foster+freeman

Forensic Science Innovation

1978-2018
forty years
in forensics

VSC®800

for document examination

Mid-Range High-Resolution
Video Spectral Comparator

Examine and Authenticate

Passports and ID Cards
Security Documents
Banknotes and Cheques

ff(UK):11/18

VSC®800 for document examination

Compact Workstation for the Forensic Examination of Documents

A compact and highly capable document imaging system, the new VSC®800 provides document examiners with extensive facilities for the verification of passports, visas and ID cards, and for the general examination of suspect or questioned documents.

Completing the VSC® range, the VSC®800 offers the ideal balance between size and performance.

Smaller than the flagship VSC®8000, the VSC®800 features similar high quality optics, powerful LED illumination, including pulsed UV and anti-Stokes IR for the examination of 3rd level document security features, and is an ideal workstation for professional QD examiners, law enforcement agencies, and for those tasked with the inspection of travel and ID documents at immigration and border controls.

- **Forensic-Level Examination of All Documents**
  Perform the highest level of examination on handwritten and printed documents
- **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

Examine and Authenticate				Detect and Reveal		Visualise and Verify	
Passports	✓	Banknotes	✓	Fakes & Counterfeits	✓	UV Activated Inks	✓
Identity Cards	✓	Cheques	✓	Alterations	✓	Anti-Stokes Inks	✓
Residency Permits	✓	Certificates	✓	Evidence of Tampering	✓	OVDs & Holograms	✓
Drivers Licences	✓	Travel & Lottery Tickets	✓	Photo Substitution	✓	Embedded Data	✓
Breeder Documents	✓	Handwriting & Signatures	✓	Fluent Forgery	✓	ICAO Coded Data	✓

trusted technology, powerful new features

VSC technology that builds on 40-years experience as the industry leader

The latest addition to an instrument range that stretches back through 4 decades at the forefront of forensic document examination, the VSC®800 combines cutting-edge optics, powerful LED illumination, and the latest generation of microprocessor technology for the in-depth 'forensic-level' analysis of questioned documents.

Superior Image Quality

VSC® instruments utilise a High Fidelity (HFi) imaging system that minimizes spatial distortion and chromatic aberration to dramatically improve the quality of images.

Advanced Illumination

For the multi-spectral examination of documents, the VSC® range utilises the latest generation of LED technology, providing superior output, reliability and colour consistency.

Increased Functionality

Guided by user feedback, the VSC®800 includes numerous innovative design features such as a Removeable Transmitted Light Base, which enables the examiner to inspect larger/thicker items of evidence.

for the forensic document examiner

Analysis techniques for the forensic interrogation of documents

Suitable for the most demanding of document examinations, the VSC®800 provides examiners with a full suite of analysis techniques from the basic, UV-Vis-IR imaging modes, to the most advanced, microspectrophotometry and phosphorescent decay imaging etc.

Multi-spectral Illumination

Exploit the fluorescent and reflective properties of papers and inks to reveal additions, alterations or erasures that would be impossible to detect in the visible spectrum.

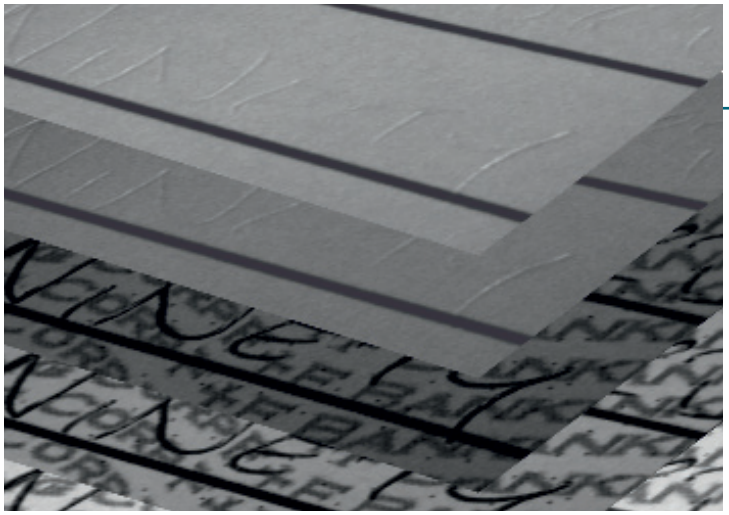
4K UltraHD Imaging

Examine crystal-clear images of documents captured via the VSC®800 5MP colour/IR sensitive camera and reproduced in unprecedented detail on a 32" 4K monitor.

Image: A UK banknote is examined under high magnification

High Magnification

Inspect documents at up to x130 zoom magnification to assess the print quality of documents and detect minute imperfections or evidence of tampering.



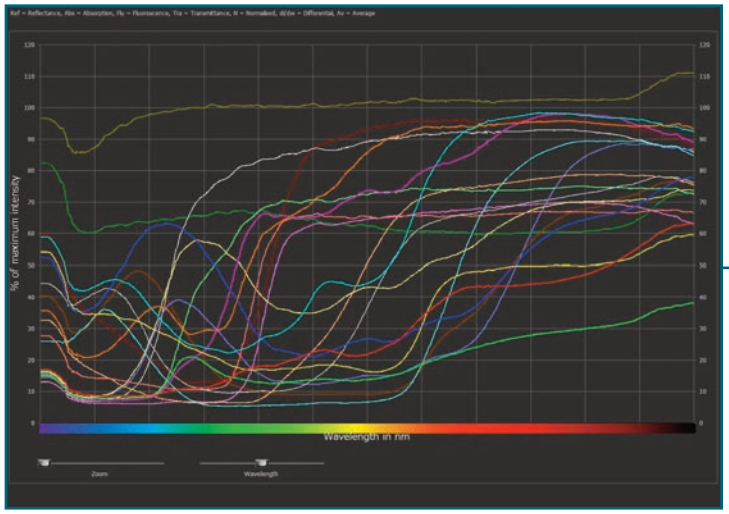
Advanced Colour Analysis

Perform advanced forensic analysis of a document by recording absolute light measurements at each point in an image to create Multi-spectral Fluorescence and Multi-spectral Absorption image data cubes.

Image: Representation of a multi-spectral fluorescence data cube

Extended Field of View

By removing the transmitted light base, it is possible to increase the VSC®800 observable area for the examination of larger objects such as books, ornaments, artworks etc.



Digital Image Analysis

Use the VSC® Suite software to boost the appearance of weak or faded print, sharpen images, remove background colours, and discriminate between closely related colours.

Further analysis using: Optional Spectrometer Module

An optional accessory, the VSC®800 Spectrometer Module captures absorption, reflectance, 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.

Image: Spectral data is captured and displayed on-screen

for the travel and identity document examiner

Examine and authenticate passports, ID cards, visas, and drivers licences

Ideally suited to second line of document examination, the VSC®800 enables examiners to authenticate identity documents, including passports, ID cards, visas, and drivers licences, and to detect counterfeit and falsified documents through the examination of optical and embedded security features and by revealing evidence of alterations and tampering.

Examine Security Inks and Dyes

Examine commonplace and specialist document security features, including inks and dyes, using narrowband illumination to stimulate fluorescence and 'activate' the feature.

Image: UV examination reveals hidden features on a US ID card

Reveal Alterations and Tampering

Use a combination of zoom magnification and UV-Vis-IR illumination to detect evidence of tampering including data alterations, erasures, photo and page substitution etc.

Automated Examinations

For bulk processing of similar documents, the examiner may pre-select examination settings to be automatically performed by the VSC®800, with results displayed as thumbnails and stored together with examination settings.

Detect and Decode E-Passport Data

Interrogate and authenticate biometric passports and digital documents by decoding data embedded within eChips, 1D and 2D barcodes, ICAO encoded Machine Readable Zones (MRZ), Invisible Personal Information (IPI), Invisible Constant Images (ICI), and other encoded data including LetterScreen++.

Image: Decoding the JURA LetterScreen++ security feature

Reveal 3rd Level Security Features

Visualise advanced '3rd-Level' security features including anti-Stokes IR fluorescent inks, optically variable inks, ghost images, and phosphorescent UV decay.

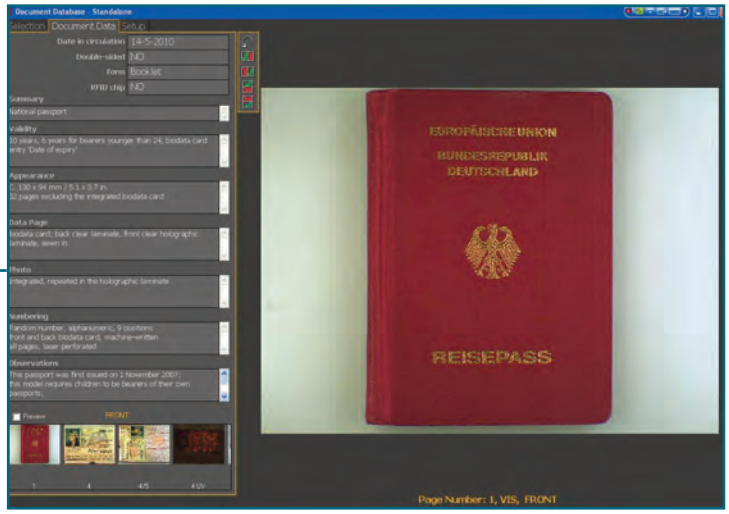
View OVDs, Holograms & Kinegrams

Examine the movement and color changes of Optically Variable Devices using a 21-LED array capable of vertical and horizontal scanning.

Further analysis using: Genuine Document 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.

Image: Exploring the Keesing Identity Document Database



VSC®800 specifications and accessories

VSC®800 System Specifications

Essential Hardware

VSC Dimensions	W:440 x D:375 x H:365mm
Power Supply	Input 110V/230V, 50/60Hz
Computer & Monitor	Desktop PC 32" 4K UHD display

Imaging

Camera	High-res 5.0MP CMOS camera Vis-IR sensitive Motorised zoom lens
Magnification	Up to x130 on 32" 4K 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 Pulsed UV 365nm IR Anti-Stokes
Imaging Filters	Integral motorised filter wheel includes 1x broadband visible filter 12x visible - IR long-pass filters and a linear polariser for cross-polar imaging

VSC Suite 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 2/A
Order Ref: VSC/EREADER2/A
Multi-functional high-speed eMRTD reader. Reads passports, eID cards and visas.

1x microtaggant

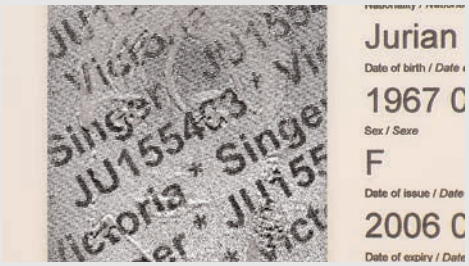
3x microtaggant

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



Embedded Personal Data Decoder
VSC800/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
VSC800/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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