

LABORATORY: CNR-SCITEC

NAME OF THE INSTRUMENT

Hyperspectral imaging camera in the Short-Wave Infrared (SWIR) range: PHOTON ETCS-EOS™ 2.5

GENERAL DESCRIPTION:

The camera explores the short-wave infrared range (900-2500 nm), probing both the vibrational (combination and overtone bands) and electronic molecular transitions of materials, it enables the characterization of both organic (binding media, plastics, restoration materials...) and inorganic compounds (pigments, fillers). Hyperspectral imaging modality provides spatially resolved information on the nature of the identified chemical species and revealing invisible compositional details thanks to the IR light penetration.

TECHNICAL DESCRIPTION:

The hyperspectral imaging camera covers the 900-2500 nm range with a spectral resolution better than 5 μm . It is equipped with the Photon Etc camera (ZephIR™ 2.5) a 320 x 256 pixel HgCdTe FPA. The spectral and spatial acquisition is in full-field mode by using Volume Bragg Grating (VBG) filters.

The HypIRia 25 lens has a focal length of 25.3 mm, F/#2.6, the minimum working distance is 30 cm reaching a field of view of about 15 cm^2 . The camera weights 20 kilos and has overall dimensions of 30.5x 61x27 mm^3 . Two halogen lamps are used as external light sources. The camera can be mounted on a tripod or on a dedicated table on which also the external sources are fixed.

Figure: a) In situ set up of the SWIR camera



ADDITIONAL INFORMATION:

- <https://www.photonetc.com/products/zephir-2-5>

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