

LABORATORIO: CNR ISPC

NAME OF THE INSTRUMENT

3D and 2D Digital Microscope

GENERAL DESCRIPTION

3D Digital microscope is an instrument available at MOLAB to acquire high-resolution images and video of superficial morphology and texture of heritage surfaces, to analyze superficial patina or conservation treatments on stone, metal or wood artifacts; craquelure, complex stratigraphy in paintings, manuscripts and contemporary artworks; residues, marks, and use-traces on archeological remains.

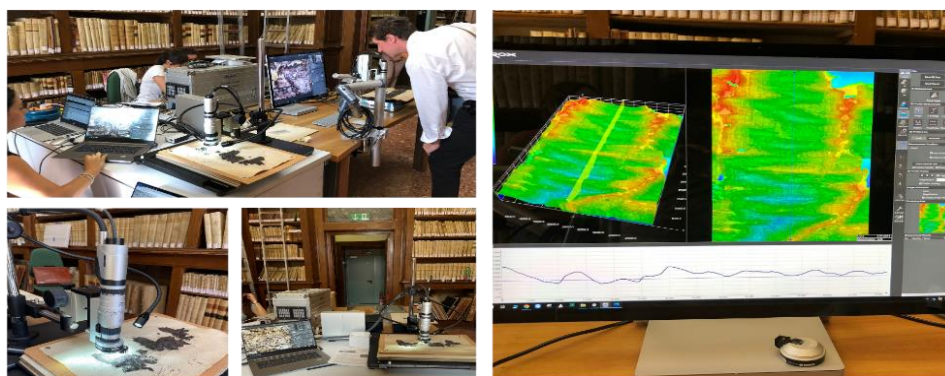
In particular, the technique allows acquiring:

- 2D measurements (length, area, angle, etc.) of the surfaces of artistic artefacts, details in pictorial layers, residues, marks and traces on archeological remains.
- 3D measurements (micrometric-resolution profilometry, volume of the discontinuity, etc.) of heritage artifacts, alteration patinas, residues, marks, and traces on archeological remains.
- High resolution digital scans (gigapixel) on paintings, engravings, manuscripts on different supports with a size up to 500x500mm.

TECHNICAL DESCRIPTION

3D Digital microscope Hirox RX-100 is equipped with:

- 2 lenses with magnification from 6x up to 2500x
- Rotary-Head lens enables 360-degree inspection without manipulating the samples (image and video), with magnification from 20x up to 140x.
- Fixed stand with manual XY stage of 500x500 mm.
- Horizontal motorized stand for inspection of vertical objects, with a step size of 0,2 micrometer and a maximum XY moving speed: 10 mm/sec. Motorized Z axis multifocus up to 80mm for the acquisition of 3D image of painted surfaces. Data images can be exported as a point cloud for micro-profilometry and topographic analysis. The tool can scan and map in 3D automatically reconstructing the image (tiling) at very high resolution. The image can be shared and easily explored using an open access viewer software.



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