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Established 1965

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Operating Instructions

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SPR-365 V2

UV LED Flash Light

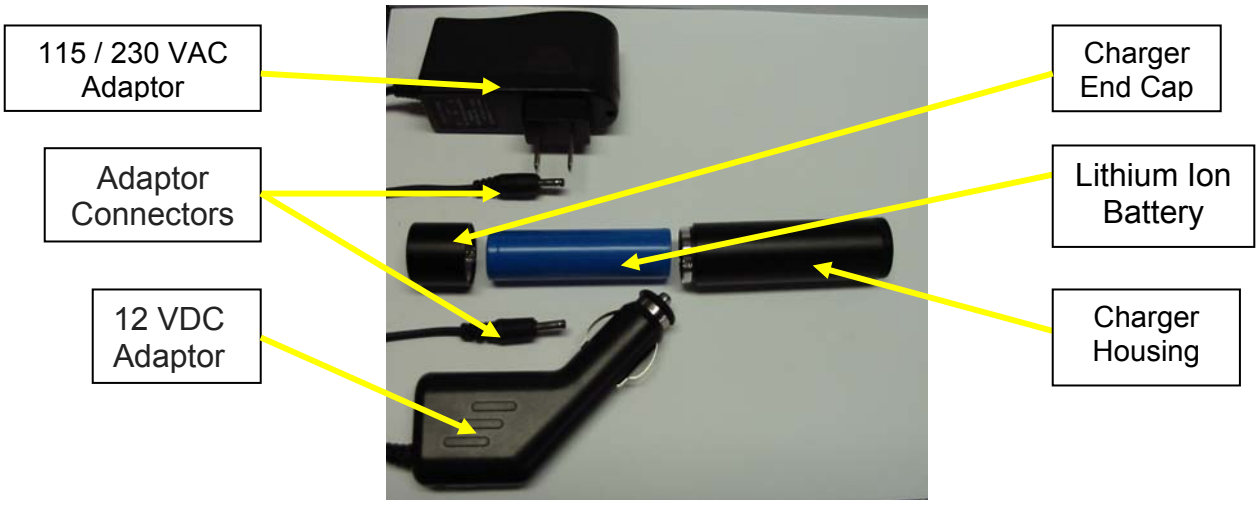
The SPR-365 is a Longwave Ultraviolet (UV A) LED Flash Light (Torch) designed for Magnetic Particle Inspection. The unit should be used within the parameters as set out in the specifications outlined in this Manual.

1. **Push Button Switch –** The Push Button Switch was designed for comfort and safety, but should only be considered water resistant. Push the button once and the lamp turns on, pushed a second time and the lamp turns off.

   If the lamp fails to turn on, the Battery may be installed backwards, so try turning the battery end for end. If that fails, try the spare battery included in the kit. If the second battery fails to turn on the lamp, charge the battery for about 10 minutes, then try the light again. If again the lamp fails to turn on, repeat the procedure with the first battery. If this fails to work either the switch or LED are damaged and must be returned to an authorized repair depot.

   For short periods of time, the SPR-365 can be operated from the charger.

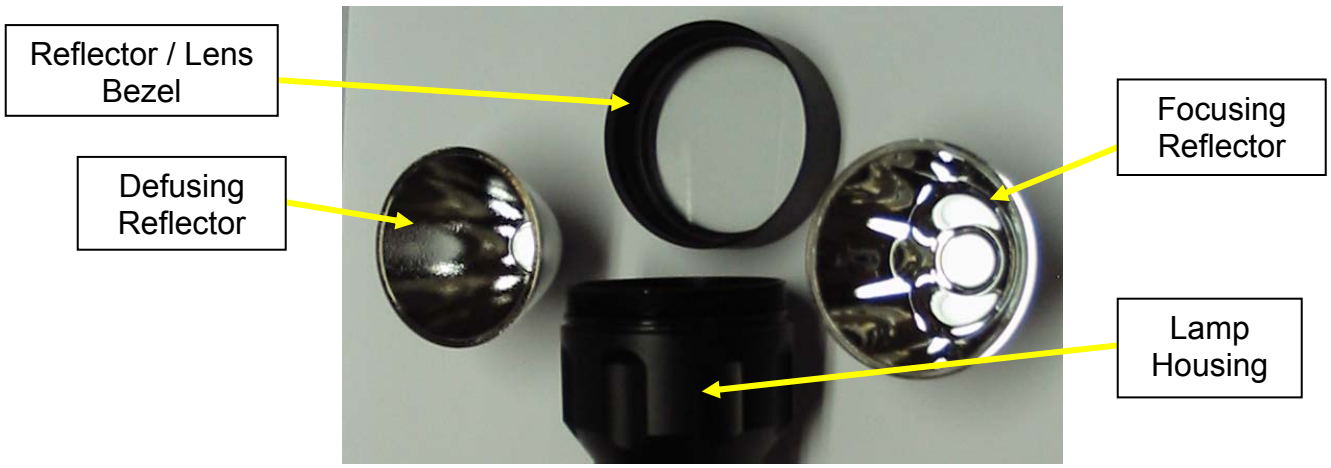
2. **Battery Replacement –** The Battery is Charged Externally in the supplied charger Housing. The Lithium Ion Battery is charged with either the 115/230 VAC Charger or the



12 VDC adaptor. Attention must be paid to the Positive End and Negative Ends of the Battery, where standard conventions are agreed by making the Positive End a button (or small

diameter) and the Negative End flat (larger diameter). There is a legend inside the Charger Housing, which shows the positive end out. If the battery is positioned wrong, the charger will not start.

3. Reflector Replacement - The SPR-365 is supplied with 2 Reflectors, to permit Focusing or Defusing the light. The Focusing Lens in smooth inside, while the Defusing Lens is pebbled. The Reflectors are changed by carefully removing the Lens Bezel, being careful to



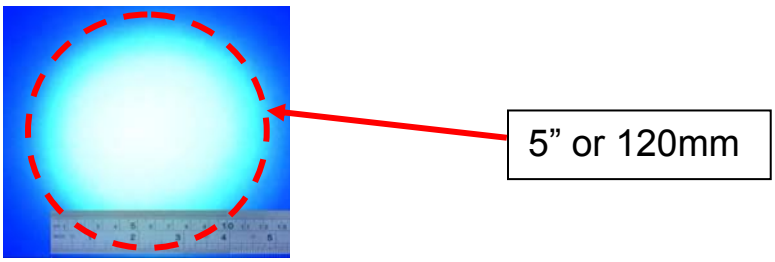
prevent the lens from dropping. The existing Reflector is then simply remove the other Reflector is installed. Operators should try both reflectors for particular inspections that may differ from background light, part geometry, etc.

4. Operational Parameters – The SPR-365 is intended to be turned On and Off very regularly to save on battery life. To be more specific, do not leave the unit turned on when it is put aside. The operator should get in the habit of turning it on when inspecting the workpiece, and off when not. This practice will prolong the charge in the battery, so a fully charge battery can last a half day of inspection, and the spare for the balance of the day.

The SPR-365 can be left on for prolonged periods of time (45 minutes), but the Lens Housing should be felt to ensure it does not get excessively hot. High power LED's do not tolerate heat well, so turning the unit on when in use, and off when not, will ensure a long service life of the LED Assembly (LED, Printed Circuit Board and Heat Sink).

Over time, the Lens/Filter may become clouded do to the intense UV light. When Clouded the Operator may notice a reduction in UV Irradiance, but this will become evident with checking the unit with a Longwave UV Radiometer. Replacement Lens can be ordered separately, but are not considered a consumable item.

5. Field Characteristics – The SPR-365 produces an intense UV illumination area of approximately 5" (or 120 mm) at a distance of 15" (38cm). The average intensity over this



area is 5,000 µW/cm², however the area just outside the center of this area will be higher than 10,000 µW/cm².

6. **Maintenance –** After extended use the SPR-365 should be cleaned with a mild soap solution and thoroughly dried. The unit should be visually inspected for any damage that could cause harm to the operator, or the material being inspected. Special attention should be paid to the Push Button Switch Cover, to ensure its fit is acceptable and it is not cracked or failing in any way.. The most important item is to ensure Oil is not allowed to soak into the rubber switch cover, which will cause it to harden and crack.

   Whether industrial specifications are being observed or not, the LED Flash Light should be tested periodically, using a calibrated Longwave UV Radiometer to ensure it continues to have a minimum output of 1,500 µW/cm² at 15" (38cm). If the unit fails such a test, first inspect the Lens to ensure it is not clouded or dirty. If the unit continues to fail, contact the Distributor or Western Instruments for instructions on corrective action.

7. **Battery Charging** – To charge a SPR-365's Lithium Ion Battery, it must be installed in the Charger Housing, with the End Cap securely tightened to the Body. First Plug in the charger's voltage adaptor (115/230 VAC or 12VDC) to the electrical power source. When the 12VDC Adaptor is plugged into an Accessory Outlet the LED will be Red and will remain Red after charging. When the 115/230 VAC Adaptor is plugged into mains power, the LED will be green, and when it is plugged into the Charger Housing the LED will change to Red.

   The 3.7 Volt / 2600 mAmp-Lithium Ion Battery will take approximately 6 hours to fully charge. The batteries can be charged at any point of their cycle, but should not be left on the charger for more than 12 hours at a time. It is recommended the operator start his day, or an inspection cycle, with both batteries charged., which will take a little 'battery management' on his part.

8. **Safety -** When operating the SPR-365 the operator must wear protective eyewear, either the type included with the kit, or others that provide a reasonable level of Longwave protection from the intense UV irradiance. The level of irradiance from the SPR-365 is about 100 times more intense than the sun on a clear day! Do not point the SPR-365 at anyone's eyes as Retinal damage is virtually assured. Short exposure to indirect irradiance of from the SPR-365 should be kept to a minimum, but acceptable eye protection is appropriate industrial practice..

Warranty

Western Instruments warrants its products, against defects in materials and workmanship for a period of 1 year from receipt by the end user. If Western Instruments receives notice of such defects during the warranty period, Western Instruments will either, at it's option, repair, replace, or condemn products that prove to be defective. Consumable items, such as Batteries and bulbs are warranted for 30 days, from receipt by the end user.

Any warranty is void if the unit has been modified in any way, or if it has been repaired by an unauthorized agency. The end user agrees that any equipment's disposition, when returned for warranty work, is at the full discretion of Western Instruments as to whether a claim is under warranty, or due to misuse. Western Instruments warranty shall overlook normal wear, however does not include operation outside the environmental specification of the product. All warranty work is FOB Western Instruments, and any returned units shall include a written description, by the end user, of the fault.

Western Instruments makes no other warranty, either expressed or implied, with respect to this product. Western Instruments specifically disclaims any liability arising form the use of this equipment. For the correct use of the product, refer to the Operating Instructions, furthermore we recommend instructional training to CGSB, ASNT, or other regulatory authority qualifications. Western Instruments highly recommends the end user exercise all possible safety precautions, including use of protective equipment, while operating this or other industrial equipment.

Specifications:

Wave Length: 365nm +/-5%, Longwave UV A
LED Type: Nichia, NC Series
Visible Light (380 - 780): < 0.1 foot-candles (1 LUX)
AC Charger Voltage: 110 to 240VAC 50 to 60 Hz
DC Charger Voltage: 12 to 15 VDC
Charger Current: 0.8 Amps @ 115VAC
Battery Type: Lithium Ion
Battery Voltage: 3.7 Volts DC:
Battery Capacity: 2600 mAmp-Hour
Weight: 1 Pounds (0.5 Kg)

SPR-365v2 Kit

(Carrying Case not shown)