VideoBarrelino™

USER'S MANUAL

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UNPACKING

Before installing the *VideoBarrelino*™ make sure all the parts on the included check list are present. If any parts are missing or damaged, contact Harrick Scientific immediately.

> ***CAUTION*:**
> *When unpacking and handling the optic fiber, take extreme care not to bend it, as it can very easily be damaged and rendered useless.*

TECHNICAL SUPPORT

For additional information please contact our Technical Support Center at 800-248-3847 between 9 a.m. and 5 p.m. EST; or e-mail your questions to: techsupport@harricksci.com

FEEDBACK

Your comments and suggestions are welcome.
Please send them to:

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The *VideoBarrelino*™ is a remote diffuse reflection probe specially designed for the Cary 50 and 60 UV-Vis spectrophotometer. It is optimized for true diffuse reflection mode (*i.e.* no specular reflection from the sample is detected) and it features a small (under 1.5 mm diameter) sampling spot size. It uses fiber optics to bring light from the spectrophotometer into the probe. An integral detector is used for signal detection. Both the fiber optics and the detector cord are about 1.5 m long enabling analysis of any sample that could be brought within 1 m from the sample compartment. Typical samples for analysis include objects of art, biological samples, large panels, dyes etc.

The *VideoBarrelino*™ comes with an integral video camera to facilitate selecting the sample spot to be analyzed by providing a visual image. Zero order light from the spectrophotometer is used for illumination and the spot illuminated is the spot that will be analyzed. The video version comes with a power supply and an USB video adapter to display the sample in real-time on the computer monitor. Software provided allows video capture and storage of the displayed image. The *VideoBarrelino*™ also comes with a switch for remote scan initiation and a convenient wooden storage/carrying case.

GETTING READY

Before installing the *VideoBarrelino*™, familiarize yourself with the accessory and its various components by referring to the photo of the *VideoBarrelino*™ in its storage case found below (Figure 1).

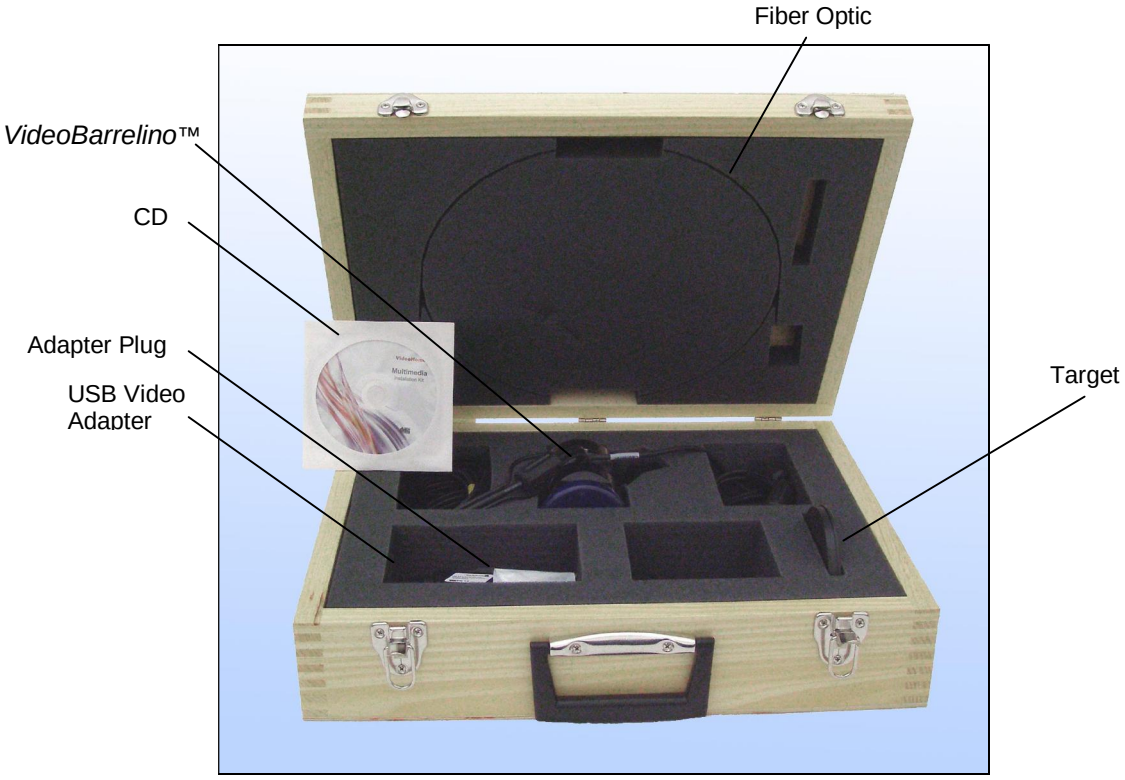


Figure 1 • *VideoBarrelino*™ in its storage case

> ***CAUTION*:**
> *When unpacking and handling the optic fiber, take extreme care not to bend it, as it can very easily be damaged and rendered useless.*

INSTALLING THE *VideoBarrelino™*

Before installing the *VideoBarrelino*™ install and align the Fibre Optic Coupler into the Cary spectrophotometer according to Varian instructions (See the Cary software help files for details).

To install the *VideoBarrelino*™:

- Unplug the internal spectrophotometer detector and plug the *VideoBarrelino*™ detector (Figure 2) into the appropriate receptacle in the sample compartment wall (Figure 3).
- Slide one SMA connector of the optic fiber into the SMA connector of the *VideoBarrelino*™ (Figure 2) and the other end into the Coupler SMA connector (Figure 4).
- Plug the Read Switch into the Coupler Read Switch connector (Figure 4) and the Coupler Read Switch into the appropriate receptacle in the sample compartment wall.

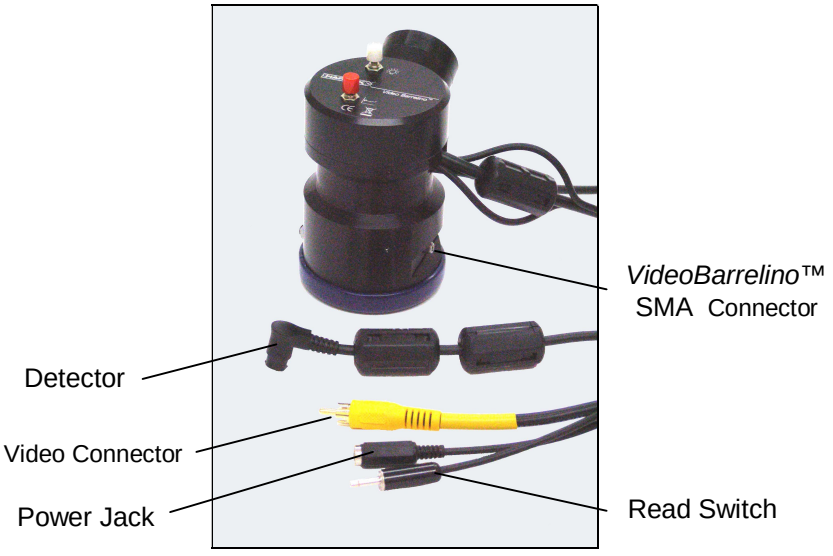


Figure 2 • *VideoBarrelino*™ Connections

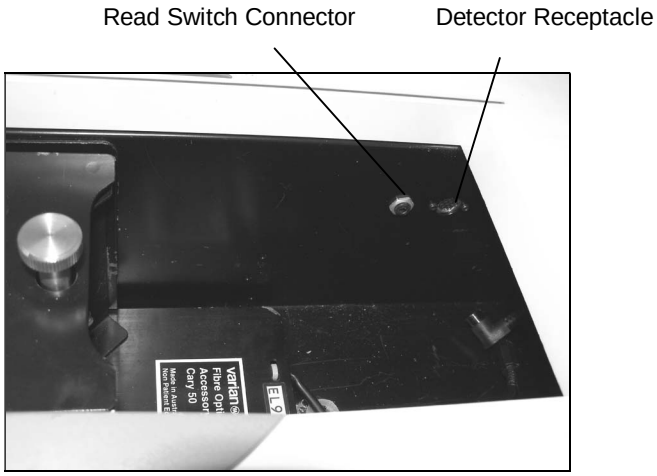


Figure 3 • Cary 50/60 Connections

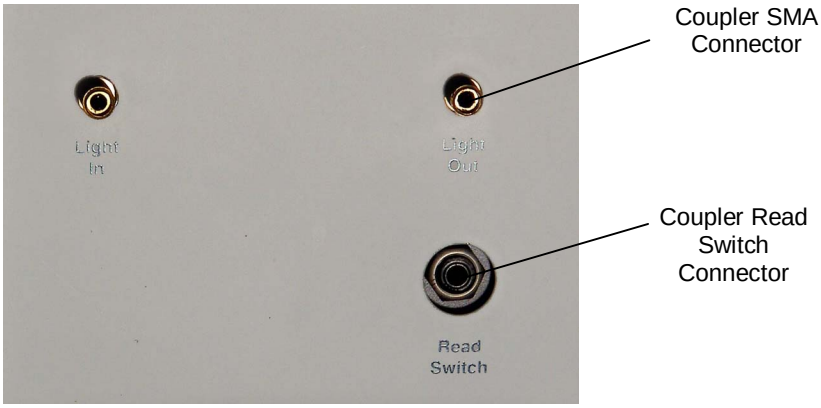


Figure 4 • Cary 50/60 Fibre Optic Coupler Connections

- Connect the *VideoBarrelino*™ to the power supply using the adapter provided.
- Plug the power supply into a wall outlet.
- Install the supplied USB video adapter as per the included instructions for the adapter.
- Plug the USB adapter from the computer into the video connector on the *VideoBarrelino*™.

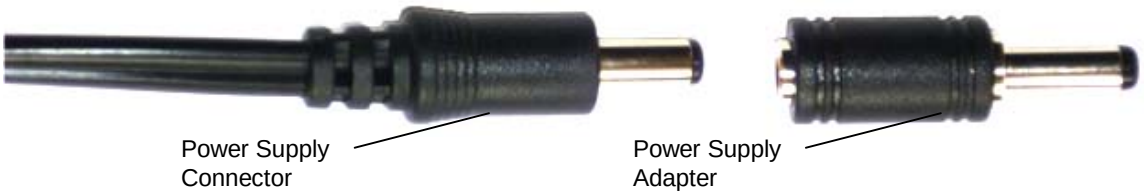


Figure 5 • Power Connections

To confirm that the USB video adapter is operating:

- Click on the “GrabBee” icon on your desktop.
- If no image is visible, check to make sure the GrabBee screen shows Composite/Preview. If it does not, select the icon indicated in Figure 6 to toggle the display.

Figure 6 • GrabBee Screen

To confirm the performance of your accessory, it should be tested before first use and at regular intervals thereafter.

PERFORMANCE TEST

- Place the *VideoBarrelino*™ on a white sheet of paper or a white section of this manual. Make sure the three PTFE balls on the bottom rest on the sample.
- Then collect a spectrum by clicking the read switch (Figure 7) on the *VideoBarrelino*™.

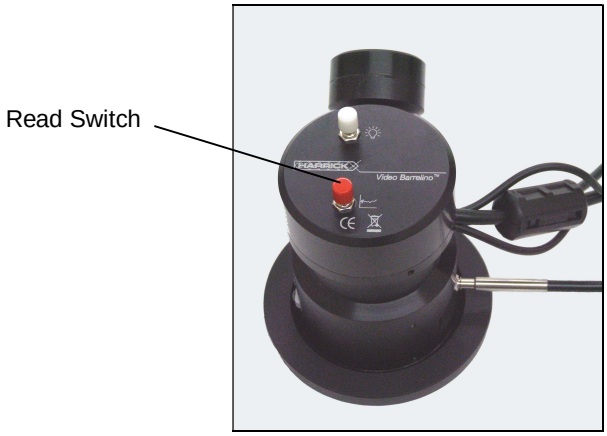
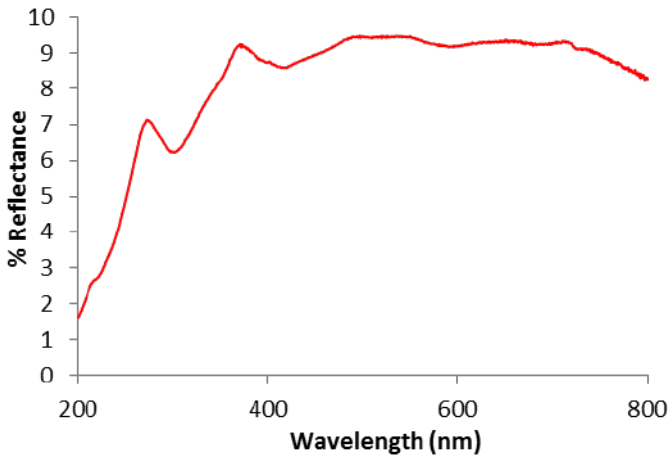


Figure 7 • Read Switch



Start (nm)	800	Y Mode	%R	Ave. Time (sec)	0.1
Stop (nm)	200	Scan Rate (nm/min)	300	Beam Mode	Dual Beam
X Mode	Nanometers	Data Interval (nm)	0.5	Baseline Correction	Off

Figure 8 • Spectrum of White Paper. Shown with collection parameters.

- Read the maximum value at 800 nm and record it for future reference. It should be at least 7% and the spectrum should resemble that shown in Figure 8.

COLLECTING SPECTRA

To collect a spectrum with the *VideoBarrelino*™:

- Place the target, with the point of interest on the sample visible through the hole in the center of the target ((Figure 9).
- Place the *VideoBarrelino*™ on the target so the three PTFE balls on the bottom of the *VideoBarrelino*™ are within the three slots (Figure 9) in the target.

NOTE: *The baseline correction spectrum should be collected with a reference that is a known good diffuse reflector (such as Halon, MgO powder, etc). Since the VideoBarrelino™ collects only the diffuse component of the reflected radiation, highly specularly reflective samples, such as a mirror, will contribute no signal.*

- To collect the spectrum of the targeted area, simply click the red read switch (Figure 10).

NOTE: *The read switch on the VideoBarrelino™ will not trigger if the light is on.*

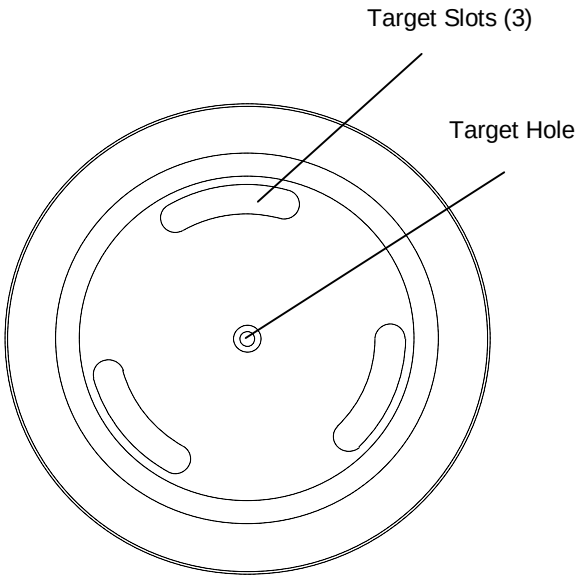


Figure 9 • Target

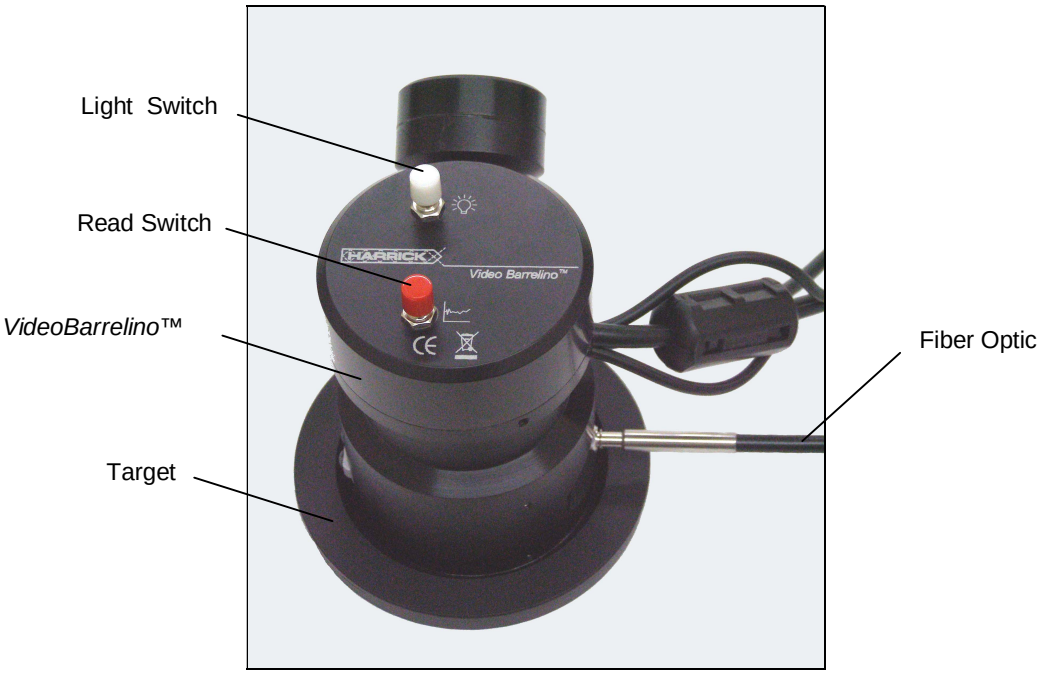


Figure 10 • Collecting Spectra

USING THE CAMERA

- Open GrabBee software by clicking on its icon on the desktop.
- Right-click on the Video Window and select Always on Top (see Figure 9) to keep the video visible.
- To change the resolution of the saved images right-click on the Video Window and select the desired resolution.
- This also changes the Video Window size. To resize the window without changing the resolution, grab the corner of the window with the mouse and resize as for any window.
- To adjust the image, click on the arrow (see Figure 10). Use the slide-bars to adjust the brightness, contrast, saturation and hue.
- Use the image displayed to help position the sample.
- To capture a photograph, click on camera icon. Select the save icon in the window that opens Save under the desired filename and directory.

Note *For illumination of the sample when photographing or positioning the sample, either turn on the VideoBarrelino™ light or set the spectrometer for Zero Order.*

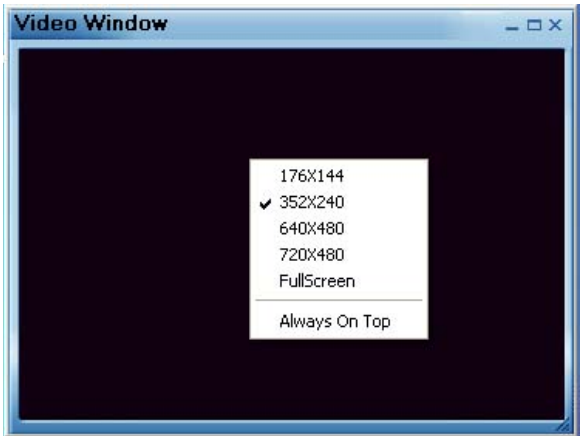


Figure 9 • Video Window options.

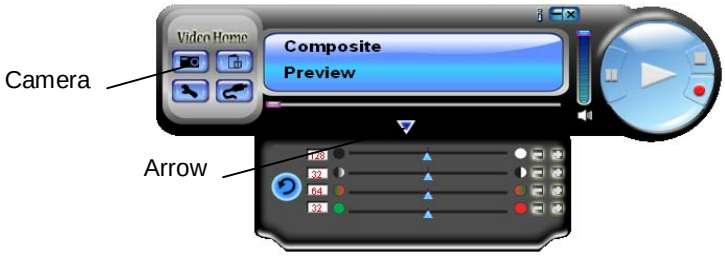


Figure 10 • GrabBee window.

ABRL-V-VA3 Parts Check List

	Qty	Completed
Accessory Parts		
Barrelino™ (with cover on)	1	
Target	1	
Adapter Plug	1	
Fiber	1	
USB Device and Software	1	
Instructions		
Barrelino™ User's Manual	1	
Q/C Tests		
Sample Spectrum (White Paper)	1	