

## Document authenticity verification device Regula 4115



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

Regula 4115 is designed as a small-sized unit in a plastic body. Light sources for different examination modes are activated via control buttons located on the top panel of the device. The device is equipped with a built-in camera displaying an image on the monitor. The vari-angle monitor of the device can be folded down for convenient transportation and storage.

A passport or currency database is integrated optionally into the device for visual comparison of examined objects with their reference images.

The device has a spacious working area over the object stage. A measuring scale on the light transmitting screen should be used for measuring sizes of examined objects. Control buttons on the front panel are used for adjusting camera magnification, browsing passport or currency databases, turning on/off automatic switching between light sources.

Product design provides a possibility to place a 10x magnifier Regula 1003M with incident white and oblique white light sources right on the device body.

Regula 4115.01 is equipped with a spectral luminescent magnifier Regula 4127.

## Functionality

- **Examinations at different levels**
  - **protection of the document basis**
    - paper 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, guilloche 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 at different wavelengths
    - 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/immigration services
- Customs authorities
- Law-enforcement agencies

- Forensic laboratories
- Other agencies and organizations authorized to check documents

### Delivery set

- Magnifier [Regula 1003M](#)
- Spectral luminescent magnifier Regula 4127 for Regula 4115.01



Monitor position: a) operating position b) folded down position for transportation and storage.

Functionality				Model	
				4115	4115.01
Light sources*	white	incident		+	+
		oblique		+	+
		transmitted		+	+
	ultraviolet 365 nm		+	+	
	infrared, nm	incident	830	+	+
			950	+	+
		oblique	880	—	+
		transmitted	880	—	+
Detection of security features with magnetic properties				+	+
Spectral luminescent magnifier Regula 4127				—	+

\* – All light sources are LEDs

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. Alternate switching between IR 830 nm and IR 950 nm light sources for M-mark visualization.
5. Detection of security features with magnetic properties.
6. Visual comparison of examined objects with their reference images from the passport or currency database.
7. Automatic measurement of the banknote area (residual area).

Video sensor:

- type — CMOS, 2MP
- colour model — RGB
- colour depth, bit — 16
- frame size, pixels — 1600×1200
- field of view, mm — 155×90

Monitor:

- type — TFT
- diagonal, inch — 7
- resolution, pixels — 800×480

Magnification on a 7 inch monitor — x1 and x2

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

Dimensions (length×width×height), mm — 280×185×295 / 200

Weight, kg — 3

Power supply voltage, V — 12

Power consumption, W — 12

### Spectral luminescent magnifier Regula 4127

Functionality					
Light sources*	white	incident			+
		oblique			2 sources
	ultraviolet 365 nm				+
	infrared, nm	incident	830	+	
			950	+	
		oblique	870	2 sources	
			high-intensity incident	980	+
	cyan high-intensity incident 505 nm				+

\* – All light sources are LEDs

Video sensor:

- type — CMOS, 2MP
- colour model — RGB
- colour depth, bit — 16
- frame size, pixels — 1600×1200

Field of view, mm — 10×5,6 and 5×2,8

Magnification on a 7 inch monitor — x16 and x32

Camera filters:

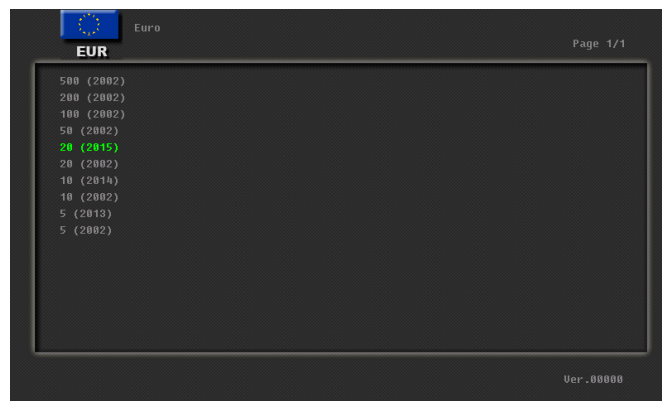
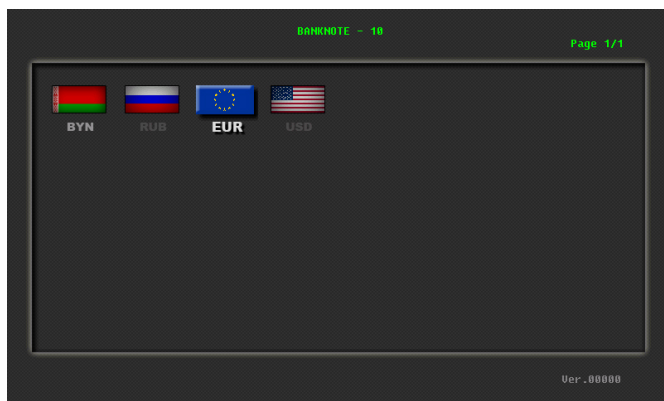
- IR low-pass with threshold, nm — 700
- IR high-pass with threshold, nm — 660

Dimensions (length×width×height), mm — 94×62×52

Weight, kg, max — 0,15

Power supply voltage, V — 5





Selection of currency, denomination, year of issue in the database



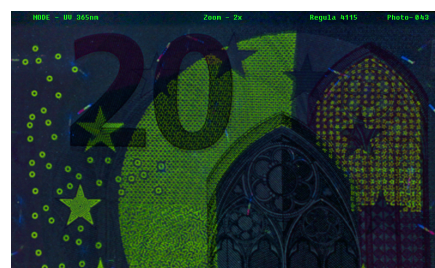
Comparison of the examined banknote in white incident light with the reference banknote from the database



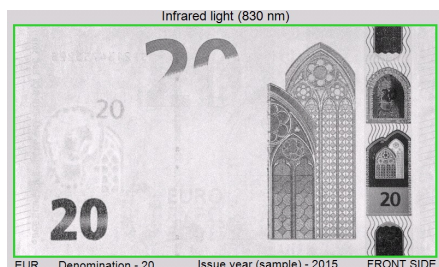
Fragment of the examined banknote in white incident light.  
2x magnification on the monitor



Comparison of the examined banknote in ultraviolet light (365 nm) with the reference banknote from the database



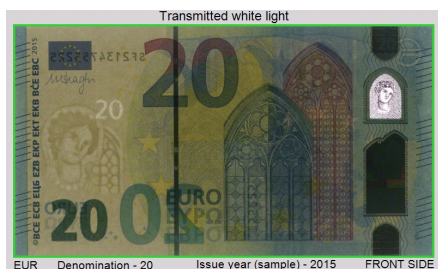
Fragment of the examined banknote in ultraviolet light (365 nm).  
2x magnification on the monitor



Comparison between the examined banknote in infrared incident light (830 nm) with the reference banknote from the database



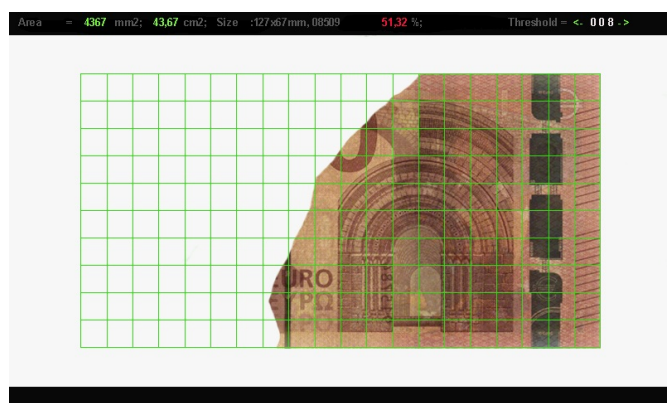
Fragment of the examined banknote in infrared incident light (830 nm).  
2x magnification on the monitor



Comparison between the examined banknote in white transmitted light with the reference banknote from the database



Fragment of the examined banknote in white transmitted light.  
2x magnification on the monitor



Automatic measurement of the banknote area (residual area)