

# VSC<sup>®</sup>400

for checking the integrity of  
Passports, Visas and ID cards



HIGH RESOLUTION  
**3.2M  
PIXEL**  
3.2M PIXEL CAMERA

IMAGING TECHNOLOGY  
**HFi**  
IMAGING TECHNOLOGY

- Detects alterations and counterfeits
- Reveals covert security features
- Non destructive
- Provides documentary evidence for prosecutions
- Helps generate alerts
- Gives instant results
- In use by immigration and forensic laboratories worldwide

foster + freeman

# VSC<sup>®</sup> 400

## for checking the integrity of Passports, Visas and ID cards

The **VSC<sup>®</sup>400** is a colour and infrared digital imaging system designed for the verification of passports, visas and ID cards and for the general examination of suspect or questioned documents. PC or laptop operated through Windows Vista, **VSC<sup>®</sup>400** is easy to use through on-screen menus and commands.

Featuring image resolution of 3.2M pixels and 'HFi' image technology, an optical system that minimizes spatial distortion and chromatic aberration throughout the entire magnification range, the **VSC<sup>®</sup>400** offers exceptional image quality.



Coaxial lighting reveals retro-reflective patterns on an identity card.



## VSC<sup>®</sup> 400 main features

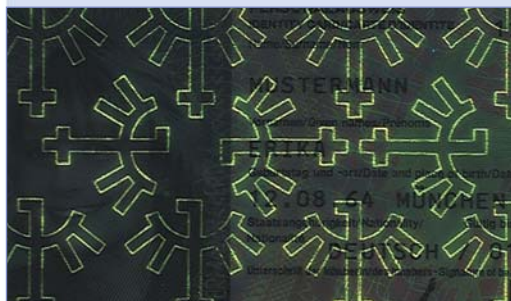
- High resolution 3.2 million pixel CCD firewire colour camera with 360nm to 1100nm spectral response.
- 'HFi' imaging technology providing exceptional image quality.
- On screen magnification range of x1.6 to x112 (approx.) on the standard 24inch (61cm) display monitor.
- Maximum field of view from 160 x 118mm.
- Wide range of illumination for the examination of all security and travel documents from short wave UV to infrared including incident, oblique and transmitted modes plus high intensity lamps for generating weakly fluorescent features.
- On-chip integration from 8ms to 22s to enhance weakly fluorescent features.
- Simple to use on-screen controls plus interactive guidance on instrument operation.



Series of 3 images showing multiple security features on a German passport. 1: viewed under normal lighting.

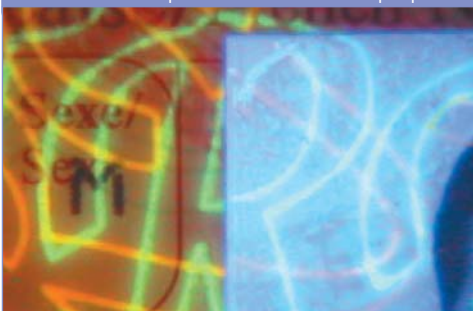


2: shows fluorescent fibres seen using transmitted 365nm UV.



3: shows a fluorescent security image seen under 365nm incident UV.

Misalignment of fluorescent security features indicate a photo substitution on this passport.



High resolution is essential for scrutinising fine detail to detect physical alterations.



- 'Quick Check' - an option for applying standard examination tasks using pre-set instrument parameters to ensure consistent examination procedures.
- Casework management system to create casework files with images, including instrument settings. Features include a pull-out gallery of recent work, notepad and a key word search engine.
- On-screen image comparisons.
- Image measurement.
- Image enhancement.
- Optical character reader and ICAO data decoder.
- Optional embedded information decoder.
- Optional e-passport reader.
- Optional passport & banknote databases.

# VSC® 400 SYSTEM SPECIFICATIONS

## Comprehensive facilities for examining...

- UV activated luminescent features under short, medium and long wave UV.
- Tampering and photo-substitution under high magnification.
- Anti-Stokes security features using intense IR lighting.
- Retro-reflective features with coaxial lighting.
- Embossed stamps under oblique lighting.
- Holograms using sequential multi-angled lighting.
- Watermarks using transmitted lighting.
- Suspected alterations using differential infrared absorption and luminescence properties of inks.
- ICAO coded data reader.

## Optional accessories & databases

- **EMBEDDED PERSONAL INFORMATION DECODERS** Product Code: V6/IPI  
Personal information invisibly embedded in photographs has become a valuable technique for protecting passports.
- **E-PASSPORT READER** Product Code: V6/EPRT  
Desktop e-document reader for reading ISO14443-4 documents such as electronic passports.
- **PASSPORT & BANKNOTE DATABASES** (see page back for more details)  
Databases provide authentic images of watermarks, holograms, UV activated features and other security features allowing direct comparison to samples under examination.
- **AUXILIARY VIDEO MICROSCOPE** Product Code: V400/CM  
Provides an additional high magnification input into the VSC®400. Includes a 3.2 Mpixel high resolution colour video camera, new Leica M205C microscope. Suitable for the examination of A4 documents.

### Features

- 20.5:1 zoom range working distance 61.5mm.
- Eyepiece magnification: x7.8 to x160 fields of view; 59mm to 2.88mm (*diagonals*).
- On-screen magnification with (24") monitor x61 to x1252, fields of view 25.3mm to 1.24mm (*diagonals*).

### Leica microscope

- M205C optics carrier.
- Trinocular tube 100%, M series.
- Video-/photo objective 1.0x.
- C-mount adaptor 1 x delta.
- Eyepiece 10x/23B, adjustable x2.
- Universal microscope carrier AX.
- Focus drive coarse/fine.
- Light base with anti-shock feet.
- LED5000 MCI multi angle LED illumination module.
- Objective Planapo 1.0x, M series.
- Power cable.

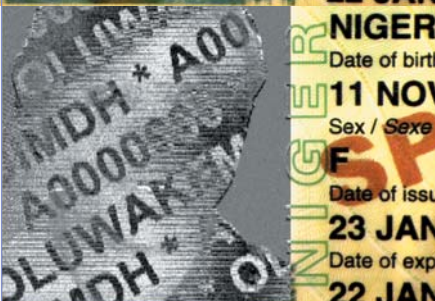
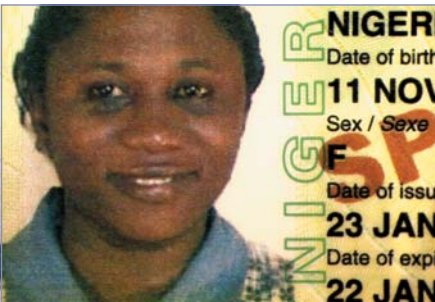


(1.)



(2.)

anti-Stokes fluorescent feature within a Portuguese e-passport viewed under normal lighting (1.) and intense infrared lighting (2.).



Embedded personal information is revealed with software decoders.



(1.)



(2.)

British passport viewed with infrared light (1.) showing variations in the infrared absorption of printed text and also viewed with incident UV lighting (2.) showing fluorescence.

Databases of passports and banknotes are regularly updated.

Belgium - BEL - all documents  
P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 P22 P23 P24 P25 P26 P27 P28 P29 P30 P31 P32 P33 P34 P35 P36 P37 P38 P39 P40 P41 P42 P43 P44 P45 P46 P47 P48 P49 P50 P51 P52 P53 P54 P55 P56 P57 P58 P59 P60 P61 P62 P63 P64 P65 P66 P67 P68 P69 P70 P71 P72 P73 P74 P75 P76 P77 P78 P79 P80 P81 P82 P83 P84 P85 P86 P87 P88 P89 P90 P91 P92 P93 P94 P95 P96 P97 P98 P99 P100

< > cover

validity  
5 years, page 2 entry 'Date of expiry'

booklet  
c. 125 x 80mm / 4.9 x 3.5 in.  
32 pag., pages 2 and 3 not numbered

laminated  
page 2, matt laminate with print, not sewn in

photo  
integrated, second photo in image perf

numbering  
6 digits, preceded by 2 letters  
page 1 printed  
page 2, machine-written  
pages 3 - 32, perforated

observations  
this passport was first issued February 2001  
passports issued since 15 November 2003 must contain a colour photo

UNION EUROPEENNE  
EUROPESE UNIE  
EUROPAISCHE UNIE

ROYAUME DE BELGIQUE  
KONINKRIJK BELGIË  
KÖNIGREICH BELGIEN

PASSEPORT - PASPOORT - REISEPASS

Sequential images of a banknote OVD using programmed multi-angled lighting.



# VSC<sup>®</sup> 400 SYSTEM SPECIFICATIONS

## STANDARD PC SYSTEM

Product Code: VSC400

Supplied with a PC and a 24inch (61cm) monitor

### IMAGING SYSTEM

- High resolution 3.2 million pixel CCD firewire colour camera with 360nm to 1100nm spectral response.
- HFi - high fidelity imaging system.
- On-chip image integration range from 8ms to 22s.
- Automatic and manual focus and exposure controls.
- Motorised zoom lens.
- On screen magnification range of x1.6 to x112 (approx.) on the standard 24 inch (61cm) monitor.
- Additional digital zoom.

### IMAGE DISPLAY

Via 24inch (61cm) flat screen LCD.

Screen resolution of 1920 x 1200 pixels

Maximum field of view from 160 x 118mm.

### IMAGING FILTERS

12 camera filters mounted in a motorised wheel, including 11 red and infrared high pass filters with thresholds at 590, 610, 630, 645, 665, 695, 715, 725, 780, 850 and 1000nm and a broadband visible pass filter, 450 to 660nm.

### LIGHT SOURCES (with applications)

- Incident intense visible 100W (for examination of weak IR fluorescent features) halogen lamp with dichroic reflector and integral range of filters with transmission wavebands: 400-480, 400-540, 400-580, 440-580, 480-640, 520-640, 560-680, 610-740, 650-740nm and wide band 400-680nm.
- Incident white and infrared (general visible examinations & infrared absorption/reflectance imaging). Variable intensity control, 4 x 12.8W incandescent lamps.
- Incident intense infrared (anti-Stokes imaging). Broadband 850nm to 1100nm.
- Transmitted white and infrared (imaging watermarks and embedded features such as metallic strips). Wide field, 4 x 12.8W incandescent lamps.
- Transmitted high intensity white and infrared (for imaging concealed or masked information). Focussed, 1 x 20W lamp.
- Ultraviolet Light Sources (for imaging UV security features)
  - UV light source (365nm), incident 2 x 9W
  - UV light source (313nm), incident 2 x 6W (Safety interlocked)
  - UV light source (254nm), incident 2 x 6W (Safety interlocked)
  - UV light source (365nm), transmitted 2 x 9W
- Low level oblique lighting, white and infrared (imaging surface features i.e. intaglio print, embossings, indentations). Selectable left and right 2 x 20W halogen lamps.
- Angled lighting (for sequential imaging of multi-image OVDs) 13 LEDs in horizontal and vertical arrays.
- Co-axial lighting (imaging retro-reflective features) 1 LED array.

### CASEWORK MANAGEMENT & IMAGE DATABASE

Enables the operator to create casework files and to store and recall images, including instrument settings. Features include a pull-out gallery of recent work, notepad and a key word search engine.

### IMAGE DISPLAY and COMPARISON, options include:

- Real time live image.
- Stored image.
- Side by side comparison of live and stored images.
- 90° image rotation.
- Mirror reversal, top to bottom and side to side.
- Superimposition (overlay) of live and stored images.
- Variable speed strobed display of two images.
- Colour balance and contrast optimisation.

### IMAGE MEASUREMENT, options include:

- Distance between two points.
- Area within a selected feature.
- Angle between two lines.
- Radius of a circular feature.
- Image annotation.
- System calibration to provide absolute measurement.

## OTHER SYSTEM FEATURES

### PROGRAMMED EXAMINATIONS (Quick Check)

Enables the instrument to be pre-programmed for standard examination tasks. Instrument parameters of illumination mode, filters, magnification are preset to ensure consistency in the repetitive examination of similar or identical documents. Password protected. Several examination tasks can be sequenced.

### OPTICAL CHARACTER READER

Decodes and displays ICAO coded data on machine readable zones of passports and ID cards.

### POWER

Universal mains power input.

USB Power on/Standby mode with LED indicator.

## LAPTOP SYSTEM

Product Code: VSC400/L

Specification as standard VSC<sup>®</sup>400 model but supplied with a laptop computer. Laptop screen resolution is 1440 x 900 pixels and optical magnification range of x1 to x52.

## OPTIONAL ACCESSORIES

### UNINTERRUPTABLE POWER SUPPLY (UPS)

Product Code: V4P/BAT

- Mains input with mains & battery status monitoring.
- Inline RCD (IEC).

### EMBEDDED PERSONAL INFORMATION DECODERS

Product Code: V6/IPI (details on previous page).

### E-PASSPORT READER

Product Code: V6/EPRT (details on previous page).

### AUXILIARY VIDEO MICROSCOPE

Product Code: V400/CAMFW (details on previous page).

### IDENTITY DOCUMENT DATABASE

Product Code: KD/IDENTITY

A reference database of over 1,400 passports, driving licences and identity cards from 180 countries. Data includes descriptions and over 20,000 images of watermarks, holograms and UV features. Information is supplied on DVD by annual subscription with updates issued monthly

### BANKNOTE DATABASE

Product Code: KD/BANKNOTE

A reference database of over 4,500 banknotes from 180 countries. Data includes over 70,000 images and descriptions of watermarks, holograms and UV features. Information is supplied on DVD by annual subscription with updates issued monthly.

Appointed Agent:

Foster & Freeman Ltd reserve the right to alter the specification of the VSC<sup>®</sup>400 or any accessories without prior notice.

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