

Xenics detector products overview

Mission statement



- A supplier of **leading-edge** infrared solutions
- Leveraging a strong **knowledge** of **technology**
- To provide **affordable innovations**
- Driven by **applications** and **markets**
- Combined with **flexibility** and **support** towards our customers to answer to your specific infrared needs

Target market segments



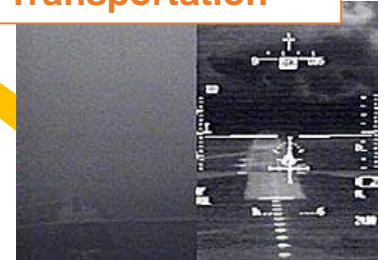
Machine Vision



Safety & Security



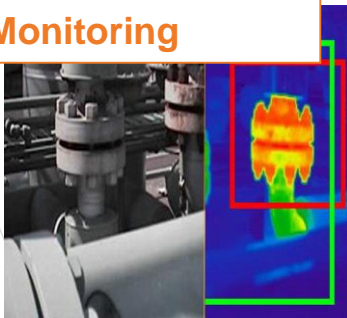
Transportation



Medical



Process Monitoring



Scientific and research



InGaAs linescan detectors



- Family 3504/8
 - Uncooled
 - Rectangular pixels or square pixels
 - Wirebonded
 - XLIN 512 SQ
 - XLIN 1024/2048 SQ/R
- Family 3512
 - Single-stage Peltier cooled (TE1)
 - Rectangular pixels or square pixels
 - Flip-chip hybridization
 - XLIN-FC 512/1024/2048 TE1 SQ
 - XLIN-FC 512/1024/2048 TE1 R (not yet available)

InGaAs linescan detectors



- Typical applications and target markets

- **Family 3504/8**

- *Food sorting (square pixels)*
- *Wafer inspection (square pixels – high resolution)*
- *Spectroscopy DWDM monitoring (rectangular pixels)*
- *Spectroscopy food analysis (rectangular pixels)*

- **Family 3512**

- *High speed OCT (spectral domain optical coherence tomography) (rectangular pixels)*
- *Spectroscopy (rectangular pixels – high dynamic range and/or high speed)*
- *Wafer inspection (square pixels – high sensitivity and/or high speed)*
- *Semiconductor device inspection (square pixels – high sensitivity and/or high speed)*

InGaAs linescan detectors



	XLIN 512	XLIN 1024	XLIN 2048	XLIN-FC 512	XLIN-FC 1024	XLIN-FC 2048
ROIC	Xenics XRO 3504	Xenics XRO 3504	Xenics XRO 3508	Xenics XRO 3512	Xenics XRO 3512	Xenics XRO 3512
Pixel pitch [μm]	25	12.5	12.5	12.5	12.5	12.5
Pixel height [μm]	25	12.5 (SQ) or 250 (R)	12.5 (SQ) or 250 (R)	12.5 (SQ) or 250 (R)	12.5 (SQ) or 250 (R)	12.5 (SQ) or 250 (R)
Wavelength range [nm]	900 - 1700	900 – 1700	900 – 1700	900 – 1700	900 – 1700	900 – 1700
Max line rate [kHz]	40	40	10	390	390	390
Full well charges [e^-] *	450k to 32M	450k to 32M	450k to 10M	312k to 39M	312k to 39M	312k to 39M
Read noise [e^-] *	1500 (highest gain 450k FW)	1500 (highest gain 450k FW)	1500 (highest gain 450k FW)	380 (highest gain 312k FW)	380 (highest gain 312k FW)	380 (highest gain 312k FW)
Package size – top view [mm]	39 x 22	39 x 22	39 x 22	40 x 40	40 x 40	40 x 40
Camera type where this detector is used	Lynx 512 GigE & CL	Lynx 1024 GigE & CL	Lynx 2048 GigE & CL	Manx 512 SQ	Manx 1024 SQ	Manx 2048 SQ

* Valid for detectors with square pixels

InGaAs areascan detector



- XFPA 320 – 3506
 - 320x256 – 20 μm pixel pitch
 - Single-stage Peltier cooled
- XFPA 640 – 3503
 - 640x512 – 20 μm pixel pitch
 - Single-stage or three-stage Peltier cooled
- XFPA 640 – 3515
 - 640x512 – 20 μm pixel pitch
 - Single-stage Peltier cooled

InGaAs areascan detector



- XFPA 320 – 3506
 - 320x256 – 20 μm pixel pitch
 - Single-stage Peltier cooled
 - Max frame rate (full frame) 400 Hz
 - Dark current $<1\text{E}5$ e/s at 288 K
 - Read out noise ~ 110 electrons
 - Full well 70000 electrons



InGaAs areascan detector



- XFPA 640 – 3503
 - 640x512 – 20 μm pixel pitch
 - Single-stage Peltier cooled
 - Max frame rate (full frame) 100, 400, 800 or 1700 Hz
 - Dark current $<1\text{E}5$ e/s at 288 K
 - Read out noise ~ 120 electrons (HG)
 - Visible InGaAs (vSWIR) optional
 - Full well
 - *45000 electrons (High gain mode)*
 - *500000 electrons (High dynamic range mode)*

InGaAs areascan detector



- XFPA 640 – 3503
 - 640x512 – 20 μm pixel pitch
 - Three-stage Peltier cooled
 - Max frame rate (full frame) 100 Hz
 - Dark current $<1\text{E}3$ e/s at 233 K
 - Read out noise ~ 120 electrons (HG)
 - Full well
 - 45000 electrons (*High gain mode*)
 - 500000 electrons (*High dynamic range mode*)

InGaAs areascan detector



	320 TE1	640 TE1 - 100	640 TE1 – 400/800/1700	640 TE3	640 TE1 – low noise *
ROIC	Xenics XRO 3506	Xenics XRO 3503	Xenics XRO 3503	Xenics XRO 3503	Xenics XRO 3512
Format and pixel pitch [μm]	320x256 – 20	640x512 – 20	640x512 - 20	640x512 – 20	640x512 - 20
Max frame rate [Hz]	100 or 400	100	400, 800 or 1700	100	122 or 244
Package	Metal can	Metal can	Metal can – butterfly	Metal can – butterfly	Metal can
Wavelength range [nm]	900 – 1700	900 – 1700 or 400 – 1700	900 – 1700 or 400 – 1700	900- 1700	900 - 1700
Read noise [e ⁻]	110	120 (HG) – 500 (HDR)	120 (HG) – 500 (HDR)	120 (HG) – 500 (HDR)	TBD
Full well charges [e ⁻]	70k	45k (HG) – 500k (HDR)	45k (HG) – 500k (HDR)	45k (HG) – 500k (HDR)	37k (HG) – 375k (HDR)
Dark current [e ⁻ /s]	<1E5 (at 288K)	<1E5 (at 288K)	<1E5 (at 288K)	<1E3 (at 233K)	<1E5 (at 288K)
Package size – top view [mm]	38.1 x 34.4	38.1 x 34.4	63.5 x 25.4 (pins not included)	63.5 x 25.4 (pins not included)	TBD
Camera type where this detector is used	Bobcat 320 GigE & CL	Bobcat 640 GigE & CL	Cheetah	Cheetah TE3	Wildcat 640 U3V & CL

* Not yet available