

Limited Warranty:

FJW OPTICAL SYSTEMS INC. warrants the UV-Scope FIND-R-SCOPE® (exclusive of batteries) to be free from defects in workmanship and material. This obligation shall be limited to the repair and/or replacement (at FJW OPTICAL SYSTEMS, INC. option) of articles or parts for which notice of defect is given in writing by the purchaser to FJW OPTICAL SYSTEMS, INC. within ninety (90) days from the date of shipment to the purchaser. Additionally, FJW OPTICAL SYSTEMS, INC. warrants the Infrared Image Converter Tube and FIND-R-SCOPE® Power Supply and optics (excluding Tube breakage) to be free from defects for a period of 18 months. This additional obligation is limited to the repair and/or replacement (at the option of FJW OPTICAL SYSTEMS, INC.) of these items. The notice of defect must be given in writing by the purchaser to FJW OPTICAL SYSTEMS, INC. within 18 months from the date of shipment to the customer. This warranty is in lieu of all other warranties and expresses the sole liability of FJW OPTICAL SYSTEMS, INC. with respect to the product.



FIND-R-SCOPE

Ultraviolet Viewer

User's Manual

For FJW Model Numbers
85300 and 85300-5

Other FIND-R-SCOPE® Product Lines:

FIND-R-SCOPE®	Infrared viewer with IR light source
FIND-R-SCOPE®	1800 & 2200 camera/viewers
FIND-R-SCOPE®	Infrared video system & monitor
FIND-R-SCOPE®	Helmet & microscope units
FIND-R-SCOPE®	UV viewers
FIND-R-SCOPE®	Electronic infrared viewer
FIND-R-SCOPE®	Radiometric infrared viewer/camera
and	The Speckle Buster®.

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FJW Optical Systems, Inc.

Introduction

Thank you for purchasing the FJW Ultraviolet Viewer. Your new UV-SCOPE is a wide angle, monocular, long-wave ultraviolet viewer with a focal range from 114.3 mm (4.5 inches) to infinity. It is fabricated utilizing a rugged polycarbonate body with aluminum housed precision ground optics, eyepiece, and objective lenses. It consists of several modular components which are listed on the following page. Preassembled, tested, and ready for use, the FIND-R-SCOPE® UV-Scope ultraviolet viewer should provide many years of trouble-free operation.

Operating Procedures

In order to view any object, it must emit, or be illuminated by, some quantity of light, be it visible or ultraviolet. Incandescent room lights and daylight are both acceptable for checking instrument operation.

Caution: Viewing excessively high powered light may damage the UV-SCOPE image tube.

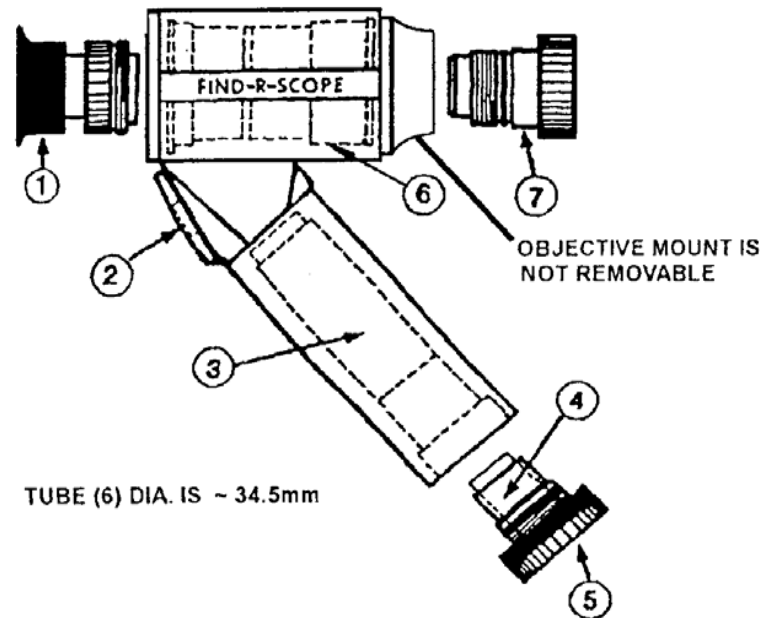
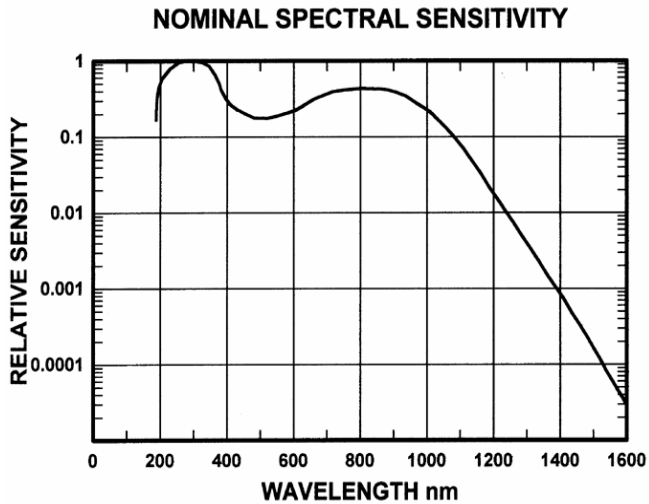
1. Unscrew the End Cap Assembly and insert enclosed "C" cell battery (+ side down into the end cap); re-assemble.
2. Remove the lens cap.
3. Turn the viewer switch ON.
4. Pre-focus the eyepiece lens by rotating the rubber portion to clarify the phosphor screen "grain" of the image tube.

Caution: Rotating the eyepiece beyond the point of easy movement may damage the image tube.

5. Direct the viewer towards the illuminated object and look through the eyepiece lens.
6. Focus the objective lens by rotating the lens to obtain the clearest and sharpest image possible.
7. Repeat STEP 4 to fine-focus and maximize image clarity.
8. Be sure to turn viewer switch OFF when not in use.

UV-SCOPE PARTS and ACCESSORIES LIST (call for current prices)

Part	Item	Description
		IR & UV VIEWERS
85300	UV-SCOPE 180-1350 nm	Hand-held, self contained, monocular UV-near-infrared viewer w/spectral sensitivity from 180 to 1350 nm, with 26 mm f/3.0 UV-grade fused silica lens, and ≈ 1x magnification.
85300-5	UV-SCOPE 180-1550 nm	Hand-held, self contained, monocular UV-near-infrared viewer with extended spectral sensitivity from 180 to 1550 nm, with 26 mm f/3.0 UV-grade fused silica lens, and ≈ 1x magnification.
		VIEWER ACCESSORIES
	Special Filters	Special order filters available, prices vary
80380	Neck Strap	Neck strap to screw into 85300 handle
80385	Wrist Strap	Wrist strap to screw into 85300 handle
80389	Close-up Lens	Attachment for viewing within 6" of target
80451	Variable Iris	Attachment to increase depth of field
81850	Volt Converter	120 Vac, 60Hz Adapter to operate from wall outlet
81850-1	Volt Converter	230 Vac, 50Hz Adapter to operate from wall outlet
85206	16mm Lens	16mm C-mount camera lens
85255	8mm Lens	8mm C-mount camera lens
		REPLACEMENT PARTS
61883	Eyeshield	Rubber eyepiece eyeshield
61897	Power Supply	12,000V internal power supply
80000	Eyepiece Lens	Eyepiece lens
93330	UV Objective Lens	UVATAR 3-element Objective Lens is the standard lens supplied with models 85300 and 85300-5.
93380	UV Objective Lens	UVAGON 5-element Objective Lens can be used in lieu of the standard 3-element lens
85086	"C" cell Endcap	C-Cell End Cap assembly for current models
85282	Carrying Case	Polypropylene case w/ die-cut interior
80064	Power Switch	On/Off switch
93001	180nm Tube	180nm to 1300 nm image converter tube
93001-5	180nm Tube	180nm to 1500 nm image converter tube



Specifications

Standard Sensitivity.....	180 to 1350 nm
Optional Sensitivity	180 to 1550 nm
Peak Sensitivity.....	300 nm
Field of View.....	40°
Magnification.....	1:1
Focal Range.....	4" to infinity
Dimensions.....	6 x 2 1/8 x 7 in.
.....	15.25 x 5.4 x 17.8 cm.
Weight.....	22 oz./ 625g
Tube Resolution.....	50 lines/mm (min)
Power Supply Life.....	2500 hours
Battery Life.....	250 hours (intermittent)
.....	350 hours (continuous)
Body Material.....	Polycarbonate
Operating Temp.....	-25°F to 115°F
.....	-32°C to 46°C

Major Components

Part Number

1. Eyepiece Lens with Rubber Shield	80000
2. ON/OFF Switch	Depends on serial #
3. High Voltage Power Supply	61897
4. "C" cell battery	80148
5. Battery End Cap Assembly	85086
6. Image Converter Tube	93001
6. Image Converter Tube	93001-5
7. Quartz UV Lens Assembly	93330

Optional Objective Lens

Part Number

7. One Element Quartz UV Objective	85310
7. 5 Element UV Achromat Objective	93380

Component Replacement

The UV-SCOPE is designed for ease of service. The following list contains specific details:

1. LENSES: The eyepiece and objective lenses are retained by threads on their tubular housings.
 - a) TO REMOVE THE LENSES - Grasp the instrument in one hand such that the lens to be removed faces up. With the other hand, rotate the lens counterclockwise two or three revolutions until free.
 - b) TO REPLACE THE LENSES - Engage screw threads and rotate clockwise two or three revolutions until snug.
Do not force or over-tighten the lenses as damage to the tube may result. Care should be exercised in engaging and disengaging lenses in order to protect the precision thread quality necessary for proper visual alignment.
2. SPRINGS: The unit has coil springs located behind the eyepiece assembly and in the battery end cap.
3. BATTERY: The unit has one "C" cell battery located in the battery end cap.
 - a) TO REMOVE THE BATTERY: Grasp the instrument securely and rotate the battery cap counterclockwise until the cap comes off. Battery is free to be removed.
 - b) TO REPLACE THE BATTERY: Place the "C" cell battery (+ side down) into the end cap. Place this end cap assembly and battery into the handle. Rotate the assembly clockwise to engage the screw threads. **Do NOT force or over-tighten the endcap**

4. POWER SUPPLY: A high voltage power supply is located behind (*above*) the battery/end cap assembly.

Caution:

To avoid electrical shock, DO NOT REMOVE THE POWER SUPPLY unless the power switch has been turned off for at least five (5) minutes.

- a) TO REMOVE THE POWER SUPPLY: Remove the battery cap and battery per instruction 3a. Grasp the viewer housing such that the opening faces downward. Bump the open end against the palm of the hand to dislodge the power supply.
 - b) TO REPLACE THE POWER SUPPLY: Insert the smaller cylindrical diameter end first and press firmly into place. Replace the battery and battery end cap per instruction 3b.
5. IMAGE CONVERTER TUBE: The image tube is located behind the eyepiece lens. **Caution: This is a fragile glass tube - Do Not Drop!**
 - a) TO REMOVE THE IMAGE TUBE: Remove the eyepiece lens per instruction 1a. Tilt housing downward keeping one hand under the opening. The image tube should slide partially out. If not, tap the housing lightly in your palm. Grasp the tube and pull it free. A gentle tilting or rocking motion while pulling away may be helpful.
 - b) **NOTE:** For maximum performance, all external surfaces of the image tube must be free of fingerprints and other dirt or high voltage arcing and image degradation may occur. Before replacing the