
OPERATOR'S MANUAL



SuperFlood™ UV-400 Series UV Lamps



SPECTRONICS CORPORATION

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 **DANGER**

Ultraviolet radiation emitted from this product. Avoid exposure. **ALWAYS WEAR PROTECTIVE CLOTHING. UV EXPOSURE MAY CAUSE PREMATURE AGING OF THE SKIN AND CANCER. ALWAYS WEAR PROTECTIVE EYEWEAR; FAILURE TO DO SO MAY RESULT IN SEVERE BURNS OR LONG-TERM INJURY TO EYES.** Never look directly into lamp. Exposure can cause eye and skin allergy and allergic reaction. Medications or cosmetics may increase your sensitivity to ultraviolet radiation. Consult a physician before operating this product if you are using medications or have a history of skin problems or believe yourself especially sensitive to sunlight.

For Laboratory Use Only

 **WARNING**

The UV-400 SuperFlood Series UV lamps must be used with a properly grounded outlet. **Please read the instructions in this manual carefully before using the unit. Never use this equipment in any manner not specified in these instructions because the protection provided by the equipment may be impaired.** The lamp is completely safe when used as directed (see "MOUNTING INSTRUCTIONS FOR SAFE OPERATION"). We recommend using Spectroline UV-absorbing protective eye and face wear. See "REPLACEMENT PARTS AND ACCESSORIES" for model numbers. This eye and face wear also improves contrast between the fluorescent area and the background and eliminates "blue haze" interference.

NOTE: Unfiltered UV can be hazardous to the eyes and skin. Never operate the lamp with the UV filter removed or with the UV filter assembly open.

INTENDED USE

The SuperFlood Series UV lamps are used for fluorescent penetrant and magnetic particle inspection, parts degreasing inspection, and wash station inspection in nondestructive testing (NDT).

OPERATION

Carefully unpack and inspect the lamp for possible damage in shipment. **If any damage is noted, immediately notify the carrier and supplier before attempting to use the lamp.**

Make tests in a darkened area for best fluorescent response, which may be relatively bright or dim, depending on the amount of fluorescent material present.

1. Install the BLE-400 400-watt metal halide bulb (packed separately) according to the instructions outlined in the “BULB REPLACEMENT” section of this manual.
2. Prior to plugging the unit into a grounded receptacle, ensure that both power switches on the front panel are in the “OFF” position.
3. Connect the plug to a power source that complies with the electrical specifications stated on the lamp’s label.
4. The MAIN power switch must be activated or the LAMP power switch will not function. First, push the MAIN power switch to the ON position and check the fan at the side of the unit for airflow. Then push in the LAMP power switch. Both the LAMP and MAIN power switches will light when pushed into the ON position. When initially starting the lamp, allow at least six minutes for the UV source to reach maximum output.
5. When the lamp is to be used intermittently at frequent intervals, it is preferable to leave the lamp burning continuously rather than turn it on and off repeatedly. This ensures longer bulb life and avoids the restarting delay.
6. Restarting of the lamp will *not* occur immediately as the metal halide vapor within the bulb must first cool off. The restarting delay can range up to five minutes or longer.
7. Any interruption in the power supply, such as an excessive voltage drop, will extinguish the arc. Restarting will again be delayed while the metal halide vapor cools off and full voltage is again available to cause the arc to strike.
8. **The lamp housing and filter will become hot during continuous operation and care should be taken not to touch these components.**

MOUNTING INSTRUCTIONS FOR SAFE OPERATION

WARNING

The UV-400 SuperFlood Series UV lamps should be mounted at a 45° angle with a minimum of 6 inches clearance around the unit to allow for airflow circulation. Make sure the front panel switches are easily accessible to the operator and the cord is secured so it does not hang in the line of traffic.

The operator should stand behind the lamp away from the UV beam (see Diagram 1 on page 4). **NOTE:** No UV should be seen on clothing or body parts. UV reflection on clothing means the operator must move outside of the UV beam. For maximum personal safety, we recommend using the Spectrolite UVF-80 face shield.

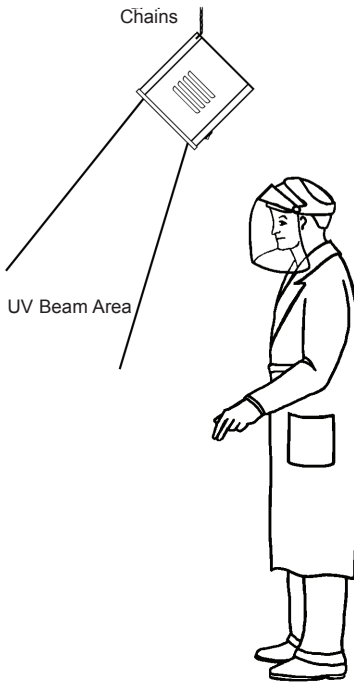


Diagram 1

To achieve a 45° angle, follow the instructions below:

1. Place eyelet bolts into the $\frac{5}{16}$ " diameter holes on the mounting plate closest to the back of the unit (see Diagram 2 below).
2. Attach two pieces of chain link (not supplied) to the eyelet bolts.
NOTE: Depending on the ceiling size and application, select the appropriate chain link size. Chain link rated for 100 pounds is recommended.
3. The lamp will now hang at a 45° angle

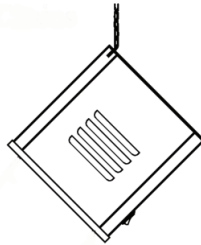


Diagram 2

IF THE LAMP FAILS TO OPERATE

1. Make sure that the unit is plugged into a grounded outlet with the appropriate voltage.
2. Check to see that both the LAMP and the MAIN switches are pushed to the ON position.
3. Check to see that the bulb is securely inserted between the spring-loaded metal contacts.
4. If the lamp has recently been shut off, make sure that the bulb has cooled sufficiently before attempting to restart it. Remember that restarting of the lamp will *not* occur immediately. The restarting delay can range up to five minutes or longer.

OPERATOR SERVICING

The following servicing instructions are intended for limited maintenance of the UV-400 SuperFlood Series lamps. Do not perform any servicing other than that contained in these instructions. Return the lamp to the factory for maintenance not covered in this section.



WARNING

To avoid the risk of electrical shock, **always** unplug the lamp from its power source **before** cleaning or servicing.

HOUSING AND FILTER MAINTENANCE

The aluminum lamp housing is designed for protection of the internal parts. Using a soft cloth, immediately clean spills from the housing with water and a mild detergent and wipe dry. **Do not allow any liquids to touch the filter when it is hot or to penetrate into the unit's electrical components.** Periodically clean the filter with a glass cleaner and a soft cloth.

FILTER REPLACEMENT

NOTE: Allow the unit to cool before changing the filter.

Since the filter is tempered glass, avoid exposing it to any sudden or drastic change in temperature. For example, immersing a hot lamp in a cool liquid can cause the filter to shatter.

1. Disconnect the lamp from the power outlet.
2. Remove the unit from its mounting position. Place it filter-side up on a workbench with the screwlocks turned toward you.
3. With a flathead screwdriver, turn the right and left screwlocks *counterclockwise* until the filter assembly is free to swing open on the hinge.
4. With the filter assembly and reflector exposed, detach the filter assembly by removing the eight Phillips screws that secure the twin filter-retaining plates.
5. With a sharp knife or blade, cut the silicone on the twin filters.

6. Replace the filter(s) as needed. The black filter should be placed farther away from the bulb. The transparent filter should be placed closer to the bulb.
7. Apply *new* silicone before closing and reinstalling the unit to its original position. Allow the silicone to dry overnight.
8. Install the twin filter-retaining plates.
9. Close the unit and the screwlocks in the *opposite* directions to those indicated in step 3, until the filter assembly is securely closed.

BULB REPLACEMENT

NOTE: Allow the unit to cool before changing the bulb.

If the BLE-400 bulb fails to operate correctly, review the procedures outlined in the “OPERATING INSTRUCTIONS” section of this manual. If the problem persists and it is found necessary to replace the bulb, follow the procedure below.

1. Disconnect the lamp from the power outlet.
2. With the screwlocks on the filter assembly closest to you, screw the right and left screwlocks *counterclockwise* until the filter assembly is free to swing open.
3. Open the filter assembly.
IMPORTANT: When installing a new bulb, **never touch the glass envelope**, as skin acids can etch the glass and cause premature failure. If you should inadvertently touch the envelope, use the alcohol-treated tissue provided or other nonflaking tissue dipped in alcohol to clean the surface. The bulb must be perfectly clean before it is installed in the lamp.
4. Note that the bulb sits between two spring-loaded metal tips that are part of a ceramic assembly. To remove or replace the bulb, push the bulb toward one of the spring-loaded metal contacts until the opposite contact clears the recessed spring-loaded contact. Insert or remove the bulb as needed.
5. Swing the lamp assembly to close, and screw both screwlocks in the opposite direction (*clockwise*) to that described in step 2, until the filter assembly is securely closed.

AIR FILTER REPLACEMENT

NOTE: Allow the lamp to cool before changing the air filter. The air filter should be replaced periodically to ensure proper ventilation. The air filter is on the right side of the unit held by a panel with six screws.

INTENSITY VERIFICATION

To ensure that your UV-400 SuperFlood Series lamp is operating at the required UV intensity, it should be checked periodically. The AccuMAX™ XRP-3000 radiometer/photometer kit uses a dual-wavelength UV-A/VIS sensor detector to accurately measure ultraviolet irradiance (320–420nm with peak at 365nm) or visible light in the spectral range of 460–675nm.

The AccuMAX XR-1000 digital readout unit with the XS-365 UV sensor or the Spectroline DM-365XA digital readout unit can also be used for accurate UV-A measurement.

For more information about these units, please contact the Customer Service Department at Spectronics Corporation. In the U.S. and Canada, call toll-free 1-800-274-8888.

ELECTRICAL AND TECHNICAL SPECIFICATIONS

MODEL	TYPE	VOLTS	Hz	AMPS	FUSE
UV-400A	Concentrated Beam	120V	60	4.12	5A (1)
UV-400B	Broad Beam	120V	60	4.12	5A (1)
UV-400A/FE	Concentrated Beam	230V	50	5	6.3A (2)
UV-400B/FE	Broad Beam	230V	50	5	6.3A (2)

Each unit uses a 400-watt metal halide bulb (supplied), P/N BLE-400
 Wavelength 320–400nm
 Dimensions (W x D x H), 15.25 x 12.25 x 12 in (38.7 x 31.1 x 30.5 cm)
 Weight 29.5 lb (13.4 kg)

NOTES

120V units require one fuse, ABC series, FAST, ceramic, 250V, P/N EC-0222-05
 230V units require two fuses, 6.3A, TD (time delayed), 5x20mm, 250V, P/N 125666

Models /FB (Britain), /FA (Australia) and /J (Japan) are available upon request.
 Each unit is fitted with the proper cord set and plug for its country of destination.

ENVIRONMENTAL CONDITIONS

The SuperFlood™ UV-400 Series UV lamps are designed to be safe under the following conditions:

- Indoor use;
- Altitude up to 2,000 m (6,562 ft.);
- Temperature 5°C to 40°C (41°F to 104°F);
- Maximum relative humidity 80% for temperatures up to 31°C (88°F), decreasing linearly to 50% relative humidity at 40°C (104°F);
- Mains supply voltage fluctuations not to exceed ±10% of the nominal voltage;
- Installation Category II;
- Pollution Degree 2.

WARRANTY

The warranty policy for the UV-400 SuperFlood Series UV lamps is provided on the Certificate of Limited Warranty enclosed separately with each unit.

NOTE: For assistance of any kind, contact the Customer Service Department at Spectronics Corporation. Give full details of the difficulty and include the model and serial numbers of the unit and the date of purchase.

If return of the unit to the factory is deemed necessary, shipping instructions will be provided. If an estimate of charges for nonwarranty work or other service work is required, a quote will be furnished upon evaluation of the unit. Out-of-warranty service work will not be performed without customer approval.

Use only replacement parts supplied by Spectronics Corporation. Use of any other parts may damage the unit and void the warranty.

SHIPPING

Carefully pack the unit in its original shipping container and packing materials and ship it prepaid to the factory. Insure it for full value.

REPLACEMENT PARTS AND ACCESSORIES

Description	Part No.
400-Watt Metal Halide Bulb	BLE-400
UV-A Filter	2F110
UV-B Blocking Filter	2F400B
Air Filter	125037
Spring-Loaded Socket (UV-400, UV-400B)	EC-0416
Igniter	EC-0434
Lamp Holder (UV-400A)	126055
Ballast (120V)	100028
Ballast (230V)	102501
Latch, Adjustable Grip	
Left	MC-0483
Right	MC-0484
Spectacles, UV-Absorbing	UVS-30
Goggles, UV-Absorbing	UVG-50
Face Shield, UV-Absorbing	UVF-80



LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org