

**Premise:**

Courses in the Courts are increasingly widespread when it comes to addressing the question of the authenticity of a document, and it is no coincidence that the demand for specialist consultancy in the field of graphics is becoming increasingly topical. The evolution of technology, however, has made the techniques of counterfeiting increasingly sophisticated, so that methodology, scientific research in the field of expertise and its instrumentation must have the most advanced technologies.

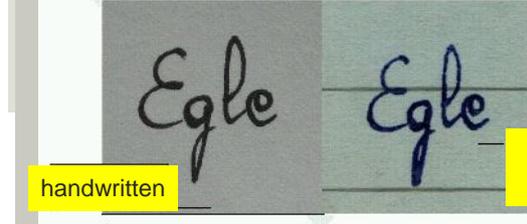
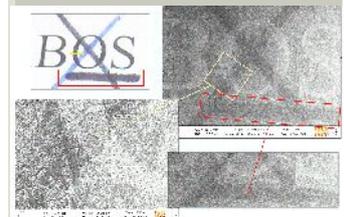
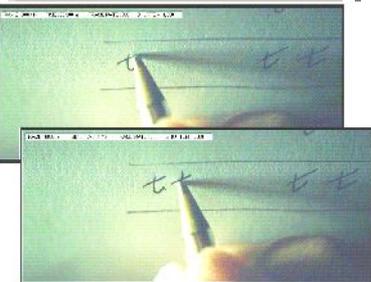
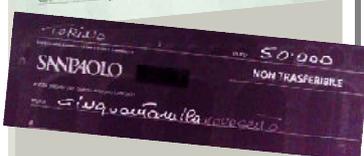
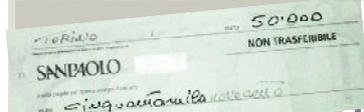
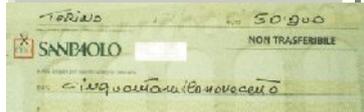
**FORINST** Forensic -Instruments based in Turin is designed for:

- the sale to specialists in the field of specialized instrumentation in the examination of the genuineness of the graphs and the detection of possible counterfeiting;
- to intervene with your instruments at Tribunals, Notarial Studies, etc. as a technical assistance to the Judge's advisers and / or to deliver an out-of-court opinion before any legal proceedings are initiated.

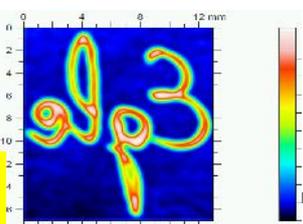
**Who we are:**

Francesco Dellavalle, the founder of FORINST, has acquired more than three decades of experience in dimensional and superficial 2D / 3D measuring systems that are not in contact with the research and industry world. In 1988 he devoted himself to the first morphological analysis of graphs by optical microscopy and Image Processing. More enthusiastic about the subject, in 2001 he is the creator of the "interferential method" (through holographic holography), aimed at objectifying the order of affixing of graphism intersecting each other. He attended seminars at the University of Naples, Rome, Wroclaw (Poland) and conferences in Turin at the Metrology Colonnetti Institute in Cluj-Napoca (Romania), Paris (France) Buenos Aires (Argentina), Brasilia, Rio de Janeiro (Brazil) and at the Interpol headquarters in Lyon (France). He has participated and still actively participates as a rapporteur and exhibitor, at Congressional and Workshop National and International at the criminal, graphic and graphological level, as well as holding lectures and practical demonstrations at Associations, Schools and Laboratories of Visual Grafology.

**In brochures:** the instrumentation on sale and the services offered.



From Stamp



## Pocket / portable devices in a price range of 60 to 1050 Euro (excluding VAT)

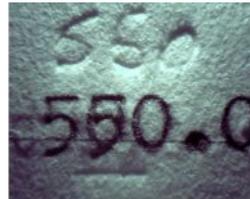


### FORINST OM

**Optical Magnifier works at 10x with a 30mm diameter magnifying glass.** The instrument generates radiation in the visible and U.V. diffused and sparkling, weighs 55 grams and is powered by network and / or rechargeable batteries.

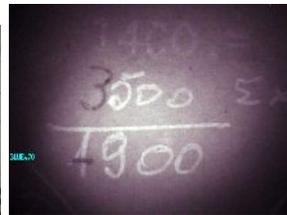
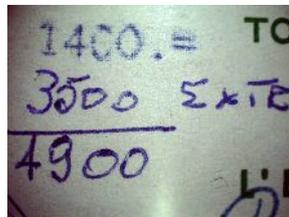
### FORINST MS-IR-UV

**It is the macro-shooting apparatus in multispectral mode.** The instrument requires connection to a computer via a USB port. Inside there are diffuse and sparkling light sources in the visible spectrum, IR (two different wavelengths), U.V. (also with two different wavelengths) and Blue. Sensor resolution: 2 Megapixels (field framed: approx. 14x10mm).



### FORINST MS-IR-UV HI RES

**Pocket device for macro shooting in multispectral mode. The instrument does not need to be connected to a computer,** except to transfer stored images (via USB). It is equipped with a 3" color screen, it has a variety of diffusing and radiant light sources in visible, IR / UV light at two different lengths and in Blue light. Sensor resolution: 5 Megapixels (field shot: ca 23x18mm. Electronic zoom up to 6x4mm.). Images can be viewed live through a digital TV via HDMI port. Memory: 2GB on SD card.

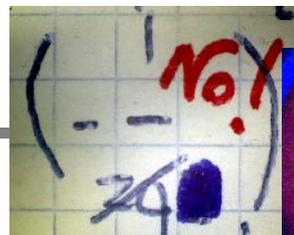
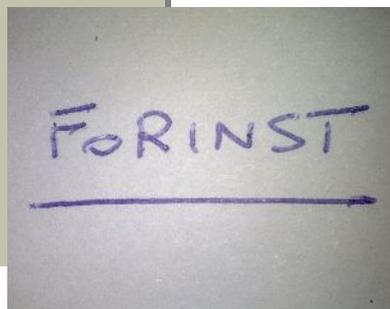


### FORINST MSM (Multi Spectral Microscope)

**Pocket Microscope for shooting in multi-spectral mode.** The instrument requires connection to a Computer (via USB) and can be paired with a interferential filter holder wheel. It has three lighting sources as standard:

- Visible Spectrum
- UV
- NIR lighting

Sensor Resolution: 2 Megapixels. Field framed: 5x-10x-20x-40x-140x. Excellent image quality without any distortion. It has a software module to perform precision measurements (dimensions, distances, angles, areas, perimeters, etc.). Various accessories are added to increase the performance of the instrument: **interferential filter wheel**, IR flash light, light tablet, etc.



### FORINST XTS - 01 STEREO LABORATORY MICROSCOPE



The kit that makes up the XTS 01 has been customized for document analysis, using a tilting stand for easy viewing of A / 3 - A / 4 format documents. Accessories: 5 Megapixel camera capable of operating in Truecolor and IR, lighting groups (NIR, UV), additional optics, bandpass filter wheel, reflex light polarization kit, solid state ring lighters, micrometer object on a slide, etc.



### FORINST VC UVR VIDEO COMPARATOR



Microscope for shooting macro for video comparator



The peculiarities of this apparatus:

the instrument captures images in multispectral mode independently, without having to be connected to a computer, other than to transfer stored images (via USB).

It is equipped with a 7" color screen, it has a variety of diffuse and sparkling light sources: in visible, IR (at two different wavelengths), in U.V. (also with two different wavelengths) and in Blue, in addition to a source both in IR and in visible in transmission, or through the sheet to be analyzed. Shooting range: 170 x 100mm and / or 23 x 16mm.

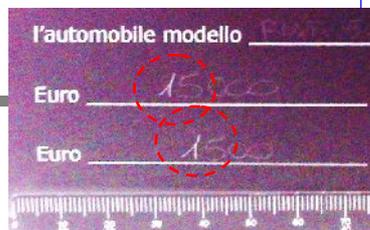
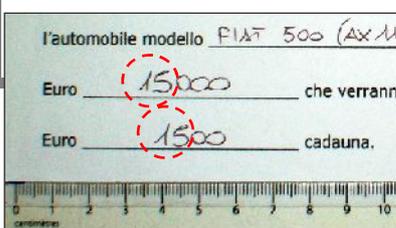
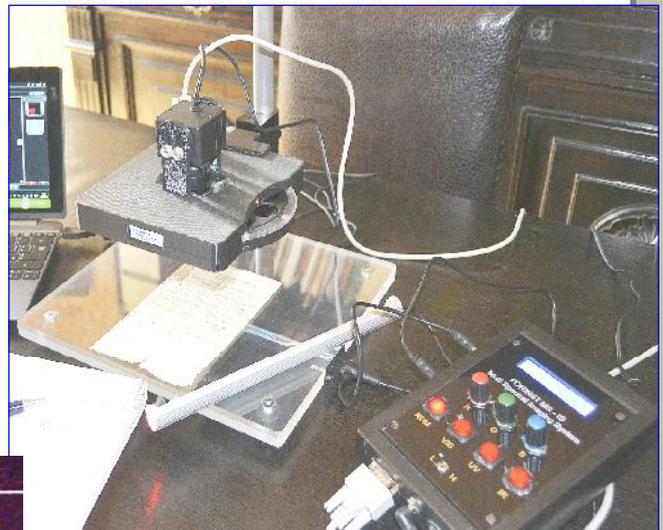
Camera: 5 Megapixel (True Color and NIR).

Completing the instrument offers an additional accessory similar to a Macro shooting Mouse, always in multispectral mode. Workspace: c.a. 12x9mm or 7x5mm, equivalent to an enlargement of c.a. 60 and / or 80x. Low res camera, usable only in conjunction with video comparator via USB. Excellent performance / price ratio. **Weight: slightly less than 1.5 kg**, which can be accommodated in a common travel trolley.

### VIDEO COMPARATOR FORINST MS - IS Multi Spectral Imaging System

The peculiarities of this apparatus:

- Portable unit (5 minutes to make it operational);
- Variable shooting range: from a max format equivalent to 1/2 UNI A4 to c.a. 5 x 4 centimeters;
- Five different light source sources: Visible, U.V., IR, Modifiable RGB and Vis in Transmission;
- "Blade" IR spring to operate at high strength;
- Seven band pass filters to obtain luminescence effects;
- 5 Megapixel camera operating both in IR and in TrueColor mode;
- Simple and intuitive Windows and / or Mac software to capture images and measurements: dimensions, distances, angles, areas, perimeters, etc;



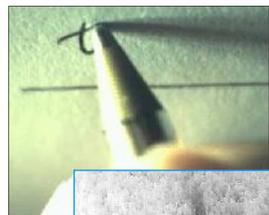
## PERFORMANCE PROVIDED BY FORINST TO THE EXPERTS



### In the case of abuse of signatures **with overlapping text**:



The **Forinst XT - PL** based on reflected light polarization has been designed to examine overlapping between toner printers (laser printers, copiers, fax machines, multifunction printers, etc.) and manuscript graphs using ballpoint pens.



### The **Grafiscan 3D**

based on the Interferential Method performed in the Conoscopic Hologram, allows to precisely observe and measure the thousandth of millimeter distance between pen stops, shape, width and depth of the grooves, and other features of the controversial script. The study of these measurements allows to objectify the temporal sequence with which two crossing lines.

Note: The interfering method actually is suitable for use in a variety of other applications including: 3D analysis of the comparative manuscript quantum press, or to "completely isolate" a subscription partially covered by a stamp.



### In the case of abuse of signatures **without overlapping**

Forinst has recently developed an apparatus capable of operating over 1000 optical magnifications to treat apparently "unsolvable" cases. For example, an abuse of a signature that does not intersect at any point with the print graphics. **The method is to detect the print residue microparticles present along the manuscript to determine whether they have been deposited on the sheet before or after the manuscript**

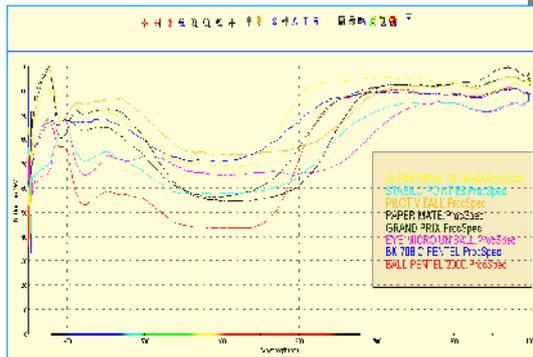
(cfr. F. Dellavalle, June 2015, "Near-Infrared (NIR) lighting, in support of determining the sequence of non-intersecting media on documents: Ballpoint Pen Ink and Laser Toner entries" - **Journal of the American Society of Questioned Document Examiners, Inc. Volume 18, Number 1**).

### Further instrumental analysis

The **Forinst SPF** spectrophotometer was created to work out of a laboratory, for the color characterization of the pencil paths; for example, to see whether to add text, correction, etc. whether or not the same ink was used.

The instrument operates on a field of diameter equal to c.a. 500 micrometers, in a spectral range ranging from 360 to 1000 nanometers with a resolution of 2 nanometers.

**The results are saved in the form of histograms with the relative spectral responses of comparative inks.**



The method based on **Image Processing** refers to the two-dimensional writing morphology and refers to the observation of the shape and width of the grooves, the measurement of the distance between the pen's staves, etc.), comparison of similar print characters, etc. .

The procedure consists in shooting with a high resolution digital camera coupled with an optical microscope; then digitized images are processed with a special one software and used to carry out the two-dimensional measures required.

Publications: **"La strumentazione per l'analisi documentale in ambito forense"**  
Sulla Rotta del Sole S.r.l. - Giordano Editore <http://www.giordanoeditore.it/>

The book broken down into three sectors, describes in detail:

- 1) "A-Class" Instrumentation Surveys: Traditional and Digital Optical Microscopy, Recessed Lighting Systems, Digital Cameras / Digital Camera Recording Systems, 2D Scanners, etc;
- 2) "B-Class" instrumentation: spectrophotometers, video comparators, electronic microscopes, 2D and 3D confocalities performed in holographic holography by means of laser profilometry for superimposed graphs analysis for comparing the quantum pressure of manuscript paths;
- 3) 3) methods for highlighting signature falsifications with pantographs, pantographs, rubber stamps (in 2D) and metal (3D) stamps, by photocopy, where ink dating techniques are described and suggestions for the drafting a strict technical report.

(currently the book is only available in Italian)

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(Forensic Instruments)

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