Xenics
Infrared Solutions

Press Release

FOR IMMEDIATE RELEASE

Xenics introduces DIONE 1280 core

Leuven, Belgium, (2nd December 2020) — *Dione 1280 has been announced today as the new high resolution uncooled long-wave infrared (LWIR) core from Xenics. Xenics is Europe's leading developer and manufacturer of advanced infrared sensors, cameras and customized imaging solutions from the short-wave infrared (SWIR) to the LWIR realm. Dione 1280 is an SXGA LWIR camera core optimized to meet today's increased demand for smaller size, lower weight, higher resolution and lower power (SWaP). It is the cutting edge LWIR core for the safety and security market as well as industrial applications. Dione 1280 is the second member of the Dione family of uncooled LWIR solutions complementary to the Dione 640 released earlier this year. There are plans for more versions to be added to the Dione family which will be communicated later on.*

Xenics means innovation

As previously communicated, 2020 has been the year of innovation for Xenics: it is the fourth new product that the company launches this year and once again, Xenics pushes the limits of technology. Dione 1280 allows customers to benefit from the latest technological breakthroughs and to use in new, future developments as well as upgrades of existing products.

High Resolution and SWaP reconciled

Using the latest generation of 12 µm pitch high resolution SXGA format (1280x1024 pixels) microbolometer detector, Dione 1280 is based on a similar SWaP architecture as its small sister Dione 640. Therefore, it benefits from all the cutting-edge innovation. The high resolution and the 60 mK sensitivity bring a detailed and crisp image. Moreover, the Xenics team succeeded in integrating sensor and electronics in only 35x35x23.5 mm^3 with 1.65 W of power consumption making it the ultimate High-Resolution SWaP LWIR core.

Paul Ryckaert, CEO of Xenics explains: "There is no magic in product development. It is the result of working with highly skilled people, good processes and a sharp sense of innovation and optimisation". The shutterless algorithm especially is of great value, enabling the core to operate with outstanding performance without a shutter and to save a lot in size and weight. As in Dione 640, this function can be bypassed and a customer, if preferred, can operate with its own shutter. The TECless operation also avoids the need for any power-demanding cooling system, resulting in a very low power requirement.

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As the SXGA sensor has four times the number of pixels compared to a VGA, the overall sensor surface area also increased, however the engineering team succeeded in keeping the core incredibly small.

“The goal is also to make a real family of products” said Paul Ryckaert. “Dione 1280 is thus using the same architecture and the same electrical interface as Dione 640, even the connector is similar”. The SAMTEC ST5 connector is supporting the 16 bit digital output (compatible with CameraLink™ protocol), the command and control (including triggering capabilities) and the power supply. Thanks to the similarities with the previous Dione 640 and a GenICam compliant SDK, Dione 1280 integration in systems is straightforward.

Another characteristic of Dione 1280 is its very low latency (in the order of 100 µs) due to a smart algorithm and electronic design. Finally, in order to put it at the highest level of performance, image enhancement processing (XIE) is embedded.

Dione 1280 comes without housing as Dione 1280 OEM, or with a housing as Dione 1280 CAM M34 (M34 optical interface) or Dione 1280 CAM M45 (M45 optical interface). A housing reference-design dedicated to usage in very demanding environments is also offered.

Dione 1280 is the solution whenever there is a need for the highest electro-optical performance with SWaP requirements:

- for high-end hand-held thermal imagers (HHTI) and thermal weapon sights (TWS) where the need is to see at longer range but where size and weight is critical
- for drone accurate observation where customers will benefit from very accurate pictures and will be able to detect at longer range
- for driver vision enhancements where resolution is requested to improve accuracy, enlarge the field of view and simplify image fusion. Moreover, thanks to the extremely small latency, customers will benefit from a real-time perception.
- for remote controlled weapon station with enhanced detection recognition and identification range
- for hand-held industrial thermal inspection devices in which high accuracy is requested as well as simplified image fusion

Dione 1280 is the long-expected breakthrough in safety and security systems as well as industrial thermal analysis gathering high resolution and SWaP characteristics in the same LWIR core.

Note to the editor

About Xenics

Xenics is a pioneer of infrared technology with a proven track record of twenty years. Xenics designs and markets infrared imagers, cores and cameras of best-in-class image quality to support machine vision, scientific & advanced research, transportation, process monitoring, safety & security and medical applications. Xenics offers a complete portfolio of line-scan and area-scan products for the vSWIR, SWIR, MWIR and LWIR ranges. Mastering all critical steps of the manufacturing process with advanced production facilities and in-house know-how on detectors, systems and software development Xenics delivers state-of-the-art solutions and optimized custom designs. As a European vendor with a worldwide sales and service network, Xenics supports its customers with simplified export procedures. More at: https://www.xenics.com/.

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