

UVP Automated eLITE™ MultiSpectral Light Source

Installation and User Instructions



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Introduction

The **UVP Automated eLITE MultiSpectral Light Source** is a 150 watt quartz halogen visible light source designed for use with select AJ Advanced Imaging Systems. The unit features a closed optical path to tightly control the output spectrum, allowing consistent and repeatable measurements with superior signal to noise. The Automated eLITE features a six position dimmer permitting variable intensity, and the integrated filter wheel accommodates up to eight excitation filters. System control is via either the VisionWorks® software interface or switches located on the front of the unit.

The unit's fiber optic bundle, designed uniquely for the eLITE, directs lighting to the darkroom. Refer to the components list included with the eLITE and imaging system to determine the appropriate assembly instructions.

System Components

Refer to the packing slip and schematic shown below for specific parts and components included with the eLITE MultiSpectral Light Source.

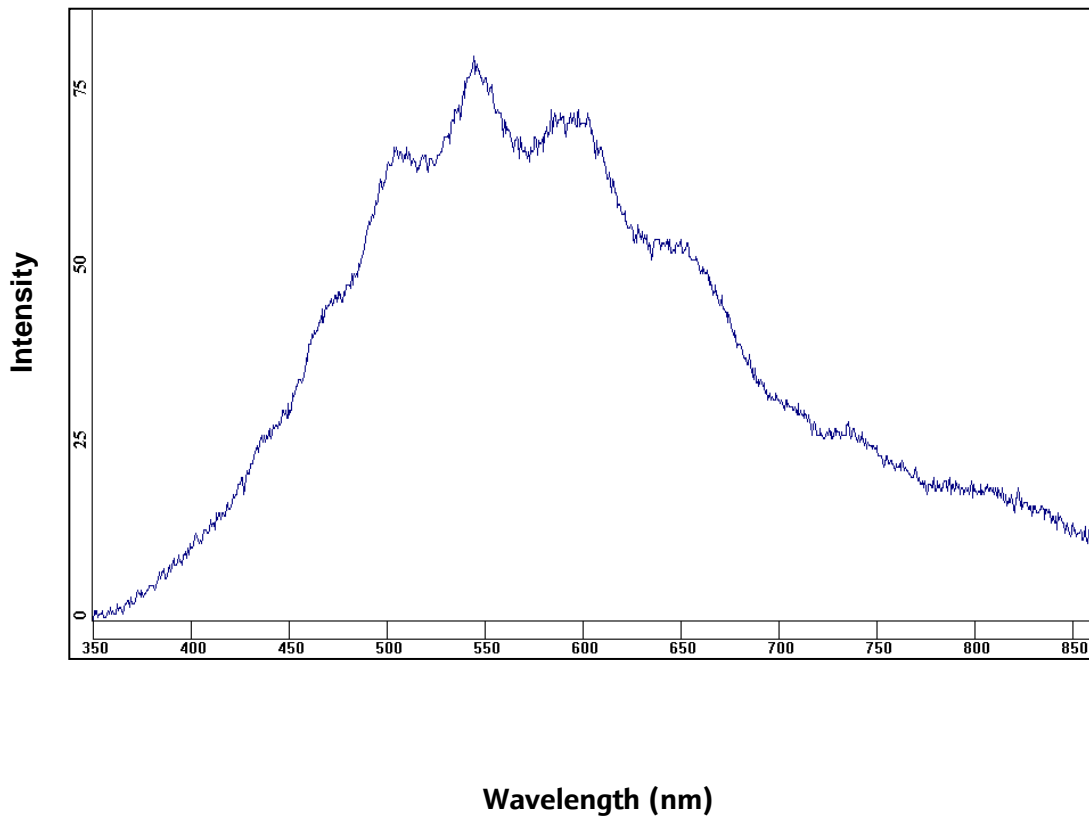


Specifications

Color Temperature:	3250°K
Bulb Type:	150 Watt Halogen Type EKE
Ferrule Dimension:	0.718 inch (18.2 mm)
Physical Dimensions:	
Height	9.6 Inches (22 cm)
Width	9.5 Inches (18 cm)
Depth	10 Inches (25 cm)
Weight	13.75 pounds (4 kg)
Power Requirements:	
115V	1.8 Amps max, 50/60 Hz
230V	0.9 Amps max. 50/60 Hz
100V	2.1 Amps max, 50/60 Hz

Output Spectrum

The graph below displays the spectral emission curve for the halogen light source within the eLITE (shown without filtering):



Safety Information

WARNING: The device will overheat if the fan outlet on the back of the eLITE is blocked.

WARNING: The quartz halogen bulb becomes very hot with use. Do not open the bottom access panel while the eLITE is running or without allowing it to fully cool.

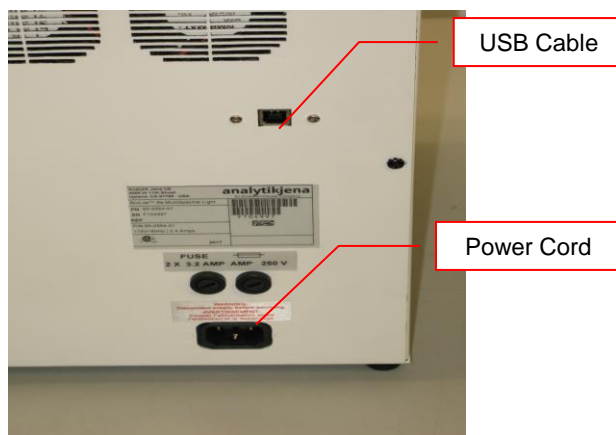
CAUTION: Never touch the inner portion of the quartz halogen bulb. If it accidentally comes in contact with skin, carefully clean the glass with rubbing alcohol and a clean, lint free cloth.

CAUTION: Never look into the output port or fiber optic bundle of the eLITE when it is on, as the intense light may hurt your eyes.

Setup Instructions

UVP eLITE MultiSpectral Light Source Setup

1. Plug the power cord into the receptacle on the back of the unit and the other end to a power outlet. Connect the USB cable to the eLITE and the other end to an available port on the computer.

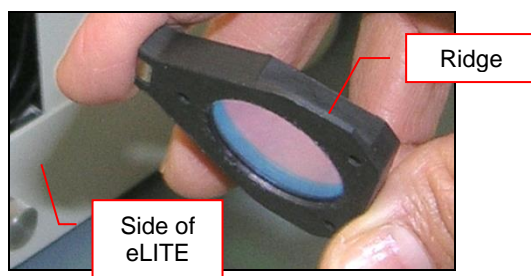


2. Position the eLITE to the left of the darkroom.

Excitation Filter Installation

Filters are installed in a metal black casing from the Analytik Jena US factory. To install the filters into the eLITE filter wheel:

1. Hold the filter assembly so that it is positioned vertically with the filter holder's ridge facing toward the front of the eLITE as shown below.



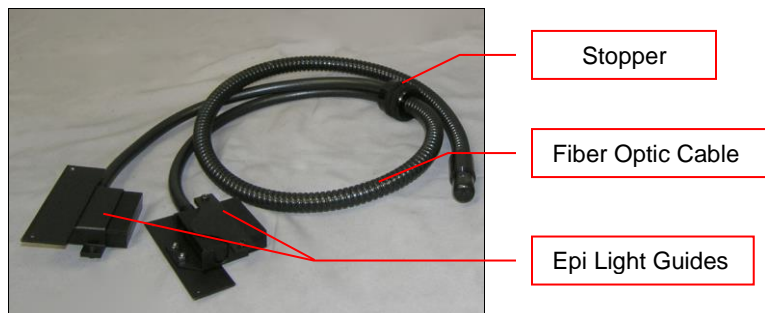
2. Slide the filter into the filter wheel as shown below. The small metal tab on the filter holder will magnetically hold the filter in place within the eLITE. **Note:** Do not force the filter into the eLITE wheel slot. If the filter is not fitting smoothly, ensure that the orientation of the filter assembly is correct.



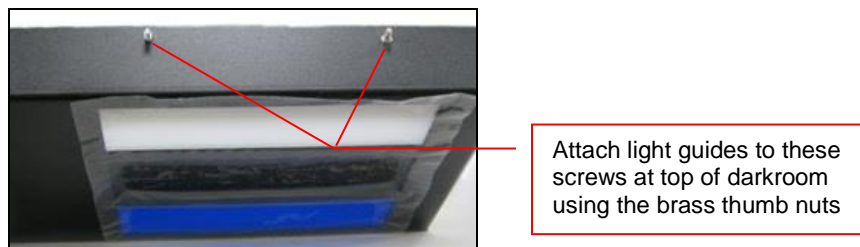
3. To access the other filter positions, manually rotate the filter wheel with the eLITE powered off.

Epi Light Guide Installation (UVP ChemStudio PLUS, formerly BioSpectrum®)

1. Remove the epi light covers at the top of the darkroom.



2. Remove one stopper at the left side of the darkroom.
3. Thread the knurled (non-smooth side) of the fiber optic cable from the inside of the darkroom through the hole created by removing the stopper until the large bulb separating the smooth and rough side of the fiber optic cable can no longer be pushed through the opening.
4. The light guides should be on the inside of the darkroom. Make sure the fiber optic cables extend from the light guide toward the front of the darkroom (toward you). Match the drilled holes in the light guide holders to the protruding screws on the epi light structure. Use the brass thumb nuts to secure the light guides to the darkroom.



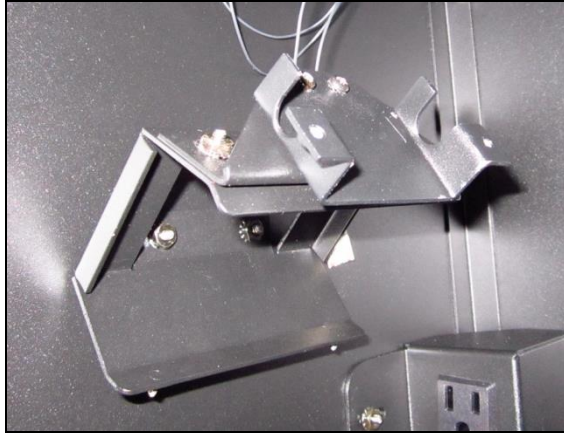
5. Remove the rubber cap from the input side of the fiber optic trunk and plug the cable into the left port



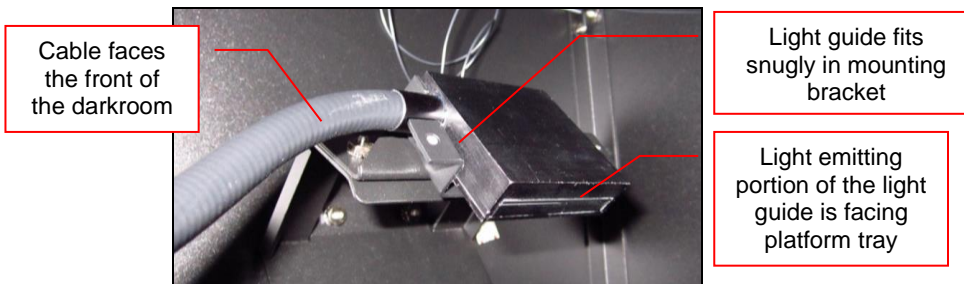
Epi Light Guide Installation (GelDoc-It^{®2/SA2} and ChemiDoc-It^{®2/SA2})

1. Remove one stopper at the left side of the darkroom.

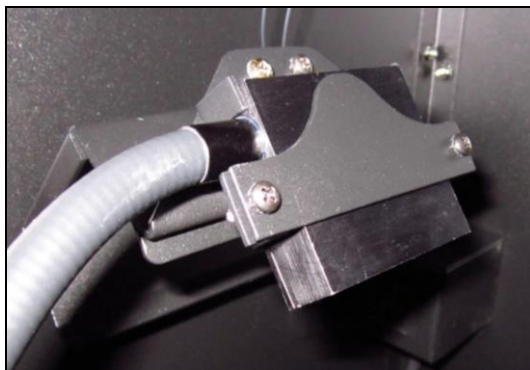
- Remove any existing plates or screws from the mounting bracket so that the epi light guide bracket appears as follows:



- Thread the knurled (non-smooth side) of the fiber optic cable from the inside of the darkroom through the hole created by removing the stopper until the large bulb separating the smooth and rough side of the fiber optic cable can no longer be pushed through the opening.
- Position the light guide in the mounting bracket as shown below. Make sure the cable protruding from the light guide faces toward the front of the darkroom (toward the darkroom door) and that the light emitting portion of the light guide is facing toward the platform tray.



- Attach the mounting bracket plate to the mounting bracket using two of the screws provided, as shown below. Make sure the tab on the plate faces up.



- Repeat the process for the other light guide within the darkroom.
- Remove the rubber cap from the input side of the fiber optic trunk and plug the cable into the left port on the eLITE unit.



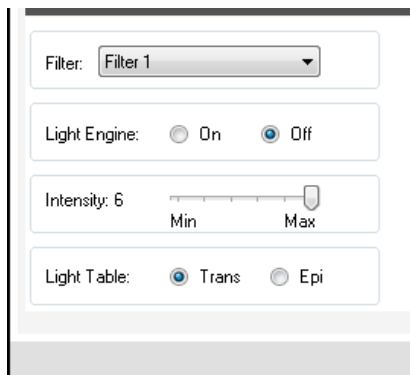
Plug the Fiber
Optic Cable into
the left port

Fiber Optic Light Table (Transilluminator) Installation

1. Remove one stopper at the left side of the darkroom.
2. If the imaging system already contains a transilluminator, unplug and remove the transilluminator.
3. Insert the fiber optic light table transilluminator in the imaging system.
4. Thread the knurled (non-smooth side) of the fiber optic cable from the inside of the darkroom through the hole created by removing the stopper until the large bulb separating the smooth and rough side of the fiber optic cable can no longer be pushed through the opening.
5. Remove the rubber cap from the input side of the fiber optic trunk and plug the cable into the left port on the eLITE unit.

Using the Light Source

1. Set the power switch on the front of the system to the **ON (I)** position.
2. Use the VisionWorks “eLITE” module (shown below) to adjust the various eLITE settings:



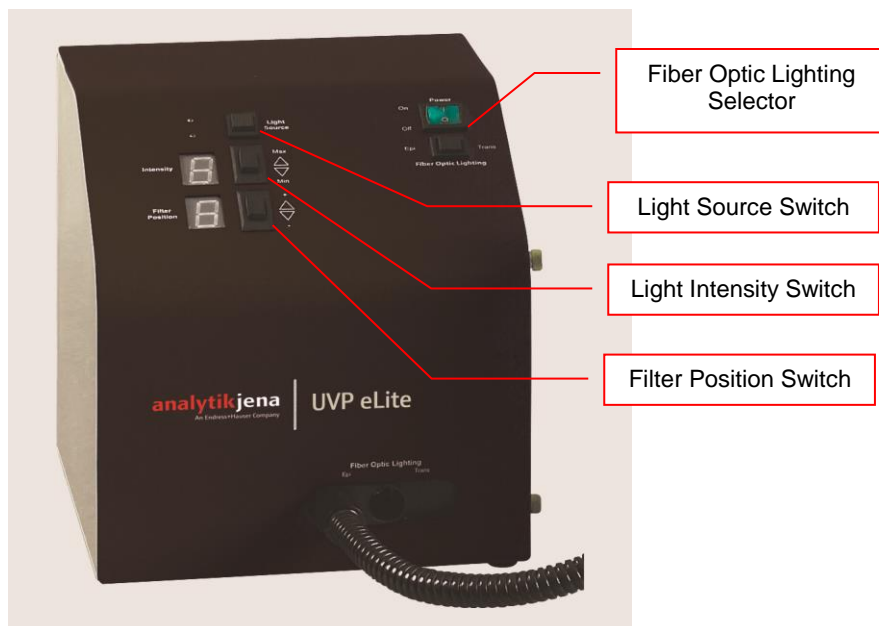
- a. **Filter:** Select the desired excitation filter position from the dropdown menu.
- b. **Light Engine:** Turn the eLITE bulb on or off using the radio buttons (note that the eLITE’s green power switch must be in the ON position to use the lighting controls). When the bulb is on, the lower indicator light to the left of the switch on the front of the eLITE will glow red.
- c. **Intensity:** This setting regulates the amount of illumination in six increments. The relative output levels are specified in the chart below:

Intensity Setting	Relative Intensity
6	100%
5	50%
4	40%
3	25%
2	12%
1	0%

Light Table: Select between either **Epi** (overhead) or **Trans** (base lighting) depending on the application. Note that both the epi and transillumination cannot be used simultaneously.

NOTE: If using the darkroom to perform light-tight experiments such as capturing a chemiluminescence sample for more than two minutes, use the black rubber cap to cover the end of the fiber optic cable. Exposing an image for less than two minutes with the rubber cap removed will not impact the resultant image, so long as the fiber optic cable is installed in the eLITE. Without capping the fiber optic cable, light may enter the darkroom through the end of the fiber optic cable, thus affecting the results of an extended resolution image.

3. It is possible to adjust the eLITE’s settings using the switches located on the front of the eLITE. Note, however, that any settings modified using the switches will NOT be reflected in VisionWorks’ eLITE software interface.



- a. **Fiber Optic Lighting:** Press this button to select either Epi or Transillumination lighting. Note that both epi and transillumination cannot be used simultaneously.
- b. **Light Source:** Press this button to turn the halogen light bulb on or off. When the bulb is on, the lower indicator light to the left of the switch will glow red.
- c. **Light Intensity:** Press the rocker switch toward **Max** to increase the relative intensity of the lighting. Inversely, press the rocker switch toward **Min** to decrease the relative intensity of the lighting. Lighting is provided in six increments, indicated on the LCD display to the left of the rocker switch.
- d. **Filter Position:** Press the rocker switch toward **+** to move to the next excitation filter position. Inversely, press the rocker switch toward **-** to move to the previous excitation filter position. There are a total of eight filter positions; the current position will be indicated on the LCD display to the left of the rocker switch.

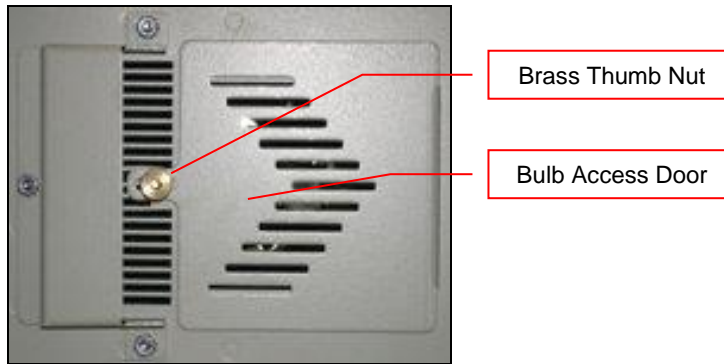
Service Procedures

Bulb Replacement

The eLITE's Type EKE 150 watt halogen bulb has a standard life of 200 hours. It must be replaced with the same bulb type only. The AJ US part number is **34-0088-01**.

The eLITE bulb replacement procedure is as follows:

1. After allowing the unit sufficient time to cool after last use (at least 1/2 hour), unplug the eLITE from its power source.
2. From the bottom of the unit, remove the brass thumb nut and remove the bulb access door.



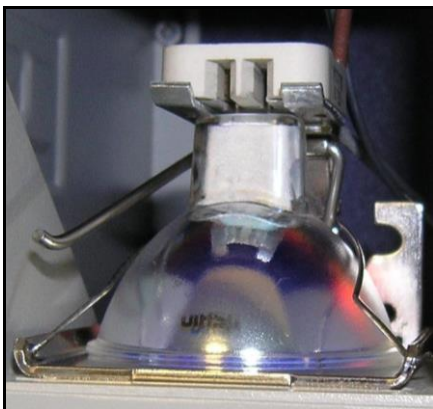
3. Remove the bulb using the mechanism built into the bulb holder. Grasp the chrome wire to the left of the bulb and push it in the direction of the base of the bulb. The bulb will pop out of the connector.



4. Return the bulb removal mechanism to its original, downward position.



5. Insert the replacement EKE halogen 150 watt bulb, ensuring that it is fully seated.



6. Replace the cover and secure with the brass nut before plugging unit back in or turning it on.

Return Procedure

A **Returned Goods Authorization (RGA)** number must be obtained from AJ US Customer Service before returning any product. See "Technical Support" below for contact information.

Replacement Parts and Accessories

To order accessories or replacement parts for the eLITE MultiSpectral Light Source, contact AJ's offices.

Part Description	Part Number
Type EKE 150 Watt Halogen Bulb	34-0088-01
370 – 430 nm Filter (for BFP, CFP, Etc.)	38-0319-01
422 – 478 nm Filter (for GFP, Cy2, Etc.)	38-0319-02
500 - 680 nm Filter (for Cy 5.5)	38-0319-07
Blue Filter (to enhance red and yellow objects)	38-0319-03
Red Filter (darkens green and blue objects)	38-0319-04
Green Filter (increases for red or blue objects)	38-0319-05
Yellow Filter (safelight for photo resist materials)	38-0319-06

Other standard and custom filters are available for a variety of imaging applications. Contact AJ or visit us.analytik-jena.com for further information.

Troubleshooting

Bulb Does Not Illuminate

1. Recheck the main power cord connection to the eLITE unit.
2. Check the fuses located at the back of the unit next to the power port. A small flat-head screwdriver or similar tool will be required. Turn the fuseholder cap counterclockwise and the fuse holder will pop out. Inspect the thin wire within the glass fuse to see if there is a break in the wire. If so, replace the fuse(s). If fuses are blowing repeatedly, contact AJ Technical Support for additional troubleshooting.
3. The bulb may be out of position. Reseat the bulb to reestablish the electrical connection by following the "Bulb Replacement" instruction earlier in this manual.
4. The bulb may be burned out. Follow the "Bulb Replacement" instruction earlier in this manual.

Care and Cleaning

Use only mild soap or detergent solution for cleaning. Do NOT use oil- or petroleum-based cleaners for the cabinet. Ensure that the system is turned **OFF** and unplugged during cleaning.

Technical Support

AJ offers free lifetime technical support on all of its products and software. Should you have any questions regarding the product's use, operation or repair, contact UVP's offices at the locations below, or visit us.analytik-jena.com.

If you are in North America, South America, East Asia or Australia:	If you are in Europe, Africa, the Middle East of Western Asia:
Call (909) 946-3197 , and ask for Technical Support during regular business days, between 7:00 am and 5:00 pm, PST.	Call +44(0) 1223-420022 , and ask for Customer Service during regular business days between 9:00 am and 5:30 pm.
E-mail your message to: info@us.analytik-jena.com	E-mail your message to: uvp@uvp.co.uk
Fax Customer Service, and send it to (909) 946-3597	Fax Customer Service, and send it to: +44(0) 1223-420561
Write to: Analytik Jena US 2066 W. 11 th Street Upland, CA 91786 USA	Write to: Ultra-Violet Products Ltd Unit 1, Trinity Hall Farm Estate, Nuffield Road, Cambridge CB4 1TG UK

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