foster+freeman

Forensic Science Innovation

1978-2018
forty years
in forensics

VSC®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

FF(UK):12/19

VSC®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®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®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® 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	VSC® 80
PHASE 4	Specialist	Specialist	✓
PHASE 3	Advanced	Advanced	✓
PHASE 2	Basic	Basic	✓
PHASE 1			✓

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®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®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®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.

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

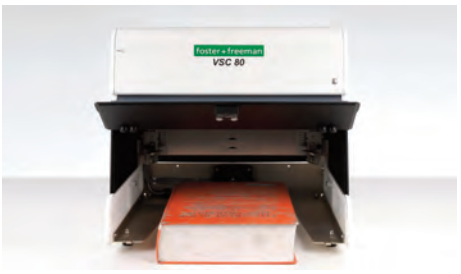
Advanced Illumination

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.

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

Increased Functionality



Removeable Base

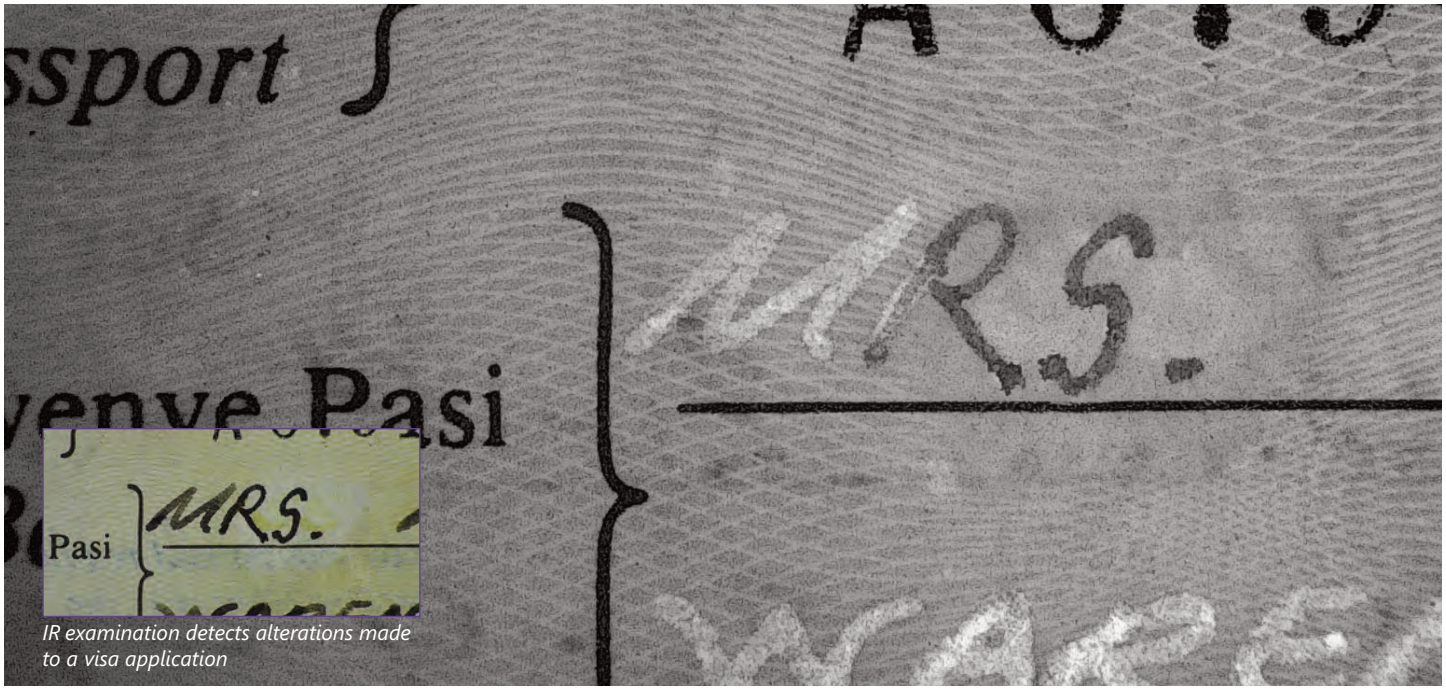
New and unique to the VSC®80, is the Removeable Transmitted Light Base which, when removed from the main unit, enables the examiner to inspect larger/thicker items of evidence.

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

VSC®80 paper and ink analysis

Non-destructive examination of paper and inks

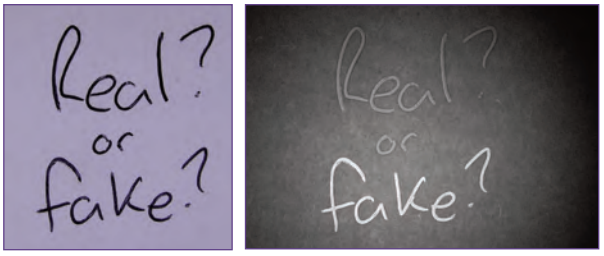
A *complete* QDE workstation, the VSC®80 provides facilities for the examination of *all* written and printed documents to expose forgery, or to reveal alterations, additions or erasures through the analysis of paper and inks.



IR examination detects alterations made to a visa application

Multispectral Examination of Absorption/Reflectance/Fluorescence

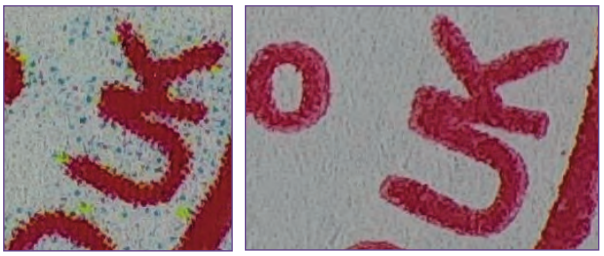
Revolutionary when first introduced by foster+freeman almost 40-years ago, multispectral UV-Vis-IR examination exploits the fluorescent and reflective properties of papers and inks to reveal additions, alterations or erasures impossible to detect in the visible spectrum, even under high magnification. Techniques that 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

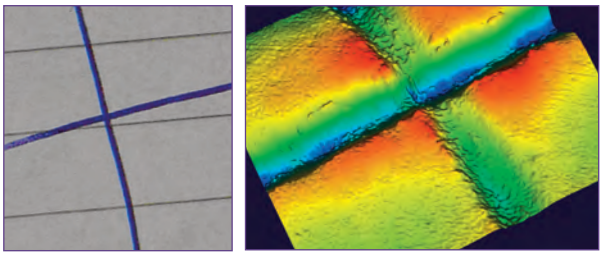
Inspection of documents up to x80 magnification, with no loss of image resolution, enables the examiner to assess the print quality of documents and to detect minute imperfections particularly on areas of fine detail or micro-printing. High magnification may also reveal disturbances of the surface of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



Inferior print quality can expose counterfeit documents

NEW 3D Imaging Software Module

Making use of the camera and illumination options already present within the VSC®80, the new 3D imaging module will be of interest to all examiners but will have particular relevance to those involved in the inspection of signatures and handwriting, particularly in cases of proof of provenance and ownership dispute. Through the 3D analysis of the pen-tip strokes that make up a signature or section of handwriting, an examiner may be able to discern the sequence in which strokes were applied to a document.



Reveal the order in which lines have been added to a document

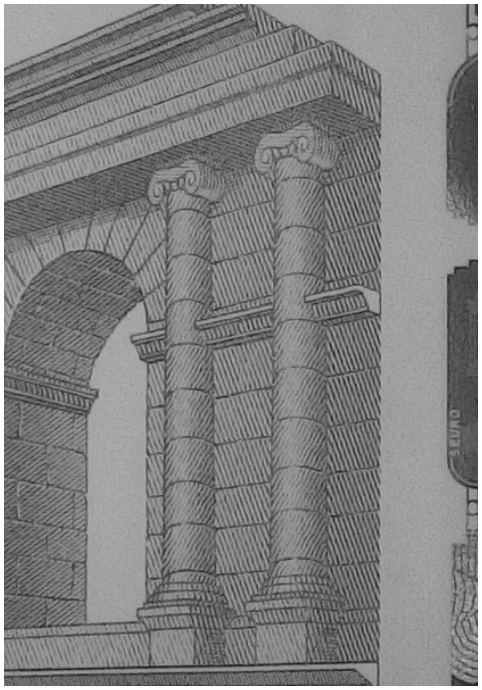
Further Analysis Using the Optional Spectrometer Module

An optional accessory, the VSC®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®80 document security features

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

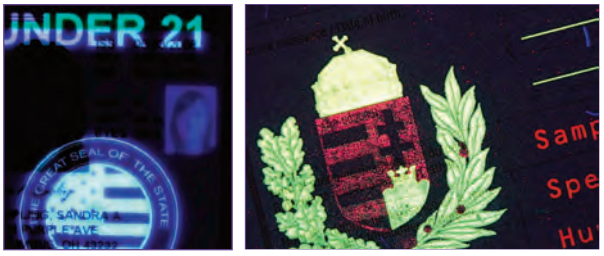
€5 Euro banknote viewed under multiple modes of illumination



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

Examination of Specialist Security Inks and Fluorescent Dyes

The VSC®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®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® and LetterScreen++® decoders require the purchase of additional software licences.*

VSC®80 specifications and accessories

VSC®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 x86 on 27" 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

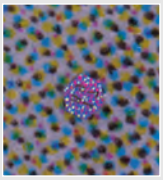
Embedded Data Decoders
Detect and decode information stored in barcodes, images, IPI, and Machine Readable Zones

Contact Foster+Freeman for the latest VSC® 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.

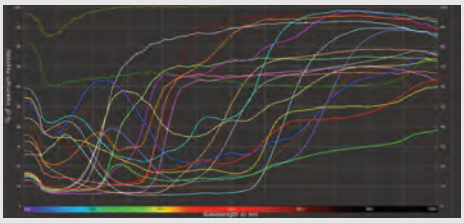


1x microtaggant

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 dimmable 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

3D imaging Module VSC80/3D
Enables VSC80 to generate 3D images of documents for the examination of intersecting lines, indentations, surface defects, and 3D print features (intaglio etc.)

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® 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++ ® 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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