

foster+freeman technology for the detection imaging and examination of crime scene evidence



Latent fingerprint development...

A range of products for the development of fingerprints using newly developed techniques

Fingerprint evidence...

Laboratory system for the capture, enhancement and management of fingerprint evidence

Shoe print evidence...

Software system and reference database for shoe print identification



bringing you the **BEST** in new technology

Detect, Capture & Enhance Crime Scene Evidence

Latent Fingerprint Fuming

MVC/D Cabinets

A range of cabinets for the safe and controlled development of latent fingerprints

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PolyCyano UV

One-stage treatment for the development of fingerprints

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Portable cyanoacrylate fuming system for use at the crime scene.

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Complete latent fingerprint recording and enhancement system

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A simple, chemical-free method for the detection and visualisation of latent fingerprints on paper.

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A bench-top viewing enclosure for the visualisation of fingerprints treated with anti-Stokes powders.

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Novel IR fluorescent fingerprint powder developed by Foster+Freeman.

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SICAR 6

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Illustrated reference database of footwear.

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SoleMate FPX

Streamlined system combining footwear database and search tool

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Foster + Freeman are innovators in the design and manufacture of systems for the examination of questioned documents, latent fingerprints, trace evidence and shoe prints.

Established in 1978, Foster + Freeman has become one of the foremost forensic science equipment suppliers in the world, exporting market leading, and in many cases unique products to more than 140 countries.

Our products are designed to assist in finding evidence at scenes of crime and in performing detailed forensic investigations in the laboratory. Our customers include all major police and forensic science laboratories as well as government agencies, commercial and private organisations.

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Forensic Science Equipment



MVC/DTM

fingerprint fuming cabinets

1000/D2 | 3000 | 5000



Simple to use

Automatic and manual modes of operation.

Consistent results

Self regulating system maintains optimum conditions throughout fuming process

Self-contained cleansing system

No external venting required

Compatible with PolyCyano UV

Exclusive one-stage fuming process

Available in three sizes

200 litres, 620 litres, and 2009 litres

Built to last

Robust construction and trusted technology.

Product Update: MVC1000/D2

The MVC1000/D2 benchtop fuming cabinet is the latest and most advanced cyanoacrylate fuming system from foster + freeman with new features including LED illumination.

Reliable . Consistent . Performance



One-stage development **PolyCyano UV**

All MVC/D cabinets are designed to accommodate Cyanoacrylate or PolyCyano UV, a new one-stage glue/stain process for developing fluorescent fingerprints without the need for further staining.

Product update **MVCTM1000/D2**

The MVC1000/D2 is a complete redesign of the popular MVC1000 benchtop fuming cabinet with new features to improve the speed, consistency and quality of results.

Notable improvements include:

- Internal LED illumination**
To increase print contrast
- New structural frame**
With larger inspection windows
- Improved glue heater & steamer**
To reduce the overall cycle time

The MVC/D range of fuming cabinets are the latest and most advanced cyanoacrylate fuming cabinet from Foster + Freeman, a range of systems for the development of latent fingerprints with cyanoacrylate monomer from the vapour phase

Automatic & Manual operation

Choose to run automatic preset fuming cycles or take full manual control of every stage of the development process.

Operating under automatic control, the complete humidification, cyanoacrylate fuming and fume extraction process proceeds without operator intervention according to recommended preset parameters.

Under manual control, each phase of the development process is initiated separately, enabling the operator to extend or terminate the fuming process for best results.

Reliable Safety Features

The health and safety of the operator is paramount. Once the fuming process has been activated safety interlocks prevent the door from being opened until the cleansing process has been completed at the end of the cycle.

All MVC/D cabinets feature self-contained cleansing systems consisting of high capacity, fan driven, activated carbon filters.

The cleansing process occurs at the end of each complete fuming cycle and, when the cabinet is not in operation automatically for a short period every ten minutes to eliminate any build up of cyanoacrylate vapour.

Consistent Results

The MVC/D of cabinets have been designed to accommodate either Cyanoacrylate or PolyCyano UV, a new one-stage glue/stain process for developing fluorescent fingerprints, without the need for further chemical staining.

During the development process fans continually circulate the atmosphere in the chamber to ensure that fingerprint development is uniform while sensors monitor and control the internal

humidity to maintain optimum conditions.

Toughened glass panels on each side of the MVC/D cabinets afford the operator a 360° view of evidence throughout the fuming process.

DNA Decontamination

Safety interlocked UV-C lamps are available for all MVC/D cabinets to provide DNA decontamination. Emitting high energy shortwave UV at 254nm, the lamps will destroy exposed DNA adhering to the internal surface of the cabinet.

One lamp is recommended for the MVC1000/D2, Two for the MVC3000/D and Three lamps for the MVC5000/D which must be ordered with the cabinet.

UV-C lamps can be retrofitted to MVC1000 cabinets in the field. MVC3000 and MVC5000 cabinet upgrades require factory modification.

Dimensions & Specifications



Installation & Service

MVC 5000/D and 3000/D cabinets are supplied flat-packed to be constructed on-site by trained personnel.

Following installation, every cabinet is tested to ensure that the residual level of cyanoacrylate vapour is below the recommended safety levels.

Regular servicing is recommended in order to maximise the performance and life span of MVC/D cabinets

Product Update: MVC1000/D2



Now includes LED illumination

Cabinet Dimensions

MVC 5000/D™

Capacity	2009 litres	
External	Height	2220mm (87.4")
	Width	1500mm (59.1")
	Depth	892mm (35.1")
Internal	Height	2095mm (87.4")
	Width	1445mm (56.9")
	Depth	667mm (26.3")
Door aperture	Height	2060mm (81")
	Width	760mm (30")

MVC 3000/D™

Capacity	620 litres	
External	Height	1660mm (69.5")
	Width	850 (33.5")
	Depth	900mm (35.4")
Internal	Height	1200mm (47.2")
	Width	790mm (31.1")
	Depth	650mm (25.6")
Door aperture	Height	1194mm (47")
	Width	737mm (29")

MVC 1000/D2™

Capacity	200 litres	
External	Height	770mm (30.3")
	Width	600mm (24")
	Depth	630mm (24.8")
Internal	Height	700mm (27.5")
	Width	550mm (21.7")
	Depth	573mm (22.6")
Door aperture	Height	730mm (28.7")
	Width	440mm (17.3")

Common Specifications

Operating Modes	Manual & Automatic	Filter type	Activated carbon (replaceable)
Humidity Level	Variable from 60 to 90%RH	Filter lifetime	At least 80 cycles
Temperature	Preset to 120 or 230°C	Fume cleansing	MVC1000/D2 10 minutes MVC 3000/D 20 minutes MVC 5000/D 40 minutes
Air circulation	Fan assisted		

Accessories & Consumables

Cabinet Accessories

Uninterruptable Power Supply capable of supporting a complete machine cycle in the event of power failure	MVC/UPS
Cabinet Cleaning Kit contains all items required to maintain the interior of MVC/D cabinets	MVC/CLKIT
Evidence Hanging Hooks pack of 10 hooks	MVC/HOOK
Foil glue dishes x200	MVC/HOOK

Carbon Filters

Easily installed activated carbon filters For MVC/D 1000 (lasts for 150 operations)	MVC/FILT2
For MVC/D 3000 (lasts for 100 operations)	MVC/FILT1
For MVC/D 5000 (lasts for 80 operations)	MVC/FILT

DNA Decontamination

DNA decontamination lamp 55W, UV-C (254nm peak wavelength) lamp. For MVC/D 1000	MVC1/SWUV
For MVC/D 3000	MVC3/SWUV
For MVC/D 5000	MVC5/SWUV
UV-C lamp storage enclosure Holds 1, 2, or 3x UV-C lamps. For MVC/D 1000	MVC1/UVSU
For MVC/D 3000	MVC3/UVSU
For MVC/D 5000	MVC5/UVSU

Consumables: Superglue

Cyanobloom superglue Ethyl-2-cyanoacrylate, shelf life 6-12 months 1 x 500g bottle	MVC/GLUE
20 x 20g bottles	MVC/GLUE20g
PolyCyano UV 1 x 60g One-stage dye/stain treatment	QCL/GLUE/PCY

Portable Fuming Systems additional fingerprint fuming products from Foster + Freeman

SUPERfume

Crime scene cyanoacrylate fuming system



A cyanoacrylate fuming system for developing latent fingerprints in situ at major scenes of crime.

Designed to treat domestic rooms, offices, garages and vehicles, the kit eliminates the need for dismantling fixtures and fittings and transporting items back to the laboratory for processing.

MVC lite

Portable cyanoacrylate fuming chamber



A fully portable fingerprint fuming chamber mounted within a rugged weather-proof case, the MVC lite retains all the features of a full sized fuming chamber and can be used for the development of latent fingerprints using both cyanoacrylate and PolyCyano UV, the cyanoacrylate/fluorescent stain that eliminates the need for subsequent chemical staining.



fingerprint
fuming cabinets
1000 | 3000 | 5000

foster + freeman

Forensic Science Equipment



MVCTM1000/D2

The MVC1000/D2 benchtop fuming cabinet is the latest and most advanced cyanoacrylate fuming system from foster + freeman with new features designed to improve the development of latent fingerprints

Reduced Cycle Times

More efficient operation increases evidence throughput

Greater Visibility

Larger inspection windows

LED Illumination

Internal LEDs enhance print visibility & contrast

Easier to Clean

Removeable fan units

MVC1000/D2

COMPACT SELF-CONTAINED FINGERPRINT FUMING SYSTEM

The MVC1000/D2 is a complete redesign of the popular MVC1000 benchtop fingerprint fuming cabinet with new features to improve the speed, consistency and quality of results.

Notable additions to the MVC1000/D2 include:

Internal LED illumination

To enhance visibility and contrast of fingerprints

New structural frame

Reducing the overall weight and increasing inspection windows

Improved glue heating and steamer units

To reduce the overall cycle time and increase evidence throughput.

Further additions include a pull-out evidence hanging rail and a removable easy-clean fan housing.



MVC Range Features

Automatic & Manual Operation

The processes of humidification, fuming and fume extraction can be fully automated according to recommended preset parameters. Alternatively, manual control allows each phase of the process to be initiated separately, enabling the operator to extend or terminate the fuming process for best results.

Self-contained Fume Cleansing

All MVC/D cabinets utilise internal, high capacity, fan driven, activated carbon filters to cleanse the chamber after fuming.

The system is self-contained, low maintenance, requiring filter replacement only after every 150 cleansing cycles.

One-stage development PolyCyano UV

All MVC/D cabinets are designed to accommodate the use of cyanoacrylate and PolyCyano UV, a new one-stage glue/stain process for developing fluorescent fingerprints without the need for further staining.

PolyCyano UV is exclusive to Foster + Freeman Ltd outside of Japan

Cabinet Specifications

Capacity	200 litres	Filter type	Activated carbon
Dimensions		Filter lifetime	150 cycles
External	Height 770mm (30.3") Width 600mm (24") Depth 630mm (24.8")	Fume cleansing	10 minutes
Internal	Height 700mm (27.5") Width 550mm (21.7") Depth 573mm (22.6")	Illumination	LEDs mounted in roof & side
Door	Height 730mm (28.7") Width 440mm (17.3")	Operating Modes	Manual & Automatic
Compliance:	CE & RoHS compliant	Humidity Level	Variable from 60 to 90%RH
		Temperature	Preset to 120 or 230°C
		Air circulation	Fan assisted
		Displays	Glue heater temperature, humidity & status of cycle

MVC lite

portable fingerprint fuming chamber

A fully portable fingerprint chamber for the safe and controlled development of latent fingerprints at the crime scene.

Mounted within a rugged weather-proof case, the MVC lite portable fuming chamber retains all of the features of a full sized fuming chamber and can be used for the development of fingerprints treated with cyanoacrylate (superglue) or PolyCyano UV, the one-stage treatment that does not require the application of additional chemical dyes.

A fully-automated system with safety interlocks and self contained fume cleansing, the MVC lite provides a safe treatment environment for the rapid visualisation of fingerprints on evidence at the crime scene.

Durable

high quality construction

Automatic

& manual operation

Self-contained

fume cleansing

Dual-temperature

compatible with PolyCyano
one-stage fuming treatment



1. Rugged case with press and pull catches
2. LED illumination for improved visibility of evidence
3. Toughened safety glass door with air tight seal
4. Power socket for Crime-lite
5. Powder coated mesh evidence tray
6. Glue heater hot plate
7. Touch panel controls
8. Digital display

SPECIFICATIONS

Dimensions external	210 x 538 x 406mm
Dimensions internal	145 x 375 x 304mm
Weight	10.75Kg
Operating modes	Auto or Manual
Glue evaporation	120 or 230C
Fume Exposure	Programmable 3-90 mins
Humidity Level	Variable 60 to 90% RH
Filter	Activated carbon
Consumables	- Cyanoacrylate consumable kit - PolyCyano sample kit
Optional	- DNA decontamination module

Complete

Latent fingerprint field kit

Detection, visualisation and capture of latent fingerprints in the field is made possible using the latest range of portable Foster + Freeman equipment.

Processing suspect fingerprints in the field can provide investigators with vital evidence in a fraction of the time that may be required to transfer evidence to a lab for examination. Foster + Freeman provide a complete range of solutions for the detection and visualisation of fingerprints under any conditions, from the processing of large volumes of paperwork to superglue fuming of a whole room. Image capture is made possible using the highly effective Crime-lite Viewing Box with a SLR camera, or by using the portable Crime-lite Imager, the complete evidence photography system.



Crime-lite 82S UV & PolyCyano UV

PolyCyano UV is a unique one-stage chemical staining process compatible with the MVC-lite fuming chamber. Fingerprints treated with PolyCyano UV can be visualised using the Crime-lite 82S UV.



MVC-lite Fuming Case

For the safe and controlled development of fingerprints at the crime scene. The MVC-lite retains all of the features of a full-sized fuming chamber and is fully compatible with PolyCyano UV.



SUPERfume portable fuming system

Cyanoacrylate fuming system designed to treat domestic rooms, offices and garages, and vehicles.



TFD-2 Thermal Fingerprint Developer

An automated, high-throughput device capable of developing fingerprints on large quantities of documents using non-destructive thermal development.



Crime-lite Evidence Viewing Box

Shields evidence from ambient light for the visualisation and photography of fingerprints on paper using a Crime-lite 82S light source and SLR camera.



Crime-lite Imager

Evidence recording system simplifies the process of forensic photography with high resolution imaging, multi-wavelength illumination and intuitive software.

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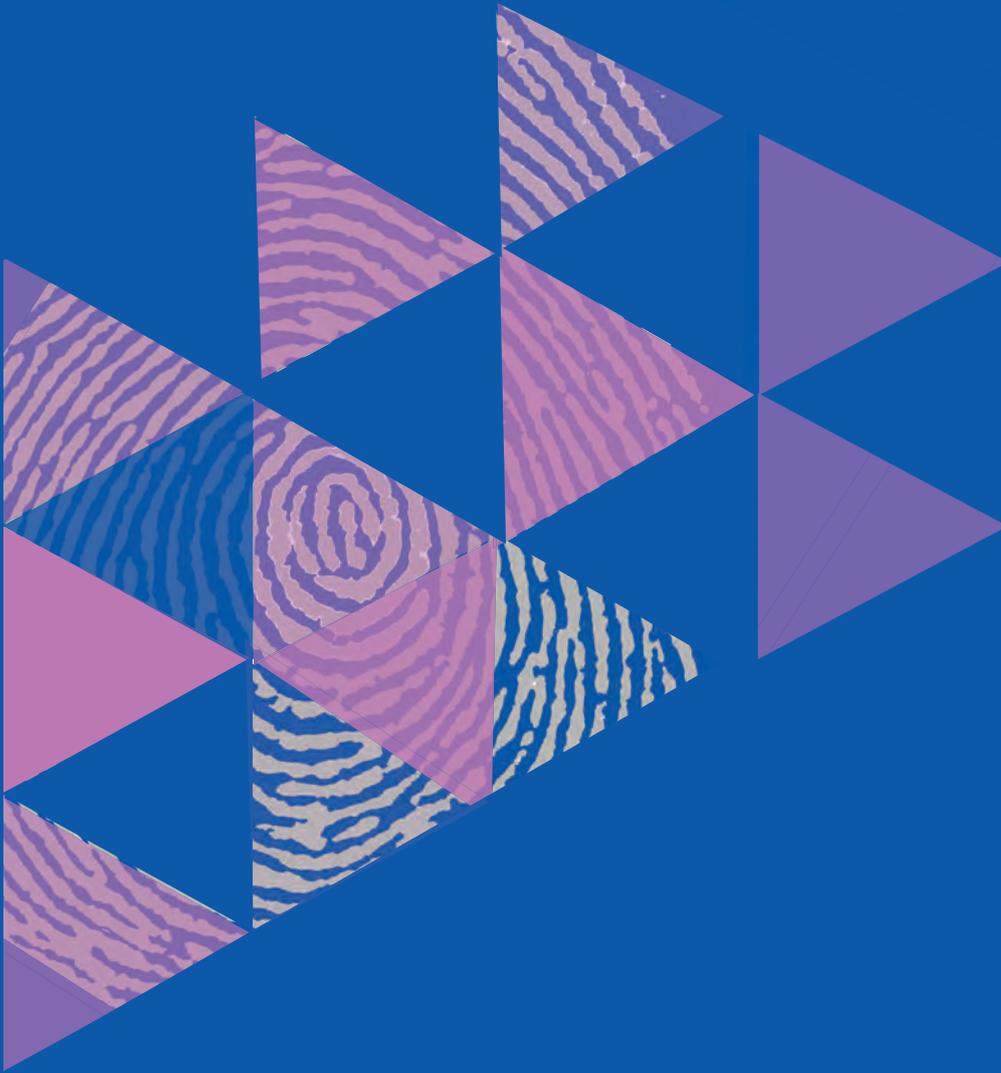
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fingerp
rint
fuming cabinets
1 0 0 0 | 3 0 0 0 | 5 0 0 0

foster + freeman

Forensic Science Equipment



POLYCYANO UV

ONE-STAGE
FINGERPRINT
FUMING PROCESS

Exclusive to Foster + Freeman Ltd. PolyCyano UV is a new one-stage glue/stain process for the development of fluorescent fingerprints without the need for further chemical treatment.

Once evidence has been fumed it becomes highly fluorescent, in the visible spectrum, when illuminated with a high powered long wave 365nm UV light source such as the Crime-lite 2, 42S or 82S UV

Exclusive Product

PolyCyano UV

ONE-STAGE FLUORESCENT FINGERPRINT FUMING PROCESS

The Foster + Freeman MVC/D range of cyanoacrylate fuming cabinets and the MVC lite portable fuming systems are designed to accommodate the use of the PolyCyano UV one-stage chemical staining process.

Exclusive to foster + freeman outside of Japan, PolyCyano UV dramatically reduces fingerprint processing times by combining cyanoacrylate monomer with a fluorescent stain in a one-stage fuming process inside the cabinet.

Whilst standard Ethyl-2 Cyanoacrylate evaporates at 120°C PolyCyano UV requires further heating to 230°C.

To achieve this increased evaporation temperature all foster + freeman MVC/D Cabinets now feature a dual-temperature heating unit, while older cabinets can be upgraded in the field.

Once evidence has been treated with PolyCyano UV, fingerprints can be seen to fluoresce brightly under Crime-lite UV illumination.



Blue and White Plastic Bag



White Leather



Polystyrene



The MVC1000/D2K with dual temperature glue heater

'Dry' Processing Protects Evidence

Can be used on evidence 'too fragile' for wet dye process. Also safe for use on firearms and electrical items.

Superb Results on 'Difficult' Substrates

Excellent fingerprints are achieved on polystyrene, leather and other hard-to-treat substrates.

Faster Processing of Evidence

Reduce fingerprint cycle time by eliminating a stage

No More Messy Dye Processes

Prints fluoresce under UV immediately after fuming

Retains DNA Evidence

Does not dilute or wash away biological evidence

Ordering Information

POLYCYANO UV Fingerprint Developer

1 x 60g Bottle

Shelf life = 6 months when stored between 5°C and 25°C

Shelf life = 12 months when stored between 0°C and 5°C

Order Code: MVC/GLUE/PCY

Cabinet Upgrades

For information on upgrading your existing MVC cabinets to accommodate PolyCyano UV please contact:

sales@fosterfreeman.com



SUPERfume™



fingerprint fuming at the crime scene

SUPERfume is a cyanoacrylate fuming system for developing latent fingerprints in situ at major scenes of crime.

Designed to treat domestic rooms, offices, garages and vehicles, the kit eliminates the need for dismantling fixtures and fittings and transporting items back to the laboratory for processing.

Save time™

by locating fingerprints at the crime scene

Rapidly deployed

supplied in three carrying cases and easily assembled at the scene

For large or immovable items

capable of fuming cars and commercial vehicle or entire rooms.

SUPERfume™

fingerprint fuming at the crime scene

Foster + Freeman have designed a compact and portable cyanoacrylate fuming system called SUPERfume™ for use at scenes-of-crime. Capable of fuming domestic rooms, offices and garages, the kit enables latent fingerprints to be detected and recorded at the crime scene without the need for transporting bulky items to the laboratory or dismantling fixtures and fittings, saving time and labour.

The kit is assembled from individual components that are easily transported and deployed and comprises a steamer, two cyanoacrylate monomer evaporators with circulating fans to disperse the fumes and an activated carbon filter system.

The powerful steamer brings the humidity of the crime scene up to 80%RH in approximately 30minutes whilst fuming takes a further 30minutes (or until the operator is satisfied with the fingerprint development). Once the fuming process has been activated all personnel are required to evacuate the area which is sealed for safety. After fuming, the cleansing system is activated remotely from outside the crime area which removes the residual cyanoacrylate vapour prior to officers re-entering the scene. The cleansing process takes 60 minutes.

The complete kit, including warning signs, cyanoacrylate monomer and cabling for operation on 230 or 120 VAC, is supplied in three carrying cases and weighs 45kg.

Images Right. A vehicle is fumed using a standard SUPERfume kit with optional SUPERfume Tent. Following fuming fingerprints are clearly visible on the vehicles surface.



SUPERfume Standard Kit Components

SUPERfume hardware

Humidifier:	2.3kW (220V) or 1.1kW (110V)
2x Evaporators:	Max evaporation temp. 230°C integral dispersing fan (x2) detachable legs
Purge Fan:	With carbon filter for safe dispersal of fumes. Purge duration, 60 minutes
Remote Control Box:	Control of fuming and purge process
Distribution Box:	Provides power to individual SUPERfume components
Handheld RH Meter:	Compact device measures humidity

Safety & Consumables

Cyanoacrylate:	40 x 20g bottles of Foster + Freeman Cyanobloom
2x Carbon Filters:	Activated carbon, 6kg net, capacity for 60 cleaning cycles
Glue dishes:	200 foil dishes
2x Respirator Masks:	For operator safety during fuming
Warning Notices:	'Cyanoacrylate fuming in process'

Fuming:	Automatic mode - 30 minutes
Room Volume:	100m ³ (Standard Kit)
Fume Cleansing:	60 minute duration

The SUPERfume kit is supplied in three soft carrying/storage cases and includes all required cables for interconnecting the individual components and connecting the system to an AC mains power supply.



SUPERfume™-TENT

scene of crime fingerprint fuming enclosure

The SUPERfume-TENT is a rapidly deployed enclosure for use with the Foster + Freeman SUPERfume system.

The tent is available in two sizes, 6x3x2m or 1.5x1.5x2m and is ideal for the fuming and subsequent examination of cars and small commercial vehicles.

The weatherproof tent can be lifted and moved into position, causing minimum disturbance to the crime scene. Once in position the side walls are attached to the frame and the fuming process can be initiated.

For large or immovable items

ideal for fuming cars and commercial vehicles

Rapidly deployed

supplied in two carrying boxes and easily assembled at the scene

Expandable

fume larger areas by linking frames together

SUPERfumeTM-TENT

cyanoacrylate fingerprint fuming at the crime scene



The SUPERfume-TENT is easily assembled around evidence at the scene, alternatively the TENT can be erected and then lifted into place over evidence.

SUPERfume-TENT Specifications

SUPERfume hardware

Robust weatherproof construction

- Aluminium frame structure with tent top fixed to it
- guy lines and ground spikes
- hard standing ballast kit

Designed to meet CSI requirements

- black PVC easy wash down material
- internal fume tight seals
- inspection window
- removable side and front panels
- Supplied with heavy duty transport bags

Standard size TENT

Size Open	6 x 3m
Height:	3.25m at centre
Weight:	70kg

Medium size TENT

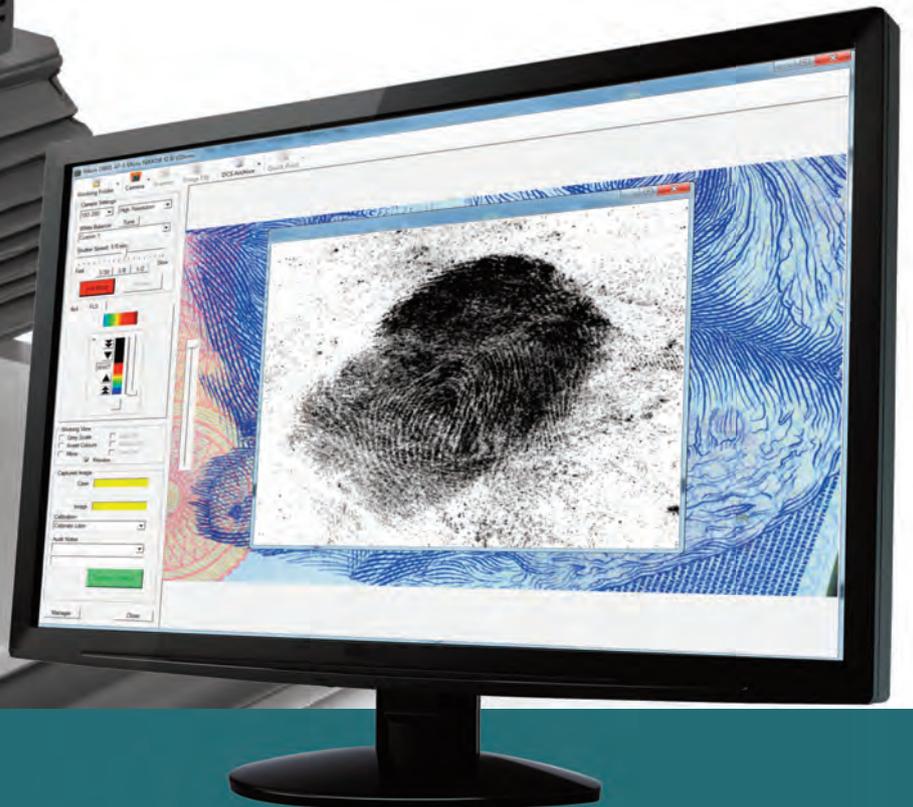
Size Open	1.5 x 1.5m
Height:	2m at centre
Weight:	30kg

All sizes are weights are approximate and subject to change



DCS[®] 5

UV | VIS | IR



Advanced fingerprint capture & enhancement



DCS[®]
UV|VIS|IR

5

DCS 5 is a comprehensive imaging system for the detection, capture and enhancement of almost any type of fingerprint on any surface or background to ensure that maximum detail is revealed.

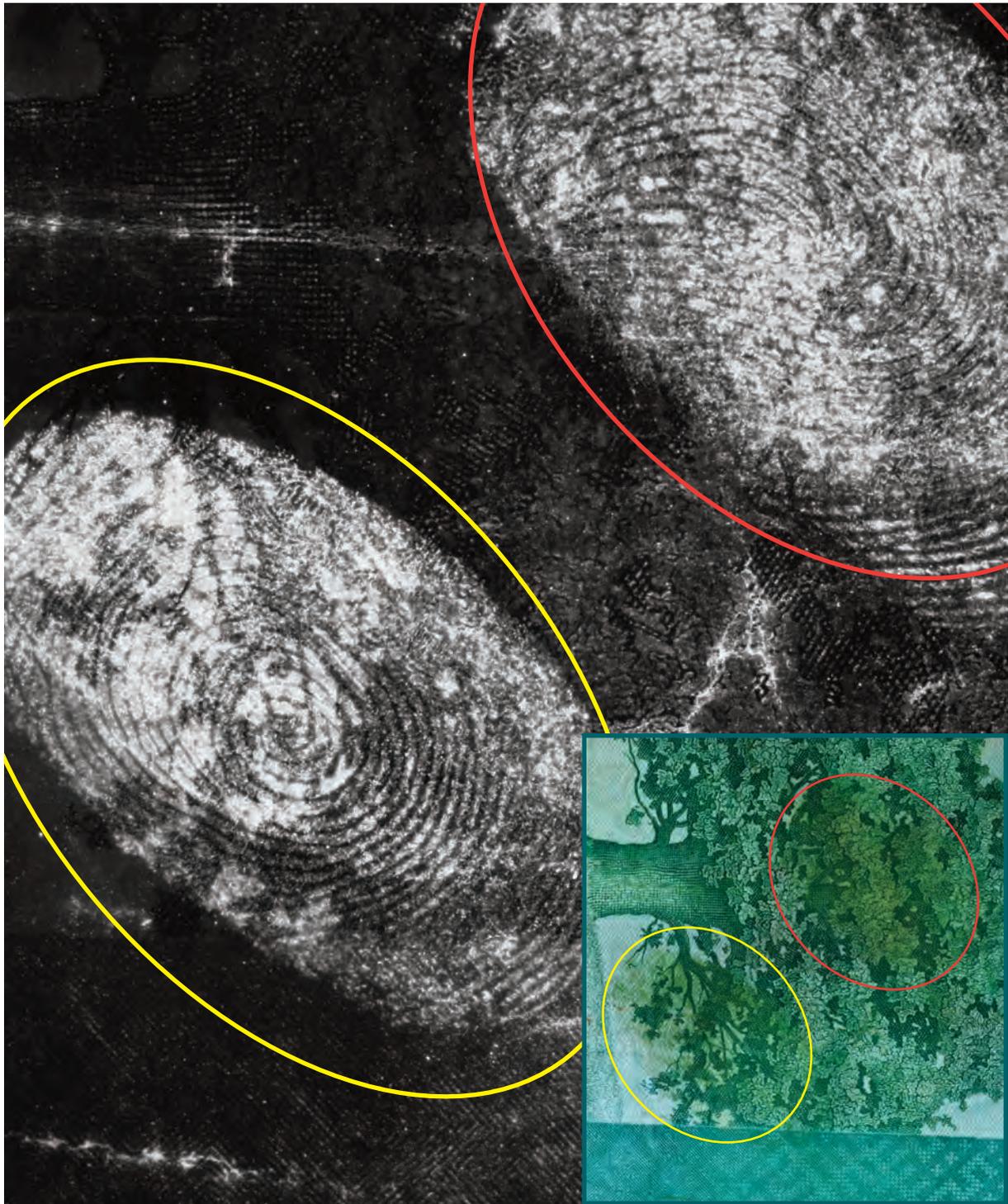
Not only does the DCS 5 high resolution, 36.3MP camera fitted with application specific macro lenses produce images of exceptional quality, advanced digital enhancement, applied simply, maximises print detail to improve the value of evidence.

Precise wavebands of illumination from UV through the visible to IR are provided to improve the visualisation of every type of fingerprint whether it be latent, contaminated or chemically treated.

DCS[®] 5

Advancing the Science of Fingerprint Detection

DCS 5 reveals fingerprints on a densely patterned banknote dusted with *fp*NATURAL 1, Foster + Freeman's new IR fluorescent powder



DCS[®]5

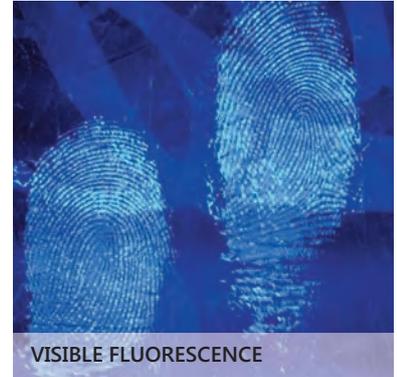
Imaging Techniques

Fluorescence Imaging

Many latent fingerprint treatments such as Ardrox, DFO, BY40 and fluorescent powders fluoresce under specific wavelengths of light.

Using the DCS 5 multi-wavelength ring light an operator is able to select the optimum wavelength to generate the maximum intensity of fluorescence for each type of treatment.

Plastic bag treated with Polycyano UV and examined under UV illumination.

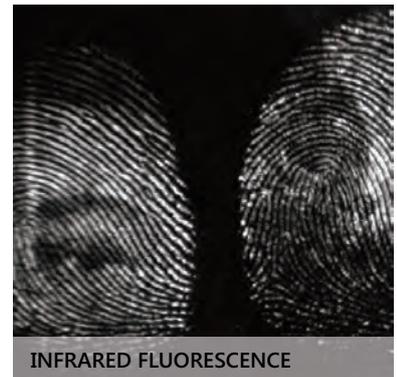


Infrared Imaging

Interfering backgrounds may be suppressed appearing white as they reflect IR whereas some chemical treatments such as Physical Developer and certain powders absorb IR and appear black.

Foster + Freeman's new fingerprint dusting powder 'fpNatural 1' fluoresces brightly in the infrared when illuminated with red light. Its application has the advantage of eliminating interference from most backgrounds which rarely fluoresce at this wavelength.

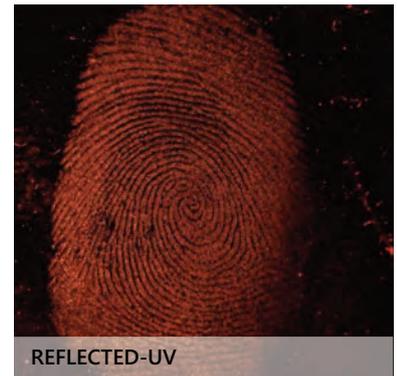
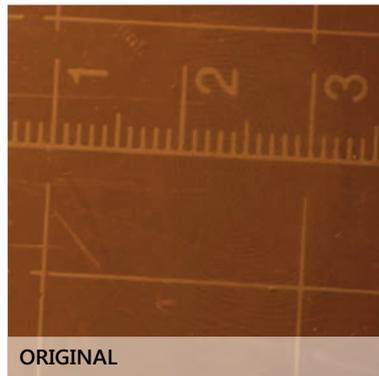
Polymer banknote treated with fpNatural 1 IR Fluorescent Powder, illuminated with red light using the Crime-lite 8x4Mk3 and viewed in the IR.



Reflected longwave UV Imaging

Many surfaces such as glass and plastics absorb UV and appear black, which improves the visibility of both treated and untreated latent prints which often reflect UV. Images can then be significantly enhanced using the DCS5 software.

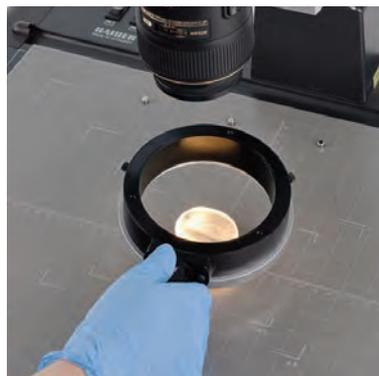
Untreated latent fingerprint on clear perspex. Perspex appears black when illuminated and viewed under UV revealing the fingerprint which reflects UV.



Flexible directional lighting

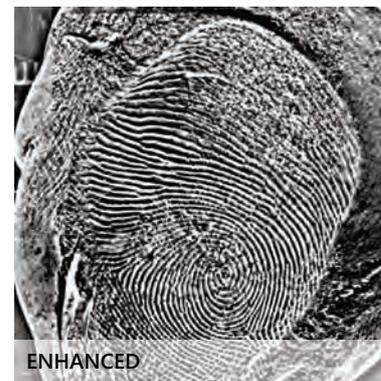
A high intensity halogen or interference light source fitted with a range of fibre optic light guides provide backlight, coaxial and oblique lighting for the examination of fingerprints on difficult surfaces such as reflective, curved or dusty surfaces or as 3-D impressions in soft materials.

Using a dark field ring light to illuminate a 3-D fingerprint in soft putty.



DCS[®] 5

Enhancement Software



Digital Enhancement

An integral part of DCS 5 is the easy-to-use software that provides sophisticated image processing and enhancement tools to uncover hidden detail within images.

Operated via simple drop down menus, DCS 5 enhancement software enables the operator to remove textured or 'difficult' backgrounds as well as enhance prints developed using a variety of chemical treatments, dyes, stains and dusting powders including the new IR powder. Each toolbox offers the operator 'tried & trusted' enhancement programmes that enable complex processing routines to be performed with a single button press.

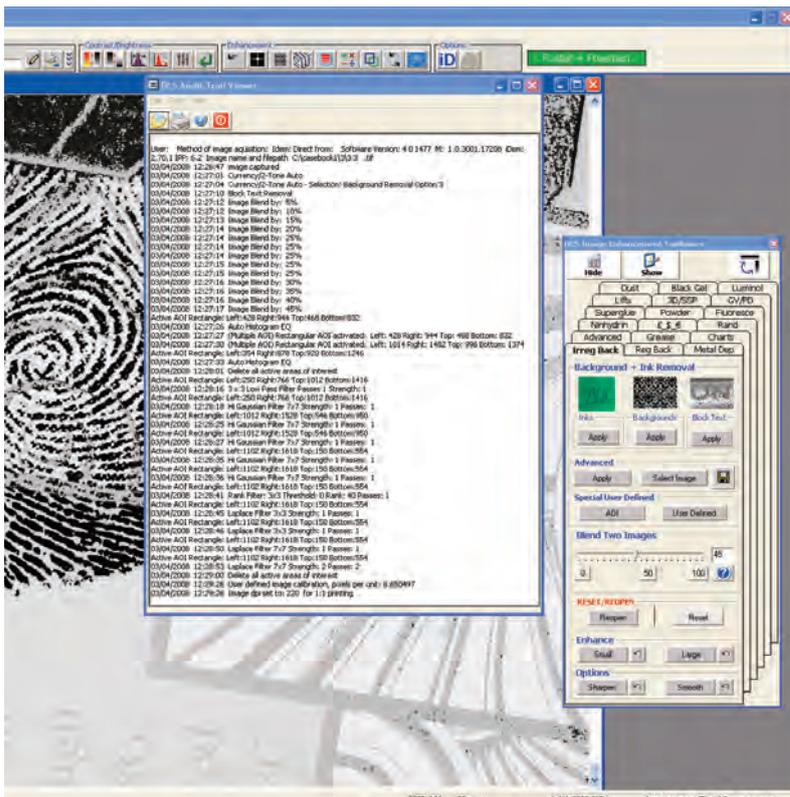
Ninhydrin developed fingerprint on a multicoloured patterned background. DCS 5 enhancement software can improve the clarity of fingerprints by removing or reducing backgrounds.

Fingerprint illuminated with the dark field ring light and enhanced using the dedicated 3-D enhancement software.

Image Validation & Audit Trail

Encryption software protects all original fingerprints captured by the system. Images that are enhanced or processed in any way automatically lose their status of authenticity with full details of each process being recorded in a detailed Audit Trail.

Essential when presenting courtroom evidence, audit trails detail every step taken during the capture and enhancement process together with information about the operator, computer and software used to perform enhancements. Audit Trail descriptions are in simple to follow language to aid presentation.



Interactive Guidance

DCS Wizard provides an interactive step-by-step guide to achieving consistently high quality images of fingerprints.

By following intuitive steps to select the exhibit type, surface type, chemical processes, and background data the user will be presented with suggestions on the lighting, filters, excitation wavelengths and camera settings required to achieve the optimum print definition and contrast every time.

DCS[®] 5

System Components

1 Camera

custom-modified digital SLR camera

In order to achieve excellent image quality, the DCS 5 has been built around a pro-grade DSLR camera customised by Foster+Freeman for UV-Vis-IR imaging applications.

Setting new standards for image quality, the Nikon D810 includes a new large format image sensor and a powerful image processing engine that work together to produce images of exceptional clarity.

1



Lenses

A choice of specialist lens provides greater control of the image captured by the camera.

2 105mm Vis-IR Macro Lens

for general imaging

Focusing up to 1:1 life size in auto or manual focus modes images remain sharp at every distance.

2



3 60mm UV Transmitting Lens

for reflected UV imaging

This quartz/fluorite lens, is essential for Reflected UV Imaging but also provides excellent results in the visible and IR.

3



4

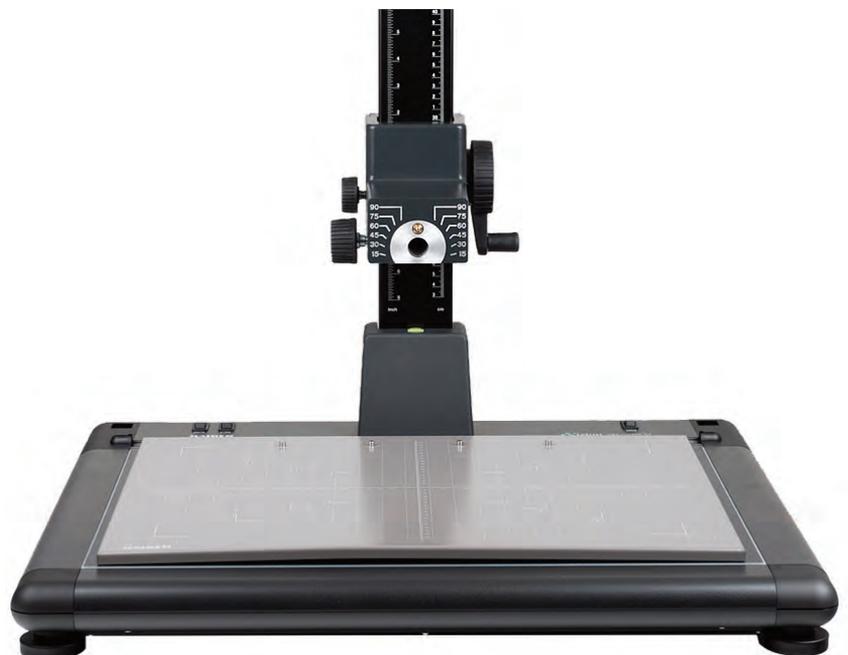


4 85mm Vis-IR Tilt/Shift Lens

for depth of field control

With a revolving capability of + or - 90 degrees this high performance lens enables selective focussing of images across different focal planes in the visible and IR wavelengths.

5



5 Copy Stand & Accessories

for accurate, repeatable image alignment

Professional photographic copy stand includes a 1.2m column and transmitted light base.

Accessories include camera lens bellows and variable friction light source mounts

DCS[®]5

System Components

1



2



3



4



5



6



1 Multi-wavelength Ring Light

The Crime-lite 8x4Mk2 provides intense white, UV, violet, blue, blue/green, green, orange and red narrow waveband light for visible and fluorescent image examinations.

2 Halogen Light Source Package

Intense 150W light source with 5 coloured filters for general contrast imaging. To be used in conjunction with the fibre optic light guides for directional lighting on any surface type.

3 Forensic Light Source (FLS)

A continuous 400-1000nm narrowband light source used in conjunction with the fibre optic light guides provides specific wavelengths of light for improved contrast imaging and removal of interfering backgrounds.

4 IR Imaging Crime-lite 8x4Mk3

A specialized LED ring light providing intense blue and red light for generating infrared fluorescence from specialist dusting powders such as fpNatural 1. Also includes infrared light for examining reflected infrared images for fingerprints in blood or treated with Physical developer or Powders.

5 UV Light Source

The Crime-lite 82S fitted with 16 UV LEDs. Provides more intense UV at 365nm for generating fluorescence from treated fingerprint images and reflected UV images.

6 Fibre Optic Light Guides

Flexible directional light guides to illuminate any evidence type;

Ring Light

Diffuse, uniform illumination for flat items such as paper, banknotes or coloured plastic.

Backlight/Paddle Light

For transmitted illumination for lifts, clear plastic, cellophane or for specular illumination for prints on reflective surfaces.

Darkfield Ring Light

360° oblique illumination for 3D impressions in soft materials.

Twin arm Goosenecks

Dual directional illumination for curved or reflective surfaces.

Coaxial Light

For reflective surfaces including mirrors & CD's.

DCS[®] 5

SYSTEM DESIGN

BY APPLICATION

In order to accommodate the differing requirements of fingerprint laboratories worldwide, **DCS 5** is a modular system that can be expanded through the addition of application specific modules.

The **DCS 5 core** provides a complete solution to the capture and enhancement of fingerprints within the visible spectrum and includes a Windows PC running the DCS 5 Software, a pro-grade photographic copy stand and a selection of light guide clamps and mounts.

Additional modules can be selected to provide IR, Reflected UV and Shift/Tilt Imaging capabilities.

DCS 5 core

System Components & Product Order Codes

image capture

Nikon D810	DCS5/CAM#8, %8
- Custom-modified camera	
- 36.3million effective pixels	
- 35.9 x 24mm CMOS sensor	
105mm Macro Lens	DCS4/LENS/AF105
- for visible imaging	
- Anti-reflection lens coating	
Imaging Filters	
- Circular Polarizing Filter	DCS5/CPF2
- Visible Pass Filter	DCS5/VPF2
- 715nm IR Imaging Filter	DCS5/IRF1
- 780nm IR Imaging Filter	DCS5/IRF2
- 850nm IR Imaging Filter	DCS5/IRF3
- 1000nm IR Imaging Filter	DCS5/IRF4

illumination

Halogen Light Source	DCS4/LIGHT3/62
- 150W halogen lamp	
- Variable dimmer control	
- Supplied with light guide	
+ Darkfield Light Box	DCS4/LTDARK
+ A4 Line Light	DCS4/LTLINE
Multi-waveband Ring Light	QCL/231x8/KIT
- 32x high intensity LEDs	
- White, UV, Violet, Blue, Blue/Green, Orange and Red illumination	
- Includes power adaptor	
+ Imaging Filters	QCL/232x8/SET

DCS 5 essentials

Pro-Grade Copy Stand	DCS4/STAND
+ Ring Light Mount	QCL/144x8/ASSY
+ Camera Filter Pouch	QCL2/012
+ Camera Filter Step-ring	QCL/212
Desktop PC	DCS4/COMP
+ 24" Monitor	DCS4/MON24W
+ Photo Printer	DCS4/PRIN/CP9600
DCS 5 Software	DCS5/MODULE
+ Image Pro Analyser	DCS4/IPA
+ VeriData iDem	DCS4/IDEM
DCS 5 Wizard	DCS5/WIZARD
DCS Photography Pack	DCSL/075

Application specific modules

+Infrared Imaging

IR Imaging Ring Light	DCS5/SYS/8x4MK3
- Blue, Red and IR LED illumination	
- 715, 780, 850, 1000nm Viewing Filters	
- Includes power adaptor	
- Sample of fpNatural1 IR fingerprint powder	

Forensic Light Source (FLS)	DCS5/SYS/FLS
- 100W halogen lamp	
- 400-1000nm continuous bandpass filter	
- Supplied with light guides	

+Reflected UV Imaging

60mm UV Transmitting Lens	DCS5/LENS/UVIR
- Macro lens with 310-1100nm transmission	
- Manual focusing	
+ 330-385nm bandpass filter	
+ Circular Polarizing Filter	DCS5/CPF3
+ Visible Pass Filter	DCS5/VPF3
+ Optional IR Filter Step-ring	DCS5/SUR52/72

UV Light Source	QCL/82S/UV2
- 16x 365nm LED illumination	
+ Power adaptor	QCL/80
+ UV light source clamp	DCS5/CLAMP

+Shift/Tilt Imaging

85mm Shift/Tilt Lens	DCS4/LENS/PCE85
- Maximum shift: ±12.4 mm	
- Maximum tilt: ±8.3 mm	
- Supplied with macro extension tubes	
+ Circular Polarizing Filter	DCS5/CPF1
+ Visible Pass Filter	DCS5/VPF1
+ Optional IR Filter Step-ring	DCS5/SDR77/72

To request a formal DCS 5 sales quotation, please contact your local Foster + Freeman sales representative providing details of the modules you would like to add to your system.

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

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

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

Tel: 888 445 5048 | usoffice@fosterfreeman.com

foster + freeman

fosterfreeman.com

Crime-lite® IMAGER

Rapid high resolution photography and digital enhancement of forensic evidence



Digital Image Capture of:
Latent Fingerprints
Trace Evidence including
Body Fluids, Fibers, Paint, Glass
Fragments & Gun Shot Residues
Counterfeit & Altered Documents

- *Record and enhance images of evidence recovered from the crime scene*
- *Advanced technology provides excellent image clarity*
- *Two modes of operation to allow manual or semi-automated control*

foster + freeman

Crime-lite[®] IMAGER

Evidence Photography System

The Crime-lite Imager, an evidence recording system, is designed to meet the varying demands of forensic photography providing optimum illumination for all types of evidence and backgrounds.

Combining advanced imaging and multi-wavelength illumination with simple to use software, the Crime-lite Imager is the only digital imaging system for forensic applications with two distinct modes of operation (Automatic and Advanced) providing rapid, high quality results for users with varying degrees of photographic expertise.

Professional results in minutes without training

Using the Automatic Mode of operation effective imaging and enhancement can be achieved in 3 simple steps.

- 1 Place the evidence under the Crime-lite Imager
- 2 Select a pre-set evidence type from the drop down menu.

Preset Examinations exist for:

Fingerprints, including commonly used chemical treatments

Documents, handwritten and printed

Trace evidence, including blood, fibres, GSR etc.

- 3 Having pressed the 'Run' button, the image of the evidence is automatically enhanced in several ways with results being displayed as thumbnails. Select the best result to view as a full-screen image or for further enhancement in Advanced Mode.

In Advanced Mode the user has complete manual control of all lighting, filters, and enhancement software.

System features

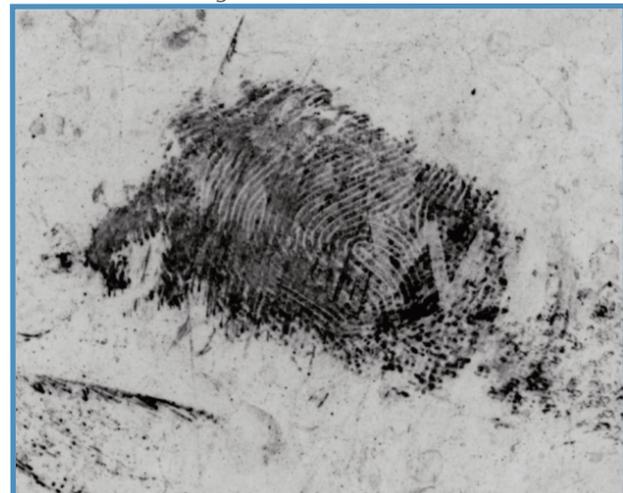
- High sensitivity, scientific grade camera and optimised colour corrected lens providing 5 Megapixel 14bit monochrome and full colour composite imaging. High resolution images are achieved in the visible and infrared wavelengths from 300-1100nm.
- Maintenance free integral LED ringlight providing intense focussed multi-wavelength illumination.
- Variable wavelength narrow band light source for advanced hyperspectral imaging of fingerprints on highly coloured backgrounds.

www.fosterfreeman.com/CLI.html



Above: In Automatic Mode examination results are displayed as thumbnails.

Below: The 'best image' is selected and viewed full-screen.



Crime-lite® Imager

Dual-Mode SOFTWARE

Automatic Mode of Operation

Expert photographic practice is made simple using the Automatic Mode of operation where enhancement options are presented as a simple dropdown list.

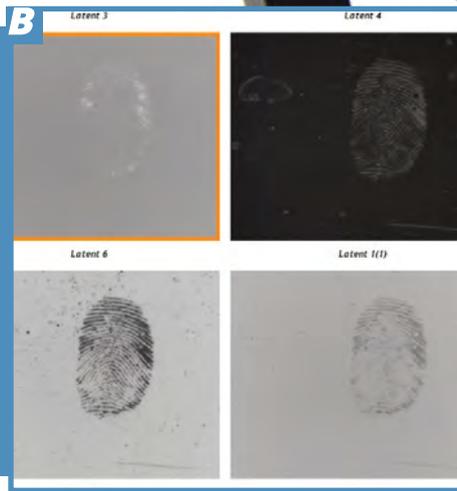
After selecting the type of evidence and evidence treatment the Crime-lite Imager automatically performs a number of preset standard enhancements, displaying each enhanced image in a thumbnail gallery.

Preset evidence types include:

- 18 fingerprint treatment types including: DFO, ninhydrin, BY40, PolyCyano UV, Ardrox etc.
- Handwritten and printed documents
- Trace evidence including blood, fibres, GSR etc.



A Fingerprints - BY40
Fingerprints - Curved Surface
Fingerprints - Cyanoacrylate
Fingerprints - DFO
Fingerprints - Fluorescent Powder
Fingerprints - Gentian Violet
Fingerprints - Impressions
Fingerprints - Untreated Prints
Fingerprints - Lifts
Fingerprints - Ninhydrin
Fingerprints - PolyCyano UV
Fingerprints - Rhodamine 6G
Fingerprints - Silver Nitrate
Fingerprints - White Powder
General - Contrast
General - Fluorescence
Other - Accelerants



A The user is able to select from a comprehensive list of preset evidence types. Each preset contains two or more illumination and filter settings appropriate for the enhancement of that subject.

B After executing all options within the chosen preset, results are displayed as thumbnail images. Thumbnails can be expanded to full screen for further examination or imported into Advanced Mode.

Advanced Mode of Operation

In Advance Mode the operator may select and apply specific image enhancement processes with full manual control of lighting, filters, and post imaging enhancement.

This mode allows an expert operator to fine tune the enhancement process.

Advanced Mode features include:

- Manual selection of over 100 illumination combinations
- Manual camera filter selection
- Image enhancement tools including: Auto contrast, colour extraction, invert, lowpass, despeckle, gamma correction, and colour removal
- Creation and storage of custom examination routines
- Calibrated measurement
- Optional hyperspectral imaging (requires FLS light source)

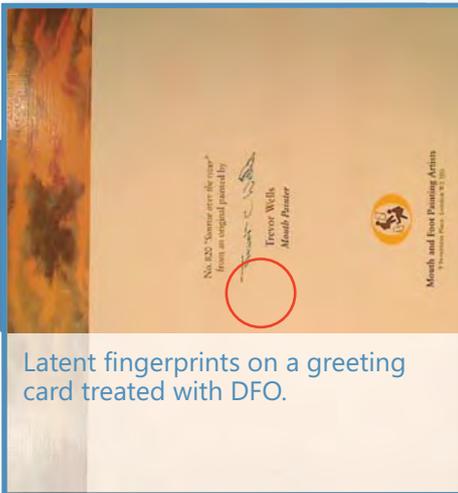
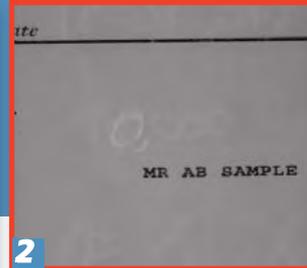
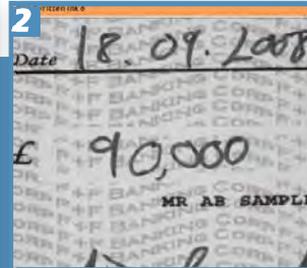


Crime-lite® Imager Application EXAMPLES

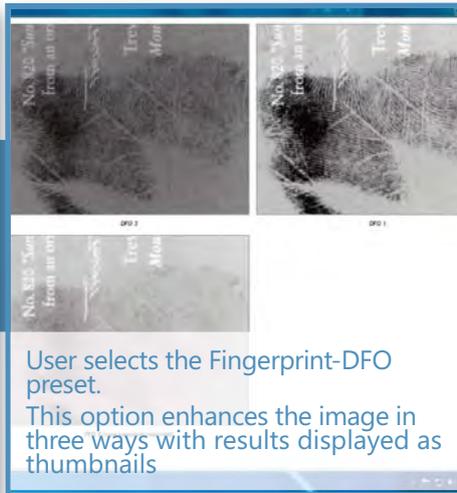


Automatic Mode

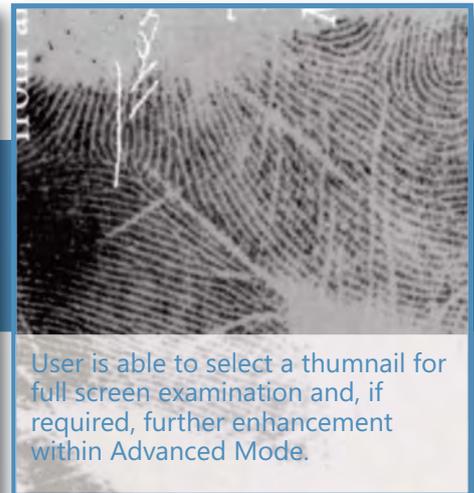
1. A fingerprint on packing tape treated with ninhydrin and enhanced using the Fingerprint-Ninhydrin preset
2. Using the Documents-IR preset, evidence of tampering can be seen.
3. The preset examination for PolyCyano UV staining renders fingerprints clearly visible on polystyrene.



Latent fingerprints on a greeting card treated with DFO.



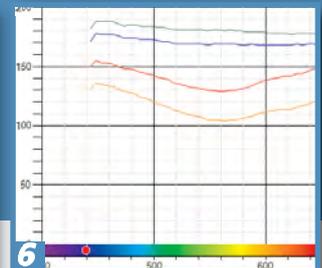
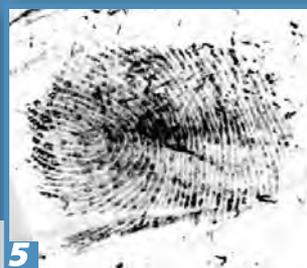
User selects the Fingerprint-DFO preset. This option enhances the image in three ways with results displayed as thumbnails



User is able to select a thumbnail for full screen examination and, if required, further enhancement within Advanced Mode.

Advanced Mode

4. Following enhancement this complex background is reduced improving the clarity of the print.
5. Latent prints fumed with PolyCyano UV and enhanced using contrast stretch and gamma adjustment before colour inversion.
6. Hyperspectral Imaging is used for the advanced discrimination of inks on a document.



Crime-lite® Imager System HARDWARE

The standalone Crime-lite Imager provides high sensitivity image capture and multi-wavelength illumination. Additional illumination, system mounting, PC hardware, and camera lens options allow you to build a system to meet any requirements

CRIME-LITE IMAGER QCL/CI/01

High Sensitivity Camera

5 Megapixel monochrome camera

Capable of full colour composite imaging
Sensitive from 300-1100nm
Focus assistance laser system (Class 1)

Standard lens

35mm wide angle lens (25mm & 50mm available)
Field of view 62mm x 52mm
Resolution 1000 pixels/inch

Integral Second Camera

2MP colour autofocus video camera
For entirety shots of evidence

High Intensity Illumination

Crime-lite 8x4 Multi-wavelength light source

32 high efficiency surface mount LEDs
Up to 98 colour combinations

4 x white LED 400-700nm,
10 levels of intensity and 10 colour temperature settings

4 x UV LED peak at 365nm,
10% intensity bandwidth of 350-380nm
Key switch safety isolation

4 x violet LED peak at 410nm,
10% intensity bandwidth of 395-425nm

4 x blue LED peak at 445nm,
10% intensity bandwidth of 420-470nm

4 x blue/green LED peak at 475nm,
10% intensity bandwidth of 445-510nm

4 x green LED peak at 520nm,
10% intensity bandwidth of 480-560nm

4 x orange LED peak at 590nm,
10% intensity bandwidth of 570-610nm

4 x red LED peak at 640nm,
10% intensity bandwidth of 600-660nm

VIS/IR Illumination

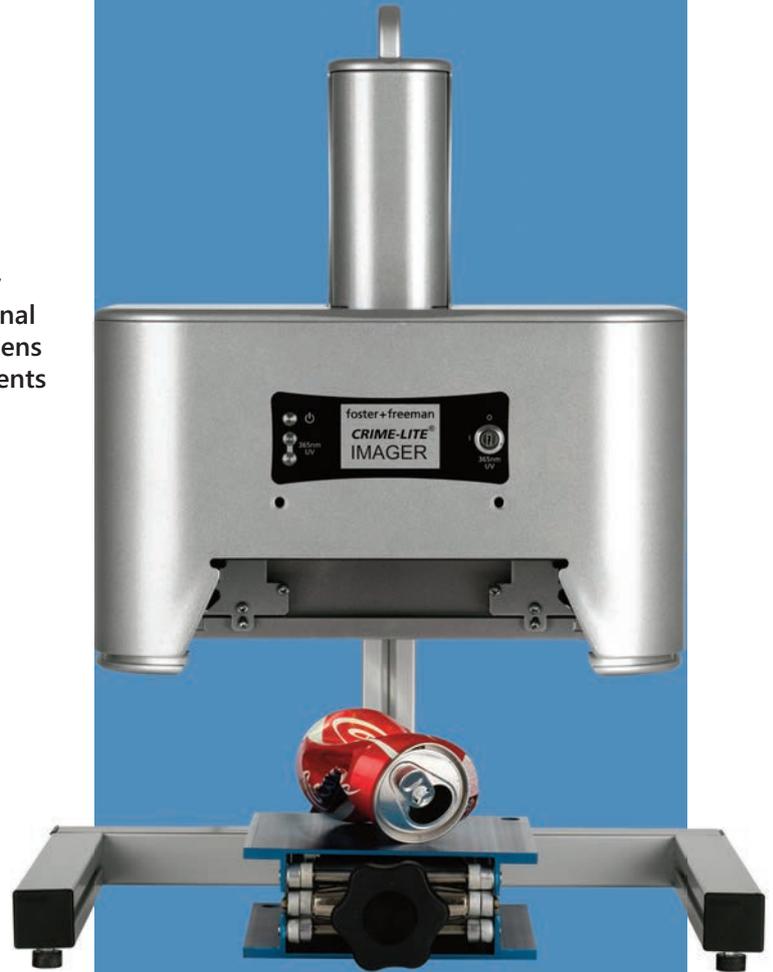
4 x 20W halogen capsule lamps

Long-pass camera filters

400nm, 455nm, 495nm, 530nm, 550nm,
570nm, 590nm, 610nm, 630nm, 645nm,
665nm, 695nm, 715nm, 780nm, 850nm

Short pass camera filters

720nm, 660nm, 610nm and 550nm,
plus polarising filter



Above: Crime-lite Imager shown with portable stand QCL/CI/04

Below: Underside of Crime-lite Imager



Optional ACCESSORIES

ILLUMINATION



Crime-lite FLS Light Source
QCL/CI/12
 • Vis/IR, continuous narrow band illumination 400-1000nm



Ring light
QCL/CI/13
 • For uniform semi-bright field illumination



Coax light box
QCL/CI/15
 • For coaxial illumination



Dark Field Ring light
QCL/CI/16
 • For uniform dark field/oblique illumination



Cross polarising filter
QCL/CI/23
 • 110mm Ø adjustable analyser and 70mm Ø fixed analyser



Transmitted Light
QCL/CI/18
 • For transmitted and side lighting



Dual Gooseneck
QCL/CI/19
 • For side lighting



Linelight
QCL/CI/20
 • For oblique lighting

System is supplied with a **35mm lens (QCL/CI/01)** as standard.
 LINOS MeVis 35mm f/1.6 camera lens
 Field of view 62mm x 52mm, Resolution 1000 pixels/inch

Additional lens options are described below:

25mm lens
QCL/CI/02
 LINOS MeVis 25mm f/1.6
 Wide angle lens.
 Field of view 97mm x 81mm
 Resolution 650 pixels/inch

50mm lens
QCL/CI/03
 LINOS MeVis 50mm f/1.8
 Narrow angle lens.
 Field of view 42mm x 35mm
 Resolution 1500 pixels/inch

25mm Quartz lens
QCL/CI/22
 For UV imaging 230-400nm
 Field of view 97mm x 81mm
 Resolution 650 pixels/inch
 Supplied with 10nm narrowband 365nm filter



LENSES

PC HARDWARE

Desktop PC
QCL/CLI10
 • High specification desktop computer.

Laptop PC
QCL/CI/09
 • High specification laptop computer.

24" Widescreen Monitor
QCL/CI/11
 • Widescreen colour 1920x1200

For details of the current laptop, PC and monitor specifications please contact your local Foster + Freeman sales representative

STANDS & STORAGE

Floor Stand
QCL/CI/07
 • Structural aluminium frame with removable magnetic tabletop (requires **QCL/CI/05**)

Bench Mount Stand
QCL/CI/06
 • To fit over existing laboratory work surfaces. (requires **QCL/CI/05**)

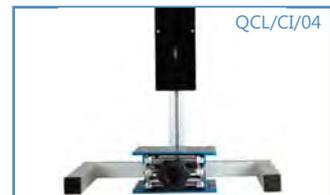
Motorised Column
QCL/CI/05
 • For smooth automated adjustment of Crime-lite Imager.
 • For use with **QCL/CI/06** or **QCL/CI/07**

Portable Stand
QCL/CI/04
 • Lightweight aluminium stand with quick release screw clamp.

Carry Case
QCL/CI/08
 • Rugged, shock-resistant and waterproof



QCL/CI/07



QCL/CI/04



QCL/CI/08

TFD-2

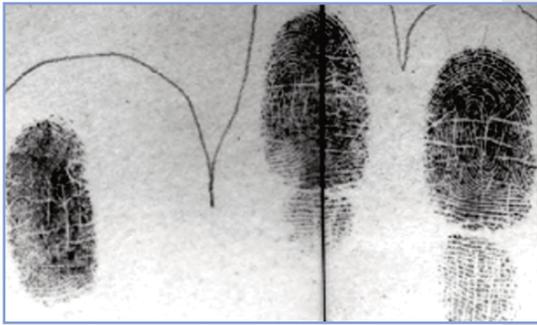


Thermal Fingerprint Developer

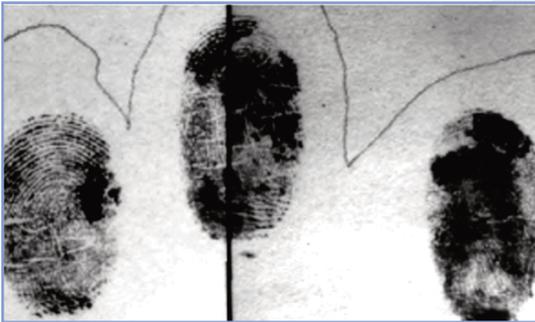


**Simple
Chemical free
Fingerprint detection**

- Prints can be detected in seconds
- No chemical process required
- High-throughput reduces search times
- Easily deployed for field use



1 week old prints revealed using the TFD-2



9 week old prints show little or no degradation



12 week old prints show good ridge detail

Designed and manufactured by Foster + Freeman Ltd, the TFD-2 (Thermal Fingerprint Developer) marks a breakthrough in the detection and enhancement of latent fingerprints using non-destructive thermal development.

The first of its kind, the TFD-2 is an automated, high-throughput device capable of developing fingerprints on large quantities of documents.

Evidence is placed on the motor driven conveyor and passed through the TFD-2 optimised heating element. The action of briefly raising the temperature of the document causes a chemical reaction between the latent fingerprint and the papers surface producing a fluorescent byproduct which is visible under intense visible light (Crime-lite Blue or Crime-lite Blue/Green with appropriate filters). The process is both reversible and repeatable.

Operated via touch panel display the user has complete control over the progress of development through variation of conveyor speed and heat source intensity. Evidence subjected to thermal development is safeguarded by conveyor jam detection and a non-contact IR sensor for the accurate monitoring of paper temperature. The virtually contactless kevlar mesh document support greatly reduces the risk of cross contamination.

In crimes where large volumes of office paper must be examined the TFD-2 dramatically reduces search times and manpower requirements.

The process of thermal development can be used in the laboratory or at the crime scene and offers the crime scene investigator with many advantages over traditional methods of fingerprint development:

- Latent prints can be detected in seconds
- Virtually contactless system reduces risk of cross contamination
- No chemical process required
- High-throughput reduces search times
- Visible prints feature excellent ridge detail and contrast
- Can be used sequentially with chemical treatments
- For use at scene of crime or laboratory



The TFD-2 has been developed in collaboration with the University of Technology Sydney, Australia

Pat.Pending: 12/745435



TFD enhanced



TFD followed by Ninhydrin



TFD followed by DFO



TFD-2 Specifications

Thermal Fingerprint Developer Unit (TFD-2)
Pat.Pending 12/745435)

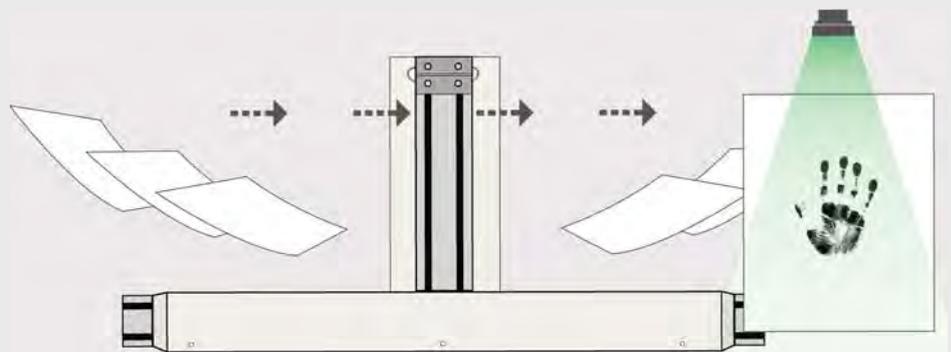
- Integral back-lit touch panel and illuminated display
- Heater power control settings 40-100 @5% increments
- Conveyor range 250 to 6500mm/min variable increments of 250mm/min
- Power saving 'sleep' mode
- Kevlar mesh 'virtually contact free' document support
- Maximum paper width 240mm x 320mm
- Typical development times of 15-60 seconds dependant on paper type
- Non-contact IR sensor for user monitoring of paper temperature
- Conveyor jam detection and rapid eject feature to protect evidence
- Weight 14kg (approx)
- 1.3KW maximum power input
- 230V/115V must be selected when ordered), 50/60Hz



Virtually contact free system minimises risk of cross contamination and produces uniform heating of paper

Paper can be processed and prints made visible under blue/green light in seconds drastically reducing development and search times.

To view a video demonstration of the TFD-2 please visit www.fosterfreeman.com



Further information on the TFD process is available in the following published papers:

D.F. Song, et al., Thermal development of latent fingermarks on porous surfaces—Further observations and refinements, Forensic Sci. Int. (2010), doi:10.1016/j.forsciint.2010.05.008

A.G. Brown, et al., Revisiting the Thermal Development of Latent Fingerprints on Porous Surfaces: New Aspects and Refinements, Forensic Sci. Int. (2009), doi:10.1111/j.1556-4029.2008.00902.x

Thermal Fingerprint Developer field kit**Crime-lite 82S Blue**

peak 445nm
10% band width 420-470nm (nominal)

QCL/82S/B

Crime-lite 82S Blue/Green

peak 480nm (nominal)
10% band width 450-510nm (nominal)

QCL/82S/BG

- 16 x high efficiency surface mount LEDs
- homogenous light beam
- weight: 560g
- handle dia 43mm, head 53mm x 65mm, overall length 210mm
- forced air cooled
- built in thermal protection
- run time continuous with mains adaptor. Typically 35 minutes with fully charged battery.
- LED Radiometric Power Maintenance >70% at 50,000 Hours
- flat battery indicator LED
- information sheet and wavelength output certificate
- classified to European safety standard EN62471:2008

Anti-glare camera filters

- Schott OG495 absorbing long pass filter glass (1% cut-on wavelength at 476nm)
- Schott OG550 absorbing long pass filter glass (1% cut-on wavelength at 529nm)
- Dichroic coating to suppress auto-fluorescent emissions of filter glass
- Maximum anti-glare and optical performance

QCL/153

QCL/154

Anti-glare viewing goggles x4

- 2x Schott OG550 absorbing long pass filter glass (1% cut-on wavelength at 529nm)
- 2 x Schott GG495 absorbing long pass filter glass (1% cut-on wavelength at 476nm)

QCL/149

QCL/148

Crime-lite 82 rechargeable battery x2

- type = Lithium ion
- output = 18 V, 3 Ah
- 500 to 1,000 charge/discharge cycles
- intelligent data chip charge technology

QCL/82S/008

Crime-lite 82 battery charger

- 110 - 120V or 220 - 240V INPUT
- charge time 22 minutes per battery
- led and audible charge status indicators
- dims 190 x 164 x 105mm
- weight 1kg

QCL/82S/009

Crime-lite 82 battery adaptor

- enables lithium battery to be connected to Crime-lite 82L & 82S directly or via the lead supplied

CL/82S/011

Crime-lite AC mains adaptor

- input voltage: 90-264V AC
- output voltage: 24V DC
- maximum power output: 80W
- dimensions: 168 x 78 x 45mm
- weight: 750g

QCL/80

Padded carrying case with wheels

- Padded carrying case with retractable handle and wheels
- Rugged, waterproof and shock resistant
- 846mm/33.3" (L) x 620mm/24.4" (W) x 490mm/19.3" (H))

TFD2/CC

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Worcestershire, WR11 1TD UK

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sales@fosterfreeman.com

USA Sales Office
For enquiries from the USA and Canada
888 445 5048
888 445 5049

foster+freeman

<http://www.fosterfreeman.com>

Crime-lite[®] ASV

bench-mounted system for the examination of latent fingerprints treated with anti-Stokes fingerprint powders stimulated by IR laser



Anti-Stokes Visualisation

a novel treatment for the ultra-high contrast examination of latent fingerprints

When latent fingerprints are located on material with multi-coloured backgrounds, standard treatments may not produce clear prints because of background interference.

Even standard fluorescent powders and stains may fail if the background itself fluoresces.

Treatment with the new anti-Stokes powders can overcome this problem. As these powders produce visible fluorescence when illuminated with invisible near infrared light, latent prints that have adsorbed the powder can be seen while the background, reflecting only infrared light remains invisible - rendering the latent prints clear of background interference.

Crime-lite[®] ASV

A bench-mounted Class 1 laser viewing enclosure for the stimulation of infrared activated anti-Stokes fingerprint dusting powders, the Crime-lite ASV renders high contrast fingerprints with no background interference.

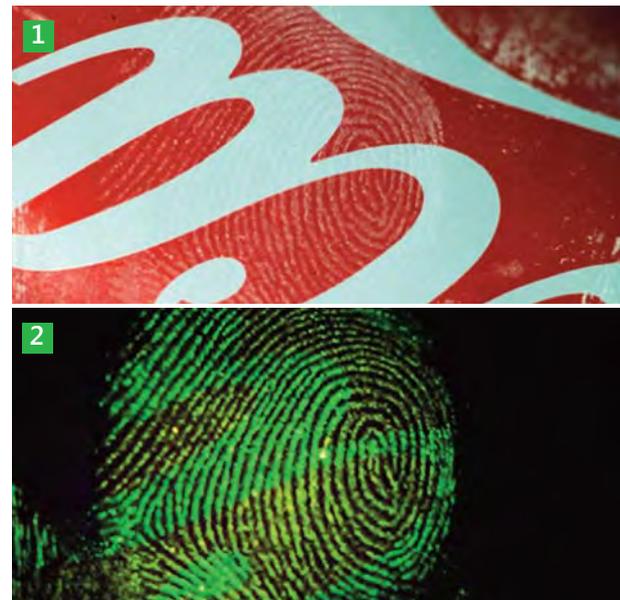
Anti-Stokes powders, also known as up-convertors, are a relatively new form of fingerprint powder that absorb invisible infrared radiation and re-emit the energy at visible wavelengths, a process that is the reverse of standard Stokes-shifted fluorescence.

Excellent results can be obtained with fingerprints on 'busy' multi-coloured backgrounds and on backgrounds which fluoresce at similar wavelengths to standard fingerprint treatments.



A light dusting of anti-Stokes powder is applied using a magnetic brush.

- 1.** A fingerprint is located.
- 2.** Under the illumination of twin 976nm lasers the fingerprint fluoresces brightly while the background pattern disappears.



CRIME-LITE ASV BENCH MOUNTED LASER VIEWER ORDER CODE: QCL/ASV/BV

- Safety interlocked Class 1 laser viewing enclosure
- For use with anti-Stokes magnetic fingerprint powder
- Allows both visual and photographic examination
- 2 x 6 watt 976nm (+/- 5nm) lasers
- Laser illumination area 45x60mm approx.
- Laser blocking viewing/imaging window, 75x100mm
- 2x high power white LEDs for internal illumination
- Height adjustable examination stand
- Enclosure dimensions: 505 x 400 x 245mm
- Power: input 100-240v ac 50/60Hz, output 15V 3.6A

ANTI-STOKES FINGERPRINT POWDER & APPLICATOR

ORDER CODE: QCL/ASV/FP

- VISAS Magnetic Fingerprint Powder 433060, 50g
- Magnetic applicator B60000
- Squirrel hair brush for print clean up after powdering

For further information on the use of anti-Stokes powders please refer to the following paper published by the Centre for Forensic Science at Sydney University of Technology:

Fingerprint Detection on non-porous and semi-porous surfaces using NaYF₄:Er,Yb up-converter particles. Forensic Sci. Int. (2010) Ref:FSI-6222

UTS:
THINK.
CHANGE.
DO

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Worcestershire, WR11 1TD UK

+44(0)1386 768050
+44(0)1386 765351

sales@fosterfreeman.com

foster + freeman

fosterfreeman.com

Recognised for innovation in the field of latent fingerprint detection & enhancement, foster+freeman are pleased to announce the launch of a novel new treatment...

fpNATURAL 1

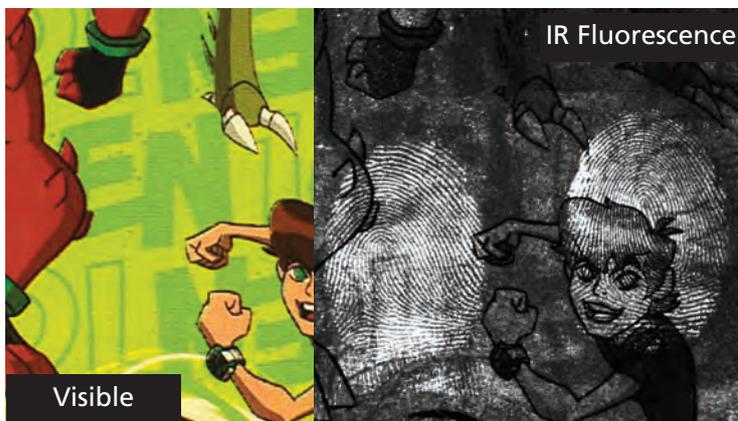
IR FLUORESCENT FINGERPRINT POWDER



Despite the vast quantity of fingerprint treatments currently available, examiners continue to be frustrated by a number of 'difficult' substrates.

Multi-coloured and densely patterned backgrounds, reflective metal surfaces and substrates that fluoresce at the same wavelengths as common fingerprint treatments, can prevent the successful imaging of fingerprints.

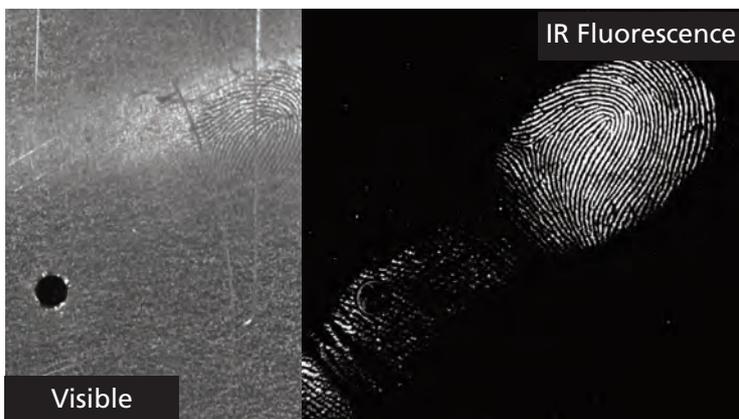
However, when dusted with fpNatural 1 IR fluorescent powder, interference can be removed to reveal high contrast prints.



Glossy gift wrapping paper



AUD \$5 Polymer banknote



Brushed Aluminium

Study Reveals Excellent results

A preliminary study into the use of fpNatural 1 as a infrared fluorescent fingerprint treatment has recently been accepted for publication by the Forensic Science International Journal.

Results from the study, some of which are shown here, clearly demonstrate the effectiveness of fpNatural 1 at revealing fingerprints on a wide range of non-porous and semi-porous substrates.

For further information see:

Seeing into the infrared: A novel IR fluorescent fingerprint powder. Roberto S.P. King, Peter M. Hallett & Doug Foster

DOI: <http://dx.doi.org/10.1016/j.forsciint.2015.01.020>

Inspired by NATURE



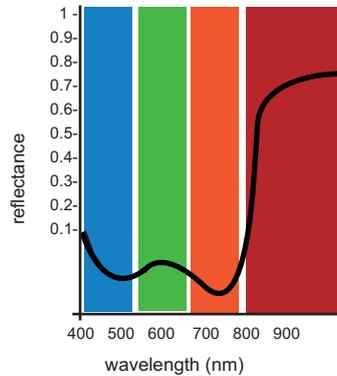
When seeking a material that would reflect IR, we took our inspiration from nature...

Plants absorb visible light as 'food' reflecting back all IR light that cannot be absorbed. Under intense illumination, pigments found in plant tissues, namely chlorophyll and anthocyanin, emit strong Near Infrared fluorescence.

Using these facts as our starting point we began testing plant-based powders for suitability.

Excellent results were achieved using a modified blend of cyanophyta, a phylum of bacteria that gains its name through its blue/green colour.

Often referred to as blue-green algae, there are approximately 2000 species of cyanophyta, the perfect blend of which meets all the requirements to produce an ideal IR fingerprint powder.



Typical light absorption of plants

Benefits of a plant based fingerprint treatments

- + Rich in IR fluorescent phycocyanin and chlorophyll
- + Non-toxic, safe to use and handle
- + Once modified can be easily applied with a zephyr brush
- + Excellent results on many 'difficult' backgrounds

fpNATURAL 1 ORDERING INFORMATION

IR FINGERPRINT POWDER 20g

Order code QCL/257

- 20g pot of IR fingerprint powder
- homogenised mixture to optimised particle size
- MSDS materials data safety sheet
- application guide and imaging instructions



Visualising fpNATURAL 1 Foster + Freemans range of IR-Ready Imaging Systems

DCS 5

The world's most advanced digital fingerprint workstation

DCS 5 provides a complete solution to the examination of fingerprints, from capture, to enhancement to the presentation of court room evidence. Equipped with a custom-modified camera and a selection of UV-Vis-IR light sources, DCS 5 is the experts choice of fingerprint system.

Crime-lite Imager

Semi-automated latent fingerprint capture and enhancement system

Combining advanced imaging and multi-wavelength illumination from UV to IR, the Crime-lite Imager enables operatives with varying degrees of expertise to consistently produce high quality results.

Crime-lite Cam

UV-Vis-IR camera attachment for use with Foster + Freeman Crime-lites

Designed for crime scene or laboratory applications, Crime-lite Cam is a UV-Vis-IR sensitive digital camera attachment for use with Crime-lite forensic light sources. Captured images are viewed via a tablet or laptop PC.

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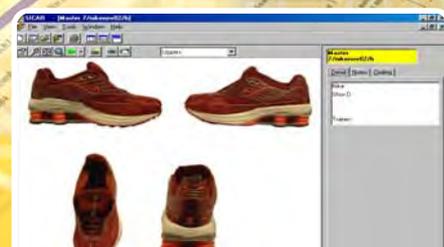
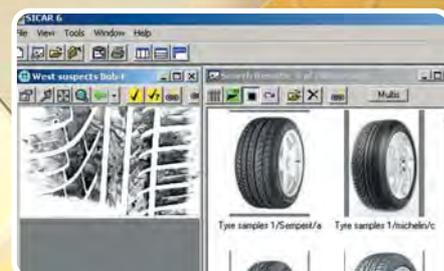
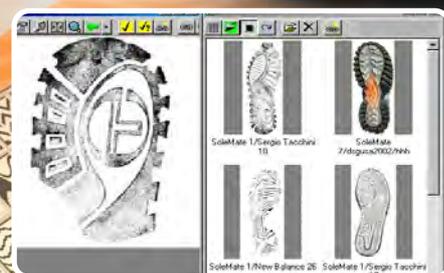
SICAR[®] 6

foster+freeman

FOR THE MANAGEMENT OF SHOE PRINT
AND TYRE MARK EVIDENCE RECOVERED
FROM SCENES-OF-CRIME

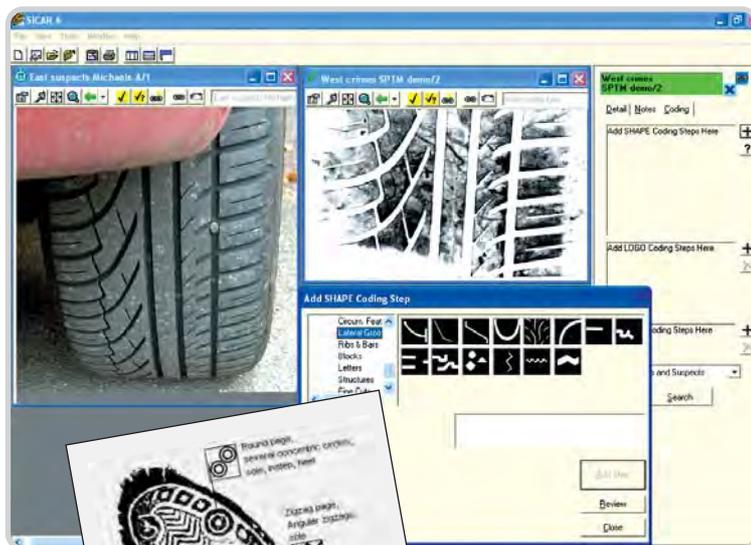


- Archives scene-of-crime shoe print and tyre mark evidence.
- Archives suspect shoe and tyre data.
- Matches suspects' shoes or vehicle tyres to scenes-of-crime evidence.
- Identifies a vehicle tyre or shoe brand using up-to-date reference collections.
- Compatible with crime management systems.
- Multi-user networking facilities.



of forensic evidence

SICAR®6 the management system for shoe print and tyre mark evidence



SICAR®6, the latest version of Foster & Freeman's evidence management system, has been extended to handle tyre marks as well as shoe prints. Both shoe print and tyre mark evidence can be entered into SICAR®6 and stored with casework data in easy-to-search databases that help you to link crimes with suspects or other crimes via their footwear or vehicles.

Pattern coding – a simple technique for comparing shoe prints and tyre treads

SICAR® provides a simple coding technique for characterising tyre marks and shoe prints to aid search and comparison in database enquiries. This process, taking no longer than a minute or two, allows the operator to create a coded description of the pattern of a shoe sole or tyre tread by identifying elemental features,

such as lines, waves, zigzags, blocks, circles, diamonds, etc. Each feature is assigned a specific code, so that the set of codes becomes a powerful search parameter. And the coding process is a straightforward one of selection, as variants of each type of pattern feature are displayed for the operator to make a simple choice.

Creating databases of suspects and crimes

Whether you are dealing with a shoe print or tyre mark, SICAR®6 is a total evidence management system in which records are created with as much information on the suspect, vehicle or crime as the operator considers valuable. As well as an image of the sole print or tyre tread and the pattern codes derived from them, dates, names, addresses, type of crime and modus operandi may be added. A 'notepad' section also allows the operator to enter miscellaneous information that may be interrogated via text searches. Images accepted by SICAR®6 may be in colour or monochrome and input from any source including digital cameras and scanners. Image compression is used to improve disk storage capacity.

The patterns within tyres and shoeprints contain many individual features which, when coded, provide a powerful set of search parameters.



Identifying suspects

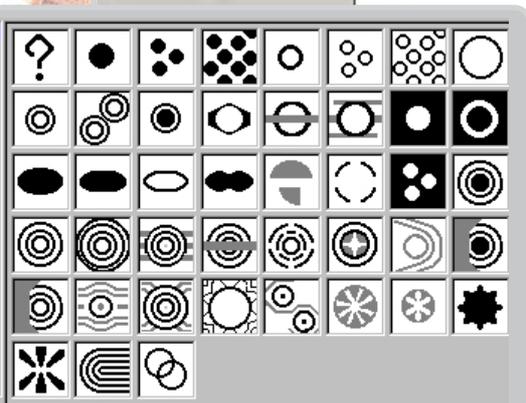
SICAR®6 is designed to match suspects to crimes or crimes to suspects by searching accumulated databases, making use of all available data. Thus, the operator may restrict a search to records of a specific shoe manufacturer, for instance, or to those citing a particular crime scene location, or name, type of crime or modus operandi. A search may also be restricted to events that occurred either before or after a specific date or between two dates. Finally, when a search is complete, the match results are displayed for the operator to make the final assessment.

Identifying shoes and tyres

When no specific suspect can be identified, the make, model and pictorial images of a shoe or tyre associated with a crime become valuable in the search for a suspect. Two reference databases, SoleMate® for shoes and TreadMate® for tyres, can provide this vital information.

Essential to each database record is a set of codes that represent the pattern of the tyre tread or shoe sole, derived using the same scheme as that provided in SICAR®. They provide the means of identifying the unknown shoe or tyre associated with the crime, in a database enquiry. The databases are extensive, dating back to 1995. Currently, SoleMate® holds 22,000 records and TreadMate® 7,838 records.

Shoe prints and tyre marks are coded by identifying elemental pattern features.



SICAR® 6 *is new* with more power and functionality

Many improvements to SICAR®6 are the result of feedback from users' practical experience and include the following features...

Statistical reports

SICAR®6 provides information on the frequency of occurrence of a shoe sole or tyre tread pattern at crime scenes and is an estimate of the popularity of shoes or tyres using the pattern. An internal auditing programme also allows you to monitor the use and effectiveness of the system by monitoring key statistics.

Power to link records

SICAR®6 can be used to create links between records, either automatically, as a result of a database search that results in two shoe print or tyre mark records being matched, or manually based on additional intelligence. For example, manual links can be made between the records of a suspect and a known associate or the shoe print records taken from several scenes of crime with a similar modus operandi or different tyre marks found at the crime scene. All links are displayed in a simple 'tree' that allows the operator to follow up the associations quickly.

Dealing with partial prints

An image compositor has been added to allow several partial scene-of-crime shoe prints or tyre marks to be joined together to form a more complete image, making visual comparison and matching easier.

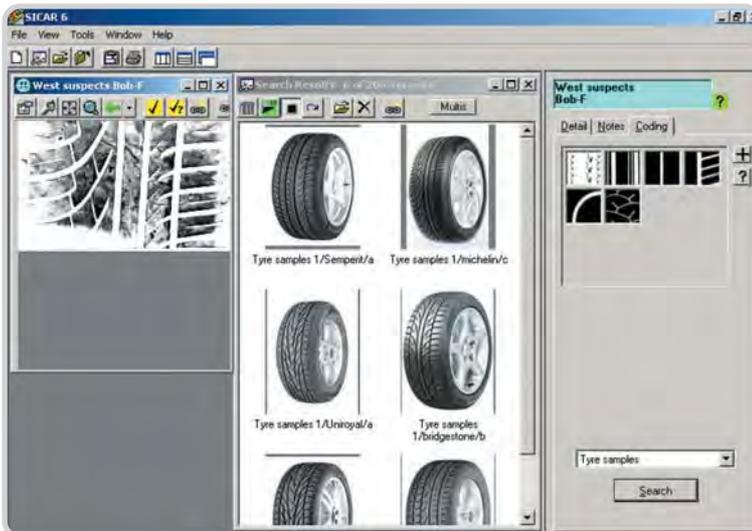
Compatible with intelligence management systems

SICAR®6 can be interfaced to other selected intelligence management systems with customized software supplied by the company.

Networking systems tailored to your needs

To extend the power of SICAR®, workstations may be networked, enabling operatives to search and examine shoe print records held on other databases acquired in other areas, helping to overcome the problem created by regional or police authority boundaries. In a complex network, the activities permitted on each workstation may be restricted to data entry, coding or database interrogation, for example.

Provision has been made for 'roaming licences' to make multi-user systems more flexible and economic. Roaming licenses permit operatives to use the system irrespective of their location.



Tyre mark and shoe print search results are presented as thumbnail images for further assessment.



Specifying part of the search enquiry.

A screenshot of the 'Shoeprint Finder' dialog box. It has three tabs: 'Crime' (selected), 'Suspect', and 'Reference'. The 'Crime' tab is active, showing search criteria: 'Crime Address' has 'Swan Lane, Evesham' (checked 'Exactly'), 'Scene Number' has '114-835' (unchecked 'Exactly'), 'Acquisition Date' is between '01/01/2003' and '31/05/2003', and 'Categories' has 'Arson'. There is also a 'Next Neighbours' dropdown and 'Search' and 'Cancel' buttons.

SICAR[®] 6 the operational benefits

There are options for dealing with footwear or tyre mark evidence – from using an external agency, to undertaking the work in-house. Each has its advantages and disadvantages but, on balance, we believe that SICAR[®] used in-house gives you more...

Immediate results

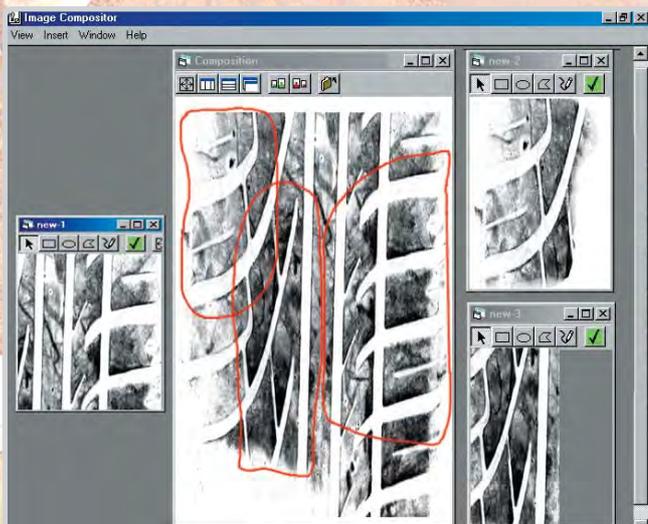
SICAR[®] allows you to use your shoe print evidence immediately, day or night, with results available in minutes. With a network, information can be made available throughout an entire police authority.

Simple to use

Over the years, our software engineers have perfected the system by listening to its many users and incorporating their suggestions for improvement. Now, users generally need only two day's training in order to use the system competently on case-work. However, help and advice is always at hand through a telephone support helpline.



For easier visual comparison partial images can be joined together to form a print impression.



Cross-border collaboration

Not only can SICAR[®] be expanded throughout your own authority with a network that links several workstations, it can access databases held on other SICAR[®] networks, in other authorities, subject to agreed protocol, providing greater scope for linking cross-border crimes through footwear evidence.

Product support

SICAR[®] is supported by a team of application specialists. This allows Foster & Freeman to provide continual product support unaffected by absence, illness or change in personnel.

Suppliers contact details

In some cases extra information is required from a footwear supplier or manufacturer. However, finding the company responsible for a particular brand and then locating personnel within that company can be a time consuming process. As part of our service Foster & Freeman will provide these contact details to you.

A system that's always moving forward

Improvements are constantly being made to SICAR[®] and upgrades are offered from time to time to ensure that users have the best product available. As well as carrying out its own research and development, Foster & Freeman collaborate with university departments undertaking more fundamental research. Currently such projects are aimed at using automatic pattern recognition as the means of comparing the images of shoe prints or tyre treads. These are long term projects which if successful will be incorporated into future editions of SICAR[®] to make it even easier to use.

SoleMate® and TreadMate®

The continually updated shoe and tyre reference collections

SoleMate® and TreadMate® are reference databases providing 22,000 examples of sports, work and casual shoes and over 7,838 tyres. Each record is provided with either a photograph or an offset print and where possible both, showing the shoe or tyre pattern. This is also supported by additional photographic images of the subject to assist in visual identification. Obtaining good quality prints of tyre tread patterns is straight forward but to provide the maximum amount of information from a shoe print, Foster & Freeman have developed a novel technique for capturing the instep area of each sole. This can be a valuable part of a print for identification purposes as manufacturer's logos are often moulded into this part of the sole. Other vital information includes the manufacturer, shoe model name and season of introduction.

Each database can be used as a stand-alone system or in conjunction with SICAR®6. As a stand-alone system, records may be retrieved using manufacturer and model references or by using ridge pattern codes, providing the means of identifying shoes or tyres found at the crime scene. All sole or tread pattern images in the databases have been pre-coded by experienced coders. Importantly, SoleMate® uses the same footwear reference system as the suppliers so that it is easy to trace further information when required. It also provides links between different brands of shoe or tyre which use the same sole or tread, making it immediately obvious if it is necessary to consider more than one possible brand as being used at a particular crime scene.

The databases are kept up to date by a team of researchers who continually liaise with manufacturers and distributors, collecting data on their latest products.

SoleMate® and TreadMate® are available by subscription and subscribers receive updates, on DVD, with information of new models introduced during the intervening period.

An archive collection with footwear dating back to 1995 is also available.

After sales support

Foster & Freeman are always pleased to provide advice, installation, training and on-site maintenance world wide. (Please contact one of our offices for further information).

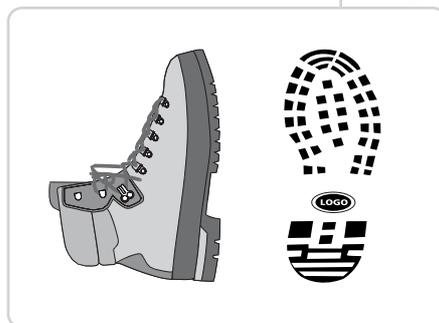


A team of researchers have direct contact with footwear and tyre manufacturers and their distributors to update the SoleMate® and TreadMate® collections.

Foster & Freeman's offset printing technique captures any features moulded into a shoe's instep, valuable information often lost by other processes.



Different brands of shoe or tyre that share the same sole pattern are contained within the reference database.



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SoleMate®

The illustrated reference database of footwear for identifying shoe prints

SoleMate® is an extensive database of footwear, providing information on the make, model, season and year of market introduction with colour images of the outsole and uppers - all the information needed to make a positive identification of a crime scene shoe print.

FEATURES

- Almost 28,000 records of over 700 brands
- Updated every season
- Available by subscription every 3 months on DVD
- Easy-to-use search engine



SoleMate®

The SoleMate® database currently has almost 28,000 footwear entries, representing more than 700 brands of sports, work and casual shoes. Details provided include the make, model, season and year of introduction with photographic illustrations of the side, back and top views of the shoe and both a photographic illustration and offset print of its outsole.

In addition, each entry contains alphanumeric codes which represent simple shapes in the design of the outsole. These form the basis of search and match operations for identifying scene-of-crime shoe prints.

Interrogating the SoleMate® database

The effectiveness of SoleMate® lies in a search engine called the Library Viewer. After examining an unknown shoe print and identifying a few simple shapes in its design, the operator simply instructs the search engine to find all footwear entries in the database with matching shapes. Additional information such as the brand name or logo, if visible in the shoe print, can be added to narrow the search. And as each database entry has the footwear's season and year of its availability, a search can be limited to entries by date, again reducing the search task and the number of matches found.

Sole pattern coding

The technique of coding the pattern in the shoe print has been made as simple as possible. After the operator has identified a shape in the pattern, a round shape, for example, by selecting the 'Round' page from the patterns menu, a variety of 'round' shapes are displayed from which the operator can choose the best match. When repeated for other shapes, a set of codes will have been created that are used to search the SoleMate® database. If different areas of the outsole can be identified, search results can be improved by coding these areas separately. This can be applied to the heel, sole, toe or upper sole, instep and edge of the outsole. The more information that the operator can put into the search instruction, the more accurate the match list and the simpler the final visual examination task becomes.

An up-to-date database

SoleMate® is continually updated by our researchers, who liaise with manufacturers and distributors, collecting footwear data at the beginning of each new season, adding approximately 2,000 new records each year. SoleMate® updates are issued to subscribers every three months on DVD.

www.crimeshoe.com

Alternatively, try our new shoe print identification service, www.crimeshoe.com. Upload a crime scene shoe print to our website and we will search our database for you. If we find no information we make no charge.

Product Descriptions

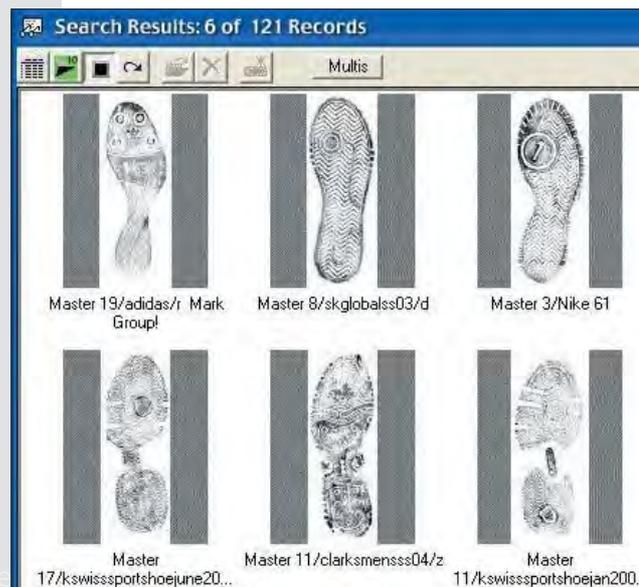
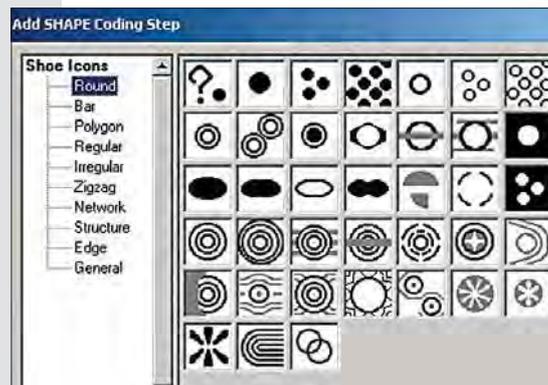
- SoleMate® Annual Subscription - a 12 month subscription
- SoleMate® Archive Collection - all past database entries
- Library Viewer - the SoleMate® search engine
- Administrator - a networking tool for multi-user database access

Manufacturer's Name: Caterpillar

Model Name: Bode Slip-On, Bode, Footsie, Far Out, Frizzle, Misty (Sole=T639)

Notes: Bode Slip-On, Bode, Footsie, Far Out, Frizzle (Sole=T639) - From the Autumn/Winter 2004 range.
Misty - Spring/Summer 2005 range.
Footsie, Far Out, Frizzle, Mitzzy are from the non-UK Spring/Summer 2005 range.

Note that some models (Footsie, Far-Out, Frizzle) are introduced to non-UK markets a season later than identical UK-based models.



Appointed Agent:



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SoleMate

FPX

FOOTWEAR PRINT IDENTIFICATION SYSTEM

Fast effective shoe print intelligence tool

Identify full and partial shoe prints

Extensive footwear reference database

foster + freeman

fosterfreeman.com

SoleMate

FOOTWEAR PRINT IDENTIFICATION SYSTEM

FPX



Identify shoe prints discovered at the crime scene using a simple yet powerful tool to search the world's most comprehensive footwear reference database

SoleMate FPX is a new and improved system that combines an extensive footwear reference database with a streamlined search interface for the rapid identification of shoe prints discovered at the crime scene.

Describe the visual characteristics of a shoe print by selecting shapes, text and logos to build an on-screen representation of the suspect print, and search the SoleMate FPX reference database for matching footwear records.

A typical database search using the FPX system can be completed within minutes...

with results displayed as thumbnail images from which the operator is able to visually identify the exact match, create a shortlist of potential matches or further refine the search through the modification of search criteria.

The key to successful footwear identification is the quality and depth of reference data available

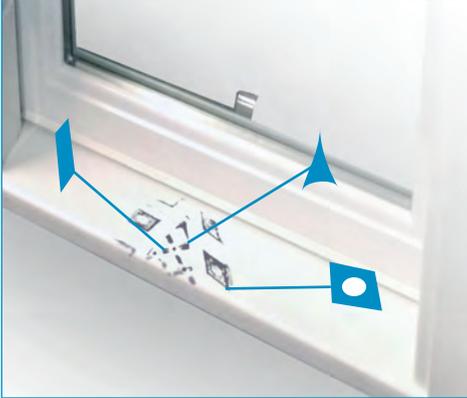
With footwear entries representing all major brands of sports, work and casual footwear, the SoleMate FPX database is widely recognised as being the world's most comprehensive footwear reference database and is used by police and law enforcement agencies worldwide.

The SoleMate FPX database currently includes details and images of more than 32,000 individual shoe prints with each record including a 'coded' representation of the shoe print.

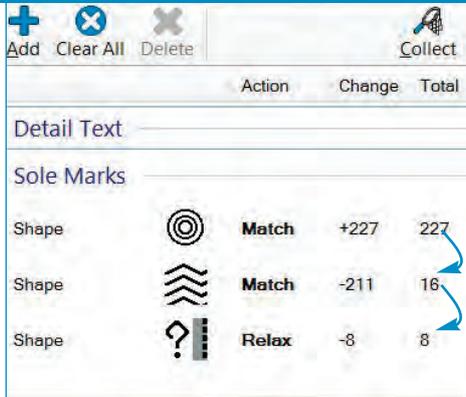
A SoleMate FPX installation includes the reference database archive, the SoleMate FPX search interface, and a year's subscription to database updates (approximately 2,000 new records per year, supplied quarterly).

Database searches using the FPX interface

Use the shape gallery to build a visual representation of a suspect shoe print



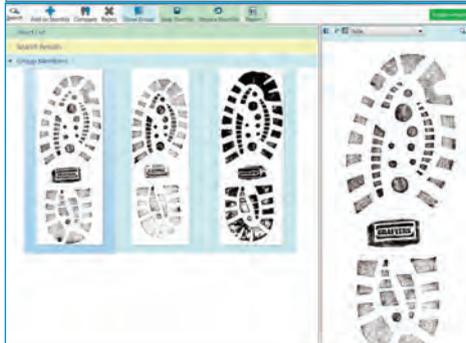
As shapes are added to your search criteria the number of possible matches is reduced



Having reduced the possible matches 'Collect' the results. Results are displayed in a thumbnail gallery



Select the matching sole pattern from the gallery to open the database record



Shortlist potential matches. Similar sole patterns are grouped together to aid searches.



Database records contain images of the footwear uppers and sole together with details of brand, model, and release date

SoleMate FPX | a complete footwear identification system

Identifying the item of footwear responsible for creating a shoe print recovered from the crime scene is now faster and easier thanks to the user-centered design of the FPX interface.

SoleMate FPX features include:

Easy to install and operate

SoleMate FPX is our most streamlined footwear tool yet, allowing users to achieve excellent results via an intuitive search and match interface.

Dynamic searches improve results

The on-screen 'Total Results' count allows the user to narrow down the number of results as new search criteria are added.

Access a single database from multiple sites

Creating and updating an FPX network is simplified by the ability to have multiple installations access the same reference database.

Regular database updates

The SoleMate Database is continually updated by our team of researchers, who liaise with brands and their distributors to collect and add approximately 2,000 new records to the database each year.



A typical SoleMate FPX record includes details of brand, model, date of release and images of the shoe print, sole and uppers. Each shoe print is coded with a combination of shapes and logos (pictured above)

Ordering Information

SoleMate FPX Viewer

- SoleMate FPX interface
- SoleMate FPX reference database archive
- Supplied on a single USB memory stick

Single-user licence [SoleMate FPX Viewer](#)

Additional licences [SoleMate FPX Viewer+](#)

SoleMate FPX Annual Subscription

- 1-year subscription to database updates
- Provided in 4 quarterly updates

Single-user licence [SoleMate FPX Subs](#)

Additional licences [SoleMate FPX Subs+](#)

SoleMate FPX Hardware

System A [SoleMate FPX HW col](#)
Desktop PC with 22" monitor and 600dpi photo quality colour printer

System B [SoleMate FPX HW b&w](#)
Desktop PC with 22" monitor and black & white printer



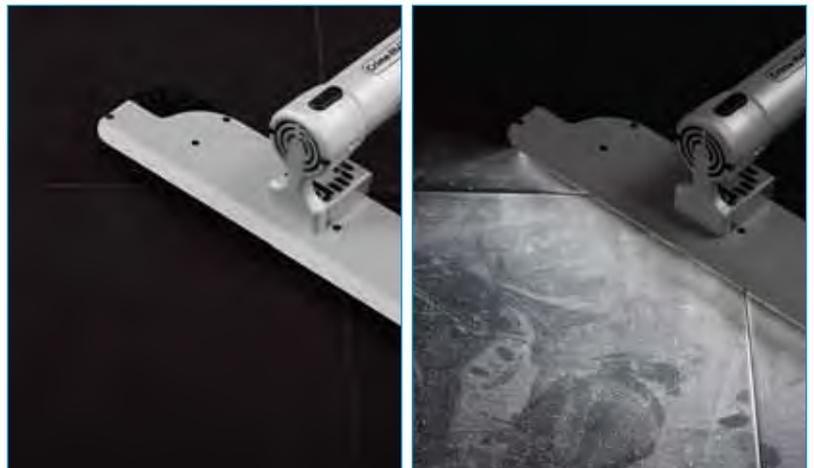
Related Products

Crime-lite 82L

A high intensity linear white light source ideal for floor searches and illuminating shoe prints at the crime scene.

- 16x White (400-700nm) LEDs
- Even shadow-free linear beam
- Upto 5280 Lumens output power
- Up to 10-hours battery life

Crime-lite 82L kit [QCL/82L/BMK](#)
includes light source plus power and crime scene accessories.



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