# Document authenticity verification device Regula 4325

**The device is intended for advanced authenticity verification of passports, ID cards and other travel documents, visa stamps and seals, including but not limited to entry permits, driver's licenses, vehicle registration certificates and other vehicle related documents, banknotes, revenue and special stamps, securities and other documents with security features.**

Regula 4325 is constructed as a single unit for desktop use. The device is operated via the front panel with control buttons. The control buttons are responsible for the activation of light sources and adjustment of camera parameters in different examination modes, as well as the thermostage temperature (+10...+50˚C). The device is equipped with 7-inch color monitor. Additionally, an extra monitor can be connected.

The device has a spacious working area over the object stage, clamps for fixing examined documents and a special shield protecting from harmful effects of ultraviolet radiation.

Regula 4325 is equipped with a torch, a 10x magnifier Regula 1003M with two white light sources, a spectral luminescent magnifier Regula 4127 for advanced document verification, a digital magnifier Regula 4128 for printing methods examination.

**Functionality**

- **Examinations on different levels:**
  - **protection of the document basis**
    - opaper opacity, watermarks, security fibers, planchetes, security threads, foil stamping, pole feature, all types of windows, transparent vanish coating, shadow images, etc.
  - **printing methods**
    - intaglio: texts, guiloche frames, rosettes and vignettes, microprinting, latent images and moire patterns, signs for the visually impaired, blind embossing, colour shifting ink, including OVI with embossing and latent images, etc.
    - letterpress: serial numbers, texts, barcodes, etc.
    - offset printing including Orlov and rainbow printing: texts, microprinting, moire patterns, background and anti-copy patterns, etc.
    - screen printing: security features with optically variable effects, etc.
    - see-through register
    - perforation
  - **physicochemical protection**
    - UV luminescence with different wavelength
    - IR luminescence
  - **complex security features**
    - security features with IR-metameric ink
    - metallized coating
    - laser engraving
- **Additional examination of**
  - fragments of document images depending on the degree of absorption or reflection of IR light
  - document alterations such as erasure, etching etc.
  - traces of signature forgery
  - extraneous lines (do not originally belong to the examined object) that are performed with IR opaque inks
  - blurred, crossed out entries, texts and images
  - document mechanical defects such as cuts, tears, folds, etc.

**Application**

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

**Delivery Set**

- Spectral luminescent magnifier Regula 4127
- Digital magnifier Regula 4128
- Magnifier Regula 1003M
- External light source (torch)
- Magnetic clamps
- Optionally: monitor

| Light sources* | | |
|---|---|---|
| White | incident | |
| | 2 oblique | |
| | coaxial | |
| | bottom | |
| | external oblique | |
| Ultraviolet, nm | 365 | |
| | 313 | |
| | 254 | |
| Infrared, nm | incident | 830 |
| | | 950 |
| | 2 oblique | 880 |
| | bottom | 880 |
| High-intensity incident cyan 505 nm | | |

* – All light sources are LEDs except ultraviolet 313, 254 nm

Operating modes:

1. Manual switching between light sources.
2. Automatic switching between selected light sources.
3. Simultaneous activation of two light sources: IR 830 nm — for examination on the monitor screen, UV 365 nm — for visual examination.
4. Examination of documents using thermostage.

Video sensor:

- type — CMOS, 2MP
- colour model — RGB
- colour depth, bit — 16
- frame size, pixels — 1600×1200
- field of view, mm — 165×85
- magnification, times*:
    - digital — 2 (without quality loss)
    - on-screen — 2

* – all magnifications are approximate and are provided for 7-inch monitors

Camera filters (automatically installed):

- visible pass 420-700 nm
- IR High pass 700 nm

Monitor:

- type — TFT
- diagonal, inch — 7
- resolution, pixels — 800×480
- tilt adjustment — 120º

Additional functionality:

- control of dimensional features

- vertical measuring scale (110±0,5 mm)
- horizontal measuring scale (240±0,5 mm)

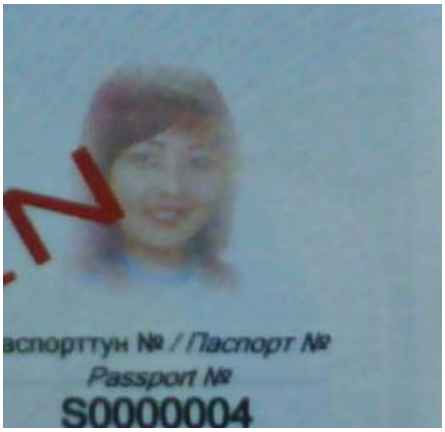
- object detection sensor
- saving images — .BMP (800×480 pixels)
- energy saving mode

Thermostage:

- Functionality
  - Examination of images and elements of banknotes and travel documents containing thermochromic ink at different temperatures.
  - Examination of a composite security feature Feel®-ID developed by Giesecke & Devrient company. Feel®-ID is based on optically variable and thermochromic effect.
- Temperature range, ˚C — +10...+50 °C with a step of 1 ˚C
- Heated area (length×width), mm — 42×53

Thermostage


Temperature +20 ˚C




Temperature +30 ˚C

Video output* — D-Sub (800×480, 60 Hz)

* – Recommended monitor: Dell E1916He

Maximum document size, mm — 210×300 (A4)

Dimensions (length×width×height), mm — 410×255×330 / 450

Weight, kg — 6,5

Power supply, V — 12

Power consumption, A — 5

**Spectral luminescent magnifier Regula 4127**

| **Light sources*** | | |
|---|---|---|
| White | incident | |
| | 2 oblique | |
| Ultraviolet 365 nm | | |
| Infrared, nm | incident** | 830 |
| | | 950 |
| | 2 oblique | 870 |
| | high-intensity incident | 980 |

http://www.regulaforensics.com/

Cyan high-intensity incident 505 nm

* – All light sources are LEDs

** – Alternate switching between IR 830 nm and IR 950 nm light sources for M-mark visualization

Video sensor:

- type — CMOS, 2MP
- colour model — RGB
- colour depth, bit — 16
- frame size, pixels — 1600×1200
- field of view, mm — 10×5,6 и 5×2,8
- magnification, times*:
    - digital — 2 (without quality loss)
    - on-screen — 16 and 32

* – all magnifications are approximate and are provided for 7-inch monitors

Camera filters:

- visible pass 370-660 nm
- IR low-pass with threshold, nm — 700

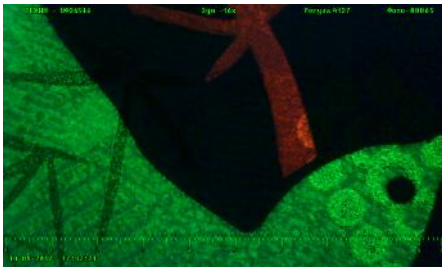
Dimensions (length×width×height), mm — 60×95×55

Weight, kg, max — 0,2

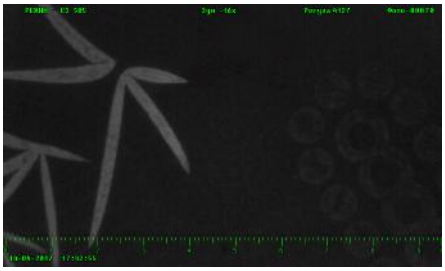
Power supply voltage, V — 5

Power consumption, A — 1,2

Fragment of the examined banknote in white oblique light. 16x magnification on the monitor



Fragment of the examined banknote in ultraviolet light (365 nm). 16x magnification on the monitor



Fragment of the examined banknote in cyan high-intensity incident light (505 nm). 16x magnification on the monitor

**Digital magnifier Regula 4128**

Light source — incident white

Sensor:

- type — CMOS, 2MP
- colour model — RGB
- colour depth, bit — 16
- frame size, pixels — 1600×1200
- field of view, mm — 2×1,2
- magnification, times*:
    - digital — 2 (without quality loss)

- on-screen — 70 and 140

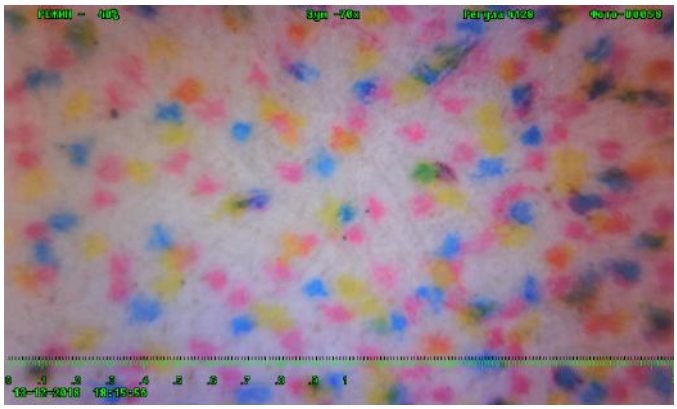
* – all magnifications are approximate and are provided for 7-inch monitors

Dimensions (length×width×height), mm — 30×30×120

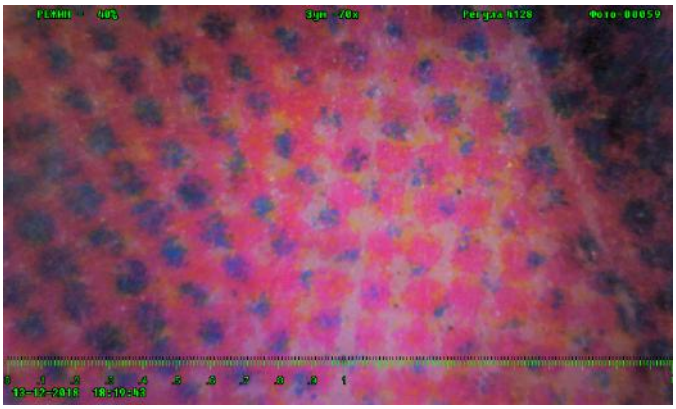
Weight, kg — 0,07

Power supply, V — 5

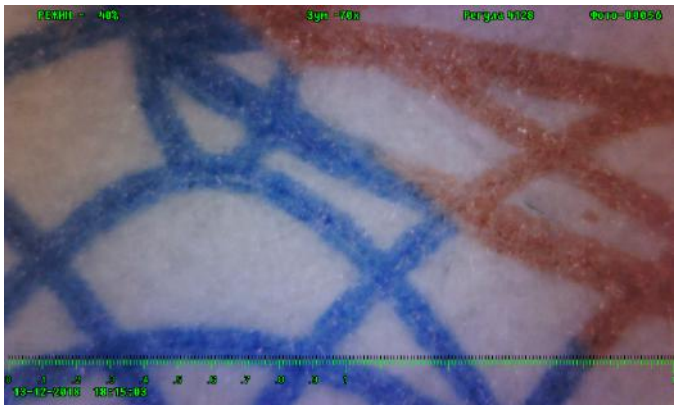
Power consumption, A — 0,6



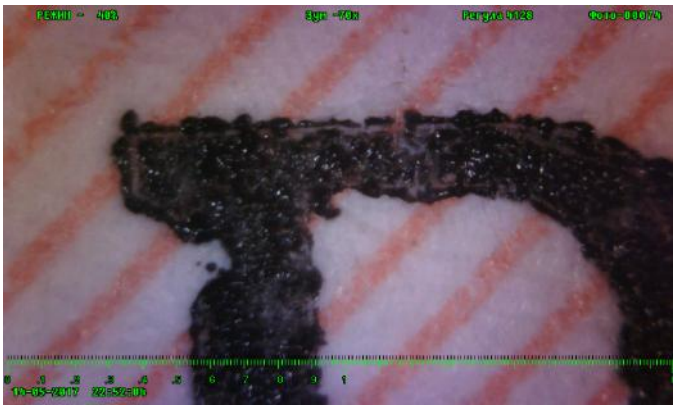
Inject printing. 70x magnification on the monitor



Laser printing. 70x magnification on the monitor



Offset printing. 70x magnification on the monitor

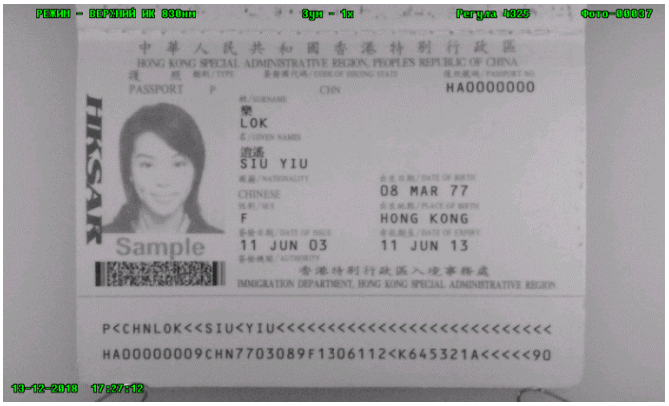


Letterpress printing. 70x magnification on the monitor

# Document examination in different operating modes

## Document authenticity verification device Regula 4325

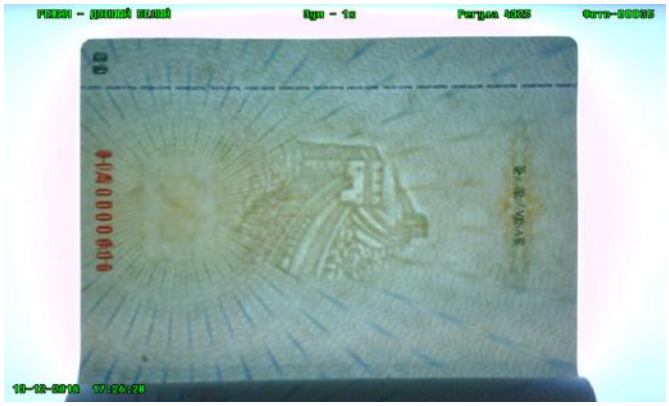

White incident




Infrared incident (830 nm)


Ultraviolet incident (365 nm)

White coaxial



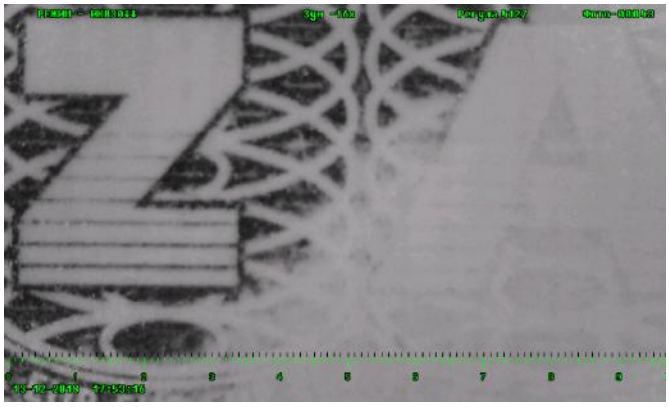
White bottom

Infrared bottom (880 nm)

## Spectral luminescent magnifier Regula 4127, 16x magnification

White incident

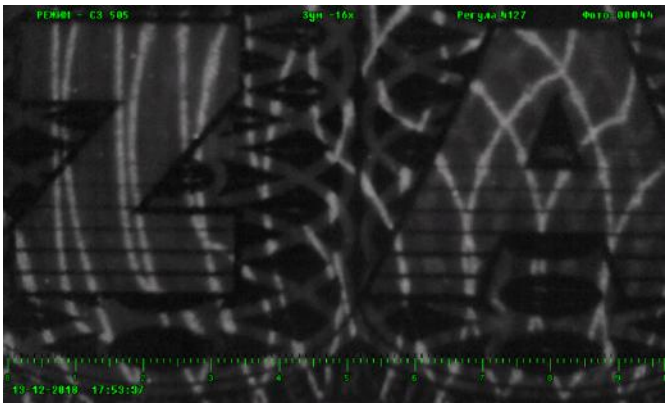
White oblique



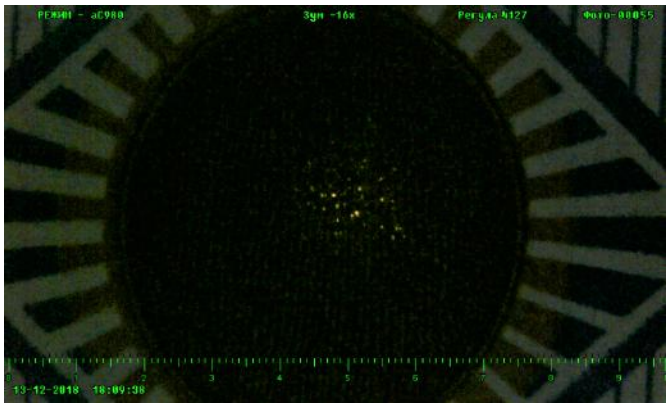
Infrared incident (830 nm)

Infrared oblique (870 nm)

Ultraviolet 365 nm



Cyan high-intensity incident (505 nm)




Infrared high-intensity incident (980 nm)