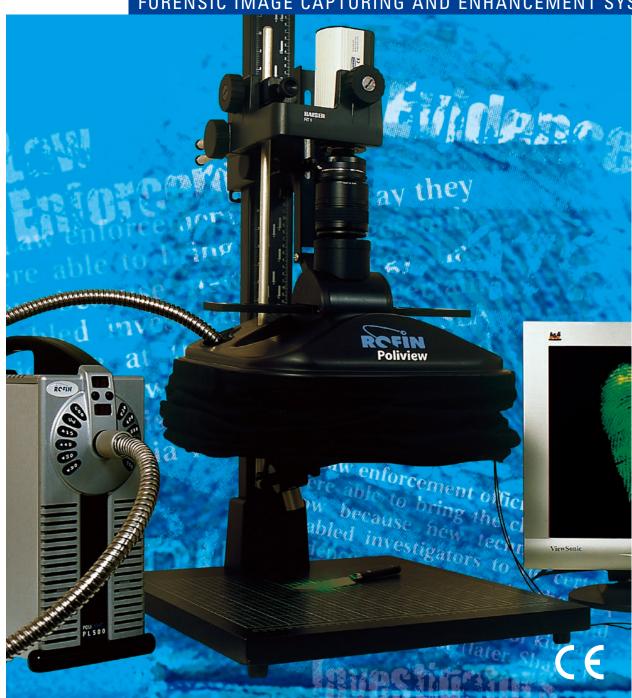# ROFIN

POLI*VIEW* ® IV

FORENSIC IMAGE CAPTURING AND ENHANCEMENT SYSTEM

MULTI FUNCTIONAL AND FLEXIBLE
Examine evidence of all sizes

FINGERPRINT, DOCUMENT AND GENERAL EXAMINATION
Cans, knives, guns, documents, glass etc.

FULL OPTICAL EXAMINATION
Post Image Capture Enhancement

FLUORESCENCE, ABSORPTION AND REFLECTION
Provided by a suite of digital image software functions

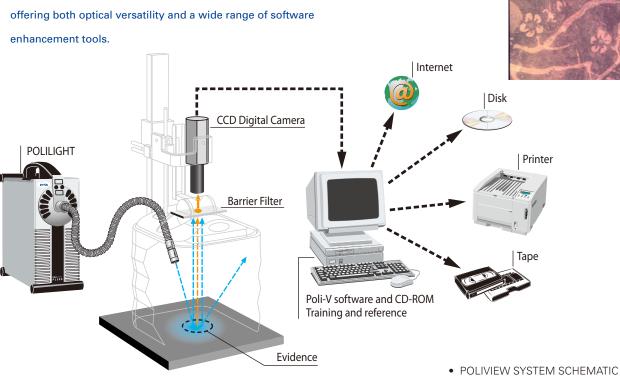**HIGH TRANSMISSION FLEXIBLE LIQUID LIGHT GUIDE**
Provides powerful illumination of most awkward areas

POLI*VIEW*® IV

FORENSIC IMAGE CAPTURING AND ENHANCEMENT SYSTEM

Poliview® examines and enhances evidence using the optical techniques of differential absorption and reflection in addition to fluorescence. To get the best results requires fine adjustments of illumination and observation wavelengths. Poliview® offers fine tuning of light bands both for illumination and observation over the range 350 – 1100nm. This unique feature allows infinite variations of conditions in order to obtain optimum contrasts. Thus two fluorescent objects with overlapping spectra can be discriminated by progressively fine tuning, resulting in one remaining fluorescent while the other gradually disappears. The power of this feature is valuable not only for fluorescent objects, but is equally applicable to absorption, reflection and transmission applications.

Poliview® is the most versatile image enhancement system, offering both optical versatility and a wide range of software enhancement tools.

POLILIGHT

CCD Digital Camera

Barrier Filter

Internet

Disk

Printer

Tape

Poli-V software and CD-ROM
Training and reference

Evidence

• POLIVIEW SYSTEM SCHEMATIC

A • White Light Image   Fluorescent Image

B • White Light Image   Absorption Image

C • White Light Image   Fluorescent Image

POLIVIEW® IV SYSTEM FEATURES

Full optical range (UV-Vis and IR)

The Poliview® system covers the range from UV (Ultra Violet) through Visible and into the IR (infra red). Sample illumination using interference filters are fully tuneable over the range 310-650 and additional IR filters extend the range from 650 to 810 (810-1100nm output). Camera barrier interference filters for image capture cover the range 350-1100nm and are also fully tuneable. A series of 5 cut-on barrier filters are also supplied for the range 610-1100nm.

Colour and Monochrome

The Poliview® system includes the colour (RGB) liquid crystal filter slider that is designed to slide in and out of the optical path. This allows the user to select monochrome (Black and White) or full colour images. Fluorescent images should always be captured in monochrome.

12 bit and 8bit pixel resolution (grey scale and colour resolution)

The Poliview® system camera has selectable 12 bit and 8 bit pixel depth resolution. When 12 bit is selected each pixel has a grey scale of 4096. 8 bit is 256. This means each pixel can have a 4096 or 256 possible levels of grey (or colour with colour module). Software features enable these levels to be seen by the eye.

Peltier Cooling (For high sample sensitivity)

Poliview® achieves the best sensitivity by eliminating all stray light and cooling the CCD by the Peltier cooling technique. Peltier cooling is electronic cooling (not water or gas) and importantly allows for long exposure times up to minutes without distortion due to thermal electronic camera noise.

• A: SEMEN UNTREATED ON FABRIC.

• B: FINGERPRINT IN BLOOD UNTREATED.

• C: FINGERPRINT ON PLASTIC TREATED WITH SUPERGLUE
     AND ARDROX.

Electronic Exposure time (For high sample sensitivity)

Poliview® provides variable electronic CCD camera exposure allowing samples to have long integration exposure times into the minutes.

Optical filter tuning

Poliview® uses high quality band pass interference filters that have the ability to be tuned. It is very important to be able to fine-tune both the illumination and barrier filter sets. This allows the collection of any peak wavelength illumination and any peak wavelength viewing of the evidence.

High image resolution

The Poliview® standard system uses the Peltier cooled high resolution camera which produces a 1024 x 1280 pixel images in both monochrome and colour mode.

Whole of image real-time display

Poliview® uses special software to provide a full computer screen live display. When electronic integration is selected an integrated live image is displayed and updated. Several real-time overlay comparison features are provided.

Digital image processing

There are over 100 digital imaging functions with the Poli-V®++ Forensic Software. Common routines include brightness and contrast adjustment, sharpening and smoothing filters. Unique features are automatic FFT routines for overlapping fingerprints and image comparison routines.

Application scripts (eg automated FFT overlapping fingerprint filter)

As specific forensic digital imaging applications are developed the sequence of steps can be made into a single button. These are called scripts. We have packaged a number of these scripts as standard however you can develop your own scripts to add to the list.

POLIVIEW® IV GENERAL TECHNICAL SPECIFICATIONS

The Poliview® IV system consists of the following major components

1. Polilight PL500 Forensic Light Source
2. Peltier Cooled 12 bit CCD camera and lens
3. Camera, barrier filter cassette, and dark-hood stand
4. Set of camera filters of cassette. 15 tunable band pass and 5 high pass.
5. Poli-V®++ software to control camera, capture image and enhance image.
6. Training CD Rom.

Optional

8. Transmission Box — for documents requiring transmitted light examination a perspex unit 300mm x 400mm x 70mm is placed on the Poliview stand and the Polilight lightguide is connected to the transmission box.

Polilight® PL500 Forensic Light Source

Input Power:	85-265 VAC 50-60 Hz. Automatic selection.
Internal Lamp:	500Watt Xenon Arc Lamp
Light output:	2 meter liquid light guide for UV and Visible
	2 meter light guide for IR application IR filter set (>610, >715, >780, >830)
Output Bands:	Blank, White, 350nm, 415nm, 450nm, 470nm, 490nm, 505nm, 530nm, 555nm, 590nm, 620nm, 650nm, IR
Indicators:	Band selection, band tuning and band power setting
Buttons:	One per filter selection, tuning up and tuning down.
Turn Off:	Automatic if left unattended
Control:	Hand held remote (all functions) or front panel
Computer Control:	All functions by Windows based control software
Weight:	Net 9.5Kg (22lbs), packed 13.6Kg
Size Net:	32.5cm x 35cm x 15cm (13" x 14" x 5.7")
Standard accessories	Camera filters, high pass, mounted OG 550, GG 475, OG 515, OG 590
	Camera adapter (short)
	Holder for light guide
	Stepping rings 52/58, 49/58 for camera adapter.
	Goggles amber, red, clear, yellow

Recommended Peltier Cooled 12 bit CCD camera and lens

Pixel depth:	12 or 8 bit pixel resolution, s/w selectable
Peltier cooled:	For low light imaging and long integration time
Integration time:	40 microseconds to 5 minutes
Imager CCD:	2/3rd inch
Pixels:	1280 x 1024 (resolution for both mono and colour)
Image type:	Can switch between Monochrome and Colour
Digital interface:	IEEE-1394 (Firewire)
Lens system:	Micro / Macro Lens

Camera, barrier filter cassette, and dark-hood stand

Stand type:	Modified Kaiser RS1 5511 stand (modified)
Base Board:	Solid wood 18" wide x 20" deep (45cm x 50cm).
Height:	1 meter.
Dark-hood:	350mm x 350mm.
Dark-hood material:	Black light thick 520gm/m wool, heat resistance and fire retardant.

Optical filters for cassette

Band Pass Fiilters:	350nm (70) 415nm (40) 450nm (80) 505nm (40) 530nm (40) 555nm (40) 610nm (27) 650nm (50) 700nm (50) 750nm (50) 800nm (50) 850nm (50) 900nm (50) 950nm (50) 1000nm (50)
Long Pass Filters	>665nm, >715nm, >780nm, >810nm and >850nm

Poli-V++ software to control camera, capture image and enhance image

Features include	Full screen, real time, live images
	Image Storage and retrieval
	Scripting language – allows the user to write down routines and macros
	Filter menu – Intensity, Contrast, Histograms, Profiles, False Colour, Smoothing, Sharpening, Edge Detection
	Fast Fourier Transformation – removal of patterned background
	Image Capture – Live and Integration up to 5 minutes
	More than 120 digital filtering options.
	Fully featured Help Menu

Computer and Printer

Specification:	Any modern Windows based system and printer
Minimum recommended:	Pentium (1GHz or equiv), 128M Ram, 40Gb HDD,
Operating systems:	Windows 98, ME, 2000, XP

NOTE:

Ordering Information

Poliview® IV can be purchased as a complete system or as modules. Existing equipment may be able to be utilized in a modified Poliview® System configuration.

For more information:
Email: info@rofin.com.au

Computer and Printer

As we supply systems all over the world we have found that it is more convenient for the end user, if the computer and printer are purchased locally to provide for local support. This can best be achieved by the end user or our local Rofin agent.

Otherwise we recommend the supply of a computer system with global support supplied from Rofin Australia.

Digital Camera

If you have an existing digital camera this may well be able to be used in Poliview® configuration. We have selected what we consider to be the best CCD camera for scientific purposes.

Agent Information:

Rofin Australia Pty Ltd
Phone: + 61 3 9558 0344 • Fax: +61 3 9558 0252
e-mail: rofin@rofin.com.au • web: www.rofin.com.au