

foster + freeman

**foster+freeman**

Instruments for the forensic examination of

# Questioned Documents



Passports & Identity Documents

Banknotes, Currency & Cheques

Official Letters & Breeder Documents

Works of Art & Valuable Artefacts



Questioned Documents

# + VSC Workstations

for the examination of *all* documents

With the VSC range of products, Foster+Freeman has pioneered the use of QDE techniques including IR imaging, microspectrometry & Super Resolution Imaging.

Designed to meet the requirements of immigration authorities, government security agencies & forensic science laboratories, the VSC Workstations include advanced features for the examination, comparison and authentication of documents including passports, banknotes, official letters, works of art and valuable artefacts.

- **Passports & Travel Documents**  
Identify counterfeits and reveal physical evidence of tampering and alterations.
- **Banknotes & Cheques**  
Reveal all levels of security feature including covert features such as anti-Stokes inks, latent images, UV security threads and taggants.
- **Valuable Artefacts**  
Non-destructive examinations can establish the authenticity of an item and detect any changes that have been made.

UK passport under visible and the UV illumination.



The world's most valuable postage stamp is examined under visible and IR illumination



## Complete QDE Workstations

Combining high-resolution imaging optics and multi-spectral illumination with powerful image enhancement software



## Detect Alterations & Counterfeits

by exposing small irregularities and inaccuracies in print, paper, and document construction.



## Examine in Forensic Detail

with advanced technology used and trusted by forensic examiners and immigration authorities worldwide



## Reveal Hidden Features

using a wide variety of examination facilities to observe security features embedded within official documents

# VSC<sup>®</sup> 8000

THE ESSENTIAL VIDEO SPECTRAL COMPARATOR



A state-of-the-art QDE workstation, the VSC<sup>®</sup>8000 combines sophisticated imaging and illumination technology with a clear and efficient software interface, to provide a complete solution to the forensic examination of *all* questioned documents.

A fully integrated system, the VSC<sup>®</sup>8000 is equipped with an integral motorised XY stage for precise positioning of documents under high magnification, a high specification spectrometer for accurate colour analysis, and a new 'Super Resolution Imaging (SRI)' optical system to capture images of unrivalled sharpness and clarity.

Document interrogation facilities include:

- **UV-Vis-IR Illumination**  
To reveal 'invisible' features, increase image contrast and excite security features
- **SRI Imaging Technology**  
Provides sharp, bright images of documents for display on a 4K UltraHD monitor
- **User-Centred Software**  
Maximises the effectiveness of examinations with Document Specific Workspaces
- **Calibration & Diagnostics**  
Monitors system performance to ensure accurate and repeatable results

## Advanced Security Features

Visualise and decode the latest generation of document security features including anti-Stokes inks and LetterScreen ++.



## Automated Examinations

Predefined procedures greatly increase both the speed and efficiency of examinations. Results are displayed and stored together with VSC examination settings.



## Calibration & Diagnostics

To ensure accurate and repeatable results, the system can be calibrated using NIST traceable standards.



# VSC<sup>®</sup> 80 COMPACT FORENSIC DOCUMENT EXAMINATION SYSTEM

An ideal instrument for the analysis and comparison of handwriting, signatures, photocopied and printed documents, the VSC80 provides a comprehensive suite of examination facilities within a compact yet powerful workstation.

The VSC80 offers a complete solution to the forensic examination of questioned documents.

- ▶ Inspect full-HD images of documents
- ▶ High-intensity LED UV-Vis-IR illumination
- ▶ NEW removeable transmitted light base



# VSC<sup>®</sup> 80i Range INTELLIGENT-TOUCH QDE WORKSTATION

Advanced forensic-level technology, operated via a simplified touchscreen interface, the VSC80i provides a complete solution to the examination of secure travel and identity documents including passports, ID cards, visas, entry permits, and drivers licenses.

The VSC80i has been designed to meet the demands of high-throughput locations such as airports and busy border control points

- ▶ Rapid, easy to use touch-screen operation
- ▶ Auto-detect embedded data and MRZ
- ▶ Select from 3 system variants



## Compact VSC<sup>®</sup> workstations

Operated via desktop PC or Intelligent-Touch interface, compact VSC<sup>®</sup> systems provide extensive facilities for the examination of the security features used to protect travel and identity documents, banknotes, certificates of authenticity and all other security documents.

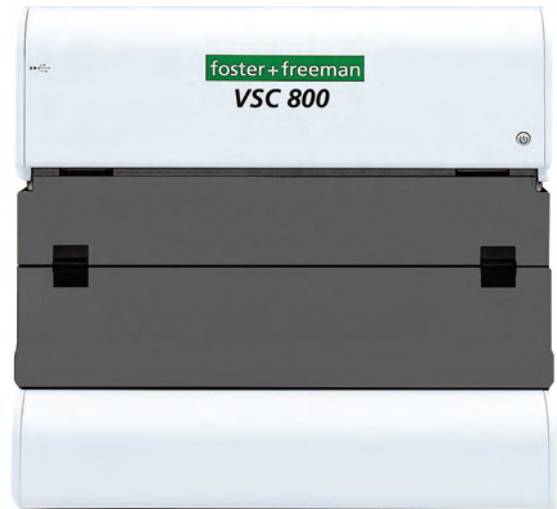
Multi-spectral examinations of documents are made under UV, visible and near IR illumination with live on-screen images provided by a scientific grade high resolution imaging system with motorized zoom and high magnification.

# VSC® 800 POWERFUL MID-RANGE VIDEO SPECTRAL COMPARATOR

A mid-range VSC Workstation for the Forensic Examination of Questioned 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.

- **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 software



## VSC® Accessories ADD NEW EXAMINATION FACILITIES TO VSC WORKSTATIONS



### e-Passport Readers

Select one of three e-Passport readers for the rapid processing of electronic and machine readable travel documents.

Select from a range of Basic, Intermediate, and Advanced models



### Reference Databases

Two optional reference databases showing the security features found on travel documents and banknotes.

Databases are available to purchase as a complete Archive or Annual Subscription.



### External Microscopes

Pair a VSC workstation with an external microscope to observe crystal clear imaging of fine details at high levels of magnification.

Select from a range of Leica and Nikon models.



### External Microspectrometer

An optional accessory for VSC800, 80, and 80i workstations, the Portable Video Microspectrometer (PVMS) enables the forensic document examiner to identify differences in ink and paper formulations through non-destructive spectral analysis.



### Data Decoders

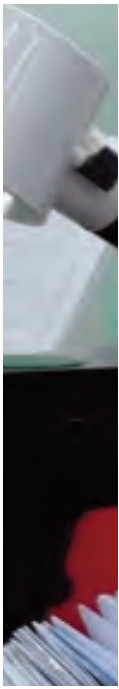
Software modules are available to decode and display data embedded within secure documents. The following decoders are currently available:

- Letterscreen ++
- Invisible Personal Information (IPI)



### Magnetic Ink Profiler

USB connected device for the high speed, reliable visualisation of soft and hard magnetic inks and threads used in banknotes, credit cards, tickets, ID cards and other security documents.



Questioned Documents

## + 2nd Line Examination

innovative solutions for the inspection of travel documents

There are 3 distinct lines of questioned document examination:

**First line examination** may be described as the visual inspection of overt security features, which may be undertaken by a trained examiner using sight and touch alone.

**Second line examination** requires users of varying levels of expertise, using simple equipment, to be able to quickly and easily detect and authenticate semi-covert security features that cannot otherwise be discerned by the naked eye.

**Third line examinations** are conducted by QDE experts equipped with specialist equipment capable of revealing covert security features.

Effective second line examination requires the operator to be able to examine the following security features:

- Security fibres
- Hidden images
- Guilloche patterns
- Latent images
- Microprinting
- Security inks
- Security threads
- High resolution print processes
- Security-type printing features



**Immigration & Border Control**  
designed to meet the rigorous demands of 2nd line applications at air, land and sea ports, and busy immigration control desks



**Rapid Authentication**  
one-button semi-automated examinations increase document throughput and reduce the risk of human error.



**Minimal Training Required**  
systems have been designed to be operated by users of varying skill levels



**Capture & Share Data**  
uncomplicated database facilities to record and store document data and images

# PD2000/FP

## ULTRA-HIGH RESOLUTION DOCUMENT IMAGING

The PD2000/FP is a unique system capable of recording exceptional images of documents under a selection of illumination wavebands for on-the-spot examination, database creation, or transfer via the internet for remote examination.

- ▶ Unrivalled image quality
- ▶ Simple 'one-click' operation
- ▶ For remote or local examination



### Remote Document Examination

A concept that is unique to the PD2000/FP, Remote Document Examination saves time and improves border security by enabling the operator to transmit high quality images of documents across a Local or Wide Area Network to any remote location for thorough interrogation by an experienced document examiner.

With the appropriate software, the remote examiner can display the questioned document image, side by side, with that of an authentic document retrieved from a database for close comparison.



## VSCQC1+<sup>®</sup>

### RAPID, SEMI-AUTOMATED AUTHENTICATION

Far more than a desktop scanner, the touchscreen VSCQC1+ enables a series of high-level checks to be carried out on a passport or ID card in seconds, combining ease of use with rapid examination, facial comparison, and data capture.

- ▶ Compact system with touchscreen interface
- ▶ Fully integrated UV-Vis-IR light sources
- ▶ Pass/Fail facial comparison



## eye-D<sup>®</sup>

### COMPACT, LIGHT WEIGHT & PORTABLE EXAMINATION

Designed for checking standard security features of travel documents, the eye-D is a low cost system that can be deployed in large numbers to improve national and border security.

- ▶ Simple controls
- ▶ Choice of 3 systems
- ▶ Highly portable, weighs less than 6kg



Questioned Documents

## + Advanced Analysis

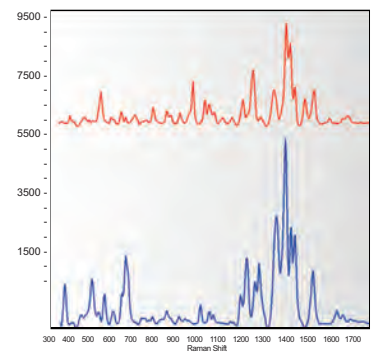
explore the chemical makeup of documents

In cases where it is not possible to distinguish between visually identical documents or inks, advanced analysis may be required.

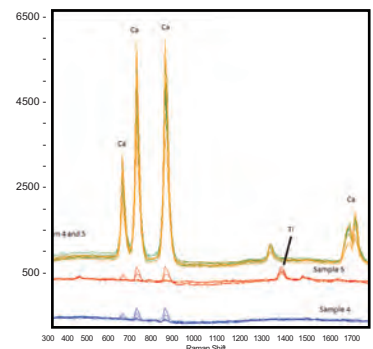
Laboratory analysis, using techniques such as Raman spectroscopy and Laser Induced Breakdown Spectroscopy (LIBS), can reveal information about the origins of a document through the chemical composition of inks, paper, and laminates.

Use advanced analysis techniques to examine:

- **Intersecting lines**  
Identify counterfeits and reveal physical evidence of tampering and alterations.
- **Printer Inks and Toners**  
Both Raman and LIBS are suitable for the rapid in-situ discrimination of printer inks and toners.
- **Analysis of Paper**  
Different brands of visually identical copier paper may be differentiated by their elemental composition.



*Raman analysis of 2 printer inks*



*LIBS analysis of 5 printer toners*



### Raman Spectroscopy

minimally destructive, in-situ discrimination of inks, pencil leads, and paper types



### Microscopic Examination

examine physical features and reveal the latest generation of security taggants



### Elemental Comparison

reveal information about a documents origins through its chemical composition



### Reveal Hidden Histories

perform analytical analysis of artworks to identify materials and techniques

# DVM

## DIGITAL VIDEO MICROSCOPE FOR TAGGANT EXAMINATIONS

Comprising a high specification digital microscope, CCD colour camera, visible and UV light sources; DVM is ideal for the examination of taggants incorporated into inks and coatings on a range of documents.

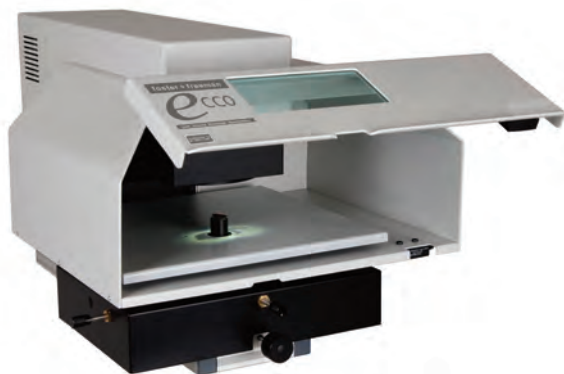
- x35 to x7000 magnification
- Locate & visualise microscopic taggants
- 3 modes of illumination



### Taggants in Security Documents

Microscopic, traceable, and virtually indestructible; 'taggants' are possibly the most versatile and powerful covert anti-counterfeit technology currently available and are fast becoming an integral part of the high security document printing process.

Using the Foster + Freeman DVM it is possible to detect and examine the latest generation of micro-taggants incorporated into inks and coatings on passports, ID cards, cheques, bank giro's, travel tickets and other security documents.



# ECCO<sup>®</sup>

## LIBS ELEMENTAL ANALYSIS

With a large sample chamber, ECCO is designed for the analysis of documents by LIBS. ECCO analysis is fast, simple to operate, requires little sample preparation, and gives immediate results

- Automatic identification of elements
- Discrimination of paper and stationery
- Discrimination of pencil lead



# Foram<sup>®</sup>3

## RAMAN SPECTROMETER FOR QDE APPLICATIONS

Raman spectra exhibit numerous features that are specific to molecular structure and provide valuable signatures for comparing and differentiating materials, making it an ideal technique for examining ink and other materials attached to documents.

- Obtain Raman spectra in under 1 minute
- Chronological sequencing of crossed lines
- Discrimination of inks and laminates

Head Office, UK Sales Office  
Vale Park | Evesham | WR11 1TD | United Kingdom

Tel: +44 (0)1386 768 050 | [sales@fosterfreeman.com](mailto:sales@fosterfreeman.com)

USA Sales Office  
46030 Manekin Plaza | Suite 170 | Sterling | VA 20166 | USA

Tel: 888 445 5048 | [usoffice@fosterfreeman.com](mailto:usoffice@fosterfreeman.com)

**foster+freeman**

[fosterfreeman.com](http://fosterfreeman.com)