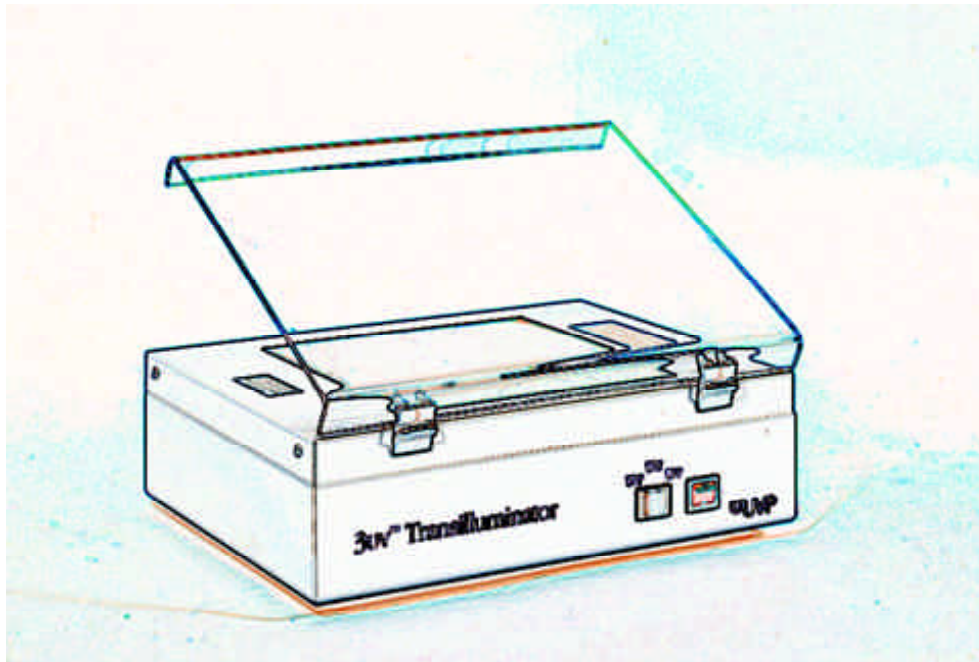


Benchtop UV Transilluminator

Operating Instructions



IMPORTANT: READ THESE INSTRUCTIONS BEFORE OPERATING YOUR UVP TRANSILLUMINATOR TO FAMILIARIZE YOURSELF WITH ITS OPERATION.



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Introduction

The UVP Benchtop Transilluminator Series offers the researcher uniform and intense sources of ultraviolet light (radiation) in a compact package. Their special design emits either one, two or three high intensity excitation UV wavelengths for back-illumination of transparent fluorescent materials.

The 302nm UV back-illumination included in all Benchtop Transilluminators provides a highly sensitive method to detect double-stranded nucleic acids that have been labeled with fluorescent dyes such as ethidium bromide or acridine orange. Single stranded nucleic acids may be detected, but with a lower excitation wavelength more sensitive for nucleic acid visualization than the 365nm model.

NOTE: Though UVP refers to the mid-range UV waveband as 302nm, others refer to this region as 300nm or 312nm. The spectral output of all these regions is the same.

Important Safety Information

A Word of Caution: All UVP Benchtop Transilluminators are powerful sources of UV radiation that will cause damage to unprotected eyes and skin. Before operating any unit, be sure all personnel in the area are properly protected. It is preferable that the transilluminator be installed and operated in a darkroom where access and exposure is limited while the unit is in operation. If a darkroom is unavailable, UVP offers a Darkroom which provides protection from accidental exposure. For part numbers of the Darkroom, contact UVP. Each transilluminator is shipped a UV Blocking Cover. Even though this cover blocks the ultraviolet radiation emitted by the unit, UV Blocking Eyewear should be worn as well. UVP has a complete line of UV Blocking Eyewear: Spectacles, Goggles, and Faceshield designed for this purpose. For part numbers, see Section 9.

Description/Specifications

Single UV Benchtop Transilluminator

The dimensions of the Single UV Benchtop Transilluminator models are:

Width: 13.25" (33.7cm) / Depth: 9.50" (24.1cm) / Height: 4.75" (12.1cm)

<u>Model</u>	<u>Part Number</u>	<u>Nominal Volt/Hz/Amp</u>	<u>Wavelength</u>	<u>Filter Size</u>	<u># of Tubes</u>	<u>Intensity Style</u>
M-15E	95-0218-01	115/60/0.7	302nm	15 x 15cm	5 x 8W	Single
	95-0218-02	230/50/0.6				
	95-0218-03	100/50-60/0.8				
M-15	95-0219-01	115/60/0.7	302nm	15 x 15cm	5 x 8W	Hi/Lo
	95-0219-02	230/50/0.6				
	95-0219-03	100/50-60/0.8				
M-20E	95-0210-01	115/60/0.7	302nm	20 x 20cm	6 x 8W	Single
	95-0210-02	230/50/0.6				
	95-0210-03	100/50-60/0.8				
M-20	95-0216-01	115/60/0.7	302nm	20 x 20cm	6 x 8W	Hi/Lo
	95-0216-02	230/50/0.6				
	95-0216-03	100/50-60/0.8				
M-26E	95-0221-01	115/60/0.7	302nm	21 x 26cm	6 x 8W	Single
	95-0221-02	230/50/0.6				
	95-0221-03	100/50-60/0.8				
M-26	95-0222-01	115/60/0.7	302nm	21 x 26cm	6 x 8W	Hi/Lo
	95-0222-02					
	95-0222-03					

2UV Benchtop Transilluminator

The physical dimensions of all models are:

Width: 13.25" (33.7cm)
 Depth: 9.50" (24.1cm)
 Height: 4.75" (12.1cm)

<u>Model</u>	<u>Part Number</u>	<u>Nominal Volt/Hz/Amp</u>	<u>Wave-Length</u>	<u>Filter Size</u>	<u>#of Tubes/ Wavelength</u>
LM-20E	95-0212-01	115/60/0.7	302nm/365nm	20 x 20cm	6 x 8W/302nm 5 x 8W/365nm
	95-0212-02	230/50/0.6			
	95-0212-03	100/50-60/0.8			
LM-26E	95-0223-01	115/60/0.7	302nm/365nm	21 x 26cm	6 x 8W/302nm 5 x 8W/365nm
	95-0223-02	230/50/0.6			
	95-0223-03	100/50-60/0.8			

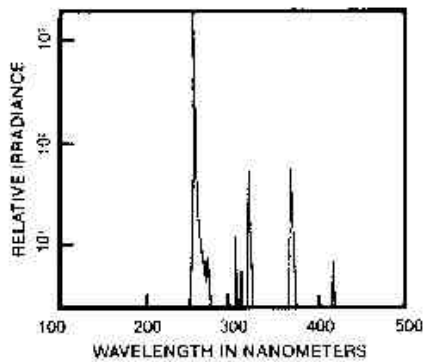
3UV Benchtop Transilluminator

The physical dimensions of all models are:

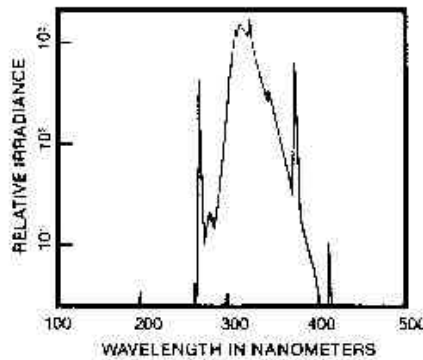
Width: 14.0" (35.6cm)
 Depth: 11.0" (27.9cm)
 Height: 5.4" (13.7cm)

<u>Model</u>	<u>Part Number</u>	<u>Nominal Volt/Hz/Amp</u>	<u>Wavelength</u>	<u>Filter Size</u>	<u>#of Tubes/ Wavelength</u>
LMS-20E	95-0220-01	115/60/0.85	302/365/254nm	20 x 20cm	6 x 8W/302nm
LMS-20E	95-0220-02	230/50/0.75			5 x 8W/365nm
LMS-20E	95-0220-03	100/50-60/0.90			5 x 8W/254nm
LMS-26E	95-224-01	115/60/0.85	302/365/254nm	21 x 26cm	6 x 8W/302nm
LMS-26E	95-224-02	230/50/0.75			5 x 8W/365nm
LMS-26E	95-224-03	100/50-60/0.90			5 x 8W/254nm

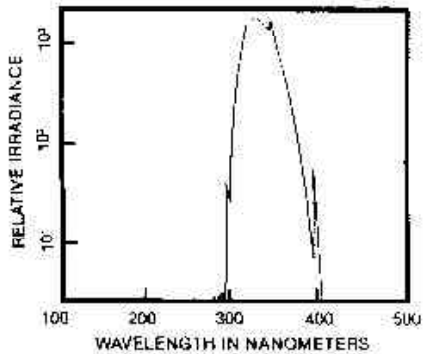
Ultraviolet Spectral Output Charts



254nm



302nm



365nm

Transilluminator Operation

Single UV Benchtop Transilluminator

Place the transilluminator on a level work surface. Be sure that an air space exists around the bottom of the work surface. This space allows for the proper air circulation through the unit.

Plug the female end of the power cord into the transilluminator. For 230 volt models, or those requiring special power cord connectors, ensure that the proper configuration of male connector or plug has been properly connected to the power cord.

Plug the male end of the power cord into a properly grounded electrical outlet. The proper voltage of the transilluminator is found on the product information label.

The transilluminator comes equipped with a UV Blocking Cover. If this cover is not in place or has been removed, do not operate the unit without securing the cover. If the cover is missing, a UV Blocking Faceshield must be worn to avoid UV exposure to the skin. UV Blocking Eyewear should be worn even with the cover in place to avoid accidental UV exposure.

Place gel/sample on the filter area. It is recommended to place the gels on a UVP Gel-Tray (see Section 10 for part number) to protect filter surface from cuts and scratches. It is recommended that gloves be worn to avoid contact with gel and staining agents.

Press the ON/OFF switch to ON. The UV tubes within the unit should be glowing beneath the filter after a momentary flickering during the start-up period.

After viewing/photographing the sample, turn the unit off.

Clean unit surface with a damp soft cloth or sponge. Never use abrasive cleaners (can damage the UV filter surface).

If you have any questions, call UVP Customer Service toll free in the U.S. at (800) 452-6788 or (909) 946-3197 or contact your local dealer. In Europe, call Ultra-Violet Products Limited in England at +44 (0) 1223-420022.

2UV Benchtop Transilluminator

The 2UV Benchtop Transilluminator operates the same as the single UV version (Section 5.1) except that it is equipped with a 365/302nm switch. The transilluminator can be turned on with the UV selector switch in any position.

3UV Benchtop Transilluminator

The 3UV Benchtop Transilluminator operates the same as the single UV version (Section 5.1) except that it is equipped with a 365/302/254nm switch. The transilluminator can be turned on with the UV selector switch in any position. However, when switching between wavelengths, the following should be done to avoid any merging of wavelengths.

1. Turn main power switch (green) off.
2. Actuate three-position switch to desired wavelength location.
3. Turn main power switch on.

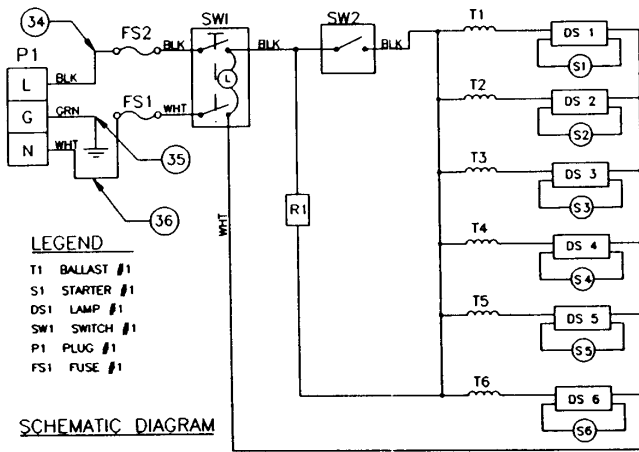
Maintenance/Repair/Technical Assistance

UVP offers technical support for all of its products. If you have any questions about the product's use, operation or repair, please call or FAX UVP Customer Service at the following numbers. In the US: toll free (800) 452-6788; Tel: (909) 946-3197; Fax: (909) 946-3597. In Europe/UK: +44(0)1223-420022 or Fax: +44(0)1223-420561

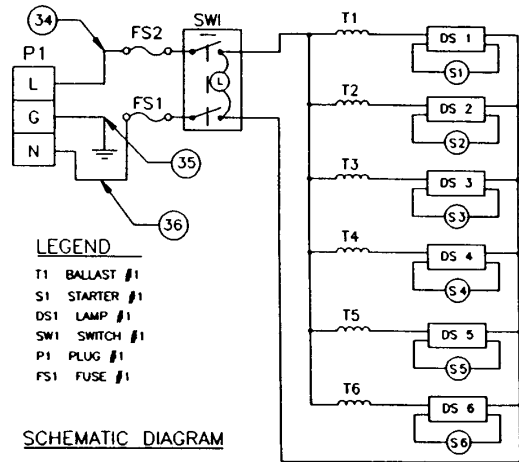
Note: **A Returned Goods Authorization (RGA) number** must be obtained from UVP Customer Service before returning any product.

Single UV Transilluminator Schematics

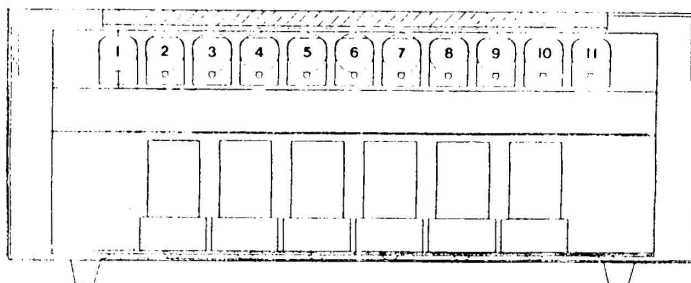
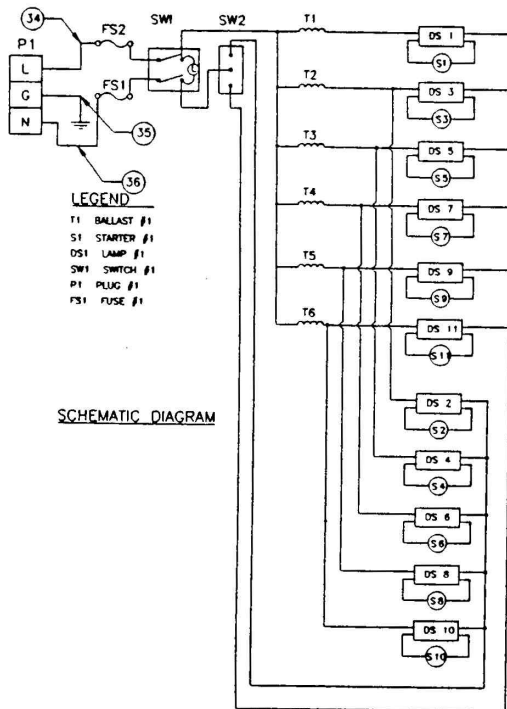
Schematic Diagram Hi/Lo Intensity Models
(M-15, M-20, M-26)



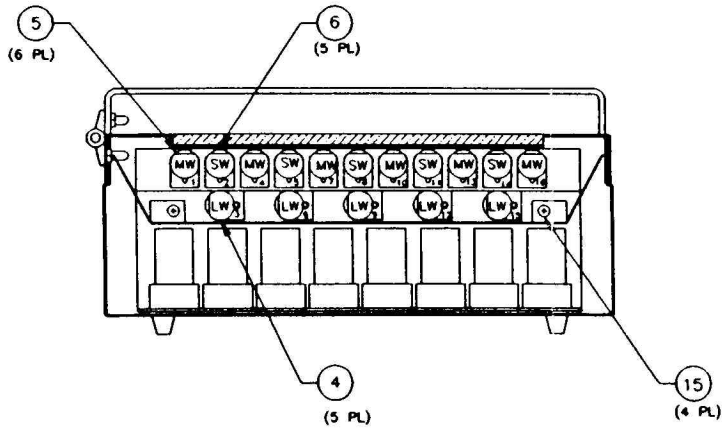
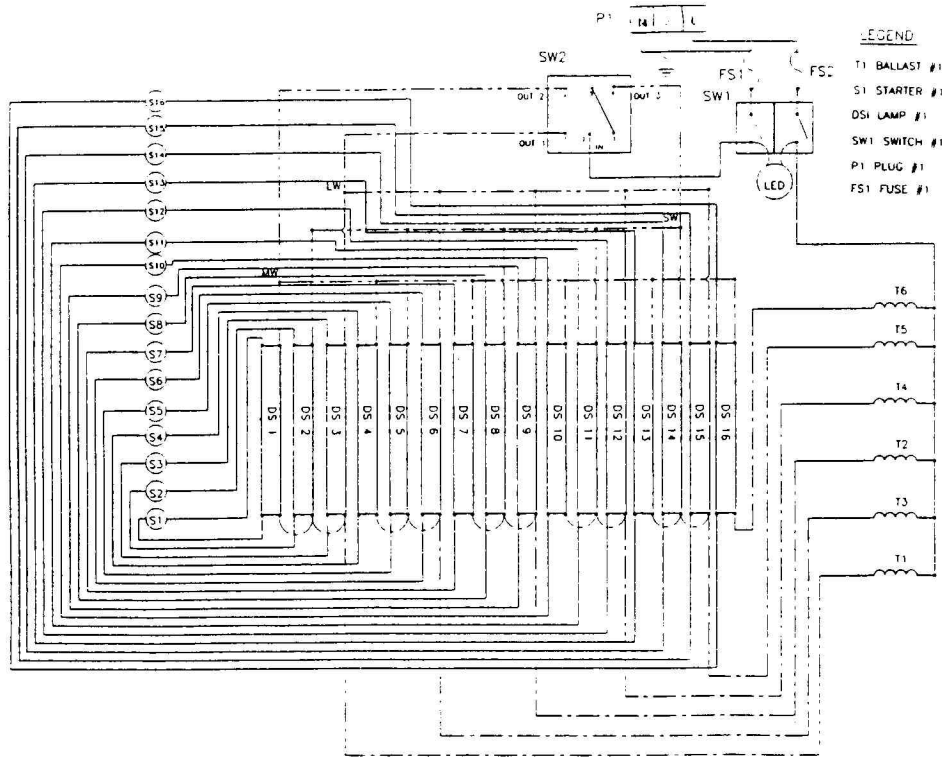
Schematic Diagram for Single Intensity Models
(M-15E, M-20E, M-26E)



2UV Transilluminator Schematics



3UV Transilluminator Schematics



Replacing the UV Tubes

In the Single UV Benchtop Transilluminator

Disconnect the transilluminator from the electrical supply.

A phillips head screwdriver is required to remove the filter cover.

Carefully twist the UV tubes from their sockets.

Fit with the proper replacement tubes. Refer to Section 10 for ordering information.

In the 2UV Benchtop Transilluminator

Care must be taken to replace the proper UV wavelength tube into the proper socket location. The 2UV transilluminator is fitted with alternating 302/365nm tubes: six of the 302nm UV wavelength and five of the 365nm UV wavelength.

Disconnect the transilluminator from the electrical supply. A phillips head screwdriver is required to remove the filter cover. It is best to remove the tubes in sequence and replace in the same manner. UV tubes 1-3-5-7-9-11 are 302nm and UV tubes 2-4-6-8-10 are 365nm. Refer to Section 6.2 for a position drawing. Fit each location with the proper replacement tubes. Refer to Section 10 for ordering information.

In the 3UV Benchtop Transilluminator

Care must be taken to replace the proper UV wavelength tube into the proper socket location. The tubes in the top row of the 3UV transilluminator consist of alternating 302/254nm tubes. Beneath each 254nm UV tube is a 365nm UV tube.

Disconnect the transilluminator from the electrical supply.

A phillips head screwdriver is required to remove the filter cover.

It is best to remove the tubes in sequence and replace in the same manner. UV tubes 1-4-7-10-13-16 are 302nm and UV tubes 2-5-8-11-14 are 254nm. To change the 365nm UV tubes (numbered 3-6-9-12-15) in the second row, it is necessary to remove the top row of tubes. Refer to Section 6.3 for a position drawing. Fit each location with the proper replacement tubes. Refer to Section 10 for ordering information.

Cleaning the UV Transilluminator

The painted surfaces and filter areas of the transilluminator should be cleaned with water, soap, and a sponge or cloth towel. Never use abrasive cleaners, solvent based cleaners or scouring pads.

ALWAYS DISCONNECT THE TRANSILLUMINATOR FROM THE ELECTRICAL POWER PRIOR TO CLEANING.

Replacement Parts and Accessories

For replacement parts or components not shown here, please call UVP Customer Service or place of purchase. Please have the model number available when you call.

<u>Replacement Part Description</u>	<u>Part Number</u>
Filter Assembly (M-10E)	38-0150-01
Filter Assembly (M-15, M-15E)	38-0161-03
Filter Assembly (M-20, M-20E, LM-20E)	38-0161-01
Filter Assembly (M-26, M-26E, LM-26E)	38-0161-02
Filter Assembly (LMS-20E)	38-0163-01
Filter Assembly (LMS-26E)	38-0163-02
UV Tube, 6 Watt, 302nm midrange	34-0044-01
UV Tube, 8 Watt, 302nm midrange	34-0042-01
UV Tube, 8 Watt, 365nm longwave	34-0006-01
UV Tube, 8 Watt, 254nm shortwave	34-0007-01
Ballast , all 115V/60Hz models	42-0005-01
Ballast , all 230V/50Hz models	42-0005-04
Ballast , all 100V/50-60Hz models	42-0005-03
Starter, all 115V/60Hz models	53-0001-01
Starter, all 230V/50Hz models	53-0131-01
Starter, all 100V/50-60Hz models	53-0001-02
Fuse, 1 amp, 250V, Slo-Blo (all voltages)	56-0022-02
<u>Accessories Description</u>	<u>Part Number</u>
Gel-Cutter	85-0002-01
Gel-Scooper	85-0006-01
Gel-Tray, UV Transmitting, Small	85-0007-01
Gel-Ruler, UV Fluorescing	85-0003-01
Spectacles, UV Blocking	98-0002-01
Goggles, UV Blocking	98-0002-02
Faceshield, UV Blocking	98-0002-04

Warranty

UVP, LLC warrants its Ultraviolet Transilluminators to be free of defects in materials and workmanship for a period of two (2) years from date of purchase. The foregoing warranty of UVP shall be of no force and effect if buyer has modified or damaged the product. Tubes and filters are warranted for 90 days.

All warranties or merchantability and fitness for any purpose and all other warranties, expressed or implied, except those expressly set forth herein, are deemed waived and excluded.

UVP's duty under the warranty is limited to replacement and/or repair of the defective part at the option of UVP, Inc. UVP shall not be liable for any expenses or damages incurred by the purchaser except as expressly set forth herein, and in no event shall UVP be liable for any special, incidental or consequential damages of any kind. This warranty does not supersede any statutory rights that may be available in certain countries.

UVP ... Providing Quality Products for the Researcher Since 1932

From its start in 1932, UVP has become a story of growth and value fulfillment. Today, UVP services the needs of science, industry and education throughout the world. A special significance of UVP research and development arises from our constant communication with customers. UVP continually invites your comments toward the improvement of UVP products or the development of custom types of ultraviolet light sources. UVP will work with you through development and production of a product that meets your specific needs. From all of us at UVP, Thank You.