



COOPERATION OFFER

GENERAL DESCRIPTION

Title

HIGH-SPEED INFRARED CAMERAS FOR MANUFACTURING PROCESS MONITORING AND CONTROL

Summary

The Spanish company, issuing this offer, manufactures innovative high-speed infrared cameras (MWIR, 1 – 5 microns wavelength range) that are mainly used, due to their characteristics, in industrial solutions dedicated to real-time manufacturing process monitoring and control. The cameras are designed under the SWaP-C concept and oriented to the full integration in the production equipment, making them compatible with the Industry 4.0 concept and requirements.

Description

The Spanish company manufactures innovative high-speed infrared cameras that are mainly used, due to their characteristics, in industrial solutions dedicated to real-time manufacturing process monitoring and control.

Some examples of these processes are laser welding, laser additive manufacturing (LMD, cladding) and laser tempering, among others. The solutions based on the company's technology allow a real-time detection of defects arising during the process and closed-loop control of the laser therefore the application of corrective actions to ensure a zero-defect manufacturing.

Advantages and Innovations

The application of infrared cameras in industry has been prevented in the past either due to the prohibitive costs of the equipment or due to limitations in the speed of data acquisition. The cameras manufactured by the Spanish company represent a breakthrough in the use of infrared cameras in the production line due to their affordability compared with other infrared sensing technologies, and the high frame rates allowed.

The current state of the art is an uncooled MWIR camera, with a sensor of 128x128 pixels, capable to provide 2000 frames per second @128x128, and more than 7 kHz when windowing the ROI.

The use of MWIR sensing for high energetic events has some advantages compared to classical CMOS cameras in the visible range, being, for example, more robust against reflections or spatters associated to the process itself, and having the capability to provide a wider dynamic range in the resolved temperatures (detection starts at 100 °C).



In addition, the MWIR images of the melt pool at high-speed provides crucial information about the geometrical dimensions of the keyhole, which can be correlated with defects arising during the manufacturing process. This information cannot be provided by single-point pyrometers which provide averaged information of the melt-pool area.

Current Stage of Development*

- | | |
|---|--|
| <input type="checkbox"/> Under development /laboratory tested | <input type="checkbox"/> Field tested / evaluated |
| <input type="checkbox"/> Available for demonstration | <input type="checkbox"/> Prototype available for demonstration |
| <input checked="" type="checkbox"/> Already on the market | <input type="checkbox"/> Concept stage |

Comments Regarding Stage of Development:

Intellectual Property Rights Status*:

- | | |
|--|--|
| <input type="checkbox"/> Patent(s) applied for but not yet granted | <input type="checkbox"/> Secret know-how |
| <input checked="" type="checkbox"/> Granted patents | <input type="checkbox"/> Exclusive rights |
| <input type="checkbox"/> Copyright | <input type="checkbox"/> Trade Marks |
| <input type="checkbox"/> Design rights | <input type="checkbox"/> Others (registered design, plant variety, etc.) |

Comments Regarding IPR Status: (e.g. countries for which protection has been granted or applied for)

Preferred Countries for Dissemination:

DETAILS OF YOUR OWN ORGANISATION/COMPANY

Type* Industry R&D Institution University Private Inventor

Other: please specify

Comments:

Organisation/Company Size* (please tick one box) < 10 employees 11-50 employees
 51-250 employees 251-500 employees > 500 employees

Year Established: 2005

Turnover (only for business profiles): < 1 mio 1 – 10 mio
 10 – 20 mio 20 – 50 mio 50 - 100 mio

Already Engaged in Trans-National Cooperation Yes No

Experience Comments: Participating in several FP7 & H2020 projects

Certification Standards: ISO 9001, ISO 140001

Languages Spoken: Spanish, English

COLLABORATION DETAILS

Type of partnership considered:

Technology Offers



- Commercial Agreement with technical assistance (an agreement arranging the acquisition of a product/technology paired with the provision of a number of services in support of a transfer of technology)
- Joint Venture Agreement
- License Agreement
- Technical co-operation agreement
- Research co-operation agreement

Business Offers

- Distribution services agreement
- Acquisition agreement
- Franchise agency agreement
- Manufacturing agreement
- Outsourcing agreement
- Subcontracting
- Financial agreement
- Services Agreement

Type and Role of Partner Sought*:

- Type of partner sought (*such as industry, academy, research organisation*):
- Specific area of activity of the partner (*example: manufacturer/distributor/user/disposal of plastic packages etc.*)
- Tasks to be performed by the partner sought: What expertise/ tasks do you expect from the partner?

Size and Type of Partner Sought (e.g. industry, research):

Additional information (pictures)

CONTACT

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