



### **MICROSCOPE PEN 330004 (A)**

Useful for on the spot inspections in forensics, biology, document verification, printing, textile, art, jewelry, and microelectronics. Also serves as an inexpensive and simple to use microscope for science education and other labs. Powerful 50x optics that clips to a shirt pocket and is easy to carry anywhere. Weighs only 0.7oz (20g). Dimensions: 5 1/8" x 1/2" (135 x 10mm).

### **UV / LASER / WHITE LIGHT 330006 (B)**

Press one end of the button and get a bright red laser pointer. Press the other end and get high intensity white LED light for inspection and illumination. Press the same side again and get 400 nm ultra-violet light. All packed into a tiny pocket sized device only 3 1/4" x 1/2" (83 x 13.5mm) on a key chain. 4 button cell batteries included. Weight: 1.3oz (38g). See applications on the following page.

### LASER POINTER 330001 (D)

Sturdy construction and long battery life, which allows for heavy use as a teaching tool for science presentations, conferences, lectures, seminars and planetariums. The attractive, brushed-metal and world's thinnest pen-shaped unit can be easily carried in a shirt pocket. Projects a brilliant red dot clearly visible even in bright ambient light or with video, film and slide presentations. Runs for a minimum of 4 continuous hours on 2 standard alkaline batteries (included).

LASER POINTER SPECIFICATIONS	
Safety Class	IIIA
Output Power	5mw
Wavelength	630~680nm
Weight	1.3 oz. (38g) with battery
Dimensions	(330001) 3/8" x 5 1/2" (10mm x 140mm) (330006) 1/2" x 3 1/4" (14mm x 85mm)

### UV LIGHT PEN 330005 (C)

UV Light Pen uses new solid-state LED technology to offer a portable source of UV light built into a slim attractive pen. This new technology has a number of significant advantages over older products using UV fluorescent tubes and light bulbs.

- A more compact, rugged and easily portable product, perfect for fieldwork.
- The 400 nm output is just on the edge of the visible light spectrum, low enough to cause fluorescence yet inherently safer than lower UV wavelengths.
- Much longer battery life eliminates the need for power cords and battery packs. Powered by only four button cell batteries (included).
- Immediate output, no warm up time.
- Much lower cost.

UV LIGHT PEN SPECIFICATIONS	
Light source	High intensity InGaN LED
Wavelength	Peak:400, Min:390, Max:410
Output power	12,000 mW/M2
Optical Rise Time	30 t, ns. Typical.
Operating Temperature	-4~176°F
Weight	1oz (30g) with battery
Dimensions	3/8" x 5" (10mm x 135mm)



### NBC Safety

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## UV LIGHT APPLICATIONS

### **Lab:**

Gel Electrophoresis Photography, Visualization of stained DNA, bacterial destruction, DNA/RNA cross linking to nylon membranes, hybridization ovens for the Laboratory, thin layer chromatography, ultraviolet shadowing of nucleic acids on acrylamide and agarose gels.

### **Food Industry:**

It is necessary to identify rodent presence in all areas of the food industry. Although rodent urine and hair may be invisible in normal light they fluoresce under UV light.

### **HVAC and Automobile service:**

By adding UV powder or liquid to a system, leaks can be identified under UV light.

### **Criminology:**

Check crime scenes for fingerprints (using fluorescing dusting powder) and for some bodily fluids. Locate the presence of accelerants in arson investigations.

### **Geology & Gemology:**

Reveals fluorescent activity in minerals and gems. Jewelers, for example, use UV light to differentiate YAG from tanzanite or synthetic corundum.

### **Medical:**

Locates dermatological bacteria that glow under UV light. Used in conjunction with an indicator fluid in eyes to check for foreign objects and as a skin treatment for psoriasis, Lichen Planus, eczema, dandruff and seborrheic dermatitis under a doctor's supervision.

### **Pest Control:**

Identifies the presence of rodents, scorpions, lice and other insects.

### **Manufacturing:**

Used to cure many special epoxies and glues.

### **EPROM Erasure:**

EPROM chips contain a small window, which when exposed to UV light, erases the memory on the chip.

### **Customs:**

Some passports have images visible only under UV light. Document and forgery analysis: Alterations or changes will sometimes become directly visible when illuminated by UV light.

### **Access control:**

Often access to events is controlled using an invisible mark on a hand or card that fluoresces under UV light.

### **Currency and stamp verification:**

U.S. and many other currencies and stamps contain images visible only under UV light.

### **Painting and carpet repair and verification:**

Many modern inks, paints and dyes may look identical to old colorings under visible light. However, under UV, differences can be seen because the chemical composition of newer substances usually includes synthetic materials.