VIGO PHOTONICS
III-V DETECTORS

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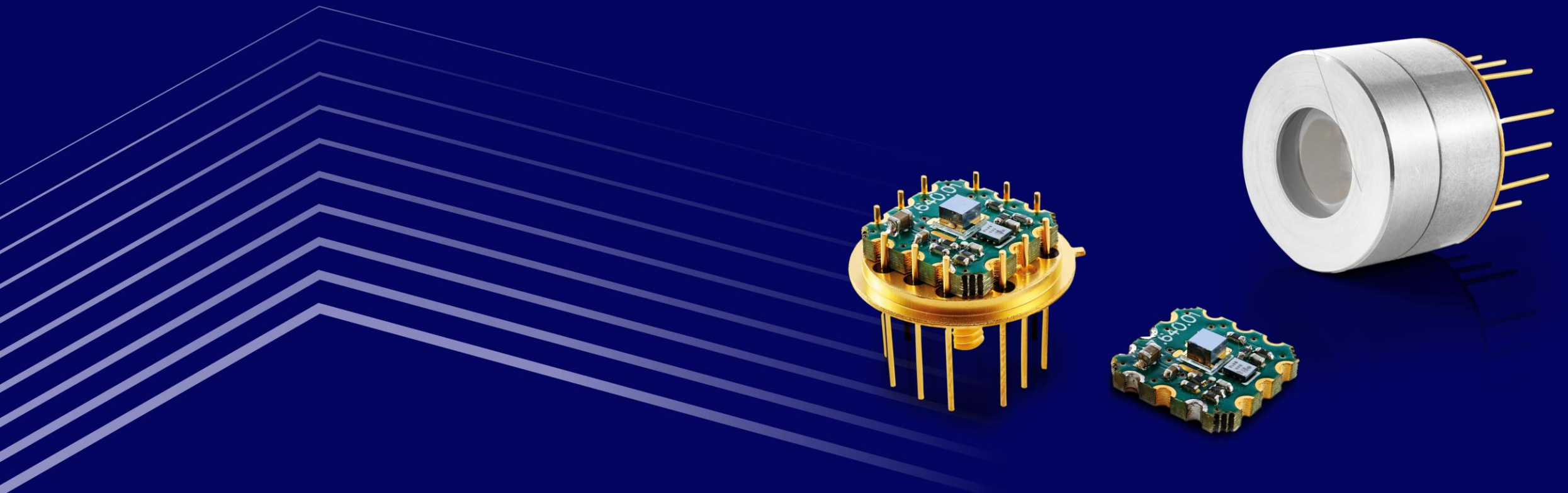


ABOUT US

VIGO Photonics S.A. is a photonic semiconductors company.

We are the sole European provider of photon mid infrared detectors, competing with Asian & US companies.

We produce the high-quality epiwafers for photonic and microelectronic applications based on advanced compound materials (III-V & II-VI).

35 YEARS on the market

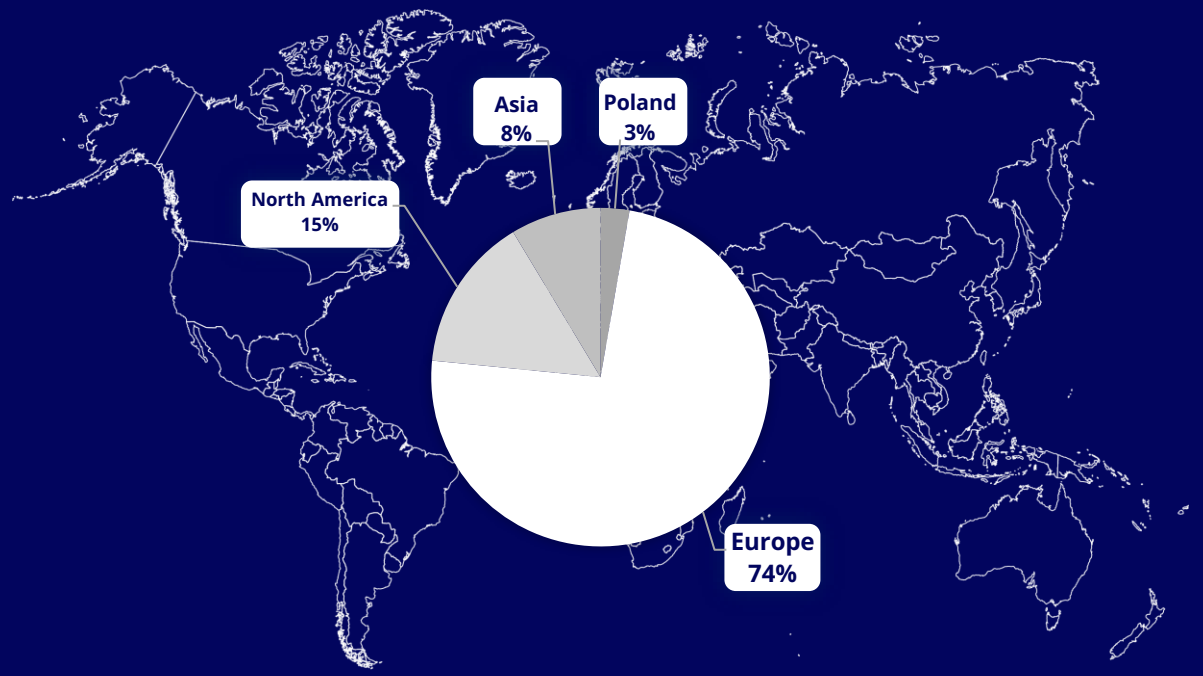
6500 m² production area

UNIQUE TECHNOLOGY - Own independent technology developed in vigo system.

CUSTOM FIT SOLUTIONS - Flexibility to tailor and test solutions that respond to customer requirements.

VIGO PHOTONICS

MARKET SPLIT 2022



VIGO Photonics has become a supplier of the high-tech components for the most demanding customers.

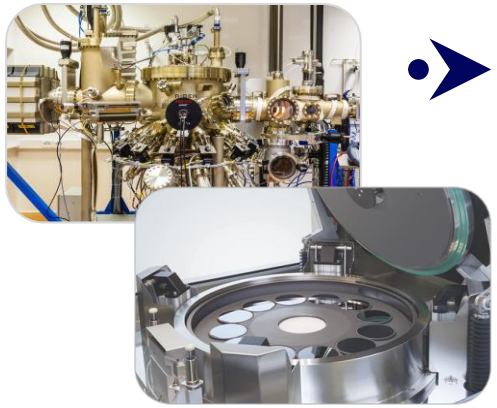
esa European Space Agency

NASA

COMPLETE IN-HOUSE VALUE CHAIN

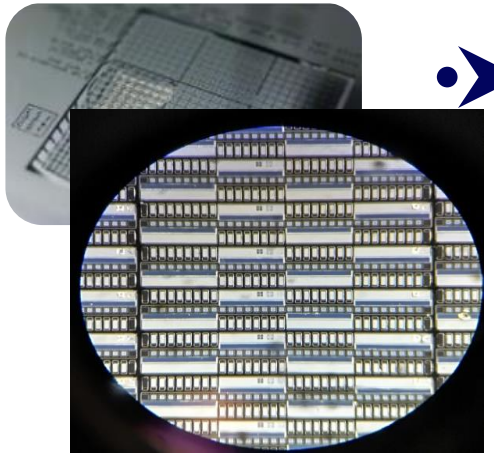
COMPLETE FRONT-END AND BACK-END PRODUCTION LINE FOR INFRARED PHOTONIC DEVICES (Near IR to Long Wavelength IR)

1.EPITAXY



II-VI and III-V epiwafers for photonic and microelectronic devices (QCL and VCSEL lasers, diodes, quantum dots, microelectronics)

2. PROCESSING



MCT and III-V detector chips

3. DETECTORS PACKAGING

Automated assembly, packaging and characterisation of complete infrared detectors.

4. INTEGRATION WITH ELECTRONICS

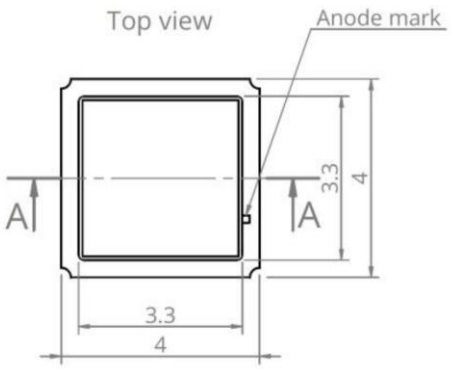
Detection modules with application specific electronics.

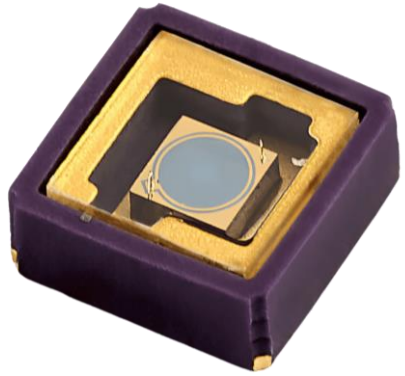
PVA-3-d1.2-SMD 1.5 – 3.4 µm

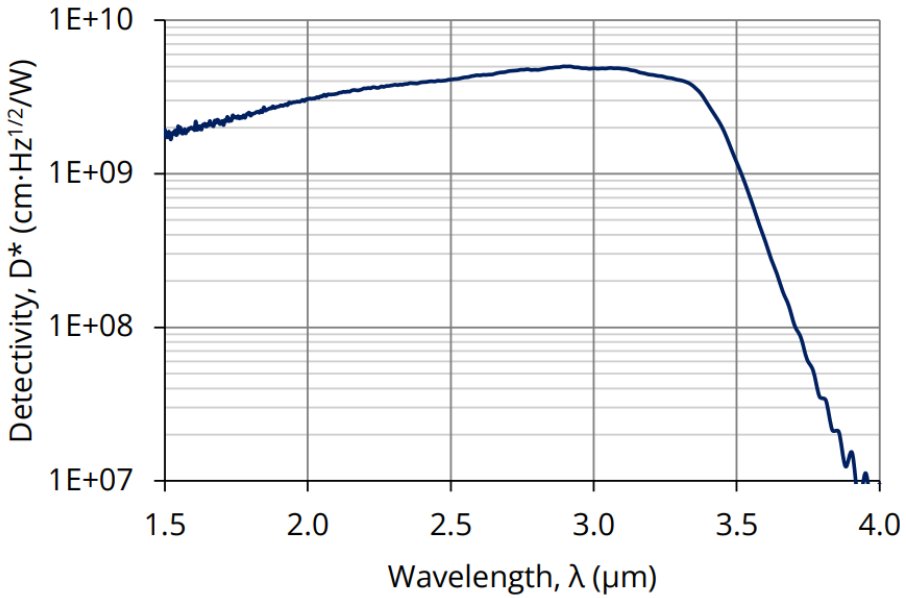
SOLDERABLE MINIATURE CHIP

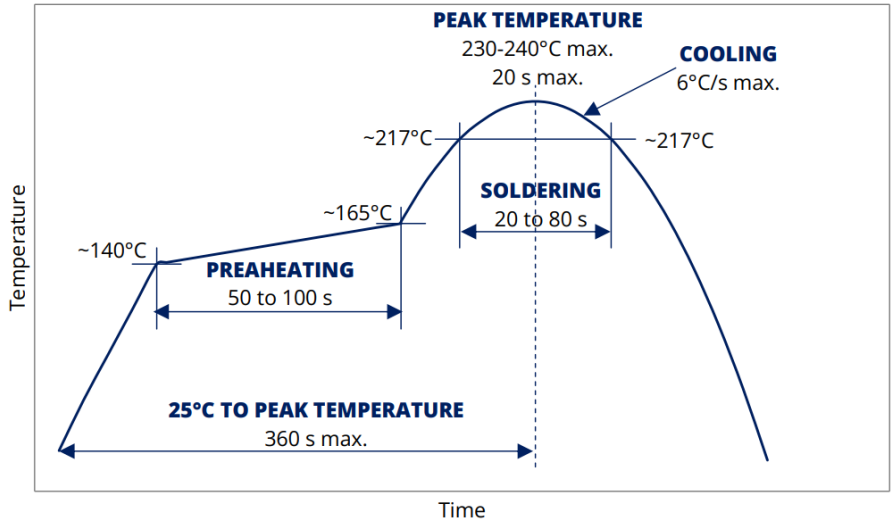
- RoHS-compliant III-V material
- Photovoltaic detector (PVA)
- Optimal for 3 µm, but usefull also at 1.5 µm
- Active area > 1 mm^2
- Compatible with electronics soldering
- Up to 4 MHz bandwidth: for modulated laser
- Low 1/f noise: for choppers and/or thermal sources

- Small, compact size: **4 mm × 4 mm × 1.6 mm**







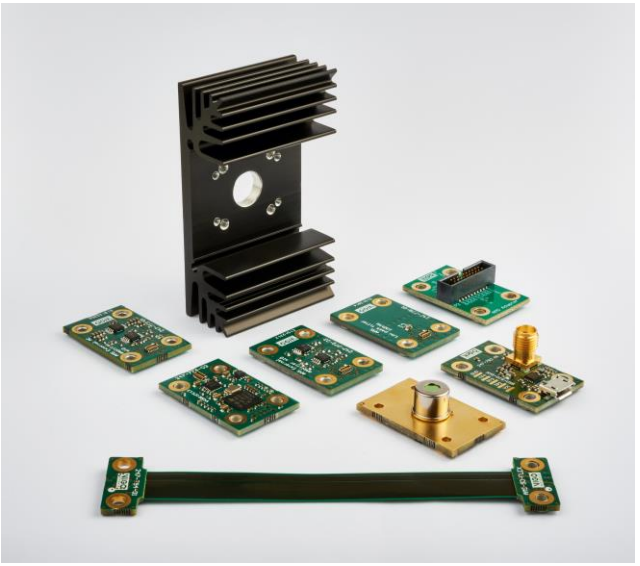


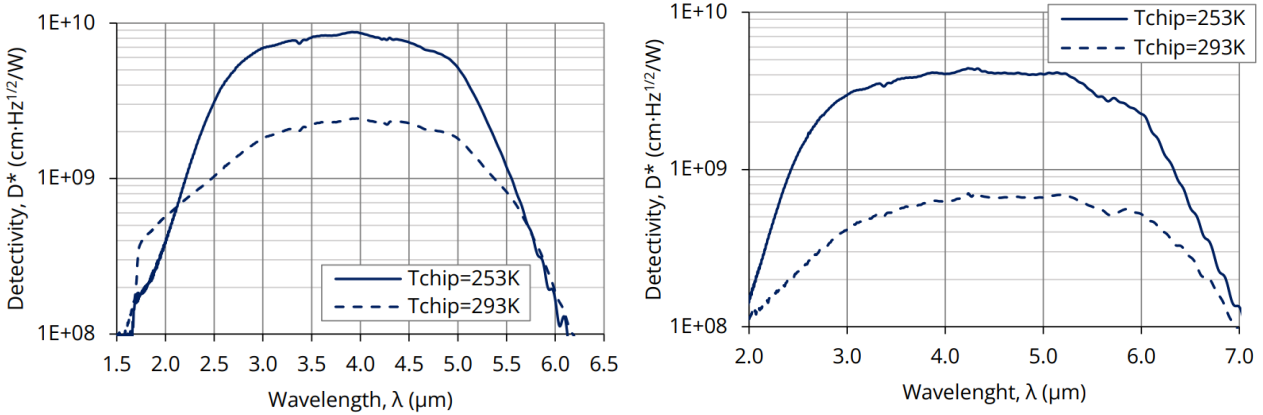
AMS3140-01, AMS6140-01 -> Features

A TINY INFRARED DETECTION MODULE

- RoHS-compliant III-V material
- Photovoltaic multi-junction detector (PVMA)
- Optimized for 5 µm (AMS3140-01) or 6 µm (AMS6140-01)
- Active area 1mm × 1 mm
- Built-in 1TE cooler: up to 40°C cooling capacity
- Configurable temperature of the detector: can be adapted to the changing environment
- Up to 4 MHz bandwidth: for modulated laser
- Low 1/f noise: for choppers and/or thermal sources

- Small, compact size: **30 mm × 19 mm × 10 mm**
- Single, low voltage power supply (3.3 V): compatible with modern digital circuits
- Differential output: better immunity to EMI
- Small, low-profile board-to-board connector
- External heatsink required: e.g. AMS-HS





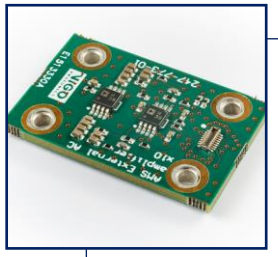
Detectivity comparison for 5 µm and 6 µm, cooled and uncooled sensors

AMS3140-01, AMS6140-01 -> Accessories

ANALOG ACCESSORIES

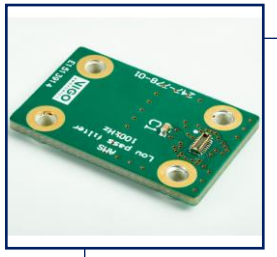
AMS-x10-AMP

Amplifier x10, DC to 10 MHz



AMS-x10-ACAMP

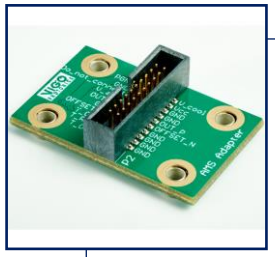
Amplifier x10, 0.1 to 10 MHz



AMS-100k-LPF

100 kHz low pass filter

ELECTRO-MECHANICAL ACCESSORIES

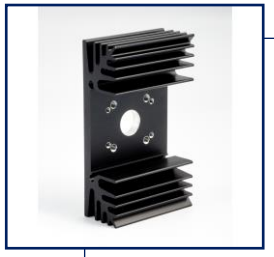


AMS-1.27-EA

Electrical adapter to 1.27 mm socet

AMS-90-FLEX

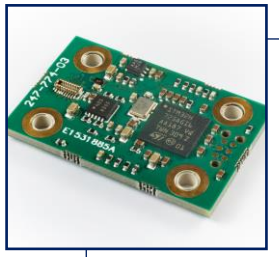
Flexible extender



AMS-HS

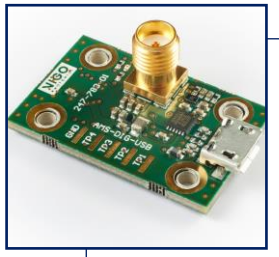
Example heatsink

DIGITAL ACCESSORIES



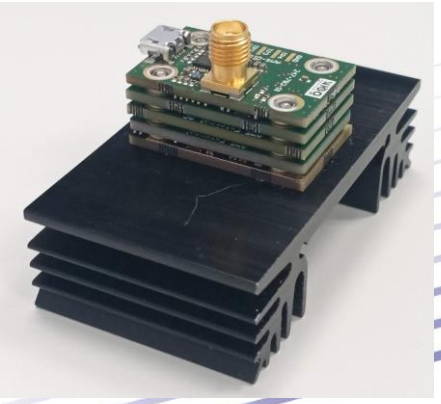
AMS-DIG-PROC

Digital signal processing with 32bit onboard processing



AMS-DIG-USB

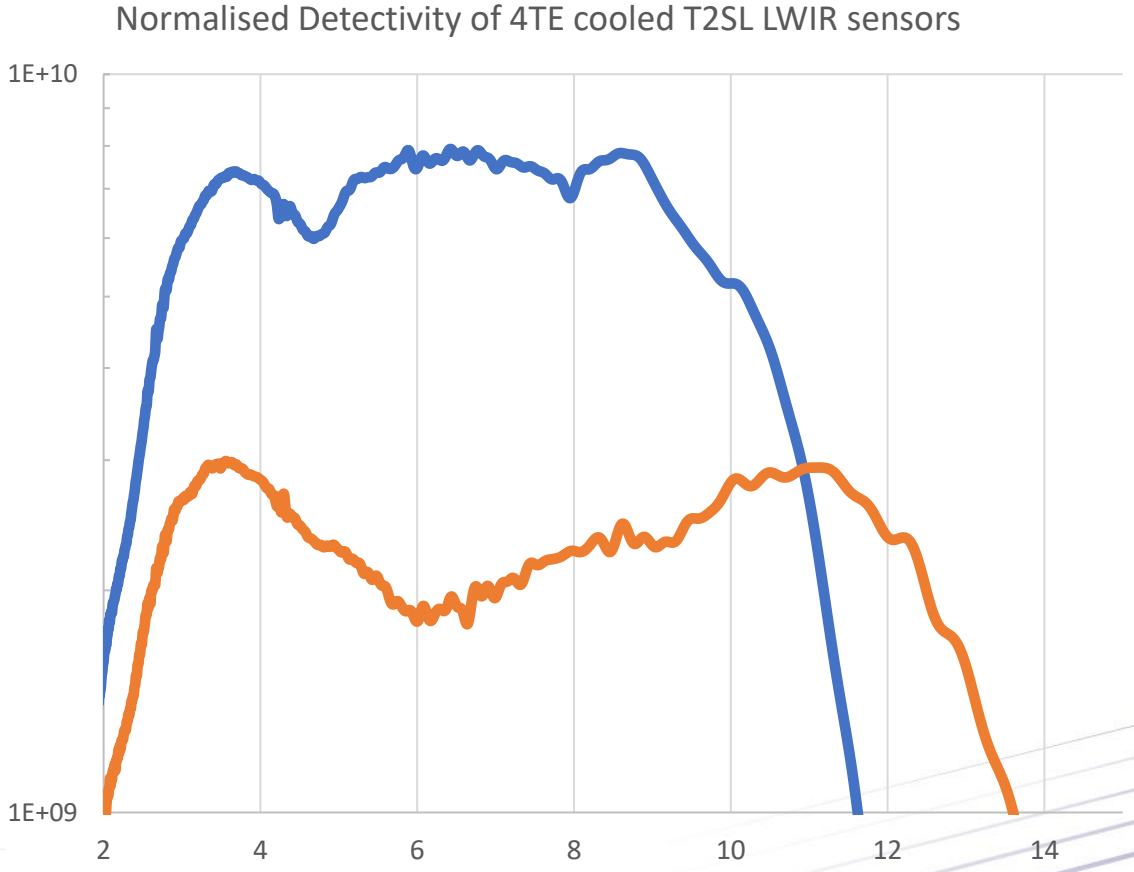
Communication and power supply over a single microUSB cable



T2SL Cascade Detectors for TDLS, FTIR & DCS

10/14 UM DETECTOR - FEATURES

- Active element material: epitaxial T2SL InAs/InAsSb
- 4-stage TEC for highest D*
- Spectral ranges available:
  - 2.0 – 11.0 µm
  - 2.0 – 14.5 µm
- Integrated hyper-hemisphere immersion lens
- Biasing possiblity for DCS-required low time constant
- RoHS compliant alternative to MCT photoconductors in FTIR



 NEW	PVIA-10.6-1×1-TO39-NW-36	InAsSb	no	yes	1×1
	PVIA-4TE-10.6-1×1-TO8-wZnSeAR-36	InAsSb	4TE	yes	1×1
	PVIA-4TE-13-1×1-TO8-wZnSeAR-36	InAsSb	4TE	yes	1×1