

## Dual-video spectral comparator Regula 4308



**The device is intended for advanced authenticity verification of passports, ID cards, travel documents, passport stamps, banknotes, driver's licenses, vehicle registration certificates and other vehicle related documents, signatures and handwritten records, paintings, revenue stamps and other security documents.**

The device is made as a single unit for desktop use. It is used with a built-in PC (may be connected to an external PC via USB 3.0) and fully controlled through "Regula Forensic Studio" software interface (supplied with a unit). The device is equipped with a high resolution spectrometer, hyperspectral imaging module, light source for anti-Stokes luminescence, XY translation stage, modules for reading MRZ, RFID chips, hidden image (IPI), 1D and 2D barcodes.

## Best in class

Being the best in class for advanced document examination, Regula 4308 has been developed and produced with the use of the latest hi-tech innovations.

Its high functionality is achieved due to over 30 types of light sources, over 20 light filters, a self-developed precision optical system and 2 high-resolution cameras.

## Technical innovations

The comparator allows working with large format documents. Due to side flaps and widened internal space examined objects can be conveniently placed inside.

The extended field of view and updated algorithms of image stitching make it easy to obtain the whole image of an A4 page.

A unique motorized system of oblique lighting, which allows changing the light source angle of incidence, provides a wide range of opportunities for examining microrelief of a document in the visible and infrared spectrum range.

## Advanced algorithms of image capture

Advanced system for capturing high-resolution images preserves all tiny elements precious for further object examination.

New algorithms and the enhanced optical scheme make it possible to obtain a multi-focus image in one click. Such an image takes on a new level of detail as the whole frame turns out to be in focus independent of the size of its relief.

## Software

Regula Forensic Studio software is a key to outstanding performance of Regula 4308. It forms a duet of personal computer and the comparator and creates a laboratory for forensic examination. Efficient and intuitive interface of the software helps the user easily operate the device and manage obtained data.

Extended functionality of Regula Forensic Studio offers an extraordinary experience to those who are involved in security document analysis. Now it is possible to build a 3D-model of a document fragment. And this is what makes the difference when examining overlapping objects such as a signature and a stamp or a signature and some text.

In addition, it is worth taking advantage of the information reference system "Secure Documents Ultimate" which provides access to images and descriptions of documents and banknotes from all over the world. During the device lifetime, Regula Forensic Studio software is updated free of charge.

## Functionality

- **Examinations under high magnification on different levels:**
  - **protection of the document basis**
    - paper opacity, watermarks, security fibers, planchettes, security threads, foil stamping, pole feature, all types of windows, transparent varnish 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**
  - anti-Stokes luminescence
  - UV luminescence with different wavelength
  - IR luminescence
  - security features with magnetic properties, etc.
- **complex security features**
  - holographic images, OVD
  - retroreflective protection
  - security features with IR-metameric ink
  - special polymer coating of security laminates
  - 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.
- Comparison of two images in different combinations (two saved images, saved image against live video, saved images against etalon image from information reference systems, etc.)
- Automatic reading of:
  - Textual information from machine readable zone of ICAO compliant documents (ID-1, ID-2, ID-3)
  - 1D and 2D barcodes
  - Information from RFID chips in eDocuments (DG1 to DG15, BAC, EAC, AA, PA, TA, PACE) and verification of those chips

## Application

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