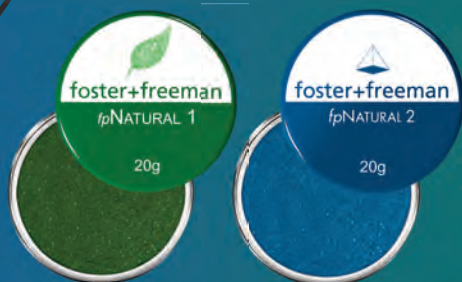


# *fp*NATURAL<sup>®</sup>

IR FLUORESCENT FINGERPRINT POWDERS



Safe to Use  
Easy to Apply  
Impressive Results

**foster+freeman**

# fpNATURAL<sup>®</sup>

## IR FLUORESCENT FINGERPRINT POWDERS



### Reveal high contrast fingermarks whilst suppressing background interference

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

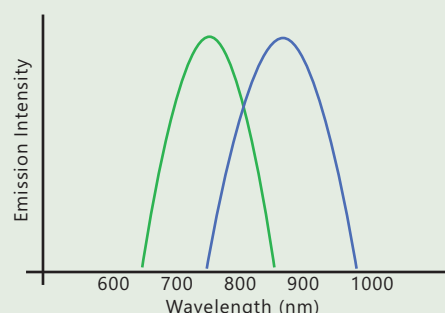
Multi-coloured and densely patterned backgrounds, reflective metal surfaces and substrates that fluoresce at the same wavelengths as common fluorescent fingerprint treatments, can prevent the successful imaging of fingerprints.

However, when dusted with **fpNATURAL<sup>®</sup>** IR fluorescent powders, interference can be removed to reveal high contrast prints.

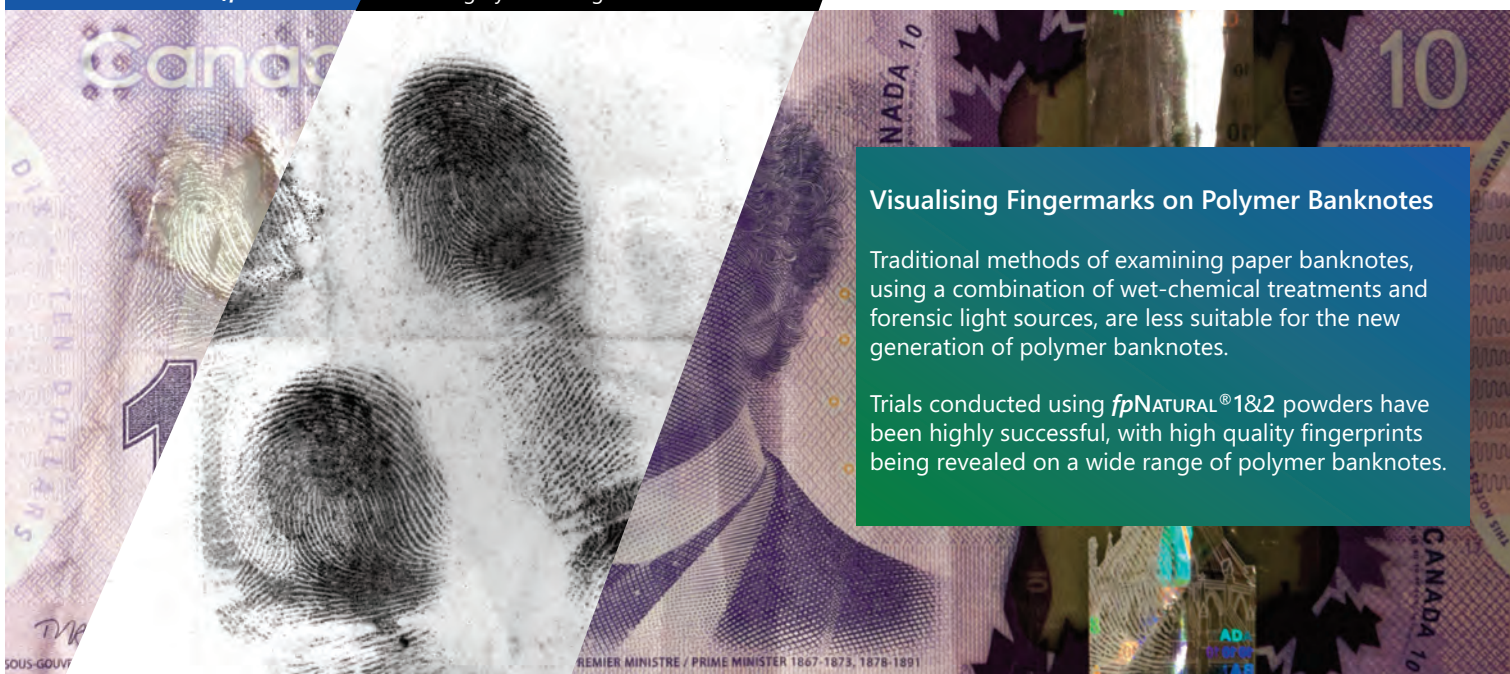
**fpNATURAL<sup>®</sup>** 1 & 2 powders emit bright fluorescence in the infrared region of the spectrum; **fpNATURAL<sup>®</sup>** 1 is excited by red or blue illumination, **fpNATURAL<sup>®</sup>** 2 is excited by near-IR illumination.

Visualisation of both powders is achieved using an IR sensitive camera equipped with an IR pass filter to block out all other wavelengths.

Both powders emit 'bright' fluorescence in the IR region of the spectrum. The higher emission waveband of **fpNATURAL<sup>®</sup>** 2 enables the examiner to block out/suppress even more of the background during photography.



Banknote dusted with **fpNATURAL<sup>®</sup>** 2 Inverted greyscale image of IR Fluorescence



#### Visualising Fingermarks on Polymer Banknotes

Traditional methods of examining paper banknotes, using a combination of wet-chemical treatments and forensic light sources, are less suitable for the new generation of polymer banknotes.

Trials conducted using **fpNATURAL<sup>®</sup>** 1&2 powders have been highly successful, with high quality fingerprints being revealed on a wide range of polymer banknotes.





## Application and Imaging

### Application

Lightly dust surface to be examined with **fpNATURAL®** powder using a standard zephyr brush with rotational application motion.

### Illumination

Illuminate **fpNATURAL™** with a high intensity light source.

- For **fpNATURAL® 1** a Blue or Red light source is required
- For **fpNATURAL® 2** best results are achieved using an IR 780nm light source

### Observation

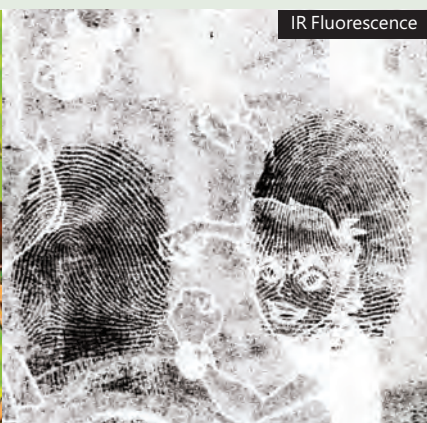
**fpNATURAL®** exhibits fluorescence from 650nm into the NIR, which can only be viewed through an IR sensitive camera. An appropriate IR Pass Filter should be fitted to the lens in order to block out visible wavelengths of light, allowing only IR wavelengths to pass.

### **fpNATURAL™ 1**

Highly effective on a wide range of surfaces, **fpNatural®1** was originally developed as a low cost solution for the detection and examination of finger marks on polymer banknotes

ARTICLE  
IN PRESS

Seeing into the infrared: A novel IR fluorescent fingerprint powder  
Published February 02, 2015



Glossy gift wrapping paper dusted with **fpNATURAL® 1**, illuminated with red light and examined at 780nm



AUD \$5 Polymer banknote dusted with **fpNATURAL® 1**, illuminated with red light and examined at 780nm

### **fpNATURAL™ 2**

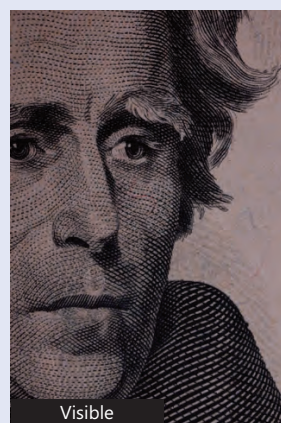
Our latest IR fluorescent powder, **fpNatural®2** can be illuminated in the visible or in the near-IR and produces a high fluorescent quantum yield of approximately 10%.

ARTICLE  
IN PRESS

NIR-NIR fluorescence: A new genre of fingermark visualisation techniques  
Published March 23, 2016



Glossy card packaging dusted with **fpNATURAL® 2**, illuminated in the near IR (780-nm) and examined at 850nm



US \$20 banknote dusted with **fpNATURAL® 2**, illuminated in the near-IR and examined at 850nm



## Specification and Ordering

To place an order, please contact your local foster+freeman distributor or email [sales@fosterfreeman.com](mailto:sales@fosterfreeman.com)

### fpNATURAL® 1

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



### fpNATURAL® 2

NIR-NIR FINGERPRINT POWDER 20g  
Order code QCL/280

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



## Illumination / Fluorescence Excitation

fpNATURAL® fingerprint powders emit bright infrared fluorescence when subjected to intense narrowband illumination.

### fpNATURAL® 1 Standard Imaging Kit

Order code QCL/FP1/L/S/KIT

Illumination:

- **Crime-lite® 425** Blue/Red dual wavelength
- 8x Blue LEDs (420-470nm), 8x Red LEDs (600-660nm)
- 1x AC mains power adaptor
- 1x Filter step-up ring 62-72mm
- 1x 715nm optical viewing filter



### fpNATURAL® 2 Standard Imaging Kit

Order code QCL/FP2/L/S/KIT

Illumination:

- **Crime-lite® 825** IR780, 16x IR LEDs (730-800nm)
- 1x IR780 protective glasses
- 1x AC mains power adaptor
- 1x Filter step-up ring 62-72mm
- 1x 850nm sharp-cut viewing filter



### fpNATURAL® 1 Advanced Imaging Kit

Order code QCL/FP1/L/A/KIT

Illumination:

- **Crime-lite® 825** Blue, 16x Blue LEDs (420-470nm)
- **Crime-lite® 825** Red, 16x Red LEDs (600-660nm)
- 1x AC mains power adaptor
- 1x Filter step-up ring 62-72mm
- 1x 715nm optical viewing filter
- 1x 780nm optical viewing filter



### fpNATURAL® 2 Advanced Imaging Kit

Order code QCL/FP2/L/A/KIT

Illumination:

- **Crime-lite® 825** IR780, 16x IR LEDs (730-800nm)
- **Crime-lite® 825** Red, 16x Red LEDs (600-660nm)
- 1x IR780 protective glasses
- 1x AC mains power adaptor
- 1x Filter step-up ring 62-72mm
- 1x 850nm sharp-cut viewing filter
- 1x 900nm sharp-cut viewing filter



## Visualisation and Image Capture

IR fluorescence emitted by fpNATURAL® powders is not visible to the naked eye and can only be viewed via an IR sensitive camera.

### Fujifilm XT-1 IR Standard Camera Kit

SUITABLE FOR USE WITH fpNATURAL® 1&2  
Order code QCL/272 + QCL/286



*A pro-grade UV-Vis-IR camera providing high image quality and detail across a wide spectral range.*

- 16.3 MegaPixel APS-C CMOS II sensor
- UV-Vis-IR sensitive from 380nm-1000nm
- Supplied with Fuji XF 18-135mm zoom lens



### Nikon D810 Advanced Camera Kit

SUITABLE FOR USE WITH fpNATURAL® 1&2  
Order Code QCL/FP/NIKCAM/KIT



*A high specification DSLR camera custom modified to enable full spectral imaging from UV through to IR.*

- 36.3 MegaPixel full-frame CMOS sensor
- Custom modified for UV-Vis-IR imaging from 365nm to 1000nm
- Supplied with 105mm AF-S 2.8G VR macro Lens



### + Scene of Crime Kit

Order code QCL/FP/PORT/KIT

*Take your fpNATURAL Imaging kit to the crime scene*

- 2x fast charge **Crime-lite®** batteries
- Battery adaptor
- Battery charger
- Light-weight **Crime-lite®** tripod
- Rugged scene of crime case



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

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

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

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

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