

foster+freeman

Forensic Science Innovation



# VSC<sup>®</sup> 80

for document examination



## Forensic QDE Workstation

A Complete Solution to the  
Examination of Questioned  
Documents in Cases of  
Identity Theft, Forgery,  
Counterfeiting and Fraud

# VSC<sup>®</sup> 80 for document examination



## Our Most Advanced Compact Workstation for Forensic Examination of Questioned Documents

A leap forward in document imaging technology, the new VSC<sup>®</sup> 80 provides QDE professionals with a complete solution to the forensic-level examination of *all* questioned documents.

63x more sensitive than previous compact VSC workstations, the VSC<sup>®</sup> 80 combines improved optical performance with multi-spectral illumination for the analysis and comparison of handwriting, signatures, photocopied and printed documents, banknotes, cheques and secure documents including passports, ID cards, driving licences, and breeder documents.

With superior imaging, a comprehensive range of light sources, and a powerful QDE software suite, the VSC80 should be considered an essential upgrade for examiners seeking to perform the highest quality of examinations.

- **Inspect Crystal-Clear Images of Documents**  
View full HD video images on an UltraSharp<sup>®</sup> monitor  
No loss of resolution up to x80 magnification
- **Identify Counterfeits and Reveal Alterations**  
Detect evidence of tampering and differentiate between false and genuine documents
- **Authenticate all Levels of Security Feature**  
Reveal basic and advanced security marks  
Decode e-Passport, MRZ and other embedded data
- **Produce Court-Ready Evidence and Reports**  
Full casework management  
Include annotations and measurements

	Immigration & Border Control	Forensic Laboratory Setting	<b>VSC<sup>®</sup> 80</b>
PHASE 1		Specialist	✓
PHASE 2		Advanced	✓
PHASE 3		Basic	✓
PHASE 4			✓

*Four phases of document examination, originally published as part of the United Nations Office on Drugs and Crime Guide for the Development of Forensic Document Examination Capacity, 2010*

# VSC<sup>®</sup>80 trusted technology, powerful new features



## Technology that builds on 40-years experience as the industry leader

The most refined compact VSC instrument from foster+freeman to-date, the VSC<sup>®</sup>80 represents the culmination of 40-years experience as the industry leader combined with cutting-edge optics design, powerful and efficient Chip on Board LED illumination, and the latest generation of microprocessor technology capable of performing sophisticated imaging applications with greater responsiveness.

Designed to meet the demands of contemporary document examination, the VSC<sup>®</sup>80 provides a complete solution to the 'traditional' examination of papers and inks as well as for the detection and decoding of modern security printing techniques.

### Superior Image Quality



#### High Sensitivity Camera

Sharp, bright full-HD images of documents are captured via a high-sensitivity, Vis-IR camera with zoom lens. Advanced camera features include StableZoom and 2D/3D noise reduction to further enhance picture quality.

### Advanced Illumination



#### Specialist Illumination Modes

A comprehensive selection of LED light sources including, UV-Vis-IR incident, flood, transmitted, coaxial, and spot light arrays utilise recent advances in LED technology to provide superior output flux, reliability and colour consistency.

### Increased Functionality



#### Removeable Base

New and unique to the VSC<sup>®</sup>80, is the Removeable Transmitted Light Base which, when removed from the main unit, enables the examiner to inspect larger/thicker items of evidence.

The VSC80 Vis-IR camera is up to 63x more sensitive than the previous VSC40/HD workstation

Adjust the wavelength (colour), intensity and angle of illumination to reveal security features and barely legible marks.

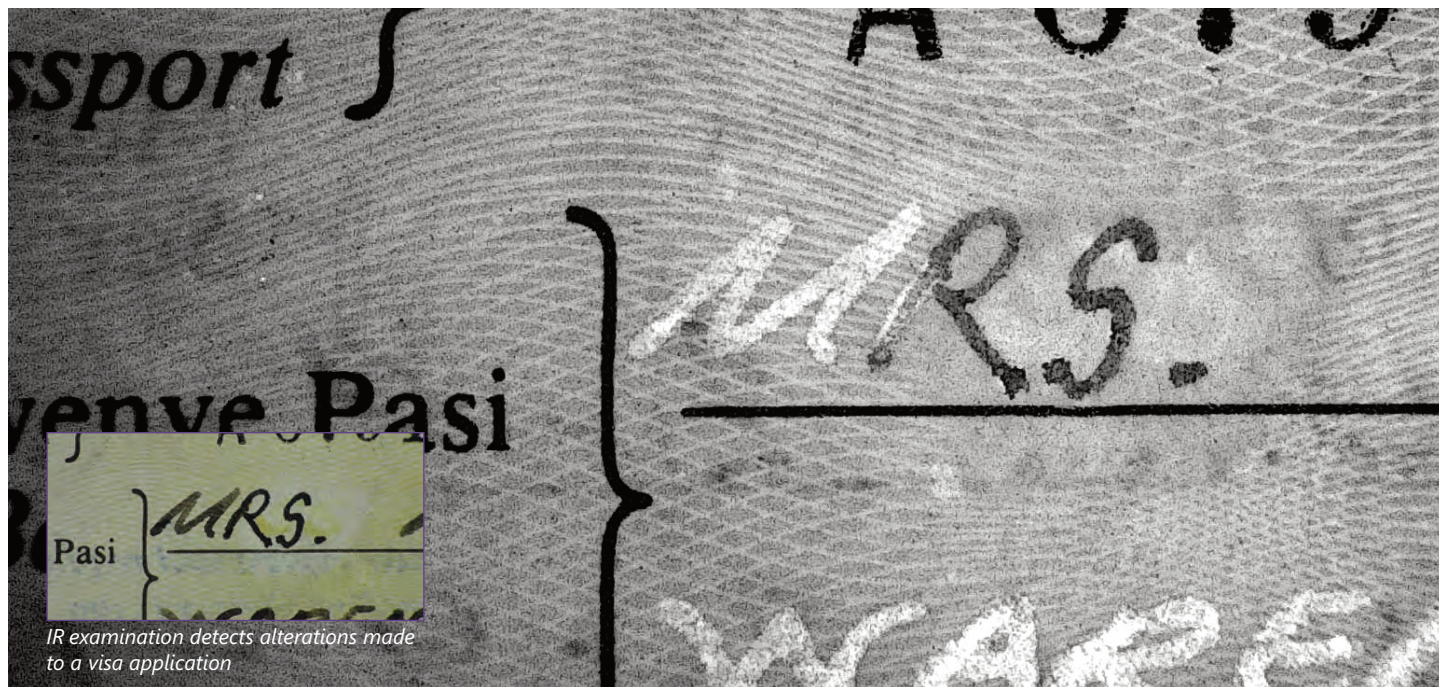
Explore the full gamut of VSC applications including anti-counterfeiting (packaging and consumer goods) and art conservation.



# VSC<sup>®</sup>80 paper and ink analysis

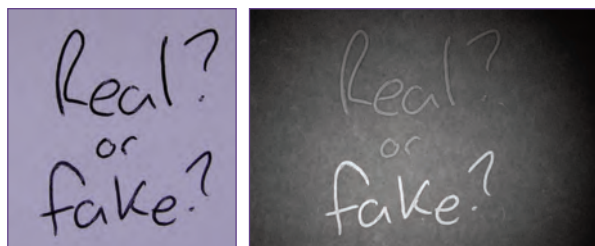
## Non-destructive examination of paper and inks

A complete QDE workstation, the VSC<sup>®</sup>80 provides facilities for the examination of *all* written and printed documents to expose forgery, or to reveal alterations, additions or erasures through the analysis of paper and inks.



### Multispectral Examination of Absorption/Reflectance/Fluorescence

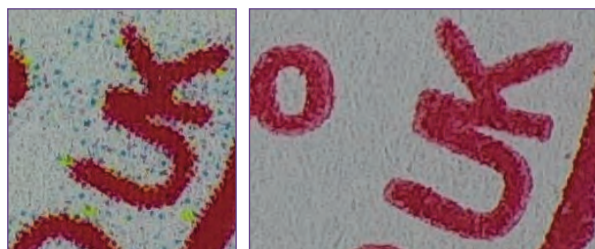
Revolutionary when first introduced by foster+freeman almost 40-years ago, multispectral UV-Vis-IR examination exploits the luminescent and reflective properties of papers and inks to reveal additions, alterations or erasures that would otherwise be impossible to detect in the visible spectrum, even under high magnification. The technique can also be used to see through correction fluid and to visualise obliterated or faded writing.



IR fluorescence can reveal the presence of different inks

### Examination of Print Quality Under High Magnification

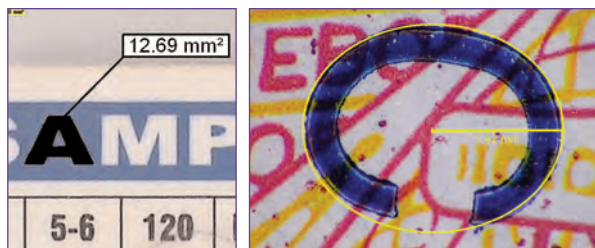
Inspection of documents up to x80 magnification, with no loss of image resolution, enables the examiner to assess the print quality of documents and to detect minute imperfections particularly on areas of fine detail or micro-printing. High magnification may also reveal disturbances of the surface of the paper caused by mechanical erasures or evidence of tampering such as page or photo substitution.



Inferior print quality can expose counterfeit documents

### Digital Image Analysis to Enhance, Compare and Discriminate

VSC<sup>®</sup> Software Suite provides specialised filters and enhancement tools to boost the appearance of weak or faded writing/printing, sharpen images, remove background colours, and to discriminate between closely related colours. Additional software functions include the facility to compare live and stored images side-by-side, superimposed, or subtracted and to measure and annotate captured images.



Document images may be enhanced, measured & labelled

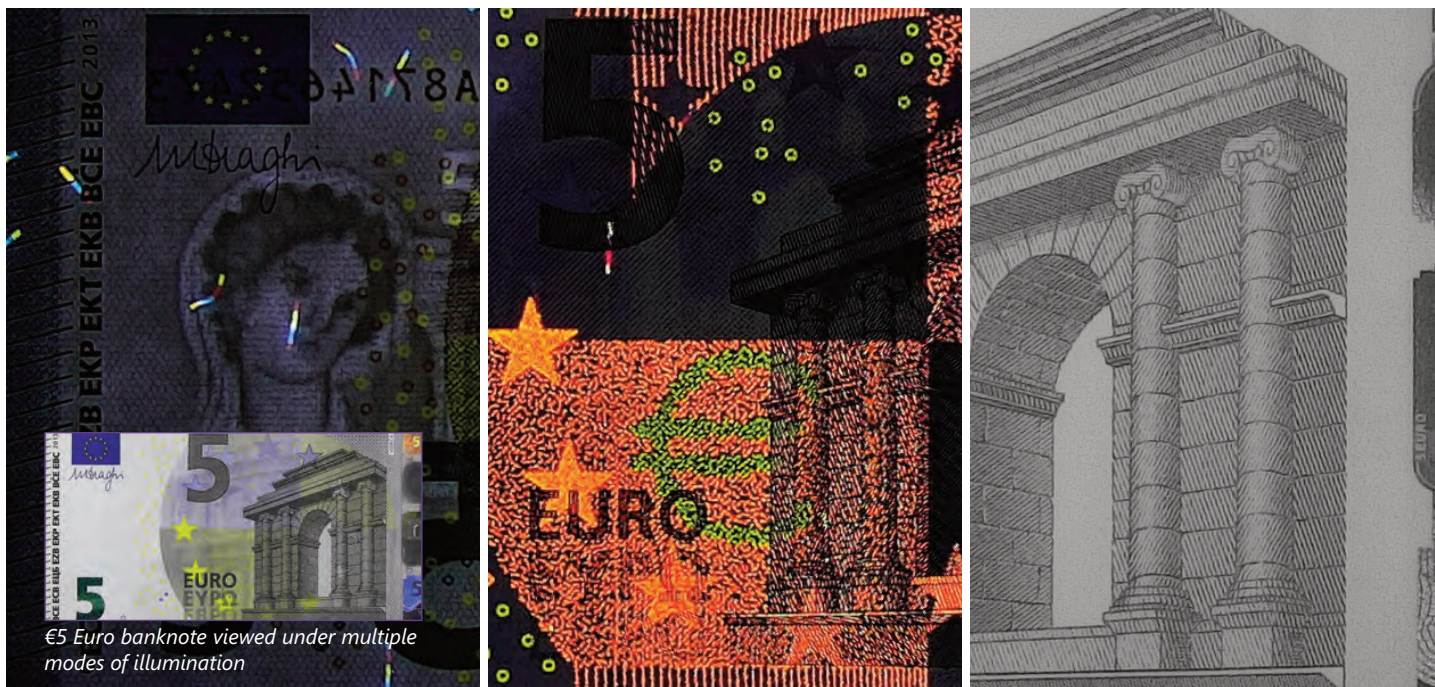
### Further Analysis Using the Optional Spectrometer Module

An optional accessory, the VSC<sup>®</sup>80 Spectrometer Module captures absorption, reflectance, fluorescence and transmitted spectra in real time with results displayed on-screen in a simple graphical format enabling the examiner to identify differences in ink and paper formulations.



# VSC<sup>®</sup> 80 document security features

## Inspect and Authenticate Security Documents including Passports, ID Cards and Currency



Images reproduced at low resolution in accordance with ECB decision ECB/2013/10

### Examination of Specialist Security Inks and Fluorescent Dyes

The VSC<sup>®</sup> 80 includes illumination modes suitable for the visualisation of all common UV fluorescent features as well as 3rd-level security features such as infrared anti-Stokes ink.

Multi-spectral UV-Vis-IR imaging stimulates a fluorescent response in the specialist inks and dyes which may then be observed using the corresponding imaging filter (automatically selected by the VSC<sup>®</sup> 80).



Stimulate visible/invisible fluorescent inks and coatings

### Detect and Decode E-Passport Chips and Embedded Data

On-board data decoders can detect and read 1D and 2D barcodes, ICAO encoded MRZ data, embedded IPI (Invisible Personal Information) and ICI (Invisible Constant Images) on passports and identity cards\*.

A choice of optional e-Passport Readers enable the examiner to capture and read RFID documents including e-Passports, eID or any other ICAO formatted eDocument.



Decode information embedded within secure documents

### New and Future Security Features and Countermeasures

Secure documents including passports, ID cards, and banknotes continue to evolve as their manufacturers compete to stay ahead of technically adept counterfeiters. Regular software updates are made available for all current VSC models enabling the instruments to keep pace with advances in security substrates, inks, and digitally encoded features.



Examine the latest generation of security features

### Compare Suspect Documents with Genuine Reference Images

Verify the authenticity of documents under investigation against up-to-date information and images of thousands of passports, ID cards, driving licences, visas and banknotes from countries around the world by subscribing to regularly updated reference databases.

\* Scrambled Indicia<sup>®</sup> and LetterScreen++<sup>®</sup> decoders require the purchase of additional software licences.



# VSC<sup>®</sup>80 specifications and accessories

## VSC<sup>®</sup>80 Core System Specifications

### Essential Hardware

VSC Dimensions W:392 x D:372 x H:366mm

Power Supply Input 110V/230V, 50/60Hz

Computer & Monitor Desktop PC  
24" LCD display  
(27" available on request)

### Imaging

Camera High sensitivity CMOS camera  
Vis-IR sensitive  
Zoom lens  
Full HD live video output

Magnification Up to x100 on 24" monitor

### Illumination

Visible-IR LED Illumination Incident (Flood) Vis and IR LEDs  
21x Multi-Angled LED Array  
Twin Vis and IR Side LEDs

Transmitted Illumination Removeable LED module with  
UV-A, Vis and IR light sources

Specialist Illumination Incident UV-A, UV-B, UV-C  
10X LED Spotlight  
Coaxial Light Source  
IR Anti-Stokes

Imaging Filters Integral motorised filter wheel  
includes 1x broadband visible  
filter and 12x visible and IR  
long-pass filters

### VSC Suite 7 Software Features

Document Specific Workspaces  
Choose Basic, Advanced, ID Document, or Banknote  
workspaces with application specific layout and tools

Camera and Hardware Control  
Automatic or manual control of camera functions  
and all VSC light sources

Automation  
Use Quick-Check mode to record images captured  
under preset examination conditions.

Image Enhancement and Comparison  
Including contrast and brightness adjustment,  
side-by-side comparison and image overlays

Embedded Data Decoders  
Detect and decode information stored in barcodes,  
images, IPI, and Machine Readable Zones

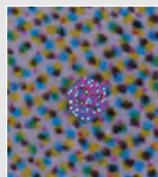
Contact Foster+Freeman for the latest VSC<sup>®</sup> hardware specifications

## Optional Hardware Accessories



e-Passport Reader 1A  
Order Ref: VSC/EREADER1/A  
High performance MRZ and RFID data reader with  
contact/contactless capability.

e-Passport Reader 3  
Order Ref: VSC/EREADER3  
Compact RFID and CARD reader with CCID interface.



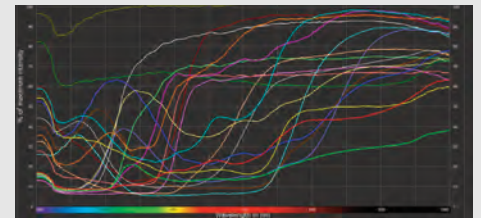
1x microtaggant



3x microtaggant

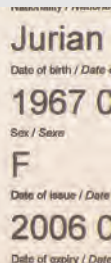
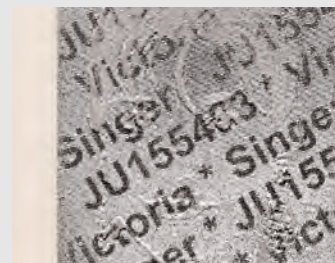
Portable Video Microscope & 5MP Camera  
Order ref: VSC80/PVM  
3x optical zoom c-mount video microscope with  
5Mpixel USB 3.0 CMOS colour camera provides  
magnification up to x249 on a 30" monitor. Includes  
dimnable White LED

5MP External Camera  
Order ref: V80/CAM  
USB 3.0 5MP C-Mount camera provides an  
additional input to the VSC



3x Optical Zoom Microspectrometer & 5MP Camera  
VSC80/PVMS  
Portable Video Microscope and 5Mpixel camera,  
connected to an external fibre-coupled spectrometer.  
- Spectrometer wavelength range of 400-850nm  
with 5nm resolution  
- Circular spectrometer sampling area of diameter  
67-200 microns, depending on magnification  
- Software-controlled Vis-IR LED lighting

## Optional Software Accessories



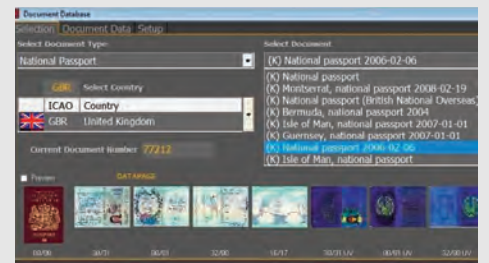
Embedded Personal Data Decoder  
VSC80/IPI  
IPI (Invisible Personal Information) and ICI (Invisible  
Constant Image) to enable detection of IPI/ICI in  
passports and ID cards

Uses Scrambled Indicia<sup>®</sup> Technology supplied under  
licence from Graphic Security System Corp (GSSC) of  
the USA



LetterScreen++ Decoder  
VSC80/LS/PLUS  
LetterScreen++ detection and verification by special  
algorithm based on personal data in MRZ

Machine-Readable LetterScreen++<sup>®</sup> Technology  
supplied under licence from Jura, Hungary



Security Documents Database  
Reference database of ID documents.  
Archive Collection VSC/DB/Archive  
Annual Subscription VSC/DB/KDATA

Banknotes Database  
Reference database of banknotes.  
Archive Collection VSC/DB/Archive/C  
Annual Subscription VSC/DB/KDATA/C

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