

# TripleBright II WithOut Cover Lamp X (WOCLX)

## Warranty and Instructions

Rev. 9-6-16

### Terms Used in This Warranty and the Instructions

**Light** – This always refers to the complete light assembly, which is the housing and everything inside the housing. Sometimes referred to just as the **TripleBright II WOCLX** (US Patents 6,479,947 and 6,838,837). There are 4 different models of **TripleBright II WOCLX** (WithOut Cover Lamp X, where X = the UV wavelength). Model **WOCLS** is a **TripleBright II** with a **Short Wave** lamp with an output at 253.7 nm. **WOCLM** is a **TripleBright II** with a **Medium Wave** lamp with an output that peaks at about 312 nm. **WOCL52** is a **TripleBright II** with a **Long Wave** lamp that peaks at about 352 nm. **WOCL68** is a **TripleBright II** with a **Long Wave** lamp that peaks at about 368nm. The **WOCLS** is usually used for germicidal applications. The **WOCLM** is usually used for medical or dermatology applications. The **WOCL52** and **WOCL68** are usually used for UV curing glues, inks, and epoxies.

**Lamp** – This always refers to the one bulb, tube or light tube. The **LS-60-254** is the short wave (SW) lamp (bulb) and has a peak output at 253.7 nm, the **LM-60-312** is the medium wave (MW) lamp and has a peak output at approximately 312 nm, the **LL-60-352** is the long wave (LW350) lamp and has peak output at approximately 352 nm, and the **LL-60-368** is the LW370 lamp and has a peak output at approximately 368 nm.

### WARRANTY

The UV SYSTEMS, Inc. **TripleBright II WOCLX** (US Patents 6,479,947 and 6,838,837) is guaranteed to be free of defects in materials, workmanship, and manufacture for one (1) year from date of purchase. Consumable and disposable products, including –but not limited to – lamps (light tubes) are guaranteed to be free from defects in workmanship and materials for thirty (30) days from date of purchase. If equipment failure or malfunction occurs during the warranty period, UV SYSTEMS, Inc. will examine the inoperative equipment and have the option of repairing or replacing any part(s) which, in the judgment of UV SYSTEMS, Inc., was (were) originally defective or became so under conditions of normal usage and service.

No warranty shall apply to any instrument or light, or part thereof that has been subject to accident, negligence, alteration, abuse, or misuse by any user. Moreover, UV SYSTEMS, Inc. makes no warranties whatsoever with respect to parts not supplied by UV SYSTEMS, Inc. or that have been installed, used, and/or serviced other than in strict compliance with the instructions in the operation manual supplied to the end-user.

In no event shall UV SYSTEMS, Inc. be responsible to the end-user for any incidental or consequential damages, whether foreseeable or not, including, but not limited to property damage, inability to use the equipment, lost business, lost profits, or inconvenience arising out of or connected with the use of instruments or lights produced by UV SYSTEMS, Inc. Nor is UV SYSTEMS, Inc. liable or responsible for any personal injuries occurring as a result of the use, installation and/or servicing of the light.

## **WARNING**

When the short wave or medium wave **TripleBright II WOCLX** is operating, huge amounts of ultraviolet (253.7 nm, UV-C for SW; and 312 nm, UV-B for MW) energy are emitted which may produce sunburn on the skin and/or conjunctivitis to the eyes upon exposure to direct or reflected radiation. Never look into a lighted SW **TripleBright II WOCLX** or a MW **TripleBright WOCLM** light because it can quickly sunburn your eyes and skin. Always position the **TripleBright II WOCLX** so that the ultraviolet light shines away from you and others. The **TripleBright II WOCLX** may emit much more ultraviolet than you may be used to. It is suggested that protective goggles (such as UV SYSTEMS, G2, or equivalent) or full face shields be used to block ultraviolet radiation from reaching your eyes, and that your skin be protected from direct exposure to the light's ultraviolet rays.

### **Before using the TripleBright II WOCLX**

#### **REMOVE THE RED TAPE FROM BOTH ENDS OF THE LAMP**

The red tape is used to hold the lamp in the socket only during shipping.

#### **A. OPERATION INSTRUCTIONS FOR THE TripleBright II WOCLX**

You are now the owner of the newest ultraviolet light specifically designed for irradiation applications. For short wave it uses a custom made quartz lamp that is very resistant to bulb solarization. For medium wave it uses a custom made lamp with a special erythemal glass and a medium wave phosphor that peaks at approximately 312 nm. For long wave it uses one of two custom made lamps with a standard soda-lime glass. One has a long wave phosphor that peaks at approximately 352 nm (LW350) and the other lamp has a phosphor that peaks at approximately 368 nm (LW370). These High Output (HO) Rapid Start hot cathode lamps are the first new sources of ultraviolet for lights that are specifically designed for irradiation applications. The **TripleBright II WOCLX** (US Patents 6,479,947 and 6,838,837) has a special circuit that supplies the cathode heat or filament power (yellow power cord). With this special circuit the **TripleBright II WOCLX** can be turned "on" and "off" thousands of times without affecting the life of the lamp. The yellow power cord supplies the filament power. The black cord supplies the high voltage necessary for the lamp to light; the switch on the **TripleBright II WOCLX** is in series with the black cord. That means that the yellow cord must be plugged in and powered up at least 10 seconds before the **TripleBright II WOCLX** should be turned "on". The **TripleBright II WOCLX** has instant start operation, which means that no starters or extra switches are needed to turn the lamp "on." This means that the black cord can be plugged directly into an external electrical or electronic timer for timing applications. To repeat: it is important that the yellow cord must be plugged in and powered up at least 10 seconds before the black cord is plugged in or powered up. The yellow cord can be left plugged in all the time without significant effect on the lamp in the **TripleBright II WOCLX**; however, you can unplug it if you will not be using the light for weeks at a time. The yellow power cord has no switch in the circuit; therefore to disconnect filament power to the lamp the cord must be unplugged. Also only the black cord should be plugged into a switched wall outlet or external timer. The **TripleBright II WOCLX** operates on 115V 60 Hz or 50 Hz electrical power.

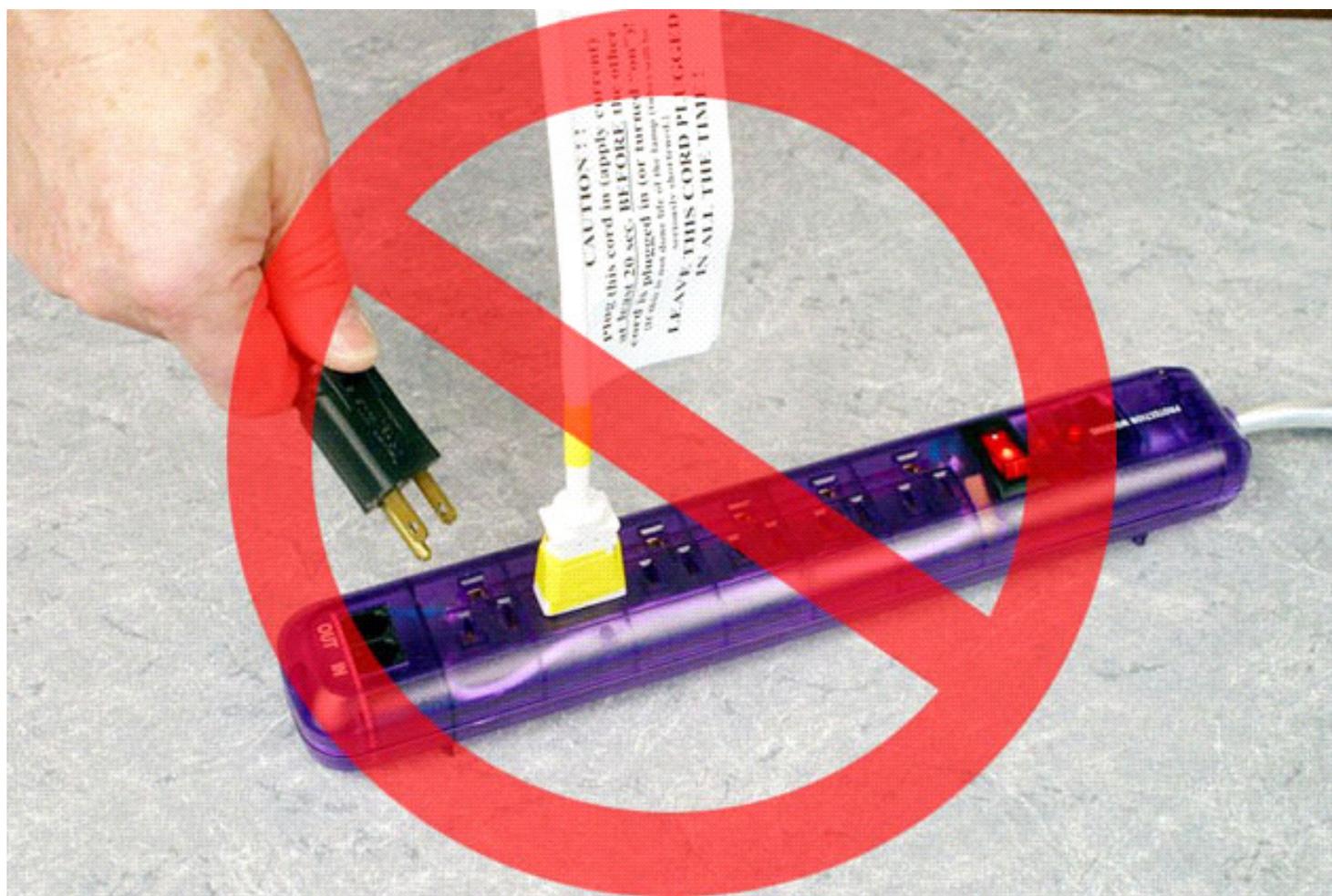
Inspect the **TripleBright II WOCLX** to make sure there is no shipping damage. Styrofoam “peanuts” or bubble pack might be used to protect the **TripleBright II WOCLX** during shipping. All that protective material (Styrofoam “peanuts” or bubble pack must be removed before the light is operated. Make sure you remove the red tape that holds the lamp in the sockets; the tape is only used to make sure the lamp does not come loose during shipping.

**B. INSTALLING THE TripleBright II WOCLX**

The **TripleBright II WOCLX** comes with four built in external tabs that accept small chains or wire to hold the light to the top of your display. By adjusting the length of the chains or wire you can tilt the light to almost any direction. There also are four tapped 8-32 nuts on the back of the unit. The **TripleBright II WOCLX** weighs about 6 pounds.

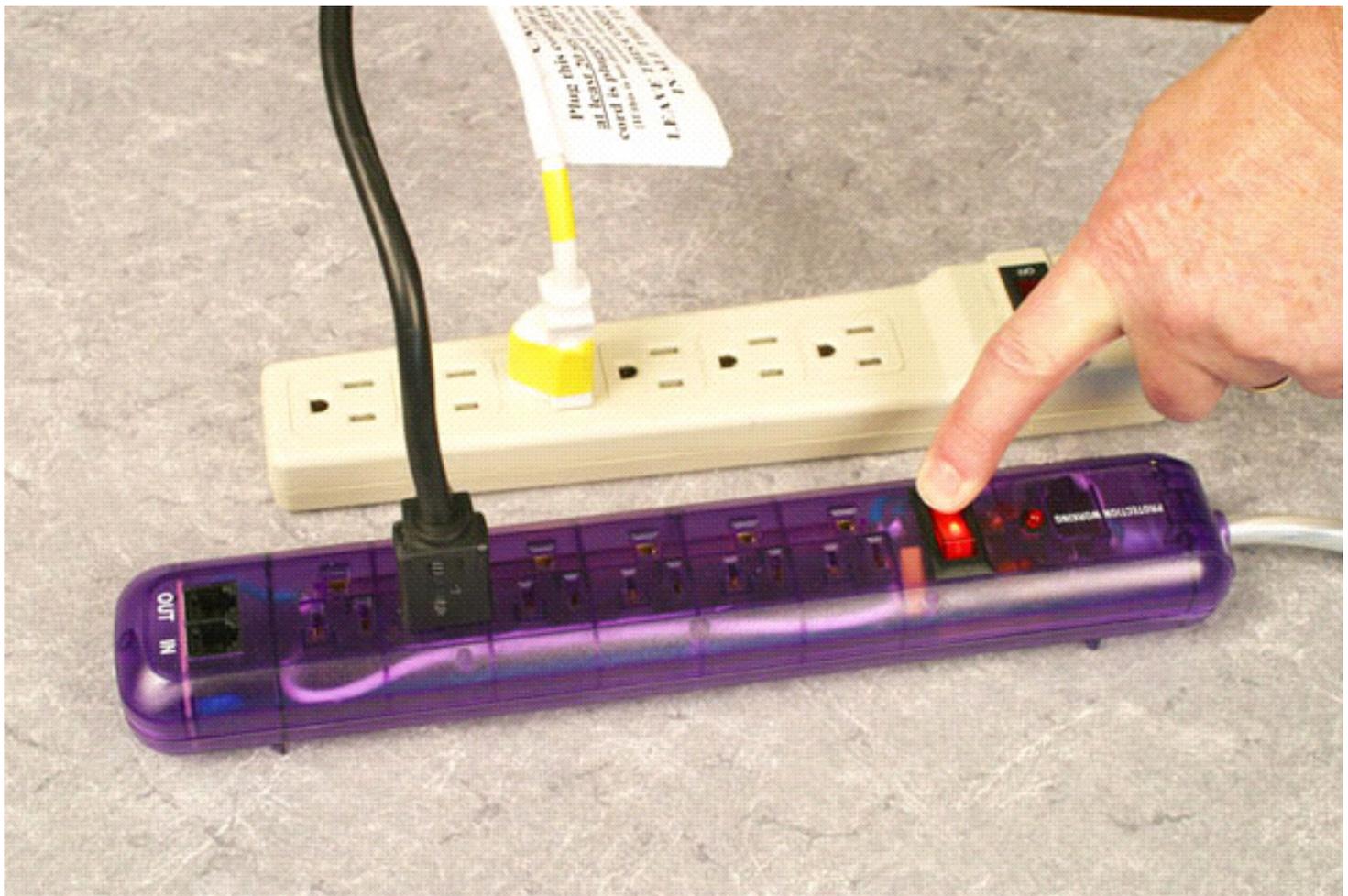
**C. CONNECTING THE YELLOW CORD TO PERMANENT 115VAC POWER**

The cord with the yellow tape around it is called the yellow cord and it must be plugged in first to non-switched constant 115V 50 Hz or 60 Hz power. The yellow cord powers the filament transformer that supplies the filament voltage. The yellow cord should be plugged in at least 10 seconds before the **TripleBright II WOCLX** is turned “on”.



**NEVER PLUG BOTH CORDS INTO THE SAME POWER STRIP**

Always make sure the yellow cord is powered “on” at least 10 sec. before the black cord.  
See next photo.



**CONNECT THE CORDS TO TWO DIFFERENT POWER STRIPS OR OUTLETS**

**This allows the yellow cord to be turned “on” for 10 seconds before the black power cord is turned “on”.**

**D. CONNECTION THE BLACK CORD TO 115 V 50 Hz or 60 Hz POWER**

The black power cord can be plugged into a switched power outlet or into a timer for remotely operating the **TripleBright II WOCLX**. One such timer is the T-20 Timer made by UV SYSTEMS. The switch on the light can be used to turn the light "on" or "off" rather than unplugging the black power cord from the outlet.

**E. REPLACING THE LAMP**

To either remove or install a **LS-60-254**, **LM-60-312**, **LL-60-352**, or a **LL-60-368** lamp, first unplug both the yellow and black 115V AC plugs. Reach in and twist the lamp 90° along its axis and remove it from the lamp holders. Note, the white lamp holders are positioned exactly a set distance apart; however, every lamp has a very slight tolerance in length so some lamps may fit tightly in the lamp holders, and some might be looser. The lamp manufacturer suggested that gloves be used when installing a new SW lamp to keep fingerprints off of the lamp envelope because the oil in your fingers might block some transmission of SW ultraviolet light. Or if you do not use gloves, the manufacturer suggested that alcohol be used to wipe any finger marks off the SW lamp after the lamp is installed. However, it is estimated that any finger oil would only have a very slight absorbing effect on the SW UV, maybe only  $1/2\%$  to 3%, so gloves are not absolutely necessary. Gloves are not required for the MW, LW350, or LW370 lamps (since those wavelengths will pass through finger oil).

The **TripleBright II WOCLX** has a special circuit in it that allows the lamp to be turned “on” and “off” thousands and thousands of time without affecting the normal life of the lamp. However, the lamp will fail at some time, usually by failing to come “on”. A life cycle test was conducted that operated three lamps, a **LS-60-254**, a **LM-60-312**, and a **LL-60-352** with each “on” for about 5 minutes and then “off” for about 39 seconds. The life test was stopped in Dec. 2000, without any lamp failures and they had over 94,000 “on-off” cycles and a total of over 7,588 “on” hours each. Another life test had three **LS-60-254** lamps each “on” for 8.2 seconds and “off” for only 1.8 seconds. That test was stopped in March 2005, with over 2.52 million “on-off” cycles and a total of over 10,321 “on” hours without any failure!

The UV output of the **LM-60-312**, **LL-60-352**, and **LL-60-368** lamps will be reduced as the lamp is used. One UV depreciation test indicates that the **LS-60-254** lamp will have about a 20% reduction in about 7,000 hours. That same test indicates that the **LL-60-352** lamp will have about a 22% reduction, and the **LM-60-312** lamp will have about a 55% reduction both in about 7,000 hours.

**F. PERIODIC MAINTENANCE**

It is important to clean the inside of the **TripleBright II WOCLX** from time to time. Every year (depending on the environment) is suggested. The reflector and lamp should be wiped off with a clean cloth to remove any dust.

**G. MAJOR PARTS LIST FOR TripleBright II WOCLX**

Lamps -	SW	<b>LS-60-254</b>
	MW	<b>LM-60-312</b>
	LW350	<b>LL-60-352</b>
	LW370	<b>LL-60-368</b>
Ballast		<b>Workhouse WH33-120-L</b>

**H. Other UV SYSTEMS products and accessories to the TripleBright II WOCLX**

**Automatic Timer** **T-20 Timer**  
 Electronic timer that can control up to 20 UV lights and up to five different types (such as LW350, LW370, MW, or SW) of lights and also ramp up and dim incandescent lights. Four different outputs are standard. Designed for the **TripleBright II** and **TripleBright II WOCLX**, but will also work for any Instant Start or Rapid Start fluorescent type light that does not require starters.

**Contrast and Safety Goggles** **GB**  
 These goggles will block all ultraviolet from getting in your eyes. A necessity for every collector.

**Replacement lamps (tubes)** **LAMPS**  
 18 sizes of replacement SW, MW, LW350, or LW370 lamps for your other ultraviolet light assemblies.



## **FLUORESCENT MINERAL SOCIETY, INC.**

The Fluorescent Mineral Society, Inc. (FMS), it is an international organization for those interested in the fluorescence and luminescence of minerals. It is not connected in any way with UV SYSTEMS. The FMS members keep in touch through the *UV Waves*, a bimonthly newsletter with articles about fluorescent minerals and their localities, ultraviolet lamps, and related matters. The yearly *Journal of the Fluorescent Mineral Society* publishes technical articles of lasting interest. FMS members have regular regional meetings, and get together at major mineral shows like those at Denver, Tucson and Franklin, NJ. The FMS was founded in 1971, and incorporated in 1993.

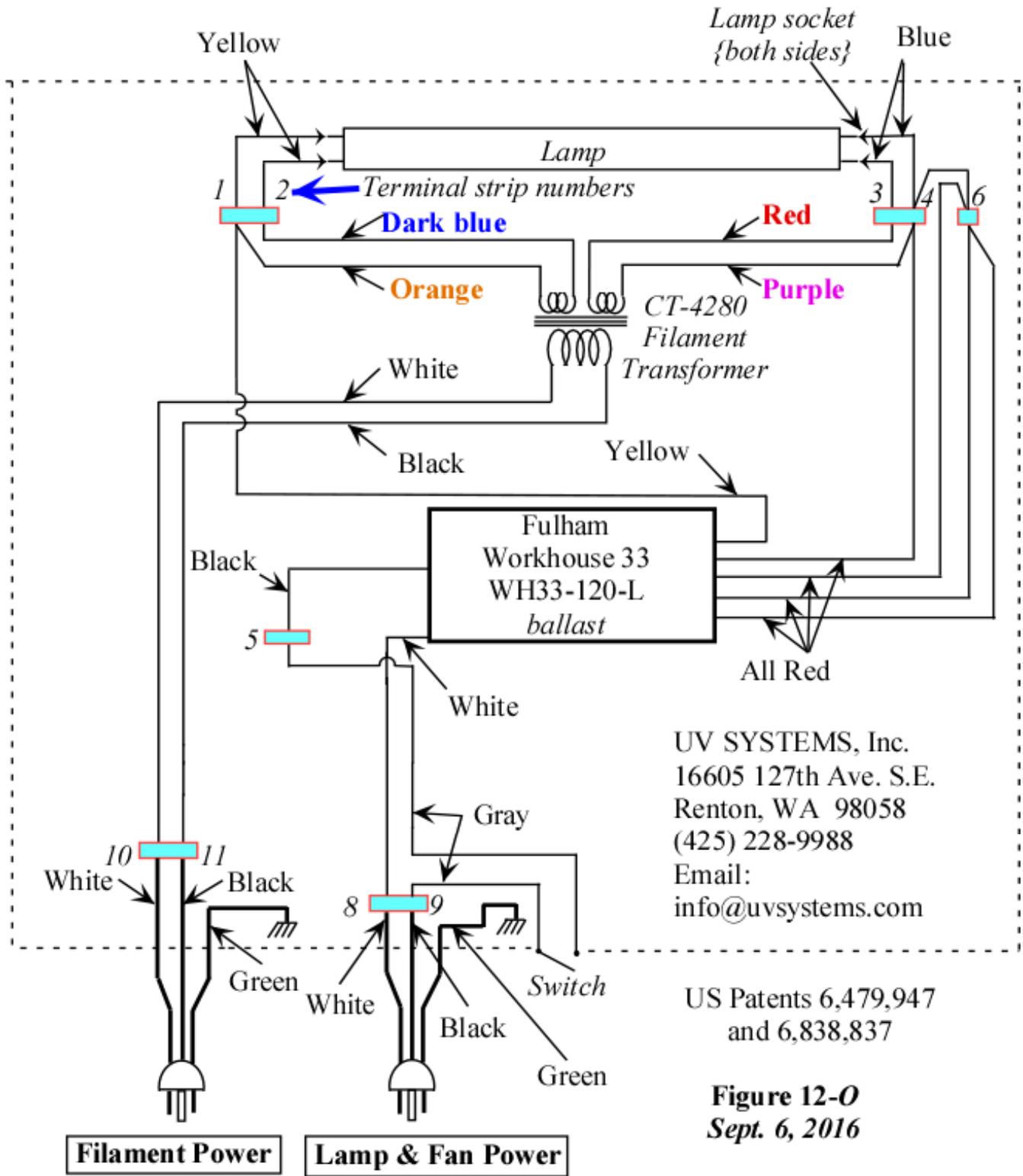
To receive a free application to the FMS contact UV SYSTEMS or contact the Fluorescent Mineral Society, Inc., at P.O. Box 572694, Tarzana, CA 91357, USA or on the web at: <http://www.uvminerals.org> Or email the president at [president@uvminerals.org](mailto:president@uvminerals.org)

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# Schematic of UV SYSTEMS, Inc. TripleBright II Model WOCLX

(where X = the UV wavelength)



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US Patents 6,479,947  
and 6,838,837

**Figure 12-O**  
Sept. 6, 2016