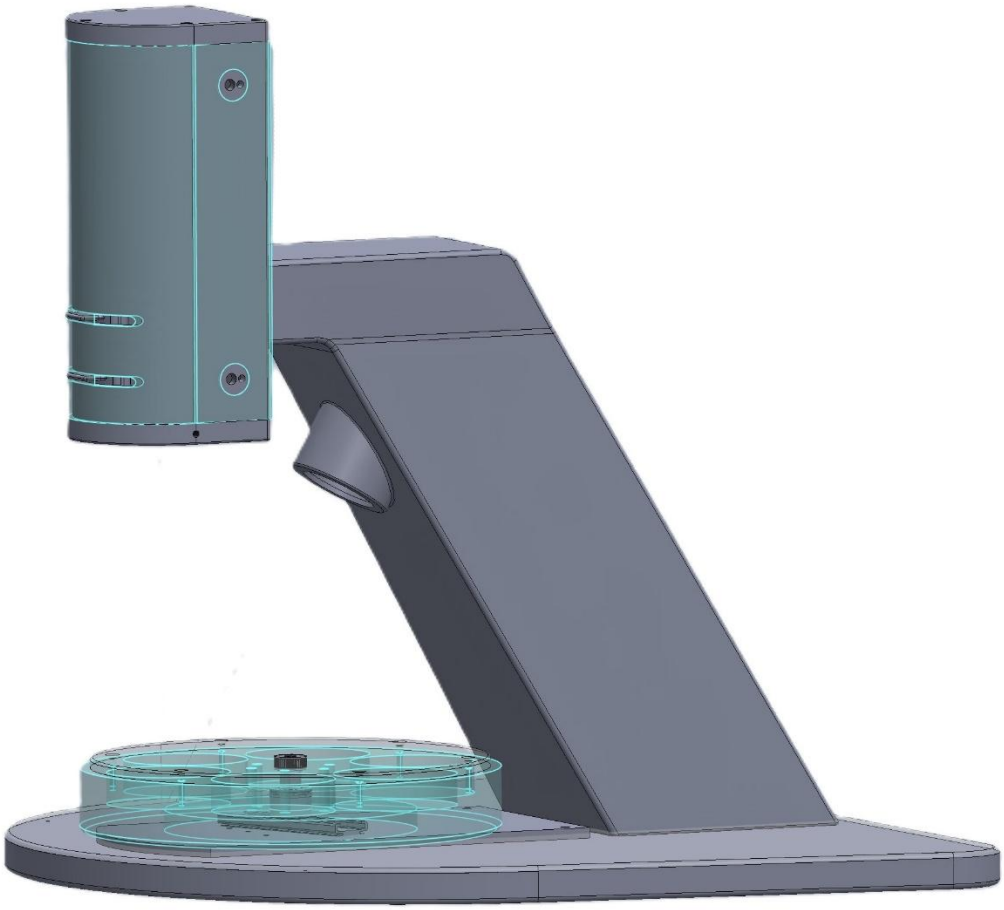
VUSEUM INTERACTIVE



VUSEUM INTERACTIVE *VIP* DIGITAL VIDEO MICROSCOPE

Installation/Operation Manual

Vuseum Interactive VIP

Installation/Operation Manual

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Thank you for purchasing the VUSEUM INTERACTIVE VIP digital video microscope. The VIP is handcrafted to high standards to give many years of quality interactive imaging. Please read these instructions to ensure correct installation and operation.

INDEX

Specifications	Page 4
System Components	Page 4
Dimensions With Base	Page 5
Dimensions Without Base	Page 6
Unpacking	Page 7
Assembly With Factory Base	Page 7
Assembly Without Factory Base	Page 7
Front Display Intensity Settings	Page 8
Standard Operation	Page 9
Digital Features Bundle	Page 10
On Screen Settings and Definitions	Page 12
Synthesis Control Panel (Bottom of screen)	Page 13
Cleaning and Maintenance	Page 14
Troubleshooting	Page 15
Warranty	Page 16

SPECIFICATIONS

- 4k 30fps Resolution, 3840x2160
- 2-40x Magnification, 13-130mm FOV
- 76mm (3”) Recommended Maximum Specimen Height, (100mm (4”) with slight vignetting)
- USB-C Flash Drive Capture Capability
- USB-C Mouse Control
- MP4 Encoded Video Format, 8 MP (3840x2160), 30fps
- JPEG/TIFF Photo Format, 8MP
- Operating Environment -10 degrees to 50 degrees C, (14 degrees to 122 degrees F)
- Operating Humidity 30-80% RH
- Weight 12.5kg, 28lbs
- Power Supply, Input: 100v-240v AC auto ranging, 50/60hz, Output: 12vdc, 0.6A (center positive)
- Language Selections Include: English, Simplified Chinese, Traditional Chinese, Korean, Thailand, French, German, Japanese, Italian and Russian.

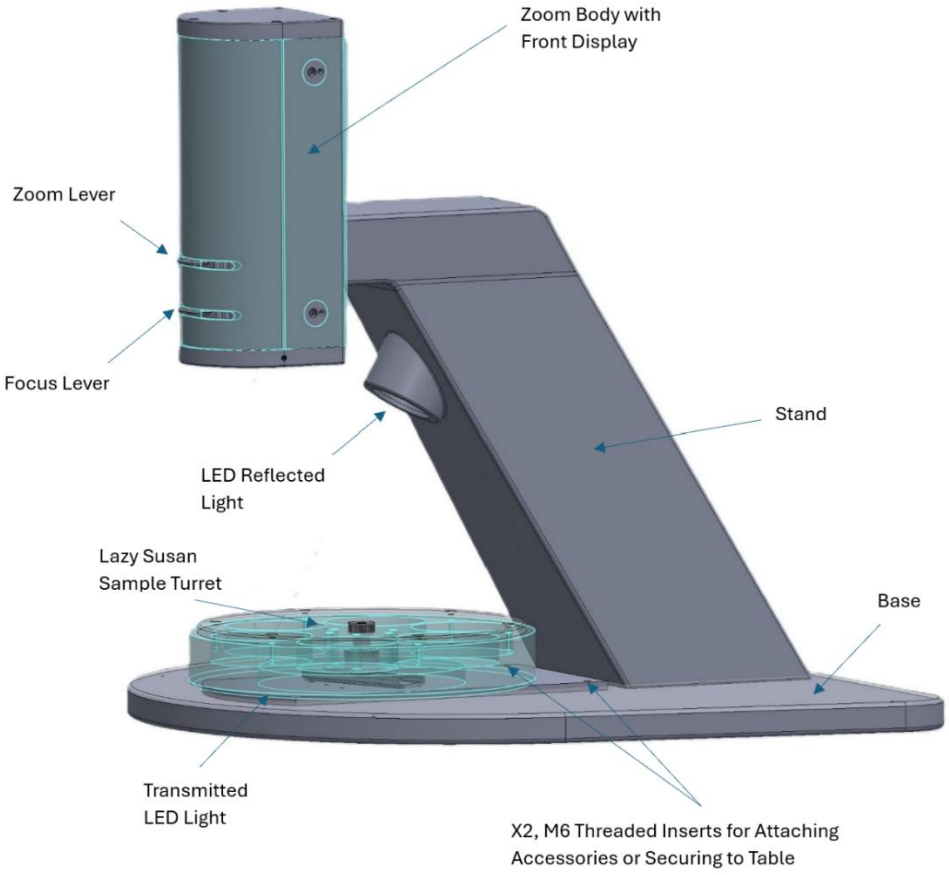
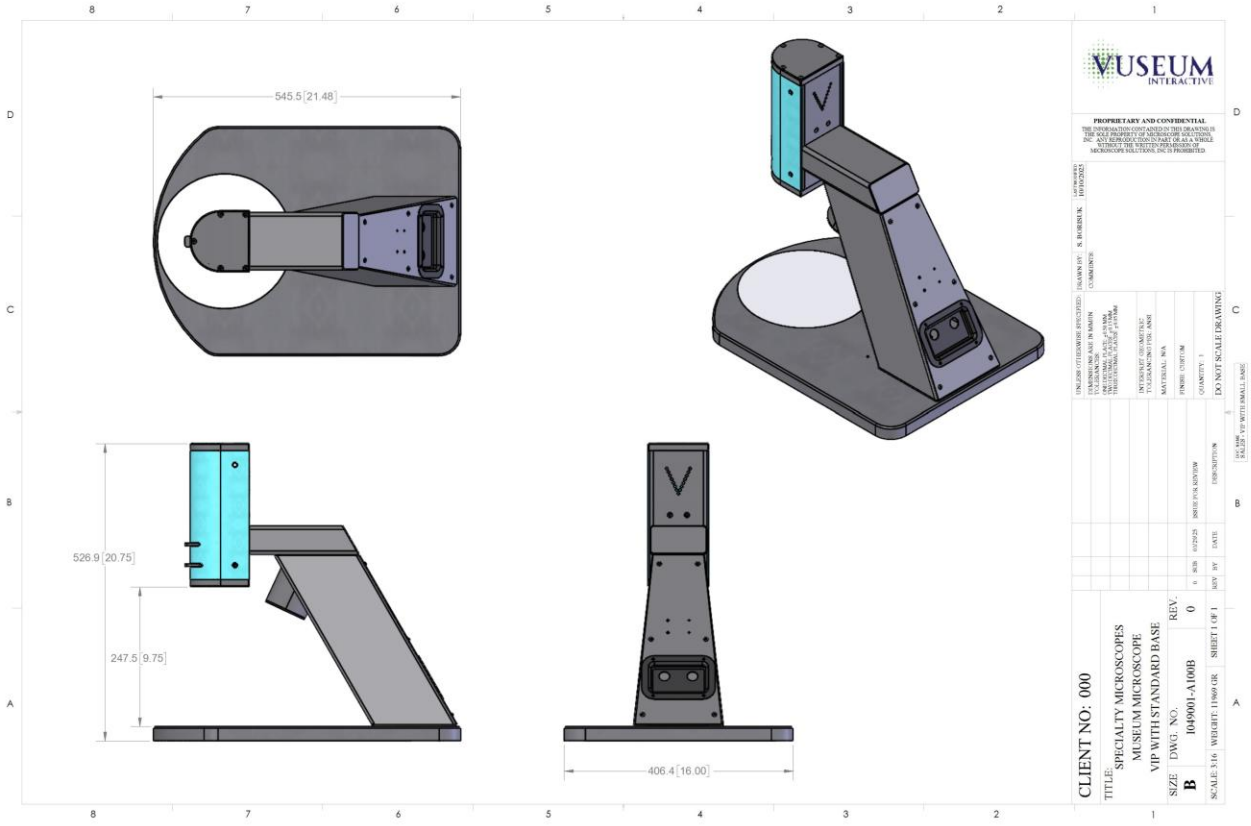


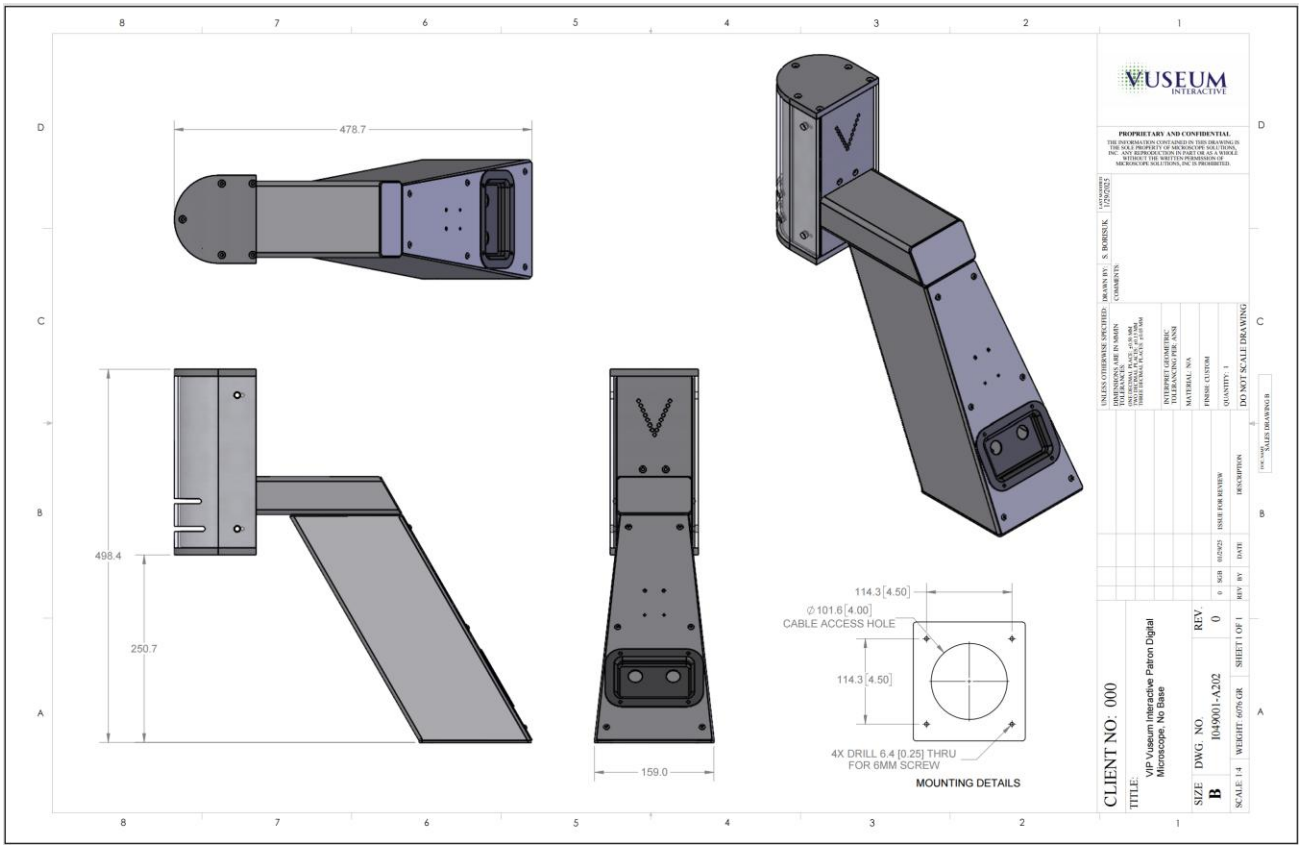
Figure 1, System Components

DIMENSIONS WITH BASE



- Height, 526.9mm (20.75”)
- Width, 404.6mm (16”)
- Depth, 545.5mm (21.48”)

DIMENSIONS WITHOUT BASE



- Height, 498.4mm (19.62”)
- Width, 159mm (6.26”)
- Depth, 478.7mm (18.45”)

UNPACKING

The VIP Microscope has been packaged carefully. Take care when removing the microscope from its packaging to avoid damage. This is a precision instrument that contains optics and electronics.

Included in the shipping carton are the following:

- Microscope zoom body with stand
- Microscope base with 4x M6 bolts (if ordered)
- 6 ft. HDMI cable
- 12v DC Power Supply, 100-240v Auto Ranging, US Plug (User may need to source the plug extension for their specific territory.)
- Wireless Mouse, USB-C (included with Digital Features Bundle)
- 32gb USB A and C thumbdrive (included with Digital Features Bundle)

ASSEMBLY WITH FACTORY BASE

The upper microscope zoom body and stand are designed to mount either to our lighted, or unlit base with four M6 screws (provided). To ease assembly, place the stand/zoom body on its back using a pad or towel to protect the finish. The base can then be held in place and the bolts inserted from the bottom. We recommend utilizing two people to mount the base to the upper assembly as both can be heavy and cumbersome until secured. Ensure bolts are secured snugly but do not overtighten. Connect the power supply for the microscope, the power wire for the bottom light (if present), and the HDMI for the monitor to the panel located under the microscope. The HDMI and power cables should be routed through the 4” access hole to keep wires hidden and protected.

The factory base also includes two M6 holes to be used for securing the optional carousel. These holes can also be used to secure the microscope assembly to your tabletop. Drill two M6 clearance holes 135mm apart and secure with bolts and washers sized to match the thickness of your table (bolts not provided).

ASSEMBLY WITHOUT FACTORY BASE

The upper microscope stand and zoom body are designed to mount directly to your table or display when not using the factory base. Drill an access hole in the center for the wiring to enter through and drill four M6 clearance holes in a 4.5” (11.43cm) square pattern. Use bolts with washers that are of proper length depending on your table/display thickness (bolts not provided). Do not overtighten.

Connect the power supply for the microscope and the HDMI for the monitor to the panel located under the microscope. Sometimes this is easier to do before mounting the stand to the table top.

INTENSITY SETTING
Front Display

FRONT DISPLAY. The front display is a high quality laser engraved acrylic with an illuminated background. Once the system is installed you may want to adjust the brightness of the front display panel depending on your lighting and display preferences.

On the back of the microscope (see Figure 2) there is a small hole where you can use a small flat tip screwdriver to adjust the brightness of the front display. Inside the hole is a dimmer that controls the intensity. The dimmer can be rotated from the left where the light will turn off, to the right where the light will be very bright. If set to the extreme right the lighting may be too bright and uncomfortable to look at directly. Somewhere in the middle is recommended.

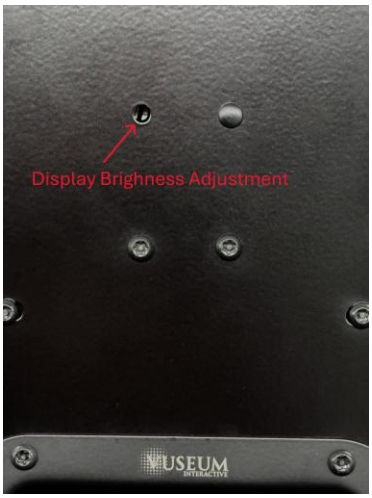


Figure 2, Front Display Brightness Adjustment

STANDARD OPERATION

This is the preferred setup for operating the microscope as an unsupervised digital imaging system. Turn the power on for the TV and make sure the correct input is selected. The VIP system has two buttons on the Rear Switch Plate (see Figure 3), POWER and LIGHT. To turn the microscope on ensure the power button is pushed in and lit which gives the system power. Then push the light button in for standard top light. If bottom lighting is included in your system, push the light button again to turn the top light off and bottom light on. The light button will no longer be pushed in or lit for bottom lighting.

Figure 3, Rear Switch Plate

- The left POWER switch is the main on/off switch. Pushing the switch in turns on the microscope power. The switch will be depressed inward and the blue light will be on. Pushing the switch again turns off the microscope power. The switch will no longer be pushed in and the blue light will not be on.
- The right LIGHT switch controls the lighting. Pushing the switch in will turn on the top microscope LED spot light. The switch will be depressed inward and the blue light will be on. Pushing the switch again turns the top microscope LED light off and the bottom microscope LED light on, if present. The switch will not be depressed, and the blue light will not be on. If there is no bottom microscope LED light option available, then the right switch when not depressed will turn off all lighting.
- The zoom body has two controls which the operator has access to. ZOOM and FOCUS.
- To zoom, adjust the ZOOM slider either left or right until the desired magnification is achieved.
- To focus, adjust the FOCUS slider either left or right until the sample is crisp and clear.

DIGITAL FEATURES BUNDLE (optional)

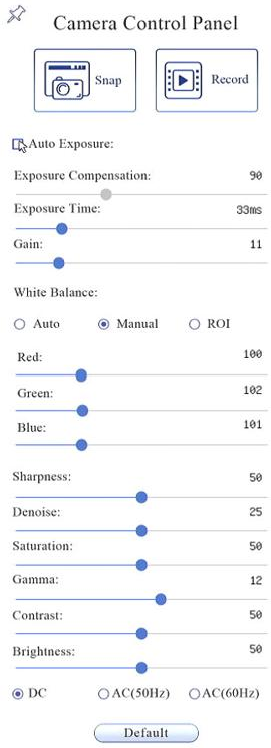
The VIP microscope system is not only designed for unsupervised patron use; with the addition of the Digital Features Bundle you now have access to a host of other features. The Rear Switch Plate (Figure 4) includes a Mouse USB-C input to allow you to plug in a wireless mouse (included). Once connected you will see a mouse curser on screen. Move the mouse curser to the far left and the Camera Control Panel (Figure 5) will pop up, move it to the bottom and the Synthesis Camera Control Toolbar (Figure 6) will pop up. These menus allow for advanced control of the imaging settings and photo/video functions.

The different functions of the Camera Control Panel (Figure 5) are explained below. The PIN at the top left pins the menu to the screen and will stay visible at all times. If the PIN is not selected, the menu will disappear when the mouse is moved from the left side of the screen.

Figure 4, Rear Switch Plate with Digital Features Bundle

Figure 5, CAMERA CONTROL PANEL, Left on screen menu

Below is an example of each on screen item as well as an explanation or definition of their use. (These are the presets from the factory, use the settings below if you need a reference.)

Camera Control Panel	Function	Function Description
	Snap	Capture image and save it to the USB flash drive
	Record	Record video and save it to the USB flash drive
	Auto Exposure	When Auto Exposure is checked, the system will automatically adjust exposure time and gain according to the value of Exposure Compensation
	Exposure Compensation	Available when Auto Exposure is checked. Slide to left or right to adjust Exposure Compensation according to the current video brightness to achieve proper brightness value
	Exposure Time	Available when Auto Exposure is not checked. Slide to left or right to reduce or increase Exposure Time, adjusting brightness of the video
	Gain	Adjust Gain to reduce or increase brightness of video. The Noise will be reduced or increased accordingly
	Auto White Balance	White Balance adjustment according to the video continuously
	Manual White Balance	Adjust the Red or Blue slide bar to set the video White Balance.
	ROI White Balance	White Balance could be adjusted when the ROI region is changed according to content inside the ROI region.
	Red	Slide to left or right to decrease or increase the proportion of Red item in RGB on video
	Green	Slide to left or right to decrease or increase the proportion of Green item in RGB on video
	Blue	Slide to left or right to decrease or increase the proportion of Blue item in RGB on the video
	Sharpness	Adjust Sharpness level of the video
	Denoise	Slide left or right to Denoise the video
	Saturation	Adjust Saturation level of the video
	Gamma	Adjust Gamma level of the video. Slide to the right side to increase Gamma and to the left to decrease Gamma.
	Contrast	Adjust Contrast level of the video. Slide to the right side to increase Contrast and to the left to decrease Contrast.
	DC	For DC illumination, there will be no fluctuation in light source so no need for compensating light flickering
	AC(50HZ)	Not utilized on the VIP system since all lighting is LED.
	AC(60HZ)	Not utilized on the VIP system since all lighting is LED
	Default	Restore all the settings in the Camera Control Panel to default values

*Default settings are general and should be modified to the settings shown above if the default button is clicked.

ON SCREEN SETTINGS and DEFINITIONS:

- **Auto Exposure** will automatically adjust brightness or light intensity. This is set to ON from the factory, but you may want to turn it OFF depending on your samples, lighting, etc.
- **Exposure Compensation** adjusts the Auto Exposure intensity target of the image on screen.
    - The lower this setting the darker the image display appears on screen,
    - The higher this setting, the brighter the image display appears on screen.
- **Exposure Time** adjusts the brightness manually when Auto Exposure is not checked.
- **Gain** adjusts the brightness of the output video; this only works when Auto Exposure is not selected.
- **Auto White Balance** is recommended to stay off at all times. White Balance is the processors definition of white. This is preset from the factory to teach the camera sensor the correct light color to base sample colors off of. Once the white balance is set properly, click Manual White Balance ON so it will not adjust on its own.
- **Manual White Balance** allows the user to custom adjust the definition of what white is. This should be set to ON. If the processor needs to be recalibrated to white follow the below steps.
    - Remove any sample from the base of the microscope. Turn on the top LED light. Only allow the microscope to view the lower LED light (Not turned on) or white filler plate, depending on your model. Once the microscope is viewing these items, click on Auto Exposure and the processor will determine what the definition of white is based off of these parts. Then once this setting is achieved turn on Manual White Balance and leave it checked. This will allow the setting you just defined to stay locked and not allow the computer to change the white balance to any other sample.
- **ROI White Balance** allows a certain region to determine the definition of white. The on screen square can be moved or modified and will base the processors definition of white off of a white sample that the ROI square is sitting on.
- **Red, Green, Blue** allows custom manual settings to change the definition of white. These are not utilized during normal operation and do not work under Auto White Balance settings. If these are changed, we recommend following the Manual White Balance recalibration above.
- **Sharpness** changes the image to have sharper focused edges. We do not recommend changing this setting as the video could appear grainy. Factory settings allow the image to appear very sharp without adding a grainy appearance to the video.
- **Denoise** works to remove any grainy appearance that the video has. This works in conjunction with the Sharpness setting above and is not recommended to be changed.
- **Saturation** adjusts the color brightness of the image; it is factory set to appear color correct. If turned all the way down the image will be in black and white, if turned all the way up the colors will appear very intense.
- **Gamma** changes the luminance of the output signal to the monitor. We recommend leaving Gamma set at factory settings. Too low will make the image extremely dark and too high will wash out the image on screen.
- **Contrast** changes the tone of the image. Too low and the image appears green, too high and the image appears pink. It is recommended to leave Contrast at factory settings.
- **Default** is programmed to reset the microscope to factory settings. Click Default to return all settings back to a base line, then adjust to match the settings in Figure 5. If Default is clicked, it is recommended to follow the White Balance calibration settings above.

SYNTHESIS CAMERA CONTROL TOOLBAR

The Synthesis Camera Control Toolbar at the bottom of the screen has other features that you may want to take advantage of. See below.

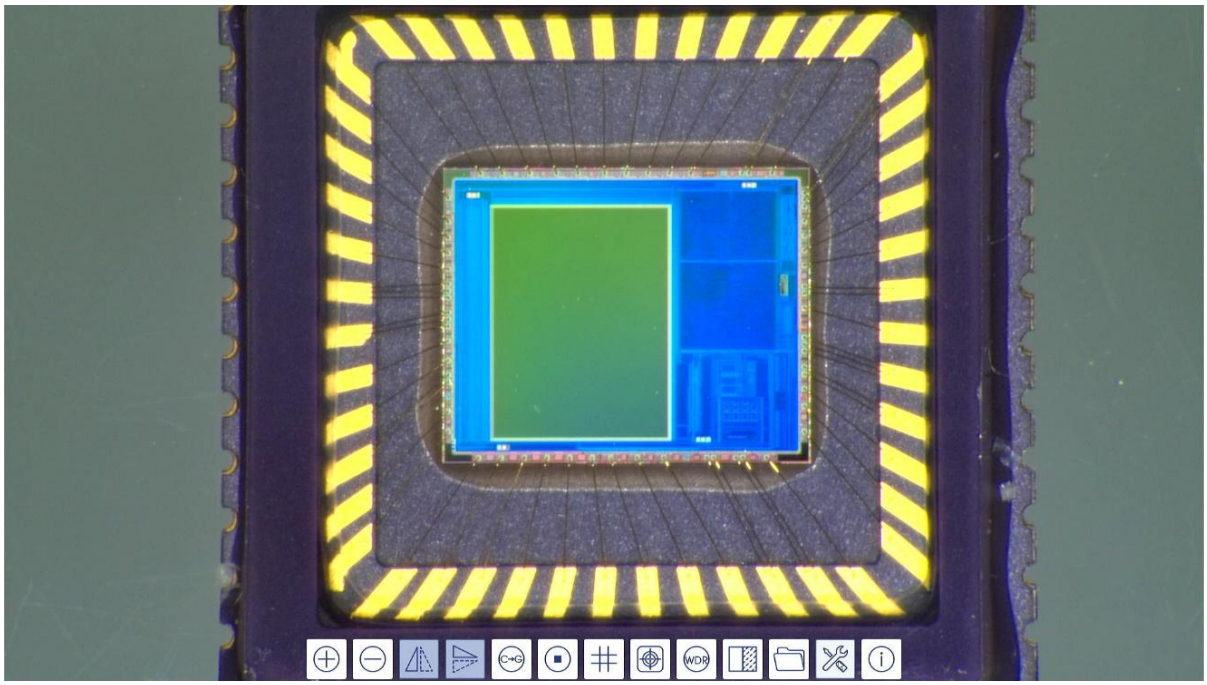


Figure 6, SYNTHESIS CAMERA TOOL BAR, Bottom On Screen Menu

Icon	Function	Icon	Function
	Zoom In the Video Window		Zoom Out the Video Window
	Horizontal Flip		Vertical Flip
	Color/Gray		Video Freeze
	Display Cross Line		Overlay
	WDR		Compare Image with the Current Video
	Browse Images and Videos in the USB flash drive		Settings
	Check the Version of XCamView		

**We recommend not changing items in the SETTINGS menu. These are preset from the factory to set things like USB Flash Drive Format and to turn off Measurement Functions which are not used on this version microscope. Although, Language Settings are available in this menu and allow for the following languages: English, Simplified Chinese, Traditional Chinese, Korean, Thailand, French, German, Japanese, Italian and Russian.

CLEANING AND MAINTENANCE

The VIP microscope system is designed with hard-wearing, high-quality components and finishes. As such, other than cleaning, there are no maintenance items required. For cleaning, we recommend glycol-based cleaners (no alcohol or ammonia-based cleaners). The stand is powder coated and is very scratch resistant, but we only recommend using a soft cloth with cleaner to wipe it down. The base is made from a laboratory grade phenolic material that is very resistant to scratches, stains, water, chemicals, etc. This can also be cleaned with glycol-based cleaners as needed.

Special care is to be provided on the front display screen as the incorrect chemical or cloth could scratch the acrylic. To clean the front display screen, spray a slight amount of glycol-based cleaner onto a soft, clean cloth and wipe. (Do not spray the cleaner directly onto the microscope.) Take care not to get liquid into the Zoom and Focus slots, or the edges of the acrylic screen. Do not use alcohol wipes or paper towels on the screen as it may be damaged.

TROUBLESHOOTING Q and A

Q. Image is always dark or dark only when I zoom out.

A. Reflected light LED could be bad, check and replace if needed.

A. Transmitted light could be turned on instead of Reflected light. Click the light switch on the back to change the type of light if applicable.

A. Auto Exposure could be set to OFF without increasing the Exposure Compensation, Time and Gain. See Figure 5 for proper presets.

A. Auto Exposure could be set to ON and the sample is dark on a white background. The automatic exposure determines the correct setting based off an average sampling of the image intensity including the bright background. See images below. We recommend Auto Exposure be set to ON using the Exposure Compensation slider to set the target exposure.

*Left image is Auto Exposure ON (too much bright background will automatically adjust looking dark)

*Right image is Auto Exposure OFF (brightness will not automatically adjust and is preset under the Exposure Settings)

Q. Thumbdrive not recognized.

A. Maximum size of thumbdrive is 32GB recommended. Larger thumbdrives may work but will slow down the processor or may not be recognized.

Q. Unit not turning on when power switch is depressed.

A. Does the power switch light up when depressed?

A. Check the power supply to confirm that it has not been unplugged from the bottom of the microscope.

A. Check that the power supply has the correct output of 12VDC. If there is no voltage, check supply power from the wall. If the supply power from the wall is good and there is no output from the power supply, it should be replaced.

Q. There is no image on the monitor but power switch lights up.

A. Make sure the HDMI cable under the microscope is not unplugged.

A. Confirm that the correct HDMI selection is chosen on the monitor. Example: HDMI 1 or HDMI 2

A. Test the HDMI cable on a second monitor to confirm if there is a signal.

A. Plug a different HDMI cable into the bottom of the microscope in case the original is damaged.

A. Some standard definition monitors will not accept a 4k signal and will not show the image on screen.

WARRANTY

Vuseum Interactive, LLC warrants that this VIP microscope will be free from defects in materials and manufacturing for a period of two years for optical, mechanical, and electrical components from the date of delivery. The warranty is transferable.

Defective products must be shipped with proof of date of purchase to Vuseum Interactive, LLC. It is recommended to ship the product in the original packaging. The risk of damage during shipping is solely the shipper's responsibility.

If, upon examination at Vuseum Interactive, LLC, it is determined that the product was defective in materials or manufacturing any time during this warranty period, Vuseum Interactive, LLC, at its option, will repair or replace this product at no additional cost except as noted below.

The warranty does not include service or parts to repair damage caused by accident, disaster, misuse, abuse, negligence, inadequate packing or shipping procedures, voltage inputs outside specifications, or service or repair or modification of the product which has not been authorized by Vuseum Interactive, LLC.

This warranty is in lieu of all other expressed warranties. If the product is defective in materials and manufacturing as warranted above, the purchasers sole remedy shall be repair or replacement as provided above. In no event will Vuseum Interactive, LLC be liable for any incidental or consequential damages arising out of the use or inability to use the product, even if Vuseum Interactive, LLC has been advised of the possibility of such damages, or for any claim by any other party.