CPRC
CANADIAN POLICE RESEARCH CENTRE

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CENTRE CANADIEN DE RECHERCHES POLICIERES

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Luma Lite Evaluation

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TECHNICAL MEMORANDUM

Submitted by
Canadian Police Research Centre

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NOTE: Further information about this report can be obtained by calling the CPRC information number (613) 998-6342

LUMA-LITE EVALUATION

The Luma-Lite, see attached description, has been evaluated by the Canadian police community. The following police departments were involved in the evaluation of this product:

Edmonton Police Service

Saskatoon City Police Department

Winnipeg Police Department

Calgary Police Service

Vancouver Police Department

Regina Police Service

Moncton Police Force

Fredericton City Police Department

Dartmouth Police Department

Halifax Police Department

Hamilton Wentworth Regional Police

Nepean Police Service

Ottawa Police Service

From these departments, many comments both positive and negative were received. Those comments have been summarized and divided into the following two categories:

POSITIVE BENEFITS:

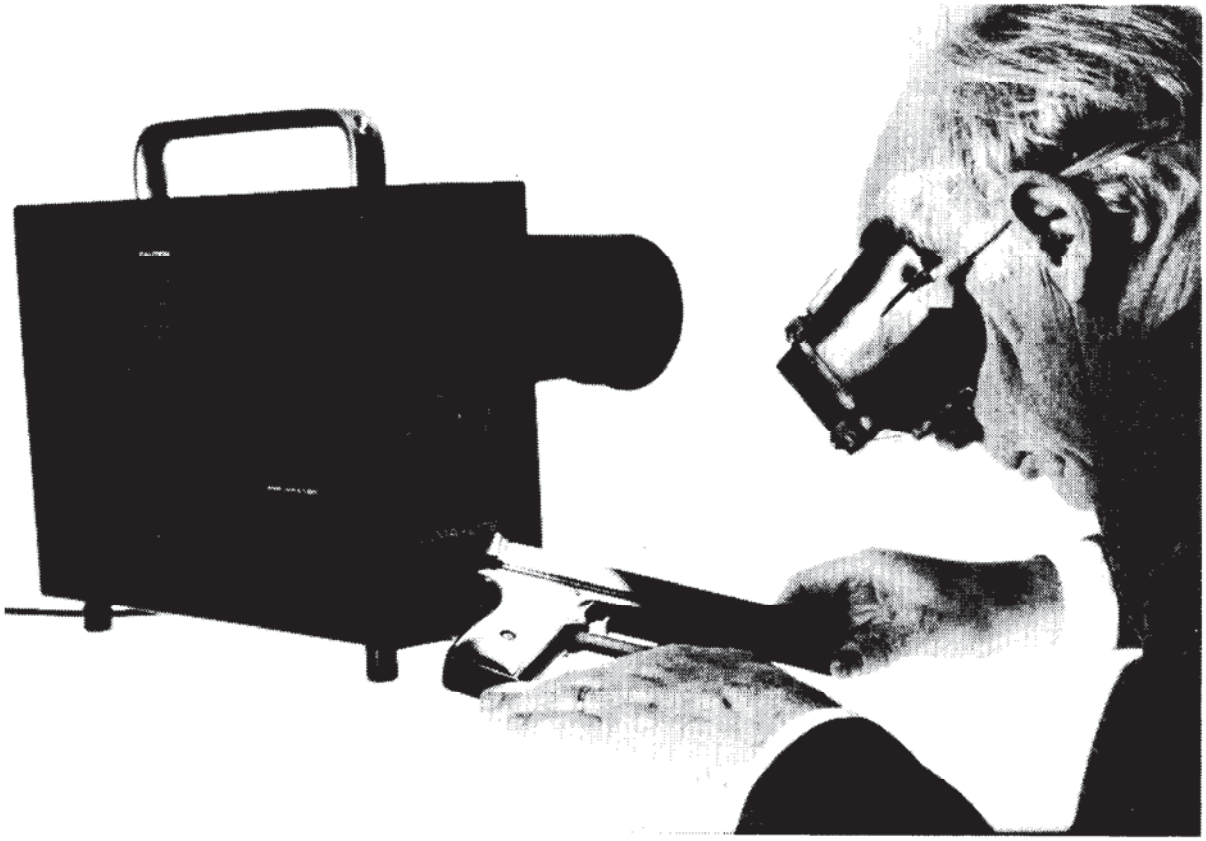
- Fluoresces semen and fibres well
- Treated fingerprints on multi coloured surfaces show up well
- Bruising shows up well
- Excellent investigative tool

CONSTRUCTIVE COMMENTS:

- Size is awkward, should be smaller and lighter
- Too heavy for continuous field use
- Should be more filter selections
- Securing device for filter inadequate
- Intensity and control adjustments in awkward place, should be on top front of unit
- Air filter does not stay in place, filter should be rigid
- Fibre optics attachment insecure at times

CONSTRUCTIVE COMMENTS:... **continued**

- Power cord length insufficient for scene work
- Generator required for field work
- Beam deflector flimsy
- Goggles should be able to accommodate eye glasses
- Training should be provided
- Purchase price is high



Luma-lite inventor Dr. J.E. Watkin examining fingerprints on handgun.

LUMA-LITE DESCRIPTION

The LUMA-LITE was designed for both laboratory and field applications and will provide a full 15 watts of light energy at 460 nanometers with a 20 nanometer band width. The unit focuses fur a 3" scanning area, 8" from the end of the LUMA-LITE, The output of light energy is variable with a control, 7-15 watts. Fluorescence of natural fingerprints can be readily observed in any dark area with especially good contrast on substrate surfaces having a low natural fluorescent

Latent prints that have been polymerized with cycanoacrylate vapours may be dyed with Rhodamine 6 or 6G, DCM or Watreprint. These prints are visjble with the LUMA-LITE under low ambient light conditions. A 485 to 500 nanometer filter is used to cause Zinc Chloride Ninhydrin treated prints to fluoresce on paper under dark-mom conditions.

The detection of body fluid stains it of major importance in police work when dealing with sexual assault cases-The LUMA-LITE with its proprietary high intensity arc tube has been shown to be an excellent *light source for the detectton of body* fluid stains such as seman. urine, sweat and saliva stains. Seminal Stains are the most easily detected of the four fluids and detection of seminal stains is crucial in the investigation of Sexual assault cases. The LUMA-LITE is a valuable tool for the detection of these stains both at a crime scene and in laboratory use and is, therefore. an invaluable tool to any police investigator, crime scene technician or crime laboratory examiner. Departments of Serology and Toxicology have reported a 15-25% improved find and catch ratio when examining surfaces, hair and fabrics using the LUMA-LITE system. Printing Inks and paper fibers also fluopsce well with the LUMA-LITE

The LUMA-LITE system has a Self contained power supply *which consumes* 440W @ 115V AC, ideal for older buildings with original wiring Md for field generated power. A 230V 50 Hz unit Is also available The basic unit weighs approximately 16 pounds and is suppljed jn an aluminum carrying case which protects the LUMA-LITE and standard accessories. A spare lamp and fuses, which are considered consumables, are contained within this portable instrument and the unit is supplied with a 6' AC power cord. Disposable plastic covers are provided for the aluminum feet to eliminate transference of surface material from one crime scene to another. The dimensions are 15" x 13.5" x 5". Provision is made to accept t-20 NC standard camera tripod mounts. A light guide system it available as an accessory which Plugs in, as do the filters. The liquid filled light guides are similar in size to the fibre optic system but are more effective at the generated wavelengths of the LUMA-LITE. We envisage that principal applications would be inside small areas, scanning overhead points of entry or simply directing the light energy In any convenient manner.

Two sets of KVSSO goggles are supplied with the system and a KV550-60mn diameter filter is supplied for mounting on your camera. Larger sizes are also available for the older 4X5 cameras if You Supply the necessary details or a filter mount so we may install the filter.

The LUMA-LITE system has been evaluated by the U.S. Army Crime Labs at Fort Gillem, the FBI in Washington, the R-C-M-P. in Ottawa Md the Ontario provincial Police in Toronto. Specific contacts are available for a reference comment. The LUMA-LITE jr a welcome technological breakthrough in source light energy for law enforcement applications without the inherent high initial and maintenance costs of a laser. The units are user servicable.