Hz.

The overall size of the OEM core is 35x35x21.5 mm³ and the weight is 25 gr. All Dione 1024 versions have the same SAMTEC ST5 connector and are GenlCam compliant. The compact Dione 1024 OEM series find application in safety & security, transportation and process monitoring.



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Dione 1024 OEM Series



KEY PERFORMANCES

Image format / Pixel pitch	1024 x 768 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
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

FUNCTIONS & INTERFACES

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

PRODUCT SELECTOR GUIDE

XEN-000795 (Dione 1024 OEM 40 mK)

XEN-000793 (Dione 1024 OEM 50 mK)

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Dione 1280 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 60 Hz

INDUSTRY LEADING LOW SWaP (SIZE,WEIGHT AND POWER) The Dione 1280 CAM series is based on an uncooled microbolometer detector with a 1280x1024 pixel resolution and 12 μ m pitch. The detector NETD is less than 40 mK (available upon request) or 50 mK. Dione 1280 CAM is a LWIR uncooled thermal imaging core with housing supporting M34/M45 lens (optional).

All Dione 1280 versions benefit from Xenics image enhancement for advanced image processing while keeping power consumption low. Moreover, GenlCam 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 1280 CAM Series



KEY PERFORMANCES

Image format / Pixel pitch	1280 x 1024 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
Max frame rate (full frame)	60 Hz (16bit DV, MIPI CSI-2); 40 Hz (USB)
Power consumption	2.1 W (16bit DV); < 2.7 W (MIPI CSI-2, USB)
Power supply voltage	DC 5 V
Optical interface (optional)	M34x0.5 or M45x0.75

FUNCTIONS & INTERFACES

Digital output format	
Operating temperature range	
Storage temperature	

Detector NETD

Shock / Vibration

PRODUCT SELECTOR GUIDE

XEN-000702 (Dione 1280 CAM 40 mK)

16bit DV, MIPI CSI-2, USB

From -40 °C to +70 °C (16bit DV, USB); From -30 °C to +70 °C (MIPI CSI-2) From -40 °C to +85 °C (16bit DV, USB); From -30 °C to +85 °C (MIPI CSI-2) <40 mK [at 30 Hz, 300K, F/1], available upon

request or <50 mK [at 30 Hz, 300K, F/1]

40 g, 11 ms, MIL-STD810G / 5 g (20 to 2000 Hz), MIL-STD810G

XEN-000701 (Dione 1280 CAM 50 mK)

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ULTRA-COMPACT, UNCOOLED LWIR THERMAL IMAGING CORE



Dione 1280 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)

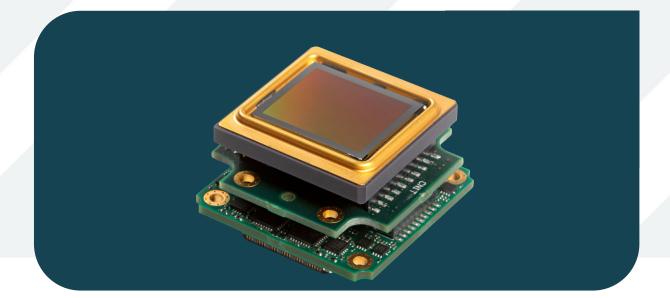
FRAME RATES UP TO 60 Hz

The Dione 1280 OEM series is based on an uncooled microbolometer detector with a 1280x1024 pixel resolution and 12 μ m pixel pitch.

The Dione 1280 OEM benefits from Xenics image enhancement for advanced image processing while keeping power consumption low.

All Dione 1280 versions are GenICam compliant. The ultra-compact Dione 1280 OEM series find application in safety and security systems, as well as in industrial thermal imaging systems.

Dione 1280 OEM Series



KEY PERFORMANCES

Image format / Pixel pitch	1280 x 1024 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
Max frame rate (full frame)	60 Hz (16bit DV, MIPI CSI-2); 40 Hz (USB)
Power consumption	2.1 W (16bit DV); < 2.7 W (MIPI CSI-2, USB)
Power supply voltage	DC 5 V

FUNCTIONS & INTERFACES

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

PRODUCT SELECTOR GUIDE

XEN-000692 (Dione 1280 OEM 40 mK)

XEN-000691 (Dione 1280 OEM 50 mK)

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COMPACT, INDUSTRIAL THERMAL CAMERA



Dione 320 CAM Series



UNCOOLED THERMAL IMAGING SWAP MODULE

KEY FEATURES



LWIR CAMERA CORE OPTIMIZED FOR LOW SWaP

FRAME RATES UP TO 60 Hz

VERY LOW LATENCY

The Dione 320 CAM series is based on the Dione 320 OEM thermal imaging core with 320x240 pixels and 12 μ m pixel pitch. The detector NETD is less than 40 mK (available upon request) or 50 mK. The maximum frame rate is 60 Hz. Dione 320 CAM is a LWIR uncooled thermal imaging SWaP module with housing supporting M24/M34 lens (optional).

Dione 320 CAM benefits from Xenics image enhancement for advanced image processing while keeping power consumption low. Moreover, GenICam compliance and availability of multiple lens provides high level of tunability for optimal integration into many systems.



Dione 320 CAM Series



KEY PERFORMANCES

Image format / Pixel pitch	320 x 240 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
Max frame rate (full frame)	60 Hz
Power consumption	570 mW (at 60 Hz operation; 16bit DV)
Power supply voltage	DC 5 V
Optical interface (optional)	M24 x 0.5 or M34 x 0.5

FUNCTIONS & INTERFACES

Digital output format	16bit DV, MIPI-CSI-2, UVC, USB
Operating temperature range	From -40°C to +70°C (16bit DV, UVC, 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-000792 (Dione 320 CAM 40 mK)

XEN-000790 (Dione 320 CAM 50 mK)

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COMPACT, INDUSTRIAL THERMAL CAMERA



Dione 320 OEM Series



UNCOOLED THERMAL IMAGING SWAP MODULE

KEY FEATURES



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

INDUSTRY LEADING LOW SWaP (SIZE, WEIGHT AND POWER)

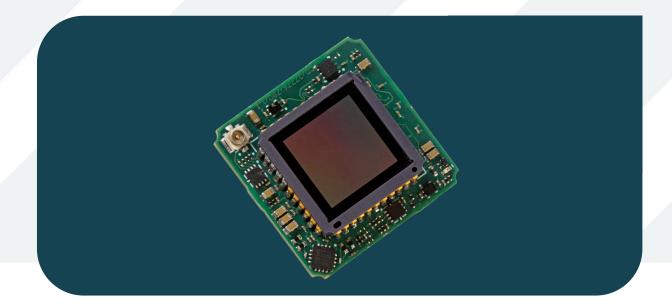
FRAME RATES UP TO 60 Hz

The Dione 320 OEM is based on a state-of-the-art detector with a 320×240 pixels and 12 μm pixel pitch. The NETD is less than 40 mK (available upon request) or 50 mK.

The cores are optimized for low SWaP (Size, Weight and Power). It utilizes Xenics image enhancement for advanced image processing while keeping power consumption low.

All Dione 320 versions have the same SAMTEC ST5 connector and are GenlCam compliant. The compact Dione 320 OEM series find application in industrial machine vision, medical, scientific and advanced research, safety and security systems.

Dione 320 OEM Series



KEY PERFORMANCES

Image format / Pixel pitch	320 x 240 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
Max frame rate (full frame)	60 Hz
Power consumption	570 mW (at 60 Hz operation; 16bit DV)
Power supply voltage	DC 5 V

FUNCTIONS & INTERFACES

Digital output format	16bit DV (standard), MIPI CSI-2 (optional)
Operating temperature range	From -40°C to +70°C
Storage temperature	From -45°C to +85°C
Detector NETD	<40 mK (at 60 Hz, 300K, F/1), available upon request or <50 mK (at 60 Hz, 300K, F/1)
Shock / Vibration	40 g, 11 ms, MIL-STD810G /

PRODUCT SELECTOR GUIDE

XEN-000791 (Dione 320 OEM 40 mK)

XEN-000789 (Dione 320 OEM 50 mK)

5 g (20 to 2000 Hz), MIL-STD810G

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ULTRA-COMPACT, UNCOOLED THERMAL IMAGING CORE



Dione XP 640 CAM (NEW)



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 μ m pixel pitch and NETD down to <35 mK or <40 mK. Optimized for demanding defense use, it features advanced XLIE (Xenics Local 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 μ 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
Mechanical specifications		
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 c	or M34x 0.5
Camera weight [gr]		V); 37 (M24 - MIPI CSI-2, USB); 40 (M34- 39 (M34 - UVC); 42 (M34 -USB)
Connector general I/O	22-pin FFC/FPC connec 80-pin Hirose DF40C-	I-L-D-P-TR [16bit DV]; tor (Molex) [MIPI CSI-2]; 80DP-0.4V (51) [UVC]; B 3.0 [USB]
Environmental & power specifications		
Operating temperature range (housing temperature) [°C]	From -30 to +	6bit DV, UVC, USB); 70 (MIPI CSI-2)
Storage temperature [°C]	From -40 to +85 (USB); Fro	5(16bit DV, UVC); om -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), acc	cording to MIL-STD810G
Regulatory compliance	Rc	DHS
Electro-optical specifications		
Image format [pixels]	640	x480
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 peri	pheral 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-001002 (Dione XP 640 CAM 35 mK)	XEN-001003 (Dione XP 640 CAM 40 mK)

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Dione 640 OEM Series



STATE-OF-THE-ART THERMAL IMAGING CORE

KEY FEATURES



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

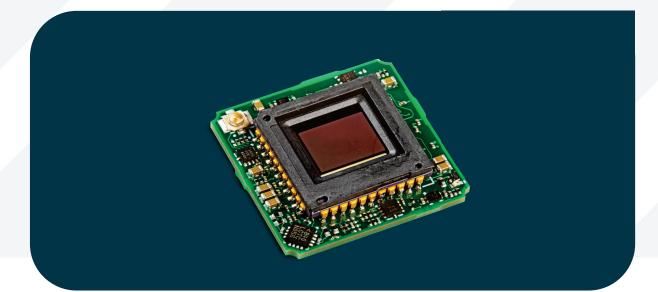
INDUSTRY LEADING LOW SWaP (SIZE, WEIGHT AND POWER)

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 GenlCam 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 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
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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Dione S 1024 CAM 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)

UNCOOLED WITH MECHANICAL SHUTTER

The Dione S 1024 CAM Series is based on an uncooled microbolometer detector with a 1024x768 pixel resolution and 12 μ m pitch. The detector NETD is less than 40 mK (available upon request) or 50 mK. The maximum frame rate is 80 Hz. Dione S 1024 CAM is a LWIR uncooled thermal imaging core with housing supporting M34/M45 lens (optional).

Moreover, GenlCam compliance and availability of multiple lenses adds flexibility for integration programs in the target markets like safety and security, transportation and industrial process monitoring.

Dione S 1024 CAM Series



KEY PERFORMANCES

Image format / Pixel pitch	1024 x 768 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 μm
Max frame rate (full frame)	80 Hz
Power consumption	2.3 W
Power supply voltage	DC 5 V
Optical interface (optional)	M34x0.5 or M45x0.75

FUNCTIONS & INTERFACES

Digital output format	16bit DV
Operating temperature range (housing temperature)	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; <50 mK [at 30 Hz, 300K, F/1]
Shock / Vibration	40 g, 11 ms, MIL-STD810G /

PRODUCT SELECTOR GUIDE

XEN-000798 (Dione S 1024 CAM 40 mK)

XEN-000797 (Dione S 1024 CAM 50 mK)

5 g (20 to 2000 Hz), MIL-STD810G

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Dione S 1280 CAM 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)

UNCOOLED WITH MECHANICAL SHUTTER

The Dione S 1280 CAM Series is based on an uncooled microbolometer detector with a 1280x1024 pixel resolution and 12 μ m pitch. The detector NETD is less than 40 mK (available upon request) or 50 mK. Dione S 1280 CAM is a LWIR uncooled thermal imaging core with housing supporting M34/M45 lens (optional).

All Dione S 1280 versions benefit from Xenics image enhancement for advanced image processing while keeping power consumption low. Moreover, GenICam compliance and availability of multiple lenses adds flexibility for integration programs in the target markets like defense and surveillance, transportation and industrial process monitoring.

Dione S 1280 CAM Series



KEY PERFORMANCES

Image format / Pixel pitch	1280 x 1024 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
Max frame rate (full frame)	60 Hz (16 bit DV, MIPI CSI-2); 40 Hz (USB)
Power consumption	2.3 W (16bit DV); <2.6 W (MIPI CSI-2), <2.7 W (USB)
Power supply voltage	DC 5 V
Optical interface (optional)	M34x0.5 or M45x0.75
FUNCTIONS & INTERFACES	
Digital output format	16bit DV, MIPI CSI-2, USB

Operating temperature range (housing temperature)

Storage temperature

Detector NETD

Shock / Vibration

PRODUCT SELECTOR GUIDE

XEN-000736 (Dione S 1280 CAM 40 mK)

XEN-000735 (Dione S 1280 CAM 50 mK)

From -40 °C to +70 °C (16bit DV, USB);

From -40 °C to +85 °C (16bit DV, USB);

<40 mK [at 30 Hz, 300K, F/1], available upon request; or <50 mK [at 30 Hz, 300K, F/1]

From -30 °C to +70 °C (MIPI CSI-2)

From -30 °C to +85 °C (MIPI CSI-2)

40 g, 11 ms, MIL-STD810G / 5 g (20 to 2000 Hz), MIL-STD810G

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Dione S 640 CAM 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)

UNCOOLED WITH MECHANICAL SHUTTER

The Dione S 640 CAM series is based on an uncooled microbolometer detector with a 640x480 pixel resolution and 12 μ m pixel pitch. The detector NETD is less than 40 mK (available upon request) or 50 mK. Dione S 640 CAM is a LWIR uncooled thermal imaging core with housing supporting M24/M34 lens (optional).

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

Dione S 640 CAM Series



KEY PERFORMANCES

Image format / Pixel pitch	640 x 480 pixels / 12 μm
Integration type	Rolling shutter
Spectral range	8 - 14 µm
Max frame rate (full frame)	60 Hz
Power consumption	0.800 W (16bitDV); < 1.3 W (USB); <1.0 W (MIPI CSI-2)
Power supply voltage	DC 5 V
Optical interface (optional)	M24 or M34 x 0.5

FUNCTIONS & INTERFACES

Digital output format Operating temperature range (housing temperature) Storage temperature

Detector NETD

Shock / Vibration

16bit DV, MIPI-CSI-2, USB

From -40° C to $+70^{\circ}$ C (16bit DV, USB); From -30° C to $+70^{\circ}$ C (MIPI CSI-2)

From -45°C to +85°C (16bit DV); From -40°C to +85°C (USB); From -30°C to +85°C (MIPI CSI-2)

<40 mK [at 30 Hz, 300K, F/1], available upon request; <50 mK [at 30 Hz, 300K, F/1]

40 g, 11 ms, MIL-STD810G / 5 g (20 to 2000 Hz), MIL-STD810G

PRODUCT SELECTOR GUIDE

XEN-000714 (Dione S 640 CAM 40 mK)

XEN-000713 (Dione S 640 CAM 50 mK)

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ULTRA-COMPACT, UNCOOLED THERMAL IMAGING CORE



Dione XP 640 CAM (NEW)



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 μ m pixel pitch and NETD down to <35 mK or <40 mK. Optimized for demanding defense use, it features advanced XLIE (Xenics Local 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 μ 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
Mechanical specifications		
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 c	or M34x 0.5
Camera weight [gr]		V); 37 (M24 - MIPI CSI-2, USB); 40 (M34- 39 (M34 - UVC); 42 (M34 -USB)
Connector general I/O	22-pin FFC/FPC connec 80-pin Hirose DF40C-	I-L-D-P-TR [16bit DV]; tor (Molex) [MIPI CSI-2]; 80DP-0.4V (51) [UVC]; B 3.0 [USB]
Environmental & power specifications		
Operating temperature range (housing temperature) [°C]	From -30 to +	6bit DV, UVC, USB); 70 (MIPI CSI-2)
Storage temperature [°C]	From -40 to +85 (USB); Fro	5(16bit DV, UVC); om -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), acc	cording to MIL-STD810G
Regulatory compliance	Rc	DHS
Electro-optical specifications		
Image format [pixels]	640	x480
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 peri	pheral 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-001002 (Dione XP 640 CAM 35 mK)	XEN-001003 (Dione XP 640 CAM 40 mK)

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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

JNCOOLED 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 μ m 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, $<100 \,\mu s$ latency, auto calpack switching, and GenlCam compliance, it ensures seamless integration and reliable performance in harsh environments.

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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]		V); 42 x 42 x 30.3 (M34 - 16bit DV); //24 - MIPI CSI-2, USB);
		84 - MIPI CSI-2, USB);
Optical interface (optional)	M24x0.5 c	or M34x 0.5
Camera weight [gr]	49 (M24 – USB); 50 (M24 – 16b	it DV); 55 (M34 – 16bit DV, USB)
Connector general I/O)-L-D-P-TR [16bit DV];
		tor (Molex) [MIPI CSI-2];
	Туре в ОЗ	5B 3.0 [USB]
Environmental & power specifications	From 40 to 170) (166:+ D) (LICD):
Operating temperature range (housing temperature) [°C]) (16bit DV, USB); ·70 (MIPI CSI-2)
Storage temperature [°C]		5 (16bit DV, UVC);
		om -30 to +85 (MIPI CSI-2)
Power consumption [W]		eration; 16bitDV);
	< 1.3 (USB); <1.0 (MIPI CSI-2)	
Power supply voltage		5 V
Shock		ling to MIL-STD810G
Vibration	5 g (20 to 2000 Hz), according to MIL-STD810G	
Regulatory compliance	RoHS	
Electro-optical specifications		
Image format [pixels]		0x480
Pixel pitch [µm]	12	
Integration type		g shutter
Active area and diagonal [mm]		(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		
55	via SAMTEC ST5 connector (16bit DV); via Molex connector (USB and MIPI CSI-2)	
Product selector guide		
Part number	XEN-001004	XEN-001005
	(Dione XP S 640 CAM 35 mK)	(Dione XP S 640 CAM 40 mK)

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Dione XP 640 OEM (NEW)



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, GenlCam 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	(Molex) [MIPI CSI-2]; 80-pin Hirose	6bit DV]; 22-pin FFC/FPC connector DF40C-80DP-0.4V (51) [UVC]; Type 3.0 [USB]
Environmental & power specifications		
Operating temperature range (housing temperature) [°C]		bit DV, UVC and USB); 70 (MIPI CSI-2)
Storage temperature [°C]		5(16bit DV, UVC); om -30 to +85 (MIPI CSI-2)
Power consumption [W]		eration; 16bit DV); 1.32 (UVC); < 1.3 (USB)
Power supply voltage	DC	5 V
Shock	40 g, 11 ms, accord	ing to MIL-STD810G
Vibration	5 g (20 to 2000 Hz), according to MIL-STD810G	
Regulatory compliance	Ro	HS
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]	6	50
Integration time range [µs]	20 - 65 recommende	d (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)

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Dione XP S 640 CAM (NEW)



KEY FEATURES

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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

JNCOOLED 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 μ m 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 GenlCam 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 d	or M34x 0.5
Camera weight [gr]	49 (M24 – USB); 50 (M24 – 16b	it 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]) (16bit DV, USB); 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, accord	ling 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]	1	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 peri	pheral 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)

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