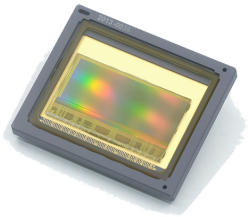
HIGH DYNAMIC Newsletter

Feb 2025



IMAGING SENSORS FOR ULTRA-VIOLET APPLICATIONS

Imaging in the UV comes with many different challenges. In this edition, we explore the contribution of PYXALIS to projects in the Ultra-Violet band and highlight PYXALIS' capabilities in the field.

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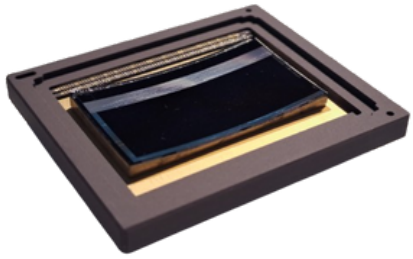
PYXALIS' PROJECTS IN UV ENVIRONMENTS:

FOR MANY APPLICATIONS, HAVING IMAGE SENSORS THAT CAN DELIVER HIGH QUALITY IMAGES IN UV IS CRUCIAL.

PYXALIS has developed CMOS image sensors for different applications in UV and worked on projects which will be discussed below.

One of the projects is the AURORAL FAR UV IMAGER (AUI) in collaboration with **ESA**. As part of the Wide Field Aurora Imager (WFAI) program, PYXALIS worked on the design of a FAR UV (down to 135nm) spectral imager for auroral measurements, an instrument which is part of the Aurora Demonstration mission (Aurora-D).

This Aurora-D project will be succeeded by the Aurora-C mission, that shall be a constellation where similar FAR UV imagers will be present. Such an imager requires a very challenging Quantum Efficiency in deep UV wavelengths.



HDPYX300-C sensor curved by CURVE-ONE (credits: CURVE s.a.s.)

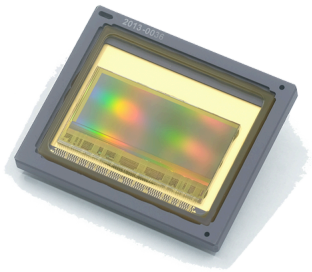
For this AUI project, PYXALIS also worked in collaboration with the company **CURVE-ONE** (CURVE s.a.s.) to get curved sensors which ease the design of the optical system for different applications. One of the curved sensors is the HDPYX300-C, a commercial-off-the-shelf sensor in a BSI version with an Anti-Reflect Coating which helps increase Quantum Efficiency in the UV band. Specifications of this sensor are found in the following article of the Newsletter.

In addition, PYXALIS developed a high resolution UV sensor in BSI technology which can be used in different applications such as industrial inspection (Crack detection in some materials, quality control of UV coatings, contamination detection of particles or organic residues…), electronics (Inspection of Printed Circuit Boards), food sorting, automotive, space (Mechanical inspection), biomedical and pharmaceutical industry (Analysis of fluorescent materials, packaging inspection…), official documents authentication, detection of counterfeit luxury products and scientific research (Chemical analysis, biologic observation…).

To get more information about our products and capabilities,
do not hesitate to visit our website www.pyxalis.com
or contact us using contact4business@pyxalis.com !

HDPYX300-C: A GLOBAL OR ROLLING SHUTTER HIGH SENSITIVITY CMOS IMAGE SENSOR

The HDPYX300-C is a 3MP very high dynamic range image sensor with high sensitivity and 30mm optical diagonal. This sensor operates in different Global or Rolling shutter modes and offers a high dynamic range in both FSI and BSI technologies.



Some key performances/features

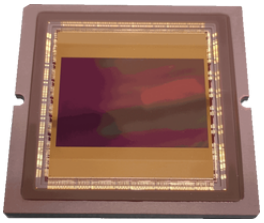
- 10 µm pitch
- Very High Dynamic Range up to 120dB (Dual gain) on-chip
- Readout Noise: 2.6e-
- Very High Full Well Capacity > 100 ke-
- QE> 60% (FSI), 80% (BSI) @ 550nm
- Dark Current <6e-/s/pixel at 20°C
- Max Frame Rate: 10 fps (@20bits, Full resolution)
- Shutter modes:
    - Rolling Shutter with CDS (ERS)
    - Global Shutter Low-Noise with CQS (GSLN)
    - Global shutter with UDS (GS)
    - Global Start Rolling Shutter (GRS)
- 14 bits ADC
- Output format:
    - 20 x CMOS data output
    - Up to 20bits data output
- Ceramic package, µPGA, 77 pins (pin out compatibility between FSI and BSI versions)
- Monochrome

Thanks to its features, the HDPYX300-C is the right sensor for applications such as: Instrumentation, Science, Space and more. The sensor exists in monochrome version and a demo camera is available for product evaluation.

If you want more information about this sensor, you can visit our website: www.Pyxalis.com or you can contact us directly via contact4business@pyxalis.com.

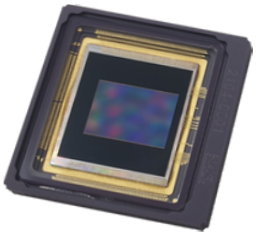
Discover some of our other sensors:

GIGAPYX4600



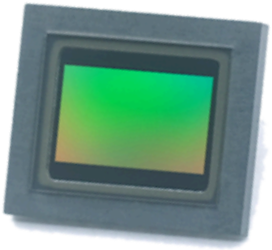
46 MP, BSI Rolling Shutter
High Speed HDR CMOS image sensor

HDPYX330-G



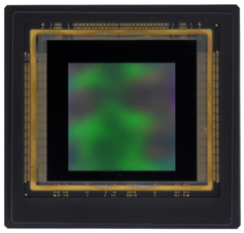
3.3 MP, Global Shutter
Low light HDR CMOS image sensor

HDPYX230-G



2.3 MP, Global Shutter
HDR ruggedized CMOS image sensor

HDPYX1600



16 MP, Global Shutter
Low light HDR CMOS image sensor

AGENDA

LET'S MEET !

Q1 & Q2 2025 agenda

It is important for us to move around and meet up face to face with the image sensor community members.

Image Sensors Europe - London,UK 18-19 March

We will be attending the ISE show to discuss and explore the latest innovations in the imaging field

LASER World of PHOTONICS - Munich,Germany 24-27 June

Let's meet at LASER World of PHOTONICS' exhibition to discuss about how we can help with your different projects

Looking forward to seeing you in person!

YOU HAVE A PROJECT THAT NEEDS A CUSTOM IMAGE SENSOR DEVELOPMENT, A STANDARD CMOS SENSOR OR A COMPLETE SOLUTION ?

WE MAY HAVE A SOLUTION FOR YOU.

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DON'T HESITATE TO CONTACT OUR LOCAL PARTNERS IF YOU HAVE ANY QUESTION

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