

# TFD-2



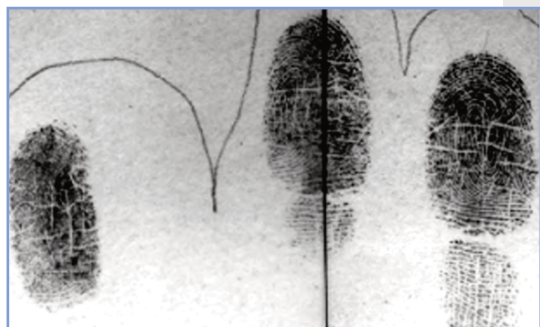
## Thermal Fingerprint Developer



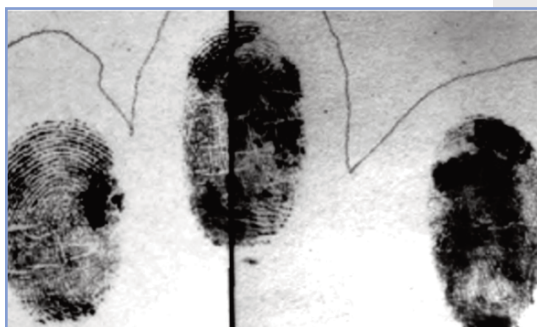
**Simple  
Chemical free  
Fingerprint detection**

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

foster+freeman



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.

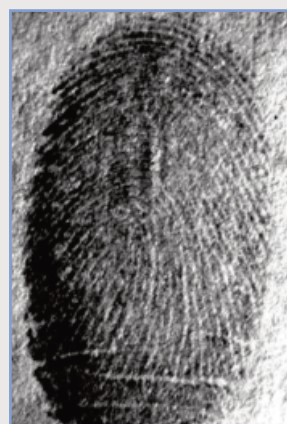
In crimes where large volumes of office paper must be examined the TFD-2 dramatically reduces search times and manpower requirements.

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:

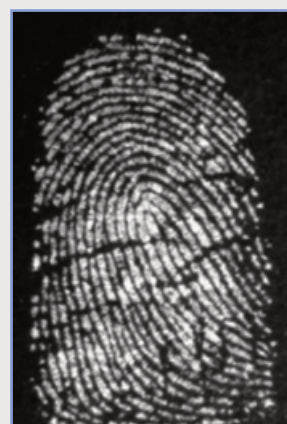
- Latent prints can be detected in seconds
- Virtually contactless system reduces risk of cross contamination
- No chemical process required
- High-throughput reduces search times
- Visible prints feature excellent ridge detail and contrast
- Can be used sequentially with chemical treatments
- For use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



TFD enhanced



TFD followed by Ninhydrin



TFD followed by DFO



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

Pat.Pending: 12/745435



## TFD-2 Specifications

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

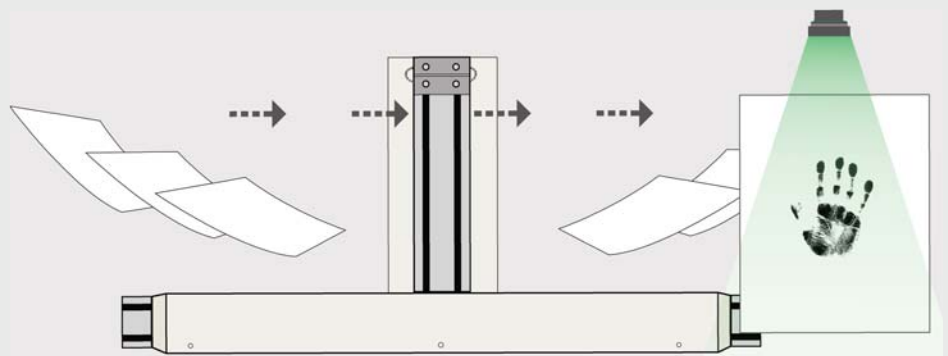
- Integral back-lit touch panel and illuminated display
- Heater power control settings 40-100 @5% increments
- Conveyor range 250 to 6500mm/min variable increments of 250mm/min
- Power saving 'sleep' mode
- Kevlar mesh 'virtually contact free' document support
- Maximum paper width 240mm x 320mm
- Typical 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](http://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

**Head Office & UK Sales Office:**  
Foster + Freeman Ltd  
Vale Park, Evesham,  
Worcestershire, WR11 1TD UK

+44(0)1386 768050  
+44(0)1386 765351  
[sales@fosterfreeman.com](mailto:sales@fosterfreeman.com)

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

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<http://www.fosterfreeman.com>