

Visualizer of holographic images Regula 2303



The visualizer is designed for expert examination of all reflection security holograms (DOVIDs) used to protect banknotes, ID documents, visa stamps, driving licenses, vehicle registration certificates, revenue stamps and other securities against counterfeiting.

The device allows obtaining images of a hologram or its separate parts. It is intended for authenticating holograms by visually comparing obtained images with reference images from the database.

The device enables to visualize covert laser readable images in holograms.

Regula 2303 is made as a single unit for desktop use. The device is used with a PC and controlled via the [Regula Forensic Studio](#) software (supplied with the device).

The device can be optionally supplied with a visualizer of covert laser readable images in holograms **Regula 2305**. The latter is equipped with two high-intensity coherent light sources (lasers) activated in turn.

Functionality (automated authenticity verification)

- Examination of hologram structure by evaluating the parameters (spacing and orientation) of the diffraction gratings it consists of
- Creation of a database of reference hologram descriptions
- Authenticity control of a hologram by comparing its structure with a reference description
- Quality control of a hologram by estimating the variation of the diffraction efficiency of the examined sample when compared to the reference value
- Control of the correctness of hologram image formation under different illumination (visualization) conditions

Functionality (visualization):

The device enables to

- obtain:
 - holographic images from different illumination angles in a wide range of resolutions (from 710 to 24130 ppi)
 - images of an entire hologram pattern and/or its separate parts
- create a sequence of images in order to demonstrate a hologram in different illumination modes
- capture holographic images using micro- and macrophotography techniques
- optionally: visualization of covert laser readable images in holograms (Regula 2305)

Application

- Border control/immigration services
- Customs authorities
- Forensic departments
- Court expertise
- Law-enforcement agencies
- Financial institutions
- Other agencies and organizations authorized to check documents

Delivery Set

Optionally:

- Visualizer of covert laser readable images in holograms **Regula 2305**

Video camera:

- type — CMOS, colour
- total pixels — 5
- frame size, pixels:
 - 2592×1944 (Full Frame)
 - 1920×1080 (Full HD)
 - 1280×720 (HD)

Detachable modules:

1. Macro module

Macro shooting mode	
Field of view, mm	Resolution, ppi
92×69	710

2. Micro module (only for 2303.01 modification)

Micro shooting mode			
Minimum magnification: 1x		Maximum magnification: 11x	
Field of view, mm	Resolution, ppi	Field of view, mm	Resolution, ppi
29×22	2260	2,7×2,0	24 130

Light sources:

1. Light source for examination
 - number of lights, pcs — 72
 - independent activation of each light source
 - colour - white
 - tilt angle of the light source to the object stage surface — 30°–60°
 - rotation angle of the light source around the vertical axis — 0°–360°
 - minimum rotation angle of the light source — 1°
2. Light source for verification
 - number of lights, pcs — 30
 - independent activation of each light source
 - independent brightness adjustment for each light source
 - colour - white
 - colour rendering index (CRI) — Ra>90
 - tilt angle of the light source to the object stage surface — 45°
 - rotation angle of the light source around the vertical axis — 0°–360°
 - minimum rotation angle of the light source — 1°

Dimensions (length×width×height), mm — 335×355×415

Weight, kg — 17

Connection interface — USB 2.0

Power supply voltage, V — 12 ± 2

Visualizer of covert laser readable images in holograms Regula 2305 (supplied optionally)

Light sources (lasers), nm:

- green — 532
- red — 650

Angle of hologram illumination — 90°

Variation of the angle of hologram illumination —
70°–110°

Power supply — three batteries, type AAA

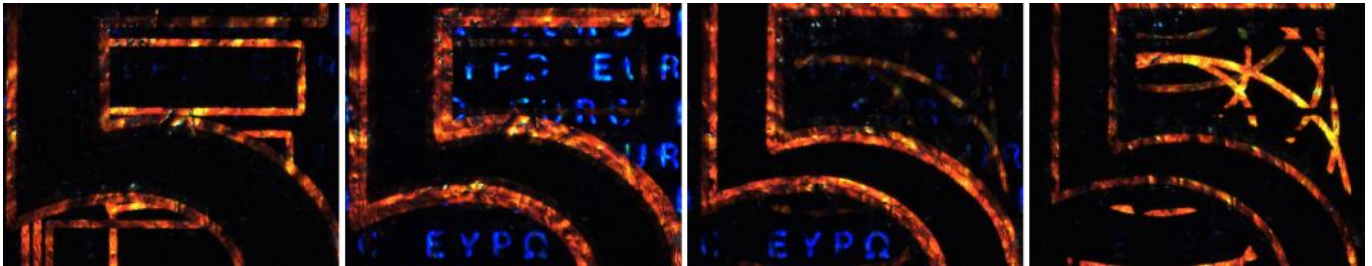
Dimensions (length×width×height), mm — 144×105×24

Weight, kg — 0,42

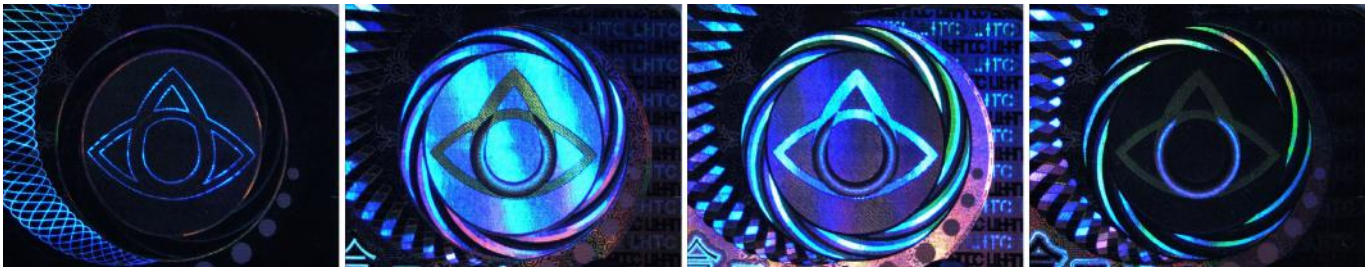




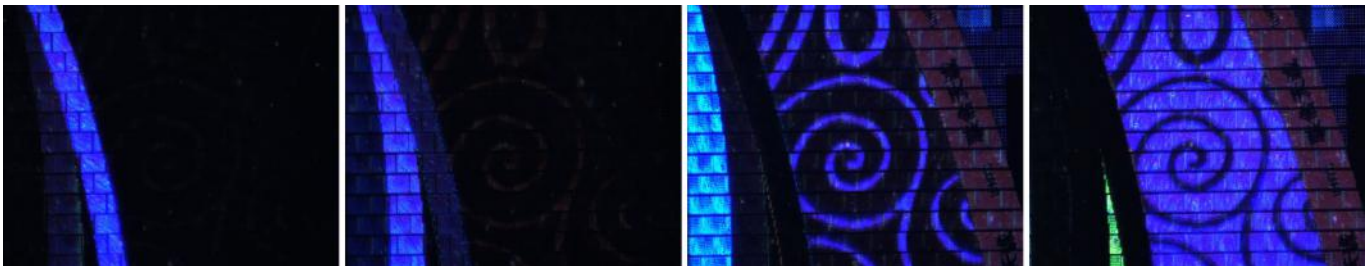
5 euro banknote in macro mode at different angles of illumination



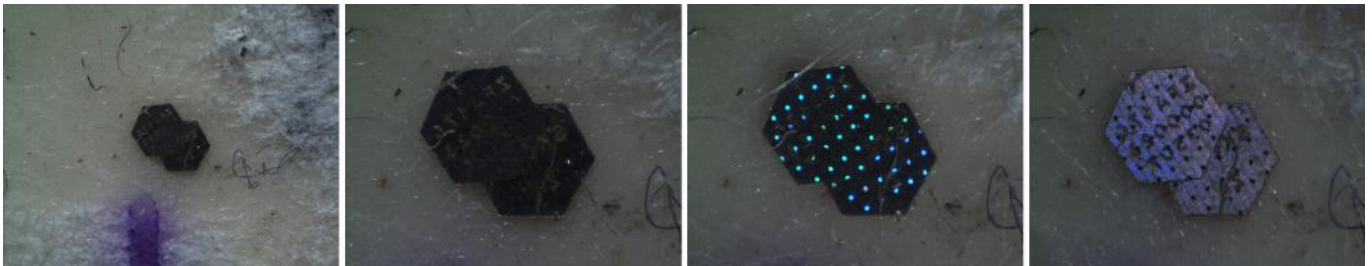
5 euro banknote in micro mode at different angles of illumination



Test object in macro mode at different angles of illumination



Test object in micro mode at different angles of illumination



Micro hologram of 2 mm size at 5x and 12x magnification and at different angles of illumination