VIAVI

FVAM-2000

**Long Working Distance Benchtop Autofocus Microscope
User Guide**

22112369-355 R000, Standard

November 2024

Contents

About this guide

This user guide provides information about using the FVAM-2000 Long Working Distance Benchtop Autofocus Microscope. R000 is the first release of this guide.

Safety instructions and regulatory compliance

Safety instructions

⚠	**CAUTION** Turn off the equipment, and disconnect all cables connected to it before moving the equipment or performing maintenance procedures. **ATTENTION** Éteignez l'équipement et débranchez tous les câbles qui y sont connectés avant de déplacer l'équipement ou d'effectuer des procédures de maintenance.

⚠	**WARNING** • This equipment is rated for indoor use only. • To prevent potential fire or shock hazard, do not expose the equipment to any source of excessive moisture. • Do not perform any operating or maintenance procedure that is not described in the user documentation. If the equipment is used in a manner not specified by VIAVI, the protection provided by the equipment might be impaired. • Do not attempt to service this product yourself, as opening or removing covers might expose you to dangerous high-voltage points and other hazards. Refer all servicing to qualified VIAVI service personnel. • Do not operate any equipment with its covers or panels removed. **AVERTISSEMENT** • Cet équipement est conçu pour une utilisation à l'intérieur uniquement. • Pour éviter tout risque d'incendie ou d'électrocution, n'exposez pas l'équipement à une source d'humidité excessive. • N'effectuez aucune opération ou procédure de maintenance qui n'est pas décrite dans la documentation utilisateur. Si l'équipement est utilisé d'une manière non spécifiée par VIAVI, la protection fournie par l'équipement peut être altérée. • N'essayez pas de réparer ce produit vous-même, car l'ouverture ou le retrait des panneaux latéraux peut vous exposer à des points haute tension dangereux et à d'autres dangers. Confiez tous les travaux d'entretien au personnel de service qualifié de VIAVI. • N'utilisez aucun équipement dont les panneaux latéraux ont été retirés.

Regulatory compliance

This section covers the following information:

- California Proposition 65
- Federal Communications Commission (FCC)
- Innovation, Science and Economic Development Canada
- Product Environmental Compliance
- EU REACH
- EU Declaration of Conformity
- Additional standards compliance
- China RoHS materials declaration

California Proposition 65

California Proposition 65, officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted in November 1986 with the aim of protecting individuals in the state of California and the state's drinking water and environment from excessive exposure to chemicals known to the state to cause cancer, birth defects or other reproductive harm.

For the VIAVI position statement on the use of Proposition 65 chemicals in VIAVI products, see the **Hazardous Substance Control** section of the VIAVI Policies & Standards web page.

Federal Communications Commission (FCC)

The equipment was tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

The authority to operate this equipment is conditioned by the requirements that no modifications be made to the equipment unless the changes or modifications are expressly approved by VIAVI.

Innovation, Science and Economic Development Canada

This Class A digital apparatus complies with Canadian ICES-001.

Cet appareil numérique de la classe A est conforme à la norme NMB-001 du Canada.

Product Environmental Compliance

VIAVI is committed to compliance with all applicable laws and regulations controlling the use of hazardous substances in its products, as well as the disposal of equipment (including batteries) and waste packaging. For details, see the VIAVI Policies & Standards web page or contact the VIAVI WEEE Program Management team at Global.WEEE@ViaviSolutions.com.

EU REACH

Article 33 of EU REACH regulation (EC) No 1907/2006 requires product suppliers to provide information when a substance included in the list of Substances of Very High Concern (SVHC) is present in an product above a certain threshold. For information about the presence of REACH SVHC in VIAVI products, see the **Hazardous Substance Control** section of the VIAVI Policies & Standards web page.

EU Declaration of Conformity

EU manufacturer Declaration of Conformity is shipped with the product and is also available on request.

Additional standards compliance

The equipment meets the following standards and requirements:

- CAN/CSA-C22.2 No.61010-1-12 Safety Requirements for Electrical Equipment for Measurement Control, and Laboratory Use, Part I: General Requirements
- Installation Category (Over voltage Category) II under IEC 60664-1
- Pollution Degree 2 Category under IEC 61010-1 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use

China RoHS materials declaration

The China RoHS materials declaration is shipped with the product and is also available on request.

1 Introduction

The FVAM-2000 Long Working Distance Benchtop Autofocus Microscope (FVAM-2000 microscope) offers unparalleled efficiency in ensuring pristine single-fiber, duplex-fiber, or multifiber connections.

- Compact benchtop format

- Long working distance design

- Quick change flexible adapter with auto-detection and setup

- PC-tethered design for use with the FiberChekULTRA management software

- Rest API automation interface via Ethernet over USB

The FVAM-2000 microscope enables automation of every step of the inspection process, including test set up, connector configuration, image panning and focus, end-face analysis testing, and data storage.

Figure 1-1: FVAM-2000 Long Working Distance Benchtop Autofocus Microscope

This section covers the following information:

- "Specifications" on page 1-2
- "Technical Assistance Center and Knowledge Base" on page 1-3

Specifications

Table 1-1: FVAM-2000 microscope specifications

Parameter	Specification
Field of view	
High Magnification	• Horizontal: 500 µm • Vertical: 700 µm
Low Magnification	• Horizontal: 1000 µm • Vertical: 1400 µm
Live image	Yes
Particle size detection	1.5 µm
Camera sensor	1/2.5 CMOS 2560 x 1290 pixels
Working distance	27.5 mm
Autofocus	Yes
Autopanning	Yes
Light source	LED 470 nm
Lighting technique	Coaxial
Status indicators	See "Status LED states" on page 2-3.
USB interfaces	• Host: USB 3.0 Type A • Device: USB 3.0 Type B
Power source	External power supply
Power supply	12V, 4A
Management software	FiberChekULTRA
PC control interface	REST API through Ethernet over USB
Operating temperature	0 to 40°C (32 to 104°F)
Operating humidity	0 to 95% non-condensing
Storage temperature	-30 to 70°C (-22 to 158°F)
Dimensions (H x W x D)	107 x 113 x 219 mm (4.2 x 4.4 x 8.6 in)
Weight (without adapter)	2.94 kg (6.5 lb)

Technical Assistance Center and Knowledge Base

To find the Technical Assistance Center phone number and email in your region for the FVAM-2000 Long Working Distance Benchtop Autofocus Microscope, or to search the VIAVI Solutions Knowledge Base, visit the VIAVI Solutions Technical & Product Support site at support.viavisolutions.com.

2 Getting started

This section covers the following information:

- "Microscope features" on page 2-2
- "Installing the FiberChekULTRA management software" on page 2-4
- "Powering the microscope and connecting to a PC" on page 2-5
- "Starting the FiberChekULTRA management software" on page 2-6
- "Removing or installing the dust cap" on page 2-7
- "Installing an adapter" on page 2-8
- "Mounting a device under test" on page 2-10
- "Cleaning the microscope enclosure" on page 2-11

Microscope features

Figure 2-1: FVAM-2000 microscope - front

Status LEDs

Adapter

Push Button

Spin Knob
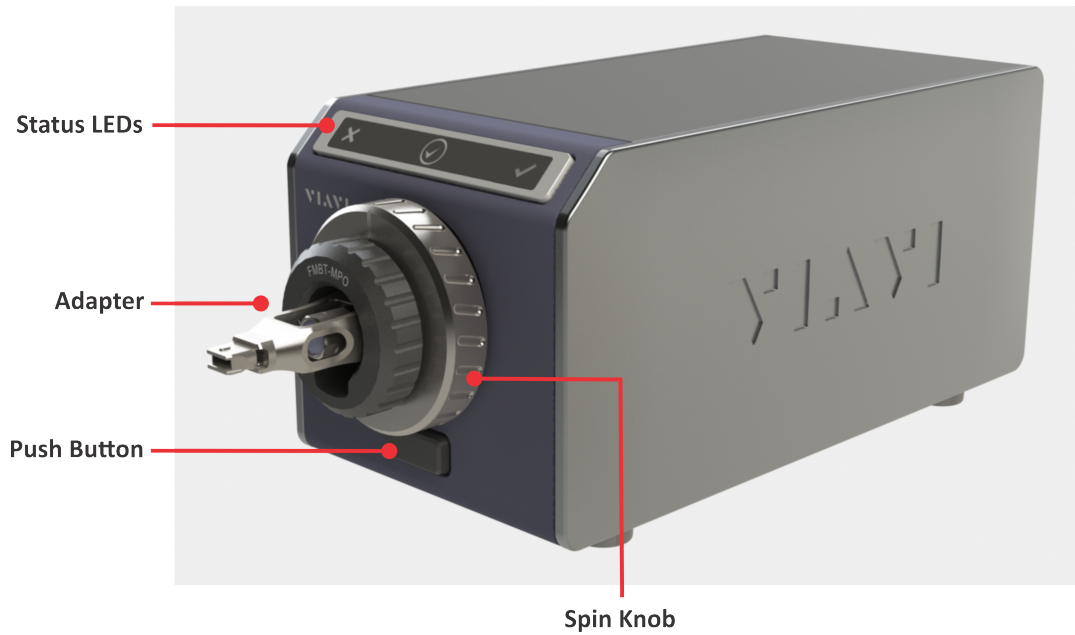
Figure 2-2: FVAM-2000 microscope - rear

USB-C Interface
with Optional Locking Mount

Power Button   Power Adapter Receptacle
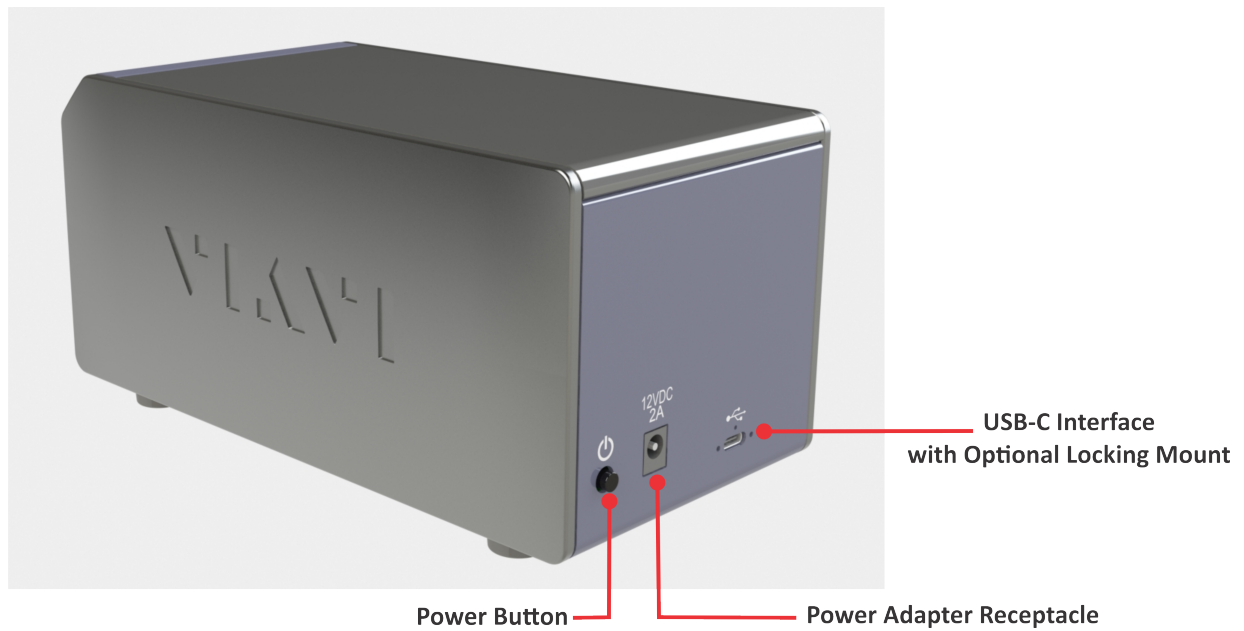
Status LED states

LED		State	Description
✖	FAIL	Red	Test failed
⊘	READY	Blue	Microscope operation normal
		Blue - Flashing	Test in progress
✔	PASS	Green	Test passed

Symbols

The following symbols might appear on the FVAM-2000 microscope and in the accompanying user documentation.

Symbol	Description
⚠	• See the user guide for instructions on handling and operating the equipment safely. • A procedure can result in serious damage to or destruction of the equipment if not carried out following instructions for proper use.
⏻	Power
⭢	USB Interface

Installing the FiberChekULTRA management software

The FVAM-2000 microscope uses an Ethernet-over-USB connection to a PC to connect to the FiberChekULTRA management software that is installed on the PC.

The FiberChekULTRA management software provides access to the FiberChekULTRA GUI and the FiberChekULTRA APIs, which enable you to perform Pass/Fail analysis tests, access test results, generate fiber inspection reports, and update the microscope firmware.

Important: Upgrade firmware for the FVAM-2000 microscope is managed by the FiberChekULTRA management software. For information about checking for the availability of upgrade firmware for a microscope, see "Upgrading the microscope firmware" on page 3-8.

Step 1   Download the FiberChekULTRA management software file from updatemyunit.net.

Step 2   Do the following to install the software on a PC:

- ▪ Ensure that the FiberChekULTRA_*version*.exe file is saved to a folder on the PC.

- ▪ Double-click the file to start the installation Wizard, and then follow the instructions provided.

When the installation is successfully completed, the folder `C:\Users\Public\FiberChekUltra` and a set of subfolders are automatically created. The subfolders will contain files automatically generated by the FiberChekULTRA management software or files downloaded from the microscope.

`C:\Users\Public\FiberChekUltra` subfolders	
`cache`	`C:\Users\Public\FiberChekUltra\cache` Image files generated during a Pass/Fail test (*.jpeg)
`logs`	`C:\Users\Public\FiberChekUltra\logs` Diagnostic log files (*.diag) downloaded from the microscope
`reports`	`C:\Users\Public\FiberChekUltra\reports` Printed report files (*.pdf)
`results`	`C:\Users\Public\FiberChekUltra\results` Test result files (*.json):
`settings`	`C:\Users\Public\FiberChekUltra\settings` • `customerDUT.settings`: User-specified DUT Mode settings • `setting.conf`: Application settings
`traces`	`C:\Users\Public\FiberChekUltra\traces` Trace files (*.txt)

Step 3   Proceed to "Powering the microscope and connecting to a PC" on page 2-5).

— End —

Powering the microscope and connecting to a PC

Step 1   Ensure that the FiberChekULTRA management software is installed on the required PC (see "Installing the FiberChekULTRA management software" on page 2-4).

Step 2   Place the FVAM-2000 microscope on a flat, stable surface in a location close to an appropriate power source.

Step 3   Connect the power adapter to the power receptacle on the rear panel of the microscope (see "Microscope features" on page 2-2) and then to the power source.

Step 4   Connect a cable to the USB-C port at the rear of the microscope and then to the PC.

Step 5   Press the power button at the rear of the microscope.

Step 6   At the front of the microscope, observe the following Status LED sequence (see "Status LED states" on page 2-3):

   ▪ PASS and FAIL LEDs light momentarily.

   ▪ READY LED lights and remains lit.

Step 7   Proceed to "Starting the FiberChekULTRA management software" on page 2-6).

Important: To power OFF the microscope, press the power button. Always use the power button to power OFF the microscope.

— End —

Starting the FiberChekULTRA management software

The FiberChekULTRA management software enables operation of the FVAM-2000 microscope using either the FiberChekULTRA GUI (local operation) or the FiberChekULTRA APIs (remote operation).

Start the FiberChekULTRA management software to access the FiberChekULTRA GUI.

Important: Remote operation of the microscope via the FiberChekULTRA APIs is supported only while the FiberChekULTRA management software is running on the host PC (see).

Note: This procedure assumes that an FVAM-2000 microscope is powered ON and connected to the PC before the FiberChekULTRA management software is started. You can also power ON and connect the microscope to the PC after starting the FiberChekULTRA management software.

Step 1   Select the **FiberChekULTRA** desktop icon.

The FiberChekULTRA GUI appears (see).

Note: A message stating that camera adapter settings are being configured might appear before the FiberChekULTRA GUI appears. Select **OK** to close the message box.
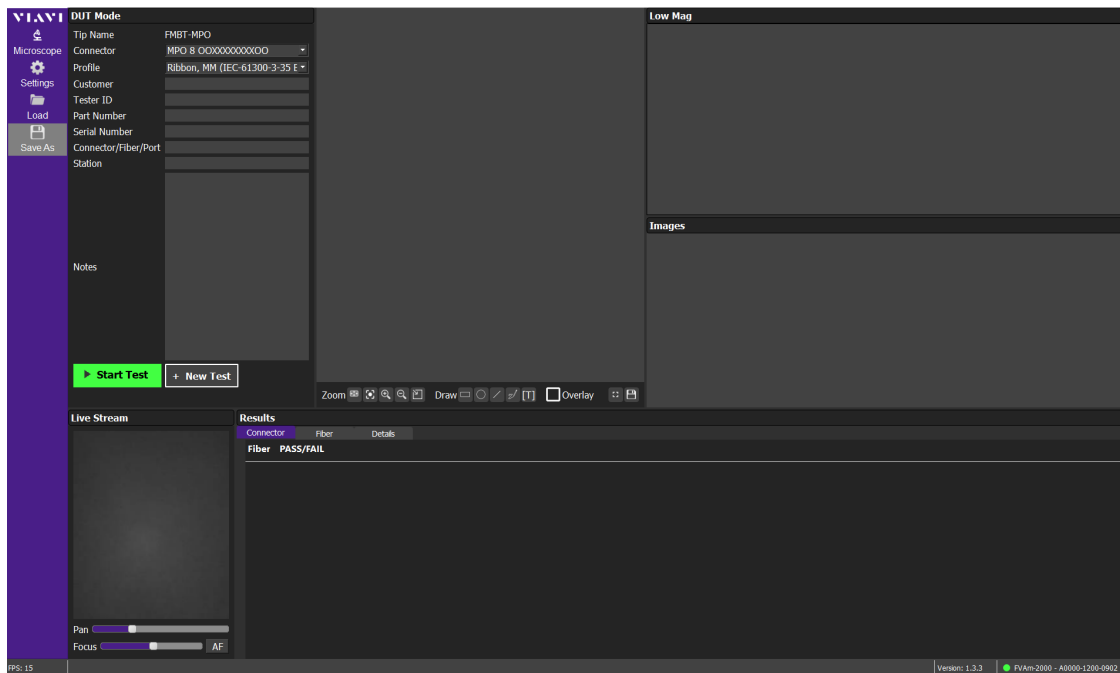
Note: The microscope connected to the PC is automatically detected. If an adapter is present on the microscope, the adapter type is also detected. For information, see .

— End —

Removing or installing the dust cap

The dust cap protects the objective lens of the FVAM-2000 microscope from dust and other contaminants while the microscope is not in use. The cap also protects the lens from damage that might result by objects striking it.

- To remove the dust cap from the microscope, rotate the cap to loosen it completely, carefully pull it straight off the microscope, ensuring that the cap does not come into contact with the objective lens.

- To install the dust cap, carefully place the cap over the objective lens of the microscope, and then rotate it to secure it.

Important: Do not overtighten the dust cap.

Installing an adapter

Step 1   Remove the adapter if present on the FVAM-2000 microscope:

   i.   Rotate the adapter ring to fully loosen the adapter.

   ii.   Holding the adapter securely, pull it away from the mount, ensuring that no part of it comes into contact with the objective lens.

Notes:
- If the microscope is powered ON, the fiber illumination LED turns off.
- If the microscope is connected to a PC on which the FiberChekULTRA management software is running, the message **No Tip Attached** appears on the FiberChekULTRA GUI.
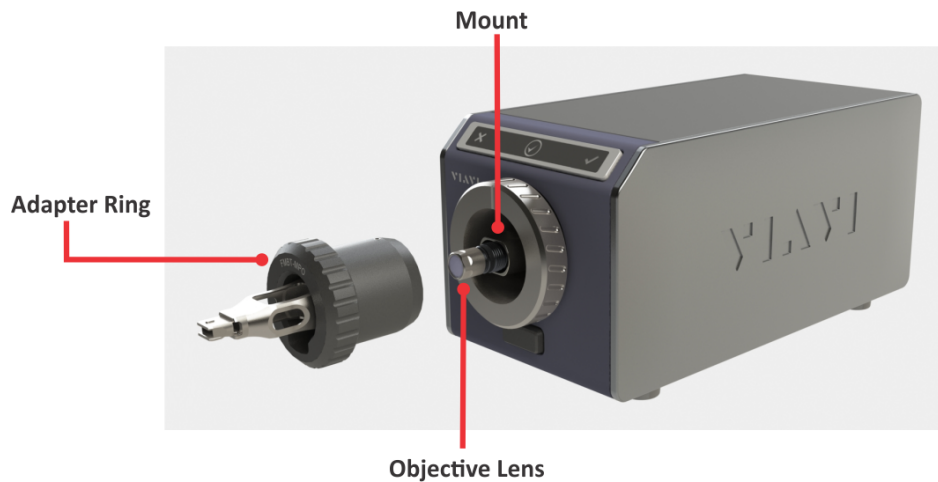
   iii. Install the safety cap onto the back of the adapter, and store it in an accessible location.

Step 2   Install the required adapter onto the microscope:

   i.   Carefully loosen and remove the safety cap from the adapter if present.

   ii.   Align the pins at the rear of the adapter with the receptacle at the rear of the mount.

   iii. Carefully position the adapter onto the mount, ensuring that it does not come into contact with the objective lens.

       iv.   Rotate the adapter ring to secure the adapter to the microscope.

> **Note:** Ensure that the adapter is properly threaded and not overtightened.

Step 3   If the microscope is powered ON, note the following:

- The objective lens might move to adjust to the correct position for the installed adapter.

- The fiber illumination LED emits a blue light from the end of the objective lens.

- If the microscope is connected to a PC on which the FiberChekULTRA management software is running, the **Start Test** and **New Test** tools appear on the FiberChekULTRA GUI.

— End —

Mounting a device under test

Note: Optical connectors, such as bulkheads, transceivers, and patch cords, are referred to as the DUT, or device under test, in this document.

Step 1   Ensure that the correct adapter for the DUT is installed on the FVAM-2000 microscope.

Step 2   Thoroughly clean the DUT.

Step 3   If required, mount an appropriate mating adapter onto the adapter, ensuring that the mating adapter is correctly oriented for mounting.

Step 4   Mount the DUT onto the adapter, ensuring that it is correctly aligned with the key on the spin knob.

Important: If required, press and hold the push button while rotating the spin knob 90 degrees to either the left or the right to accommodate the DUT being mounted.
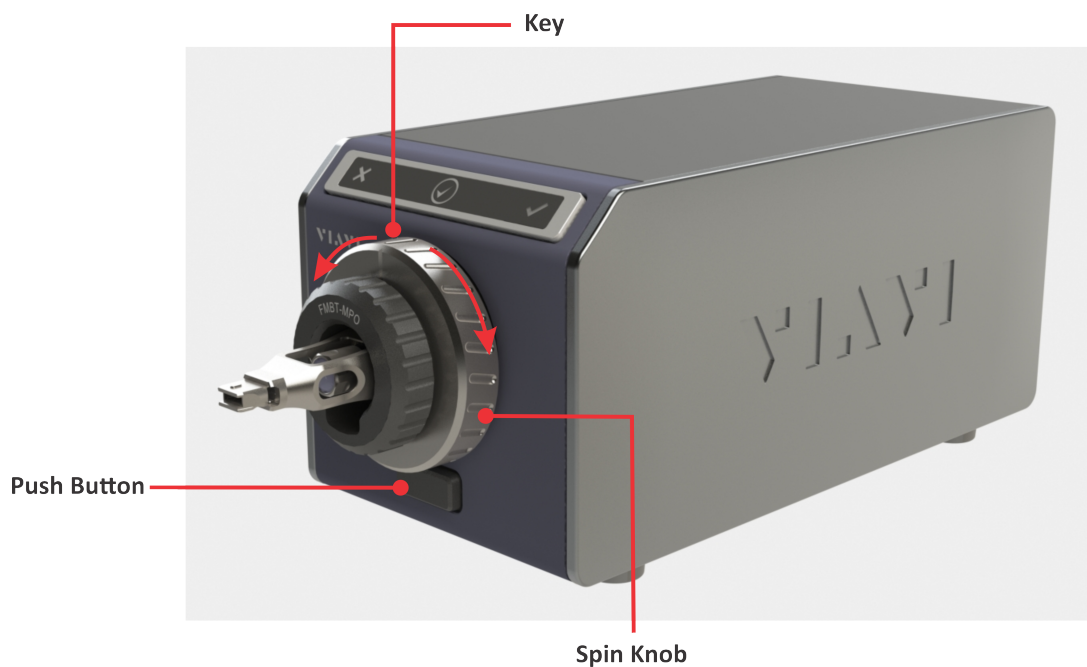
— End —

Cleaning the microscope enclosure

Step 1   Press the power button at the rear of the FVAM-2000 microscope to Power OFF the microscope.

Step 2   If the objective lens is exposed, install the dust cap on the microscope.

Step 3   Disconnect all cables connected to the microscope.

Step 4   Wipe the microscope enclosure with a clean, lint-free cloth lightly moistened with water.

⚠	**CAUTION** Use only water to wipe down the microscope enclosure.

Step 5   After all cleaned surfaces are completely dry, reconnect the power and USB cables to the microscope.

Step 6   Power ON the microscope.

— End —

3   Configuring microscope and test settings

This section covers the following information:

Navigating the FiberChekULTRA GUI

You can operate the FVAM-2000 microscope locally via the FiberChekULTRA GUI (see "Starting the FiberChekULTRA management software" on page 2-6). The GUI enables you to perform Pass/Fail analysis tests, view test results, generate fiber inspection reports, and update the microscope firmware.

Figure 3-1: FiberChekULTRA GUI with test results

Results Table
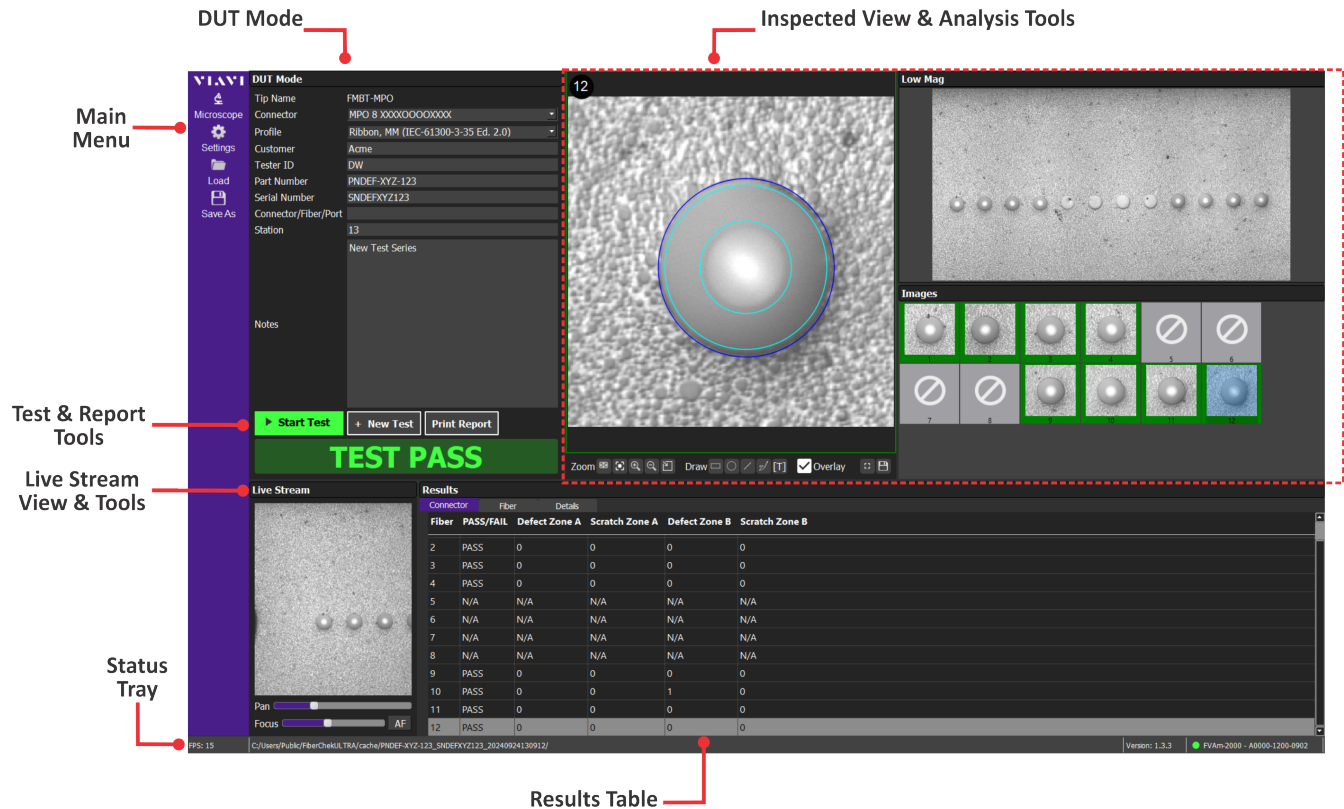
Table 3-1: FiberChekULTRA GUI menus and tools

Tool/Menu	Description
Main Menu	See the following sections: • "Managing microscope settings" on page 3-4 • "Managing application settings and preferences" on page 3-5 • "Loading a test-result file" on page 4-8 • "Saving test results" on page 4-8
DUT Mode	See "Configuring test settings" on page 3-7.
Test & Report Tools	See the following sections: • "Performing a Pass/Fail test" on page 4-3 • "Managing reports" on page 4-9

Table 3-1: FiberChekULTRA GUI menus and tools (continued)

Tool/Menu	Description
Live Stream View & Tools	Live image of the fiber end face; pan and focus meters, and auto-focus tool: • Pan meter: Move the slider to manually pan across the live image of the fiber end face • Focus meter: Move the slide to manually focus the live image of the fiber end face • AF: Select automatically focus the live image of the fiber end face
Inspected View & Analysis Tools	See "Working with Pass/Fail test results" on page 4-5.
Results	

Status Tray	Displays the following information:
	• FPS: Frames per second
	• Path to FiberChekULTRA cache location on PC
	Note: Appears after a Pass/Fail test is performed.
	• Version: Software of the FiberChekULTRA management software
	• Connection status:
	  • Green indicator: Connected to detected microscope
	  • Red indicator: No microscope connection/lost connection to detected microscope

Managing microscope settings

The **Microscope Settings** dialog provides information about the microscope connected to the FiberChekULTRA management software, as well as tools for starting a firmware upgrade and downloading diagnostic log files.

Step 1 Select **Microscope** on the Main Menu to access the **Microscope Settings** dialog.
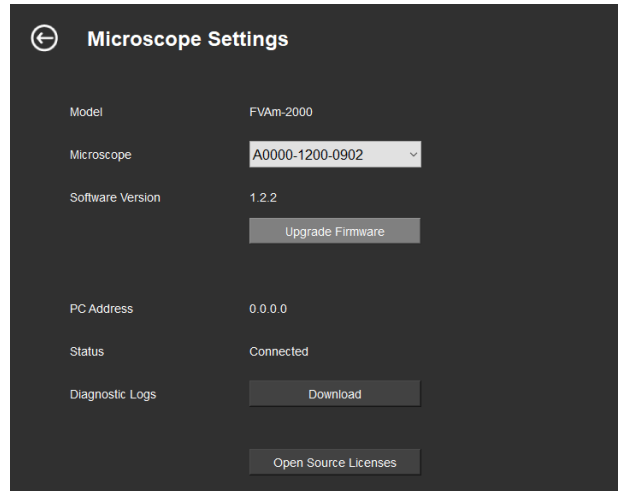
Field/Tool	Description
Model	Model of the microscope
Microscope	Serial Number of microscope **Note:** The Microscope drop-down lists all microscopes connected to the PC that the FiberChekULTRA management software detects. To connect to a different microscope, select the microscope in the list.
Software Version	Firmware version that the microscope is running
Upgrade Firmware	Select to start upgrading the microscope firmware. For more information, see "Upgrading the microscope firmware" on page 3-8.
PC Address	Local address of the PC where the FiberChekULTRA management software is running. For more information, see "FiberChekULTRA APIs" on page A-1.
Status	• Connected: The microscope identified in the Microscope drop-down is connected to the FiberChekULTRA management software. • Disconnected: No microscope is connected to the FiberChekULTRA management software.
Download (Diagnostic Logs)	Select to generate and download a log file containing diagnostic information for the microscope. **Note:** Diagnostic log files are saved to `C:\Users\Public\FiberChekUltra\logs`.
Open Source Licenses	Select to view Open Source License files.

Step 2 Select **Back** to close the dialog.

— End —

Managing application settings and preferences

The **Application Settings and Preferences** dialog provides tools for configuring report content and layout, how the FiberChekULTRA management software manages cached images, and whether test details are present in test results retrieved via FiberChekULTRA API calls.

Step 1   Select **Settings** on the Main Menu.
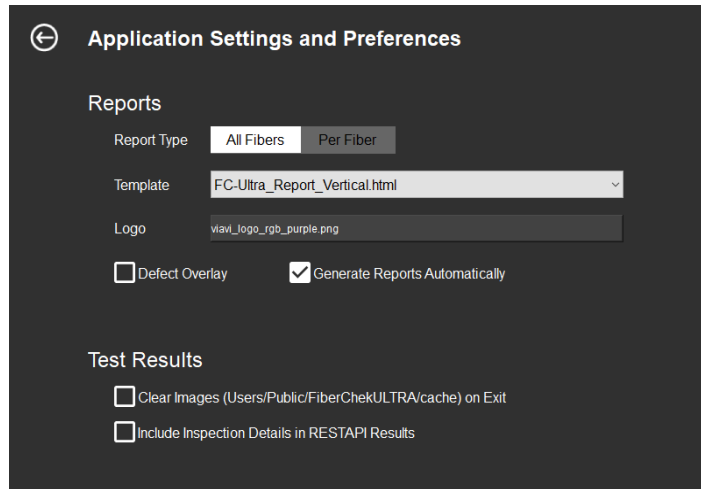
Step 2   In the **Application Settings and Preferences** dialog, specify required settings.

Field/Tool	Description
Reports	
Report Type	• All Fibers: Select to save inspection data for all fibers to a single report file. • Per Fiber: Select to save inspection data for each fiber to a separate report file.
Template	Select to specify a report template from the drop-down list.
Logo	Select an image file to set the logo applied to generated reports.
Defect Overlay	Select to include the defect overlay in end-face images contained in printed reports, or deselect to disable this function. For more information about defect overlays, see "Inspected View" on page 4-5). **Notes:** • Fiber end face images that appear in a report generated while this function is enabled, will show defect overlays even when overlays are hidden in Inspected View. • Fiber end face images that appear in a report generated while this function is disabled, will not show defect overlays even when overlays are shown in Inspected View
Generate Reports Automatically	Select to enable reports to be automatically generated when inspection tests are performed, or deselect to disable this function. **Note:** Generated reports are save to at `C:\Users\Public\FiberChekUltra\reports`.

Field/Tool	Description
Test Results	
Clear Images on Exit	Select to enable image files obtained during an inspection test to be cleared from the cache when exiting the FiberChekULTRA management software, or deselect to disable this function. **Note:** The cache is located at `C:\Users\Public\FiberChekUltra\cache`.
Include Inspection Details in RESTAPI Results	Select to enable inspection details in test results retrieved via a REST API call, or deselect to disable this function.

Step 3   Select **Back** to close the dialog.

— End —

Configuring test settings

Step 1   Ensure that the adapter required for the Pass/Fail test is present on the microscope, and that the device under test (DUT) is mounted on the adapter.

Step 2   On the FiberChekULTRA GUI, refer to the **Tip Name** field on the **DUT Mode** panel to confirm that the correct adapter has been detected.

Step 3   Select the connector layout from the **Connector** drop-down list.

The following image shows two examples of the **DUT Mode** panel.

DUT Mode		DUT Mode	
Tip Name	FMBT-LC-D	Tip Name	FMBT-MPO
Connector	LC Duplex	Connector	MPO 8 XXXXOOOOXXXX
Profile	SM UPC (IEC-61300-3-35 Ed. 2.0)	Profile	Ribbon, MM (IEC-61300-3-35 Ed. 2.0)
Customer		Customer	
Tester ID		Tester ID	
Part Number		Part Number	
Serial Number		Serial Number	
Connector/Fiber/Port		Connector/Fiber/Port	
Station		Station	
Notes		Notes	
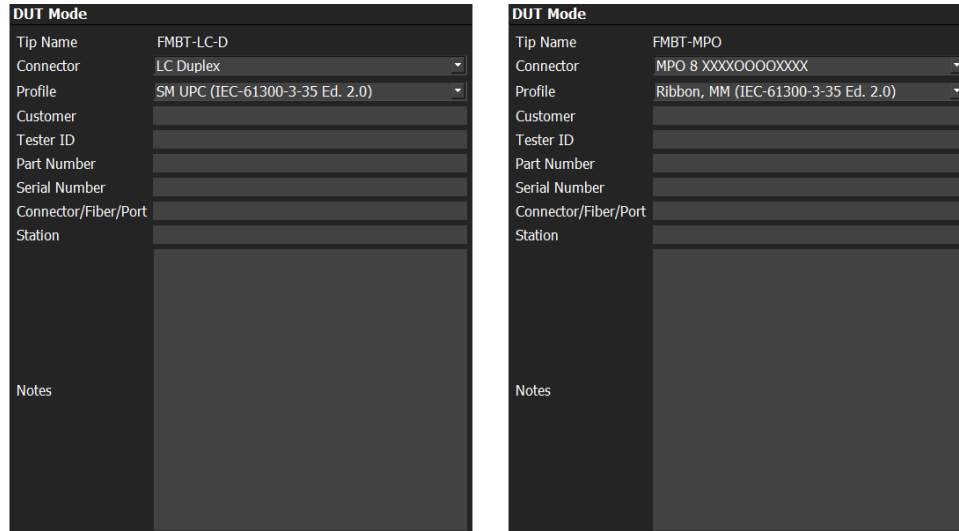
Notes:
- For an MPO connector, the connector layout options are in the format, MPO *N* <*array*>, where *N* indicates the number of fibers in the array; X indicates the position of a fiber in the array; and 0 indicates the position of a spacer in the array; for example, MPO 8 XXXX0000XXXX.
- If required, use the **Pan** slider in the Live Stream view (see "Navigating the FiberChekULTRA GUI" on page 3-2) to confirm the connector layout.

Step 4   Select the required analysis profile from the **Profile** drop-down list.

Note: Analysis profiles define the Pass/Fail thresholds for various fiber types, as per the PASS/FAIL criteria of an IEC visual inspection standard, for example, IEC 61300-3-35. Each preconfigured profile specifies the fiber type, analysis sensitivity, zones of interest within the fiber (typically starting with the fiber core and radiating out), and the criteria for failure within each zone.

Step 5   Optionally, enter information in any of the following fields:

- **Customer**
- **Tester ID**
- **Part Number**
- **Serial Number**
- **Connector/Fiber/Port**
- **Station**
- **Notes**

— End —

Upgrading the microscope firmware

The FiberChekULTRA GUI facilitates firmware management by indicating when a firmware upgrade file is available for the detected FVAM-2000 microscope.

Step 1   Select **Microscope** on the Main Menu.

When a firmware upgrade file is available for the microscope, a message appears in the **Software Version** section of the **Microscope Settings** dialog.
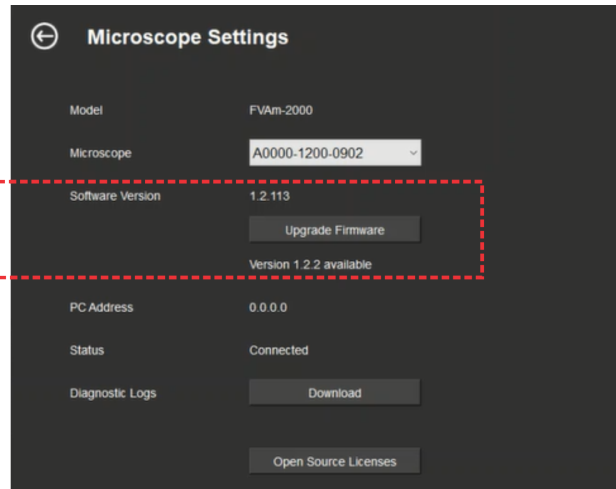
Step 2   Select **Upgrade Firmware**.

The installation process starts and its progress is indicated.
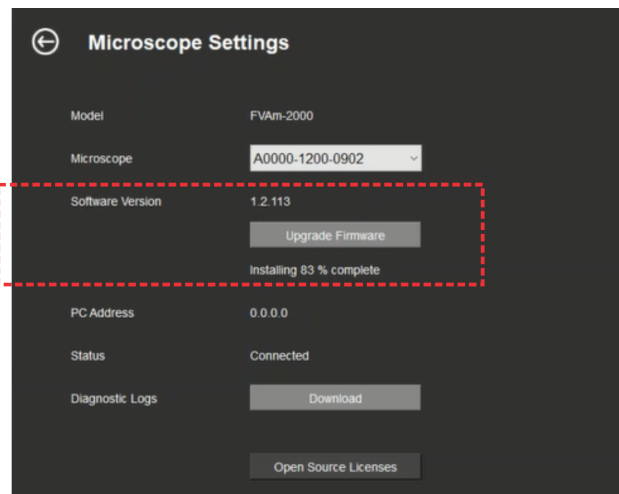
When the installation is completed, the microscope automatically restarts (powers OFF, powers ON).

When the microscope powers OFF, the **Status** message changes to **Disconnected**. When the microscope powers ON and reconnects to the FiberChekULTRA management software, the **Status** messages changes to **Connected** and the **Software Version** section shows the firmware version installed on the microscope.
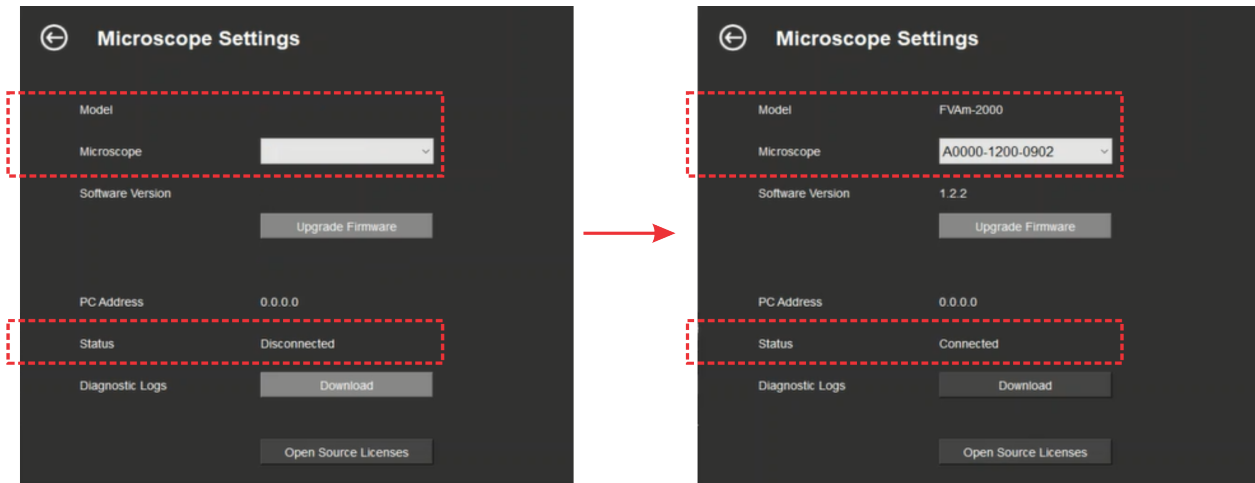
Step 3   Select **Back** to close the **Microscope Settings** dialog.

— End —

4   Pass/Fail tests and managing results

This section refers to the FiberChekULTRA GUI of the management software. For information about using the FiberChekULTRA APIs, see "FiberChekULTRA APIs" on page A-1.

This section covers the following information:

- "Requirements for a Pass/Fail test" on page 4-2
- "Performing a Pass/Fail test" on page 4-3
- "Working with Pass/Fail test results" on page 4-5
- "Managing reports" on page 4-9

Requirements for a Pass/Fail test

Pass/Fail tests inspect devices under test (DUTs) against preconfigured pass criteria for the active analysis profile.

Note: A Pass or Fail result applies to the entire connector. This means that if only one fiber in a fiber array of a DUT fails to meet the preconfigured pass criteria, the test will return a Fail result for the entire DUT. To achieve a Pass result, every fiber in the array must meet the pass criteria.

Ensure that...	See...
The FVAM-2000 microscope is connected to a PC on which the FiberChekULTRA management software is running.	"Starting the FiberChekULTRA management software" on page 2-6
The correct adapter for the Pass/Fail test is present on the microscope.	"Installing an adapter" on page 2-8
A clean DUT is mounted on the adapter.	"Mounting a device under test" on page 2-10
The analysis profile and connector settings are suitable for the Pass/Fail test.	"Configuring test settings" on page 3-7
The live image of the fiber end face is suitable for testing.	"Navigating the FiberChekULTRA GUI" on page 3-2
Required report and test result settings are specified (optional)	"Managing application settings and preferences" on page 3-5

Performing a Pass/Fail test

Step 1   If required, select **New Test** on the FiberChekULTRA GUI to clear information and data from a previous Pass/Fail test.

Step 2   Review "Requirements for a Pass/Fail test" on page 4-2.

Step 3   Select **Start Test**, and note the following as the test progresses and is completed:

- On the FiberChekULTRA GUI:

    - **Start Test** changes to **Testing** during the test, and then returns to **Start Test** when the test is completed.

    - **TEST PASS** or **TEST FAIL** message appears.
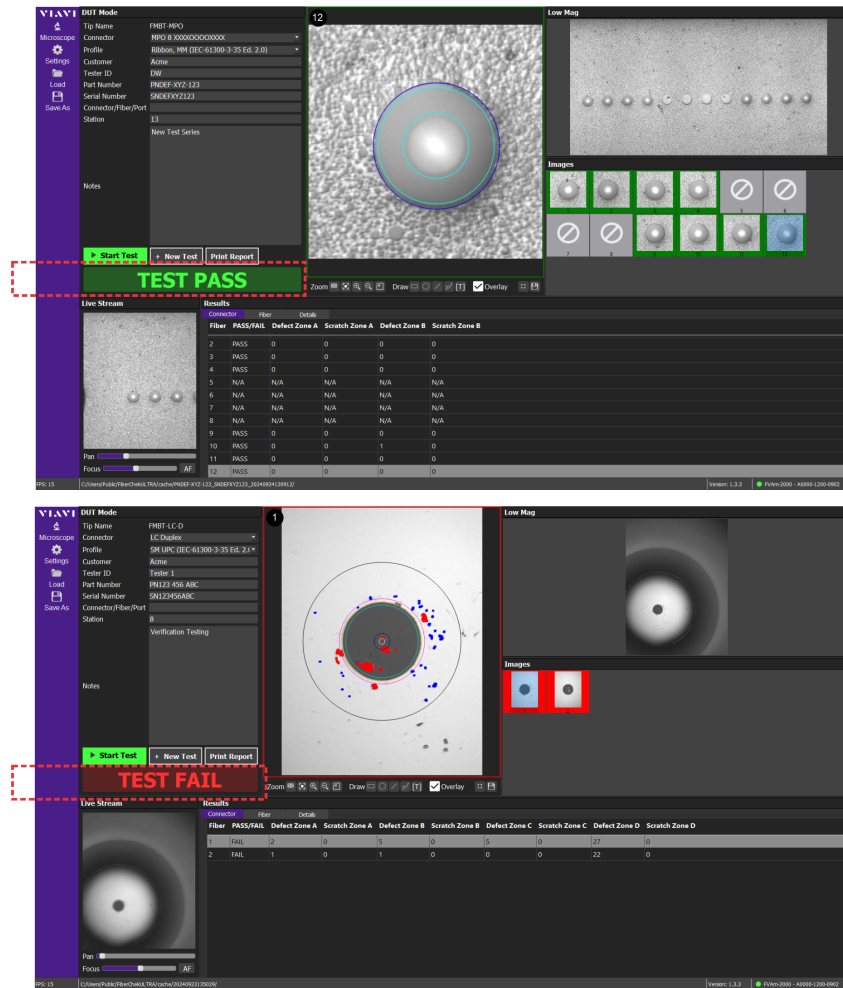
- Fiber images obtained during the inspection test appear in the **Inspected View**.

- Inspection data appears in the **Results** table.

Note: Test results are automatically save to a file (`*.json`) and by default are saved locally to `C:\Users\Public\FiberChekUltra\results`.

- On the FVAM-2000 microscope:

    - Status LEDs indicate the progress of the test (see "Status LED states" on page 2-3).

    - The objective lens moves as each fiber end face in the connector is inspected and imaged.

Step 4   Do any of the following:

- Use analysis tools in the Inspected View (see "Working with Pass/Fail test results" on page 4-5).

- Manually print a report to a PDF file (see "Managing reports" on page 4-9).

Step 5   If required, select **New Test** to clear test information and results from the FiberChekULTRA GUI.

— End —

Working with Pass/Fail test results

You can access test data and available analysis tools immediately after a Pass/Fail test for any type of DUT or after loading a test result file to the FiberChekULTRA GUI (see "Loading a test-result file" on page 4-8).

Analysis tools are available in the Inspected View (see "Inspected View" on page 4-5) and the Results table ("Results table" on page 4-7).

Inspected View

Analysis tools available in Inspected View enable you to select the fiber-inspection image you want to work with, customize the view of the image (e.g., Zoom tools or manually pan), annotate the image with shapes, lines, and text, show or hide overlays, and save the image, including customized view and annotations, to a file (*.png).

Note: Overlays denote the fiber core diameter and zones on the fiber end face as defined in the analysis profile used for the Pass/Fail test.

Figure 4-1: Inspected View - MPO fiber
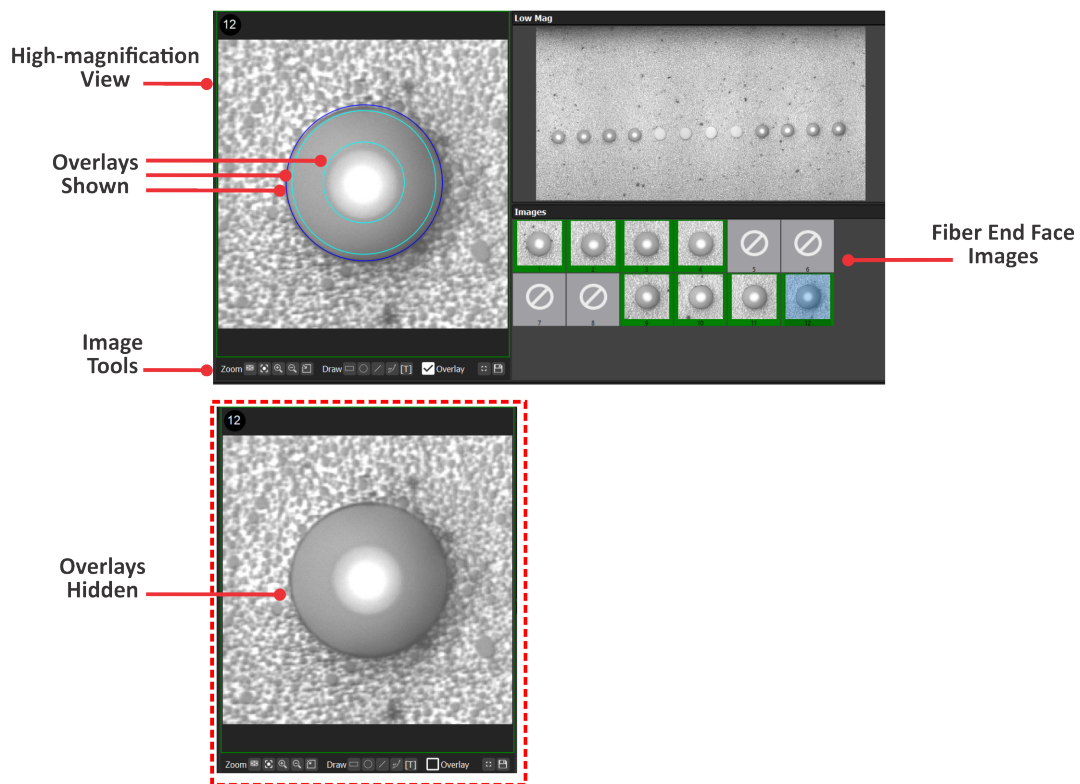
Table 4-1: Inspect View analysis tools

Tool	Description
Images	Select the fiber end face image that you want to work with to access a high-magnification view of the image (see Figure 4-1 on page 4-5).
Image Tools	View, annotate, and/or save high-magnification view the fiber end face image: • Zoom tools: Zoom in or out on the entire image or recenter the image after zooming or panning the image. • Draw tools: Drawing tools to add shapes, lines, or text to the selected image (see Figure 4-2). • Overlay: Show or hide defect overlays on the fiber image (see Figure 4-1 on page 4-5). **Note:** For information about specifying whether images that appear in a report show or hide defect overlays, see "Managing application settings and preferences" on page 3-5). • Show Full Screen/Return to Normal Screen • Save the image to a file (*.png). **Note:** By default, the image file is saved to `C:\Users\Public\FiberChekUltra\results`.
Low Mag	Low magnification view of the select fiber end face image.

Figure 4-2: View-adjusted, annotated high-magnification view of fiber-inspection image
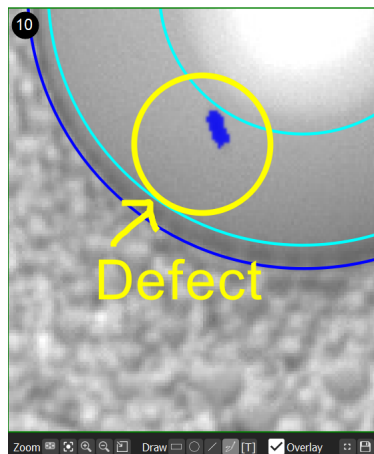
Results table

The Results table enables operators to analyze test results by providing a summary of the Pass/Fail data for each fiber in the DUT (Connector view), as well as fiber-specific inspection data (Fiber and Details views).

To display inspection data for a fiber on the Fiber and Details views, select the fiber on the Connector view or select the fiber image in the Images section of the Inspected View (see).

Note: Selecting a fiber on the Connector view makes the fiber image available for analysis in Inspected View.

Figure 4-3: Results table - Connect, Fiber, and Details views
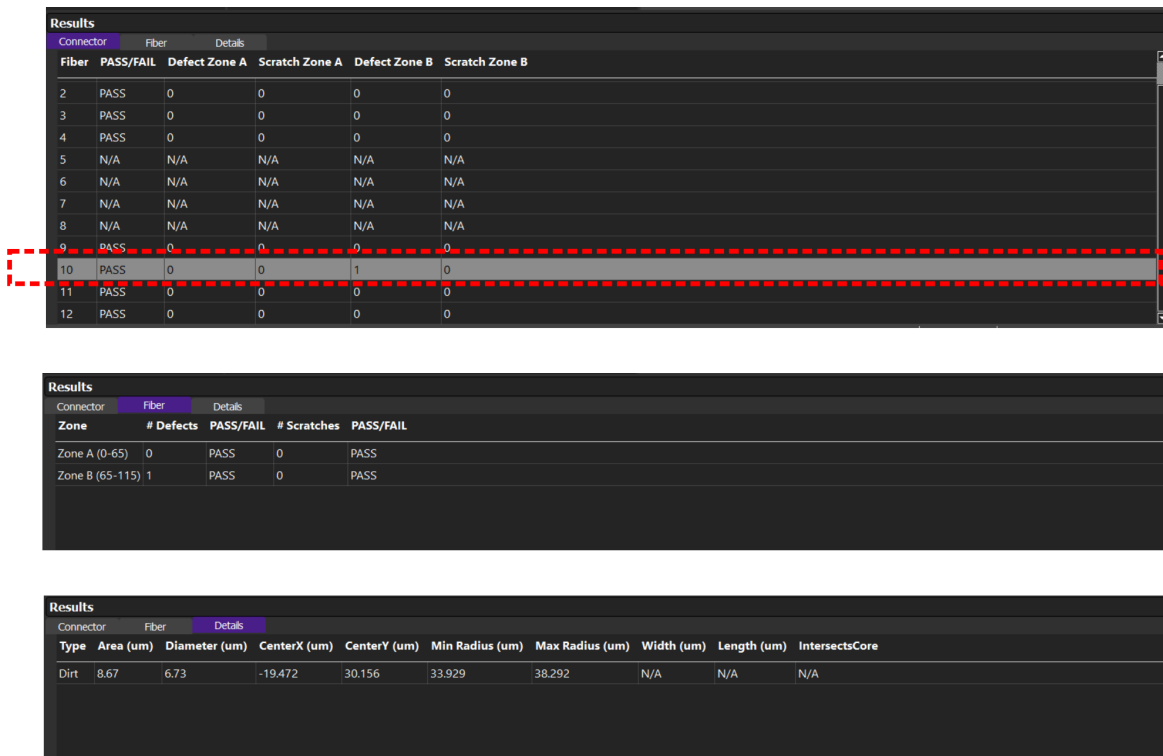
Saving test results

Test results are automatically saved to a file (*.`json`) when a Pass/Fail test is completed. By default, each file is saved locally to `C:\Users\Public\FiberChekUltra\results` using the filename format *YYYYMMDDHHMMSS*; for example, 20240912114223.json.

Also, operators can manually save test result files and share them for later analysis.

Step 1   Perform a Pass/Fail test ("Performing a Pass/Fail test" on page 4-3), or load a test-result file (see "Loading a test-result file" on page 4-8).

Step 2   Select **Save As** on the Main Menu.

Step 3   In the **Save Test Results** dialog, navigate to the location where you want to save the file.

> **Note:** You can save a test results file to a shared remote folder that the PC can access.

Step 4   Type a name in the **Filename** field.

Step 5   Select **Save** to close the **Save Test Results** dialog.

— End —

Loading a test-result file

Load a test-result file (*.`json`) to the FiberChekULTRA GUI to analyze the data.

> **Note:**   By default, test results files are automatically saved to `C:\Users\Public\FiberChekUltra\results` on the PC where the FiberChekULTRA management software is running. However, these files can also be located on either or a shared remote folder that the PC can access.

Step 1   Select **Load** on the Main Menu.

Step 2   In the **Load File Set** dialog, navigate to the folder where the required test result file is located.

Step 3   Select the file, and then select **Open** to load the test results.

Step 4   Optionally, do any of the following:

- Select a fiber image, and use the image tools to view or annotate the image (see "Working with Pass/Fail test results" on page 4-5).

- Modify test information on the **DUT Mode** panel (see "Configuring test settings" on page 3-7).

- Select **Save As** to save any changes to the file (see "Saving test results" on page 4-8).

    > **Note:** Saving the file using its current filename overwrites the file.

- Select **Print Report** to generate and save a report file (see "Managing reports" on page 4-9).

— End —

Managing reports

Reports can be set to automatically generate when a Pass/Fail test is completed (see "Managing application settings and preferences" on page 3-5). However, you can manually print a report whenever test results are available in the FiberChekULTRA GUI; for example, after the test results from an earlier Pass/Fail test are loaded (see "Loading a test-result file" on page 4-8).

By default, reports are saved to `C:\Users\Public\FiberChekUltra\reports`. However, these files can also be copied to another location, such as a shared remote folder that the PC can access.

Important:
- The contents of a report are formatted to the active report template and contain a logo. For information about changing the active template and logo that a report uses, see "Managing application settings and preferences" on page 3-5.
- For information about specifying whether fiber end face images that appear in a report show or hide defect overlays, see "Managing application settings and preferences" on page 3-5.

Printing a report

Step 1   Ensure that the required test results are available in the FiberChekULTRA GUI.

Step 2   Select **Print Report**.

Step 3   Select **OK** in the **Print Report** dialog to confirm the operation and close the dialog.
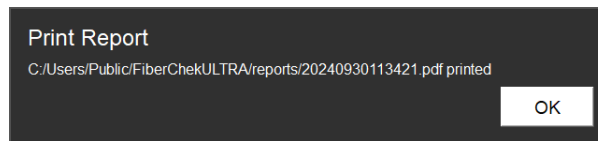
The **Print Report** dialog shows the path and filename of the printed report file.

— End —

Appendix A   FiberChekULTRA APIs

Use the FiberChekULTRA APIs to perform fiber inspection tests, retrieve test results, and configure and retrieve test information on an FVAM-2000 microscope.

Important: The FVAM-2000 microscope must be connected to a PC on which the FiberChekULTRA management software is running. For information, see "Starting the FiberChekULTRA management software" on page 2-6).

This section covers the following information:

- "API fundamentals" on page A-2
- "IDN API" on page A-4
- "Microscope API" on page A-5
- "Test API" on page A-6
- "Focus API" on page A-18
- "Pan API" on page A-19
- "Tips API" on page A-20
- "Profile API" on page A-21
- "Connector-layouts API" on page A-24

API fundamentals

The APIs communicate over the Hypertext Transfer Protocol (HTTP) and use the same HTTP methods that a web browser uses to retrieve and send data to a remote server. Responses to API calls are in Java-script Object Notation (JSON) format.

You can send API calls over an API platform such as Postman®. The URL for a call is formatted as follows:

http://*pcAddress*:*port*/*application*/v1/*resource*/*parameter*

Where...	Is...
pcAddres	The address of the local or remote PC where the FiberChekULTRA management software is running. **Note:** For information about obtaining, the local PC address, see "Managing microscope settings" on page 3-4.
port	8081
application	See Table A-1.
v1	API version number
resource	application resource
parameter	resource parameter

Table A-1: Summary of FiberChekULTRA APIs

Application	URL	Method
idn	http://{pcAddress:port}	
	idn	GET
Microscope	http://{pcAddress}/ultra/mscope/v1	
	state	GET
Test	http://{pcAddress}/ultra/mscope/v1/test	
	info	GET
	info	PUT
	clear	POST
	start	POST
	run	GET
	result	GET
Focus	http://{pcAddress}/ultra/mscope/v1/focus	
	absolute	GET
Pan	http://{pcAddress}/ultra/mscope/v1/pan	
	absolute	GET

Table A-1: Summary of FiberChekULTRA APIs (continued)

Application	URL	Method
Tips	`http://{pcAddress}/ultra/mscope/v1/config/tips`	
	attached	GET
Profiles	`http://{pcAddress}/ultra/mscope/v1/config/profiles`	
	selected	GET
	selected	PUT
	filtered	GET
Connector-Layouts	`http://{pcAddress}/ultra/mscope/v1/config/connector-layouts`	
	selected	GET
	selected	PUT
	filtered	GET

IDN API

- idn

idn

Description	Retrieve microscope information
URL	`http://{pcAddress}/idn`
Method	GET

Response

Name	Type	Description	Constraints
result	object	—	—
model	string	Microscope model	FVAm-2000
schema	integer	Schema version of this JSON object	1
serialNo	string	Microscope serial number	—
swVersion	string	Microscope software version	{true, false}
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "model": "FVAm-2000",
     "schema": 1,
     "serialNo": "A0000-1200-0902",
     "swVersion": "1.2.2"
  },
  "success": "true"
}
```

Microscope API

- state

state

Description	Retrieve the state of the microscope
URL	`http://{pcAddress}/ultra/mscope/v1/state`
Method	GET

Response

Name	Type	Description	Constraints
result	object	—	—
busyCode	enum	State of microscope	{none, testing, autoFocusing}
schema	integer	Schema version of this JSON object	1
state	enum	State enumeration	{disconnected, tip, error, idle, testing, tested}
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "busycode": "none",
    "schema": 1,
    "state": "tested"
  },
  "success": "true"
}
```

Test API

- info (GET)
- info (PUT)
- clear
- start
- run
- result

info

Description	Retrieve test information
URL	`http://{pcAddress}/ultra/mscope/v1/test/info`
Method	GET

Response

Name	Type	Description	Constraints
result	object	—	—
Connector	string	DUT type	—
Customer	string	Name of customer	—
Notes	string	Test notes	—
PN	string	DUT part number	—
SN	string	DUT serial number	—
Station	string	Name of work station	—
Tester	string	Name of tester	—
schema	integer	Schema version of this JSON object	1
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "Connector": "",
    "Customer": "ACME Ltd",
    "Notes": "",
    "PN": "22112369",
    "SN": "ABC-DEF-789",
    "Station": "12",
    "Tester": "J Doe",
    "schema": 1
  },
  "success": "true"
}
```

info

Description	Set test information
URL	`http://{pcAddress}/ultra/mscope/v1/test/info`
Method	PUT

Data

Name	Type	Required	Description
Connector	string	Optional	DUT type
Customer	string	Optional	Name of customer
Notes	string	Optional	Test notes
PN	string	Optional	DUT part number
SN	string	Optional	DUT serial number
Station	string	Optional	Name of work station
Tester	string	Optional	Name of tester

Example

```
{
  "SN":"ABC-DEF-789",
  "Customer":"ACME Ltd",
  "PN":"22112369",
  "Tester":"J Doe",
  "Station":"12"
}
```

clear

Description	Clear test information
URL	`http://{pcAddress}/ultra/mscope/v1/test/clear`
Method	POST

Response

Name	Type	Description	Constraints
success	enum	Success enumeration	(true, false}

Example

```
{
  "success": true
}
```

start

Description	Start a test asynchronously
URL	`http://{pcAddress}/ultra/mscope/v1/test/start`
Method	POST

Response

Name	Type	Description	Constraints
success	enum	Success enumeration	(true, false}

Example

```
{
  "success": true
}
```

run

Start a test and return results when completed.

Description	Start a test and return results
URL	`http://{pcAddress}/ultra/mscope/v1/test/run`
Method	GET

Response

Important: The data contained in a response for this API depends on the type of DUT inspected. Not all data retrieved might be reflected in the following table and .

Name	Type	Description	Constraints
result	object	—	—
comment	string	—	—
data	object	—	—
connector image	object	Connector-image data	—
encoding	enum	File type of image	{png, jpeg}
height	integer	Height of image in [pixels?]	—
image	path	Path to and name of image file	—
width	integer	Width of image in [pixels?]	—
endfaces	array	End face data	—
columnPos	integer	Column position of end face in array	—
focusQuality	integer	Focus quality of live image	—
images	object	Images data	—
lowMag	object	Low-magnification data	—
highMag	object	High-magnification data	—
fiberImage	object	Fiber-image data	—
overlaysImage	object	Overlay data	—
overallEvaluationResult	object	Overall evaluation results	—
passesAll	enum	Pass/fail state of end face analysis	{true, false}
zones	array	Zones data	—
innerDiameterUM	integer	Inner diameter (μm) of zone	—
name	string	Zone name	Zone A to Zone N
outerDiameterUM	integer	Outer diameter (μm) of zone	—
passesAll	enum	Pass/fail state of zone analysis	{true, false}
passesDefects	enum	Pass/fail state of defects analysis	{true, false}
passesScratches	enum	Pass/fail state of scratches analysis	{true, false}
rowPos	integer	Row position of end face in array	—
status	enum	Pass/fail status	{pass, fail, ignored}

Name	Type	Description	Constraints
info	object	Test-info data	—
Connector	string	DUT name	—
Customer	string	Customer name	—
FiberName	string	Fiber type	—
Notes	string	Test notes	—
PartNumber	string	DUT part number	—
Profile	string	Analysis profile	—
SerialNumber	string	DUT serial number	—
Station	string	Test-station number	—
TesterID	string	Tester ID	—
TipName	string	Detected adapter	—
report	string	Path to and name of report file	—
testTime	string	Date and time of test in the format `YYYY-MM-DDTHH-MM-SSTZD` **Note:** TZD = Time zone designator in the format +HH:MM or -HH:MM.	—
success	enum	Success enumeration	(true, false}

Example

```
{
 "result": {
   "comment": "",
     "data": {
       "endfaces": [
         {
         "columnPos": 1,
         "focusQuality": 94,
           "images": {
             "highMag": {
               "fiberImage": {
                 "encoding": "png",
                 "height": 640,
                 "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                         fiber1_20240916115136219.jpeg",
                 "width": 480
               },
               "overlaysImage": {
                 "encoding": "png",
                 "height": "513",
                 "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                         overlay1_20240916115138927.jpeg",
                 "width": "513"
               }
             },
             "lowMag": {
               "fiberImage": {
                 "encoding": "png",
                 "height": 640,
                 "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                         fiber_lowMag_20240916115138.jpeg",
                 "width": 480
               }
             }
           },
           "overallEvaluationResult": {
             "passesAll": false,
             "zones": [
               {
                 "innerDiameterUM": 0,
```

```
                "name": "Zone A",
                "outerDiameterUM": 25,
                "passesAll": false,
                "passesDefects": false,
                "passesScratches": true
            },
            {
                "innerDiameterUM": 25,
                "name": "Zone B",
                "outerDiameterUM": 115,
                "passesAll": false,
                "passesDefects": false,
                "passesScratches": true
            },
            {
                "innerDiameterUM": 115,
                "name": "Zone C",
                "outerDiameterUM": 135,
                "passesAll": true,
                "passesDefects": true,
                "passesScratches": true
            },
            {
                "innerDiameterUM": 135,
                "name": "Zone D",
                "outerDiameterUM": 250,
                "passesAll": false,
                "passesDefects": false,
                "passesScratches": true
            }
        ]
    },
    "rowPos": 1,
    "status": "fail"
},
{
    "columnPos": 2,
    "focusQuality": 91,
    "images": {
        "highMag": {
            "fiberImage": {
                "encoding": "png",
                "height": 640,
                "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                        fiber2_20240916115138965.jpeg",
                "width": 480
            },
            "overlaysImage": {
                "encoding": "png",
                "height": "513",
                "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                        overlay2_20240916115141709.jpeg",
                "width": "513"
            }
        },
        "lowMag": {
            "fiberImage": {
                "encoding": "png",
                "height": 640,
                "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                        fiber_lowMag_20240916115141.jpeg",
                "width": 480
            }
        }
    },
    "overallEvaluationResult": {
        "passesAll": false,
        "zones": [
            {
                "innerDiameterUM": 0,
                "name": "Zone A",
                "outerDiameterUM": 25,
                "passesAll": true,
                "passesDefects": true,
                "passesScratches": true
            },
            {
                "innerDiameterUM": 25,
                "name": "Zone B",
                "outerDiameterUM": 115,
                "passesAll": false,
```

```
                    "passesDefects": false,
                    "passesScratches": false
                },
                {
                    "innerDiameterUM": 115,
                    "name": "Zone C",
                    "outerDiameterUM": 135,
                    "passesAll": true,
                    "passesDefects": true,
                    "passesScratches": true
                },
                {
                    "innerDiameterUM": 135,
                    "name": "Zone D",
                    "outerDiameterUM": 250,
                    "passesAll": true,
                    "passesDefects": true,
                    "passesScratches": true
                }
                ]
            },
            "rowPos": 1,
            "status": "fail"
        }
        ]
    },
    "info": {
        "Connector": "LC Duplex",
        "Customer": "Acme Ltd",
        "FiberName": "",
        "Notes": "",
        "PartNumber": "",
        "Profile": "SM UPC (IEC-61300-3-35 Ed. 2.0)",
        "SerialNumber": "",
        "Station": "",
        "TestID": "",
        "Tipname": "FMBT-LC-D"
    },
    "report": "C:/Users/Public/FiberChekULTRA/reports/20240916115136.pdf",
    "status": "fail",
    "testTime": "2024-04-26T15:25:26-04:00"
    },
    "success": true
}
```

result

Description	Return the results from the last test performed
URL	`http://{pcAddress}/ultra/mscope/v1/test/result`
Method	GET

Response

Important: The data contained in a response for this API depends on the type of DUT inspected. Not all data retrieved might be reflected in the following table and the "Example" on page A-15.

Name	Type	Description	Constraints
result	object	—	—
comment	string	—	—
data	object	—	—
connector image	object	Connector-image data	—
encoding	enum	File type of image	{png, jpeg}
height	integer	Height of image in [pixels?]	—
image	path	Path to and name of image file	—
width	integer	Width of image in [pixels?]	—
endfaces	array	End face data	—
columnPos	integer	Column position of end face in array	—
focusQuality	integer	Focus quality of live image	—
images	object	Images data	—
lowMag	object	Low-magnification data	—
highMag	object	High-magnification data	—
fiberImage	object	Fiber-image data	—
overlaysImage	object	Overlay data	—
overallEvaluationResult	object	Overall evaluation results	—
passesAll	enum	Pass/fail state of end face analysis	{true, false}
zones	array	Zones data	—
innerDiameterUM	integer	Inner diameter (μm) of zone	—
name	string	Zone name	Zone A to Zone N
outerDiameterUM	integer	Outer diameter (μm) of zone	—
passesAll	enum	Pass/fail state of zone analysis	{true, false}
passesDefects	enum	Pass/fail state of defects analysis	{true, false}
passesScratches	enum	Pass/fail state of scratches analysis	{true, false}
rowPos	integer	Row position of end face in array	—
status	enum	Pass/fail status	{pass, fail, ignored}
info	object	Test-info data	—

Name	Type	Description	Constraints
Connector	string	DUT name	—
Customer	string	Customer name	—
FiberName	string	Fiber type	—
Notes	string	Test notes	—
PartNumber	string	DUT part number	—
Profile	string	Analysis profile	—
SerialNumber	string	DUT serial number	—
Station	string	Test-station number	—
TesterID	string	Tester ID	—
TipName	string	Detected adapter	—
report	string	Path to and name of report file	—
testTime	string	Date and time of test in the format `YYYY-MM-DDTHH-MM-SSTZD` **Note:** TZD = Time zone designator in the format +HH:MM or -HH:MM.	—
success	enum	Success enumeration	(true, false}

Example

```
{
  "result": {
    "comment": "",
      "data": {
        "endfaces": [
          {
            "columnPos": 1,
            "focusQuality": 94,
              "images": {
                "highMag": {
                  "fiberImage": {
                    "encoding": "png",
                    "height": 640,
                    "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                            fiber1_20240916115136219.jpeg",
                    "width": 480
                  },
                  "overlaysImage": {
                    "encoding": "png",
                    "height": "513",
                    "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                            overlay1_20240916115138927.jpeg",
                    "width": "513"
                  }
                },
                "lowMag": {
                  "fiberImage": {
                    "encoding": "png",
                    "height": 640,
                    "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                            fiber_lowMag_20240916115138.jpeg",
                    "width": 480
                  }
                }
              },
              "overallEvaluationResult": {
                "passesAll": false,
                "zones": [
                  {
                    "innerDiameterUM": 0,
                    "name": "Zone A",
                    "outerDiameterUM": 25,
```

```
                        "passesAll": false,
                        "passesDefects": false,
                        "passesScratches": true
                    },
                    {
                        "innerDiameterUM": 25,
                        "name": "Zone B",
                        "outerDiameterUM": 115,
                        "passesAll": false,
                        "passesDefects": false,
                        "passesScratches": true
                    },
                    {
                        "innerDiameterUM": 115,
                        "name": "Zone C",
                        "outerDiameterUM": 135,
                        "passesAll": true,
                        "passesDefects": true,
                        "passesScratches": true
                    },
                    {
                        "innerDiameterUM": 135,
                        "name": "Zone D",
                        "outerDiameterUM": 250,
                        "passesAll": false,
                        "passesDefects": false,
                        "passesScratches": true
                    }
                ]
            },
            "rowPos": 1,
            "status": "fail"
        },
        {
            "columnPos": 2,
            "focusQuality": 91,
            "images": {
                "highMag": {
                    "fiberImage": {
                        "encoding": "png",
                        "height": 640,
                        "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                                fiber2_20240916115138965.jpeg",
                        "width": 480
                    },
                    "overlaysImage": {
                        "encoding": "png",
                        "height": "513",
                        "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                                overlay2_20240916115141709.jpeg",
                        "width": "513"
                    }
                },
                "lowMag": {
                    "fiberImage": {
                        "encoding": "png",
                        "height": 640,
                        "image": "C:/Users/Public/FiberChekULTRA/cache/20240916115136/
                                fiber_lowMag_20240916115141.jpeg",
                        "width": 480
                    }
                }
            },
            "overallEvaluationResult": {
                "passesAll": false,
                "zones": [
                    {
                        "innerDiameterUM": 0,
                        "name": "Zone A",
                        "outerDiameterUM": 25,
                        "passesAll": true,
                        "passesDefects": true,
                        "passesScratches": true
                    },
                    {
                        "innerDiameterUM": 25,
                        "name": "Zone B",
                        "outerDiameterUM": 115,
                        "passesAll": false,
                        "passesDefects": false,
                        "passesScratches": false
```

```
            },
            {
              "innerDiameterUM": 115,
              "name": "Zone C",
              "outerDiameterUM": 135,
              "passesAll": true,
              "passesDefects": true,
              "passesScratches": true
            },
            {
              "innerDiameterUM": 135,
              "name": "Zone D",
              "outerDiameterUM": 250,
              "passesAll": true,
              "passesDefects": true,
              "passesScratches": true
            }
          ]
        },
        "rowPos": 1,
        "status": "fail"
      }
    ]
  },
  "info": {
    "Connector": "LC Duplex",
    "Customer": "Acme Ltd",
    "FiberName": "",
    "Notes": "",
    "PartNumber": "",
    "Profile": "SM UPC (IEC-61300-3-35 Ed. 2.0)",
    "SerialNumber": "",
    "Station": "",
    "TestID": "",
    "Tipname": "FMBT-LC-D"
  },
  "report": "C:/Users/Public/FiberChekULTRA/reports/20240916115136.pdf",
  "status": "fail",
  "testTime": "2024-04-26T15:25:26-04:00"
  },
  "success": true
}
```

Focus API

- absolute

absolute

Description	Retrieve the absolute position of the focus motor
URL	`http://{pcAddress}/ultra/mscope/v1/focus/absolute`
Method	GET

Response

Name	Type	Description	Constraints
result	object	—	—
steps	integer	Absolute position of focus motor	0 to 100.000
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "steps": "52.484"
  },
  "success": "true"
}
```

Pan API

- absolute

absolute

Description	Retrieve the absolute position of the pan motor
URL	`http://{pcAddress}/ultra/mscope/v1/pan/absolute`
Method	GET

Response

Name	Type	Description	Constraints
result{}	object	—	—
steps	integer	Absolute position of pan motor	0 to 100.000
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "steps": "52.484"
  },
  "success": "true"
}
```

Tips API

- attached

attached

Description	Retrieve the adapter present on the microscope
URL	`http://{pcAddress}/ultra/mscope/v1/config/tips/attached`
Method	GET

Result

Name	Type	Description	Constraints
result{}	object	—	—
partNumber	string, or {} if none	—	—
schema	integer	Schema version of JSON object	1
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "partNumber": "FMBT-MPO",
    "schema": 1
  },
  "success": "true"
}
```

Profile API

- selected (GET)
- selected (PUT)
- filtered

selected

Description	Retrieve the active analysis profile
URL	`http://{pcAddress}/ultra/mscope/v1/config/profiles/selected`
Method	GET

Response

Name	Type	Description	Constraints
result{}	object	—	—
index	integer	Profile position in filtered list (see "filtered" on page A-23)	—
name	string, or {} if none	Profile name	—
schema	integer	Schema version of JSON object	1
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "index": 4,
    "name": "Ribbon, MM (IEC-61300-3-35 Ed. 2.0)",
    "schema": 1
  },
  "success": "true"
}
```

selected

Description	Set the active analysis profile
URL	`http://{pcAddress}/ultra/mscope/v1/config/profiles/selected`
Method	PUT

Data

Name	Type	Required	Description	Constraints
index	integer	See Example on this page	Profile position in filtered list (see "filtered" on page A-23)	—
name	string	See Example on this page	Profile name	—

Example

```
{
  "index":"4"
}
```

or

```
{
  "name":"Ribbon, MM (IEC-61300-3-35 Ed. 2.0)"
}
```

filtered

Description	Retrieve the list of available analysis profiles
URL	`http://{pcAddress}/ultra/mscope/v1/config/profiles/filtered`
Method	GET

Response

Name	Type	Description	Constraints
result{}	object	—	—
profiles	array	Profiles data	—
index	integer	Profile position in filtered list	—
name	string, or {} if none	Profile name	—
schema	integer	Schema version of JSON object	1
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "profiles": [
      {
        "index": "2",
        "name": "Ribbon MM (Ed 3 IEC-61300-3-35)"
      },
      {
        "index": "3",
        "name": "Ribbon SM APC (Ed 3 IEC-61300-3-35)"
      },
      {
        "index": "4",
        "name": "Ribbon, MM (IEC-61300-3-35 Ed. 2.0)"
      },
      {
        "index": "5",
        "name": "Ribbon, SM APC (IEC-61300-3-35 Ed. 2.0)"
      }
    ],
      "schema": 1
  },
  "success": "true"
}
```

Connector-layouts API

- [selected](#) (GET)
- [selected](#) (PUT)
- [filtered](#)

selected

Description	Retrieve the active connector layout
URL	`http://{pcAddress}/ultra/mscope/v1/config/connector-layouts/selected`
Method	GET

Response

Name	Type	Description	Constraints
result	object	—	—
index	integer	Layout position in filtered list (see "filtered" on page A-26)	—
name	string, or {} if none	Layout name	—
schema	integer	Schema version of JSON object	1
success	enum	Success enumeration	{true, false}

Example

```
{
    "result": {
        "index": 4,
        "name": "Ribbon, MM (IEC-61300-3-35 Ed. 2.0)",",
        "schema": 1
    },
    "success": "true"
}
```

selected

Description	Set the active connector layout
URL	`http://{pcAddress}/ultra/mscope/v1/config/connector-layouts/selected`
Method	PUT

Data

Name	Type	Required	Description	Constraints
index	integer	See Example on this page	Layout position in filtered list (see "filtered" on page A-26)	—
name	string	See Example on this page	Layout name	—

Example

```
{
  {"index":"4"}

  },
  "success": "true"
}
```
or
```
{
  "name":"Ribbon, MM (IEC-61300-3-35 Ed. 2.0)"}
  },
  "success": "true"
}
```

filtered

Description	Retrieve the list of available connector layouts
URL	`http://{pcAddress}/ultra/mscope/v1/config/connector-layouts/filtered`
Method	GET

Result

Name	Type	Description	Constraints
result	object	—	—
connectorLayouts	array	Connector-layouts data	—
index	integer	Layout position in filtered list (see "filtered" on page A-26)	—
name	string, or {} if none	Profile name	—
schema	integer	Schema version of JSON object	1
success	enum	Success enumeration	{true, false}

Example

```
{
  "result": {
    "connectorLayouts": [
      {
       "index": "3",
       "name": "MPO 8 XXXXXXXX"
      },
      {
       "index": "4",
       "name": "MPO 8 OOXXXXXXXXOO"
      },
      {
       "index": "5",
       "name": "MPO 8 XXXXOOOOXXXX"
      },
      {
       "index": "6",
       "name": "MPO 10 OXXXXXXXXXO"
      }
      {
       "index": "7",
       "name": "MPO 12 XXXXXXXXXXXX"
      }
      {
       "index": "8",
       "name": "MPO 16 XXXXXXXXXXXXXXXX"
      }        {
       "index": "9",
       "name": "MPO 16 2x OOXXXXXXXXOO"
      }
      {
        "index": "10",
```

```
      "name": "MPO 16 2x XXXXOOOOXXXX"
     }
     {
      "index": "11",
      "name": "MPO 20 2x OXXXXXXXXXXO"
     }
     {
      "index": "12",
      "name": "MPO 24 2x XXXXXXXXXXXX"
     }
     {
      "index": "13",
      "name": "MPO 32 2x XXXXXXXXXXXXXXXX"
     }
     ],
      "schema": 1
  },
  "success": "true"
}
```

Appendix B   User Guide revision history

Revision	Date	Details
R000	November 2024	This document is released.

FVAM-2000

Long Working Distance Benchtop Autofocus Microscope User Guide

22112369-355 R000, Standard

November 2024

English

VIAVI Solutions Inc.

1445 South Spectrum Blvd., Suite 102

Chandler, AZ, 85286

USA

North America: (Toll Free) 1-844-GO-VIAVI / 1-844-468-4284

All Other Regions: www.viavisolutions.com/contacts