The Only ALS with Removable & Exchangeable Batteries

UltraLite ALS

He uses it for a reason. Shouldn't you?



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The UltraLiteTM-ALS represents the culmination of nearly a decade of forensic research and design work. The scientists involved in the research and design work have extensive experience in forensic light design. The scientists were previously responsible for revolutionary forensic products, from forensic lasers to fingerprint processing chemicals. These scientists worked closely with forensics experts who have a combined experience of over 50 years in finding, processing, documenting, and preparing forensic evidence for criminal prosecution. The result of this work and collaboration is the UltraLiteTM-ALS.



UltraLiteTM-ALS brings forth 6 major breakthroughs in forensic light technology:

- 1. Blue-Merge Technology (BMT[™]). BMT[™] is the perfect merging of forensic wavelengths (Patents Pending). It is well established in forensics that shorter wavelengths such as 450 nanometers (nm) are most useful in body fluid, teeth and bone fragment, bite mark and bruise work. While longer wavelengths such as 480 nanometers (nm) are most useful in trace evidence and fingerprint work. BMT[™] mixes a unique profile of forensic wavelengths to produce the perfect blend. With BMT[™] you only need to go over the scene or evidence one time with one set of glasses, and one filter to complete 99.5% of evidence detection, collection, and documentation work.
- 2. Power output. The UltraLiteTM-ALS in BMTTM produces over 1000 milliwatts of power. This is equivalent to 3 times the power produced by powerful scene argon lasers such as the SceneSweeperTM Argon Laser. The UltraLiteTM-ALS with BMTTM produces more blue wavelength output power than any other semiconductor based ALS. In order to match the power of the UltraLiteTM-ALS with BMTTM, you would have to purchase a large water cooled laboratory argon laser with at least 3 watts of output power.
- 3. Size and weight. At a size of 6"x 4.5" x 1.25" and a weight of less than 300 grams (including optional battery pack), the UltraLiteTM-ALS represents the smallest, lightest weight forensic light system in the world by a large margin. Anyone who has processed a ceiling, stairway, or the inside of a vehicle will appreciate the benefits of such a small, light-weight forensic light system. The size and weight of the UltraLiteTM-ALS also facilitates unprecedented access to confined areas at a crime scene such as under the dash board of a vehicle or under the sink in a building.
- Power requirements. The UltraLite[™]-ALS comes with a universal AC input. You may run the UltraLite[™]-ALS off of virtually any AC outlet from 90 volts in Japan to 240 volts in Australia. The UltraLite[™]-ALS also comes ready to run off of the cigarette lighter in

your car. The UltraLiteTM-ALS can also run off of a battery pack that inserts into the handle in place of the AC power module. The UltraLiteTM-ALS will operate at full power off of the battery pack for more than two hours.

- 5. Bulb life. The UltraLite[™]-ALS produces light by way of Light Producing Semiconductors (LPS). These LPSs do not have delicate filaments and are not 'jar' sensitive. Furthermore, the expected lifetime of these LPSs is 53,500 hours.
- 6. Price. At less than \$2,000.00 the UltraLite[™]-ALS basic package is but a small fraction of the cost of other ALS systems and forensic laser systems and is affordable to virtually any police department in the world.

The UltraLiteTM-ALS and its BMTTM are at the very pinnacle of cutting edge technology. The breakthroughs were so large in scope it took 4 separate US Patent applications to cover them all. The UltraLiteTM-ALS and its BMTTM cutting edge technology are about to change the face of forensic science forever. As a testament to the fact we offer the following photographs of evidence as evidence. The evidence was illuminated with only the UltraLiteTM-ALS and its BMTTM Head and photographed using only an amber colored filter (Nikon 056): one light, one filter, that is all we needed!:

Evidence Processed With UltraLite™-ALS and its BMT™ Technology

Powder Treated Fingerprints

Red Powder treated fingerprints on black background:





BMT[™] Head and amber filter

Red Powder treated fingerprints on white background:

on black background.





No light, no filter

BMT[™] Head with amber filter

Orange Powder treated fingerprints on black background:



No light, No filter



BMT[™] Head with amber filter

Orange Powder treated fingerprints on white background:



No light, No filter



BMT[™] Head with amber filter

Yellow Powder treated fingerprints on black background:







BMT[™] Head with amber filter

Yellow Powder treated fingerprints on white background:



No light, No filter



BMT[™] Head with amber filter

Cyanoacrylate Treated Fingerprints

Cyanoacrylate treated fingerprints dyed with RAM on metal foil:



No Light, No filter



BMT™ Head with amber filter

Cyanoacrylate treated fingerprints dyed with RAM on plastic:





No Light, No Filter

BMT[™] Head with amber filter



No Light, No Filter



BMT[™] Head with amber filter

Cyanoacrylate treated fingerprints dyed with Basic Yellow on plastic:





No Light, No FilterBMT™ Head with amber filterCyanoacrylate treated fingerprints dyed with MBD on plastic:

Cyanoacrylate treated fingerprints dyed with Rhodamine 6G on plastic:



No Light, No Filter



BMT[™] Head with amber filter

Human Bone and Teeth Fragments

Untreated human bone and teeth fragments mixed with sand and gravel:



No Light, No Filter



BMT[™] Head with amber filter

Trace Evidence



BMT[™] Head with amber filter Body Fluids

Untreated fiber:



No Light, No Filter

Untreated human saliva on denim:





Untreated human saliva on bed sheet:



No Light, No Filter

Untreated human semen on denim:



No Light, No Filter Untreated human semen on bed sheet:



BMT[™] Head with amber filter



BMT[™] Head with amber filter



BMT[™] Head with amber filter



No Light, No Filter

Untreated human urine on denim:



No Light, No filter

Untreated human urine on bed sheet:



No Light, No filter



BMT[™] Head with amber filter



BMT[™] Head with amber filter



BMT[™] Head with amber filter

<u>UltraLight[™]-ALS and Accessories Description</u>



The UltraLite[™]-ALS Basic Kit

The UltraLiteTM-ALS basic package is a kit that includes: The UltraLiteTM-ALS, A BMT Head, Universal AC Power Module and 20' Cord, 20' DC (cigarette lighter) Power Cord, Amber Glasses, Operator's Manual, Warranty Card, and Carrying Case, (Carry Case is configured and dye cut with pick and pull foam to accept all accessories see description below).



UltraLite[™]-ALS Handle

The UltraLite[™]-ALS handle has some truly unique features. First it is designed to accept interchangeable heads. Simple squeeze the clips on the sides of the head, slide it off, and snap the new head in place. It is activated by a trigger switch that is located directly under the index finger when the UltraLite[™]-ALS is held. On the upper portion of the handle is an output intensity selector button. This button allows you to select 400mw, 600mw, 800mw, and 1000mw. The ability to adjust the power output is absolutely essential when creating the best contrast between evidence and background for photography.

Immediately above the selector button are a series of lights that inform you as to what power has been selected. Immediately above the output indicator lights is the battery indicator light. This light illuminates when the batteries have been drained by approximately 20%. The battery's life is dependent upon the output intensity that is selected. The battery will maintain full intensity output of the most powerful head for more than an hour of continuous use. One hour of continuous work represents approximately four hours of busy crime scene work. The light will continue to operate for sometime after this light is illuminated, however, maximum output will not be able to be attained when this light is illuminated. Immediately above the battery indicator light is the tripod mount hole. This mounting hole will mate the UltraLiteTM-ALS to any standard tripod. The handle surrounds either the AC/DC Power Pack or the optional Battery Pack. The Power Pack and/or Battery Pack is quickly and conveniently changed by sliding one out of the base of the handle and sliding the other into the base of the handle, in much the same manner as a magazine is changed in a pistol.



BMT[™] Head

The BMT[™] Head contains Light Producing Semi-conductors that produce Blue-Merge Technology (BMT[™]). BMT[™] is the perfect merging of forensic wavelengths (Patents Pending). It is well established in forensics that shorter wavelengths such as 450 nanometers (nm) are most useful in body fluid, teeth and bone fragment, bite mark and bruise work. While longer wavelengths such as 480 nanometers (nm) are most useful in trace evidence and fingerprint work. BMT[™] mixes a unique profile of forensic wavelengths to produce the perfect blend. With BMT[™] you only need to go over the scene or evidence one time with one set of glasses, and one filter to complete 99.5% of evidence detection, collection, and documentation work. As a testament to the utility of BMT[™], all of the evidence at this website was illuminated with only the BMT[™] light and photographed with only one filter. The BMT[™] Head produces an astounding 1000 milliwatts of output energy.



Universal Input AC Power Module

With the Universal AC Input Power Module you may run the UltraLiteTM-ALS off of virtually any AC outlet from 90 volts in Japan to 240 volts in Australia or any power generator that produces 90 to 240 VAC. The Module plugs into the outlet and then plugs into a removable Power Module in the UltraLiteTM-ALS Handle. The cord is 20 feet long allowing you to process an entire crime scene without having to unplug the unit.



20' DC Power Cord

To operate the UltraLiteTM-ALS from any 12 volt DC cigarette lighter simply plug the DC Power Cord into the removable Power Module in the UltraLiteTM-ALS Handle and plug the other end into a standard 12 VDC cigarette lighter. The 20 foot cord allows you to process an entire vehicle without having to unplug.



Amber Glasses

The amber glasses are perfectly matched to the BMTTM Head. Allowing you to view all types of evidence with just one color of glasses.



Carrying Case

The Carrying Case is lined with die cut foam to provide the ultimate protection for your UltraLiteTM-ALS. The case was designed, laid out, and dye cut to accommodate all available accessories for the UltraLiteTM-ALS including all available heads, batteries, battery charger and Operator's Manual. Simply pick out the dye cut foam as you acquire the accessories. This one small case is all you will need to carry the entire UltraLiteTM-ALS Forensic Light System.

Specifications of UltraLite[™]-ALS with head and Battery Pack:

Height: 6 inches (15cm) Maximum Width: 4.5 inches (10.8 cm) Maximum Thickness: 1.25 inches (3.13 cm) Maximum Weight: <10.58oz (300 grams)

Specifications for Carrying Case

Height: 5.0 inches (12.70 cm) Width: 18.38 inches (46.69 cm) Length: 15.63 inches (39.08 cm) Dry Weight: 4.1 pounds (1.9 Kg)

Accessories



405 nm Head

The 405nm wavelength head produces light that is in the near Ultra Violet (UV). UV light has long been used in forensics for locating, collecting, and documenting evidence related to the human body. The BMT[™] head is capable of performing these tasks well, however, the 405 nm Head will further enhance your abilities to locate, collect and document evidence as it relates to the human body, body fluids, bite mark, and bruise evidence. Yellow viewing glasses and yellow camera filters that cannot be used with the BMT[™] Head can be used with the 405 nm Head and these filters will additionally enhance body fluid, bite mark, and bruise evidence on living or dead victims. Note: when searching for bruise evidence in embalmed bodies the BMT[™] Head and amber glasses and filters are recommended.

Specifications

Length: 2.68 inches (6.8cm) Diameter: (at largest point): 1.68 inches (4.3 cm) Weight: 1.44 Oz. (44.7 grams) Nominal Wavelength: 405 nanometers



525 nm Head

The 525nm wavelength head produces light that is in the visible green portion of the spectrum. Visible green light has been used in forensics for locating, collecting, and documenting trace and fingerprint evidence. The BMT[™] head is capable of performing these tasks well, however, some fiber evidence will not fluoresce when struck with blue light. Some fibers require green, some require yellow, some require red, and some require infrared. Additionally, while all of the fluorescing fingerprint powders and cyanoacrylate dyes fluoresce will with the BMT[™] head so will some of the materials that the fingerprint is found on. In these cases the fluorescence from the background may overpower the fluorescence from the developed fingerprint. Some of the fluorescing fingerprint powders such as the orange powders and some cyanoacrylate dyes such as rhodamine 6G will fluoresce under green visible light as well. Many

background substances that would fluoresce brightly under visible blue will either not fluoresce or will fluoresce at a lower intensity under green wavelengths. In such a case, the 525 nm Head will increase your ability to produce the contrast between the fingerprint and the background that is required in order to photograph the evidence. The 525 nm Head may also be used when searching for bruise evidence in embalmed bodies, however, it is recommended that you use the BMTTM Head first and then use the 525 nm Head. Red viewing glasses and red camera filters can also be used to enhance evidence when using the 525 nm Head. The addition of the 525 nm Head will enhance your abilities to locate, collect, and photograph trace evidence and developed latent fingerprint evidence.

Specifications

Length: 2.68 inches (6.8cm) Diameter: (at largest point): 1.68 inches (4.3 cm) Weight: 1.44 Oz. (44.7 grams) Nominal Wavelength: 525 nanometers



590 nm Head

The 590nm wavelength head produces light that is in the visible yellow portion of the spectrum. Visible yellow light has been used in forensics for locating, collecting, and documenting fibers, enhancing fingerprints developed with ninhydrin, and in some questioned document work. The BMTTM head is capable of performing some of these tasks well, however, the BMTTM will not work well when enhancing fingerprints developed with ninhydrin and some fiber evidence will not fluoresce when struck with blue light, some fibers require green, some require yellow, some require red, and some require infrared. Additionally, dyes used in inks respond much as fiber evidence does. That is to say that some inks will fluoresce when struck by blue light, some require yellow, some require red, and some require infrared. This is why fluorescence is so valuable in guestioned document examination. When a document such as a prescription or check is written by the victim and then altered by the suspect, it is highly improbable that the two would use identical BRANDS of ink. The ink may be similar or virtually identical in color but the actual chemicals in the ink vary from brand to brand. Therefore, the chemicals in the ink used by the victim may fluoresce when struck by blue light whereas the chemicals in the ink used by the suspect may fluoresce under yellow light. Such instances make the alterations very easy to find and document. The addition of the 590 nm Head will enhance your abilities to locate, collect, and document fingerprints developed with ninhydrin, fiber evidence, and altered/questioned document evidence.

Specifications Length: 2.68 inches (6.8cm) Diameter: (at largest point): 1.68 inches (4.3 cm) Weight: 1.44 Oz. (44.7 grams) Nominal Wavelength: 590 nanometers



630 nm Head

The 630nm wavelength head produces light that is in the visible red portion of the spectrum. Visible red light has been used in forensics for locating, collecting, and documenting fibers, and in questioned document work. The BMT[™] head is capable of performing some of these tasks well, however, some fiber evidence will not fluoresce when struck with blue light, some fibers require green, some require yellow, some require red, and some require infrared. Additionally, dyes used in inks respond much as fiber evidence does. That is to say that some inks will fluoresce when struck by blue light, some require yellow, some require red, and some require infrared. This is why fluorescence is so valuable in questioned document examination. When a document such as a prescription or check is written by the victim and then altered by the suspect, it is highly improbable that the two would use identical BRANDS of ink. The ink may be similar or virtually identical in color but the actual chemicals in the ink vary from brand to brand. Therefore, the chemicals in the ink used by the victim may fluoresce when struck by blue light. Such instances make the alterations very easy to find and document. The addition of the 630 nm Head will enhance your abilities to locate, collect, and document fiber evidence, and altered/questioned document evidence.

Specifications

Length: 2.68 inches (6.8cm) Diameter: (at largest point): 1.68 inches (4.3 cm) Weight: 1.44 Oz. (44.7 grams) Nominal Wavelength: 630 nanometers



4 Head Kit

A kit that contains all four accessory heads (405nm, 525nm, 590nm, and 630nm) for a price that is less than purchasing the heads individually.

For a complete specifications and a complete description of the individual heads in the 4 Head Kit please see desired head above.



BMT[™] Head

Included in basic kit. The BMT[™] Head is sold separately as a replacement item

The BMT[™] Head contains Light Producing Semi-conductors that produce Blue-Merge Technology (BMT[™]). BMT[™] is the perfect merging of forensic wavelengths (Patents Pending). It is well established in forensics that shorter wavelengths such as 450 nanometers (nm) are most useful in body fluid, teeth and bone fragment, bite mark and bruise work. While longer wavelengths such as 480 nanometers (nm) are most useful in trace evidence and fingerprint work. BMT[™] mixes a unique profile of forensic wavelengths to produce the perfect blend. With BMT[™] you only need to go over the scene or evidence one time with one set of glasses, and one filter to complete 99.5% of evidence detection, collection, and documentation work. As a testament to the utility of BMT[™], all of the evidence at this website was illuminated with only the BMT[™] light and photographed with only one filter. The BMT[™] Head produces an astounding 1000 milliwatts of output energy.

Specifications

Length: 2.68 inches (6.8cm) Diameter: (at largest point): 1.68 inches (4.3 cm) Weight: 1.44 Oz. (44.7 grams) Maximum Output: 1,000+ milliwatts

Labeled Wavelength: 450 nanometers; the BMTTM Head produces a blend of visible blue wavelengths. In accordance with Federal Labeling Regulations we have to specify one wavelength for the label. Pursuant to the regulation we have decided on 450 nanometers because 450 nanometers represent the strongest or most powerful, single, output wavelength of the blend.



Battery Charger Kit

The Battery Charger comes packaged in kit form. The kit includes: Double Battery Charger, Universal AC Input Power Cord, DC Power Cord (12 VDC cigarette lighter), and 3 Battery Packs.

The Battery Charger is designed to accept power from either the Universal AC Input Power Cord or the DC Power Cord. Which means that you can charge your batteries from virtually any AC power outlet from 90 volts in Japan to 240 volts in Australia to any 90-240 volt generator. The Battery Charger is also designed to plug into any standard 12VDC cigarette lighter so you may recharge your batteries from the cigarette lighter in your vehicle. The Battery Charge has slots for two batteries. The Battery Charger will charge both batteries simultaneously. Approximate charge time from completely dead to fully charged is three hours. The UltraLite[™]-ALS will operate at full power for over an hour before a loss in output intensity is noted. The battery's life is dependent upon the output intensity that is selected. The battery will maintain full intensity output of the most powerful head for more than an hour of continuous use. One hour of continuous work represents approximately four hours of busy crime scene work. The kit comes with 3 batteries, two can be in the charger while the third is being used in the UltraLite[™]-ALS.

Charger Specifications

Maximum Height: 3.70 inches (4.9 cm) Maximum Width: 7.09 inches (18.0 cm) Maximum Length: 5.39 inches (13.7 cm) Input Voltage With AC Power Supply 90-240 VAC, 50/60 Hz Input Voltage With DC Cord: 12 VDC



Battery Charger

A Double Battery Charger with a Universal AC Input Power Cord. The Battery Charger is designed to accept power from either the Universal AC Input Power Cord (included) or the DC Power Cord (optional see Battery Charger Kit). Which means that you can charge your batteries from virtually any AC power outlet from 90 volts in Japan to 240 volts in Australia to any 90-240 volt generator with the included Universal AC Input Power Cord. The Battery Charger is also designed to plug into any standard 12VDC cigarette lighter with an optional DC power Cord (see Battery Charger Kit) so you may recharge your batteries from the cigarette lighter in your vehicle. The Battery Charge has slots for two batteries. The Battery Charger will charge both batteries simultaneously. Approximate charge time from completely dead to fully charged is three hours. The UltraLite[™]-ALS will operate at full power for over an hour before a loss in output intensity is noted. The battery's life is dependent upon the output intensity that is selected. The battery will maintain full intensity output of the most powerful head for more than an hour of continuous work represents approximately four hours of busy crime scene work.

Charger Specifications

Maximum Height: 3.70 inches (4.9 cm) Maximum Width: 7.09 inches (18.0 cm) Maximum Length: 5.39 inches (13.7 cm) Input Voltage With AC Power Supply 90-240 VAC, 50/60 Hz



Battery Packs

Each Battery Pack contains lithium ion batteries that can be charged over and over again and do not maintain a memory. So you can charge the battery at anytime and anywhere. Approximate charge time from completely dead to fully charged is three hours. The battery's charge life is dependent upon the output intensity that is selected. A fully charged Battery Pack will maintain full intensity output of the most powerful head for more than an hour of continuous use. One hour of continuous work represents approximately four hours of busy crime scene work.

Battery Pack Specifications

Maximum Length: 3.25 Inches (8.26cm) Maximum Width: 2.00 Inches (5.08cm) Maximum Height: 1.25 Inches (3.18cm) Weight: 4.18 Oz (130 grams)



Universal AC Input Power Cord

A replacement cord that is interchangeable with the Universal AC Input Power Cord for the UltraLiteTM-ALS or the Battery Charger. This power cord may be plugged into any AC power outlet from 90VAC in Japan to 240 VAC in Australia. This power cord may also be used with any 90VAC to 240VAC generator. The cord is 20 feet in length.

Specifications

AC Input: Universal;100-140VAC, 50/60 Hz



DC Power Cord

A replacement cord that is interchangeable with the DC Power Cord for the UltraLiteTM-ALS or the Battery Charger. This cord can be used with any 12VDC vehicle by simply plugging it into the cigarette lighter socket. It is 20 feet in length.

Specifications

Input Voltage: 12VDC

Replacement Glasses



Amber Glasses Used for viewing evidence with all heads



Red Glasses

Used for viewing evidence with BMT[™] Head, 405 nm Head, 525 nm Head, and 590 nm Head



Yellow Glasses Used for viewing evidence with 405 nm Head.

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