Agilent

Agilent Seahorse XF Flex

Operating Manual

For Research Use Only. Not for use in diagnostic procedures.

Notices

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Copyright

Agilent Technologies, Inc.
121 Hartwell Ave.
Lexington, MA 02421
USA

Instrument Manufacturing

Manufactured by Agilent Technologies
711 East Main Street
Chicopee, MA 01020
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Operating Temperature

Operating Temperature: 16–42°C

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CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

In This Guide

This manual contains information for operating and maintaining the Agilent Seahorse XF Flex Analyzer.

Contents

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1 General Information

This manual covers the following models of Agilent Seahorse XF Flex Analyzer:

Table 1 Models of Agilent Seahorse XF Flex Analyzer Covered in this Manual

Instrument type	Model numbers
Seahorse XF Flex	S7851A

Safety Considerations

The XF Flex has been carefully designed so that when used properly you have an accurate, fast, flexible, and safe instrument.

Information on safety practices is provided with your instrument and operation manuals. Before using your instrument or accessories, you must thoroughly read these safety practices.

WARNING **Always observe all relevant safety practices.**

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. Unskilled, improper, or careless use of this instrument can create shock hazards, fire hazards, or other hazards which can cause death, serious injury to personnel, or severe damage to equipment and property.

Electrical Hazards

WARNING **The XF Flex contains electrical circuits, devices, and components operating at dangerous voltages. Contact with these circuits, devices, and components can cause death, serious injury, or painful electric shock.**

Panels or covers that are retained by fasteners which require the use of a tool for removal may be opened only by Agilent-trained, -qualified, or -authorized service engineers. Consult the manuals or product labels supplied with the XF Flex to determine which parts are operator accessible.

WARNING **Connection of the instrument to an incorrectly wired supply outlet, or lack of proper electrical grounding can create a fire hazard or a potentially serious shock hazard and could seriously damage the instrument and any attached ancillary equipment.**

Always use a three-wire outlet with ground connection which is adequately rated for the load. The installation must comply with local safety regulations.

Safety Labels

The following table lists the common safety labels you might find on the Agilent Seahorse XF Flex.

Table 2 Safety Labels

Symbol	Description
	Indicates pinch, crush, or cut hazard.

Electromagnetic Compatibility (EMC) Information

This product conforms to:

Emission

EN55011/CISPR 11: Group 1, Class A
Group 1 ISM equipment contains all industrial, scientific and medical (ISM) equipment in which there is intentionally generated and/or used conductively coupled radio-frequency energy that is necessary for the internal functioning of the equipment itself.

Class A equipment is equipment suitable for use in all establishments other than domestic and those directly connected to a low voltage power supply network that supplies buildings used for domestic purposes.

This device complies with the requirements of CISPR11, Group 1, Class A as radiation professional equipment. Therefore, there may be potential difficulties in ensuring electromagnetic compatibility in other environments, due to conducted as well as radiated disturbances.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

1. Relocate the radio or antenna.
2. Move the device away from the radio or television.
3. Plug the device into a different electrical outlet, so that the device and the radio or television are on separate electrical circuits.
4. Make sure that all peripheral devices are also certified.
5. Make sure that appropriate cables are used to connect the device to peripheral equipment.
6. Consult your equipment dealer, Agilent Technologies, or an experienced technician for assistance.

Changes or modifications not expressly approved by Agilent Technologies could void the user's authority to operate the equipment

Immunity

This product conforms to:

IEC 61326-1/EN IEC 61326-1.

This product is intended to be used in a basic electromagnetic environment with the following test requirements applied:

Table 3 Immunity Standards, Limits, and Performance Criteria

Test Items	Basic Standards	Test Limits	Performance Criteria
Electrostatic discharge immunity	IEC 61000-4-2	4 kV Contact Discharge; 8 kV Air Discharge	B
Radiated frequency immunity	IEC 61000-4-3	3 V/m (80 MHz to 1 GHz); 3 V/m (1.4 GHz to 6.0 GHz)	A
Electrical fast transient/burst immunity	IEC 61000-4-4	1 kV (AC, 5k Hz or 100 kHz); 0.5 kV (I/O, 5k Hz or 100 kHz)	B
Surge immunity	IEC 61000-4-5	±2 kV (Line to ground); ±1 kV (Line to line)	B
Conducted immunity	IEC 61000-4-6	3 V (150 kHz to 80 MHz)	A
Magnetic field immunity	IEC 61000-4-8	3 A/m (50 Hz, 60 Hz)	A
Voltage dips, short interruptions, and voltage variations immunity	IEC 61000-4-11	0% Half-cycle; 0% Full-cycle; 70% 25/30 Cycles; 0% 250/300 Cycles	B B C C

CAUTION **The shielding and length of USB and other ports cables are critical to electromagnetic compatibility performance. Only use the cables provided from Agilent.**

Instrument Overview and Intended Use

The Agilent Seahorse XF Flex analyzer measures the rate of change of dissolved oxygen and pH in the media immediately surrounding living cells cultured in a microplate. Changes in the extracellular media are caused by the consumptionor production of analytes by the cells. Therefore, a sensitive measurement of themedia flux can be used to determine rates of cellular metabolism with great sensitivity and in a totally noninvasive, label-free manner.

A unique feature of the Seahorse XF technology is its ability to make accurate and repeatable measurements in as little as five minutes. The instrument, working with a sensor cartridge, isolates a few µL of media above thecell monolayer. Cellular metabolism causes rapid, easily measured changes to the “microenvironment” in this small volume.

An XF **sensor cartridge** is required to run an assay. The cartridge has 24probes, and each probe has a single multifluor sensor spot that is sensitive to both oxygen and proton concentration. The system measures the concentrationof each analyte over time and automatically calculates the oxygen consumptionrate (OCR) and proton efflux rate (PER) - which is a quantitative measure of extracellular acidification rate (ECAR) - simultaneously in every well of the microplate.

Typically, a measurement cycle is performed for 8 minutes. The media is gently mixed, the probe is positioned 200 µm above the well bottom, and the analyte levels are measured.

Baseline metabolic rates are typically measured three to four times and are reported in pmol/min for OCR and in mpH/min for ECAR, compound is added to the media and mixed, and then the post-treatment OCR and ECAR measurements are made and repeated. As cells shift metabolic pathways, the relationship betweenOCR and ECAR/PER changes.

The XF Flex system, comprising a bench top analyzer and touch screen controller, is driven by **Wave software**. This software enables all aspects of Seahorse assays including assay setup, instrument control, and data analysis.

Consumables are sold separately and include Agilent Seahorse FluxPaks (comprising sensor cartridges, cell plates, and calibrant) as well as a variety of assay kits, reagents,and media. XF sensor cartridges are specific for the instrument type and canbe purchased exclusively from Agilent.

Technical Specifications: XF Flex Analyzer

Table 4 Seahorse XF Flex Analyzer Technical Specifications

Model Number	S7851A
Dimensions	Width × height × depth 16" × 24" × 17" 41 cm × 61 cm × 43 cm
Weight	48 lbs/22 kg
Power requirements	100–240 V AC, 50/60Hz, 300 W
Power cord rating	Three-wire (grounded) AC power cord rated 10 A
Power fuse ratings	250 V/10 A time delay fuses
Environmental conditions	"Normal" Environmental conditions- indoor use, altitude to 2,000 m
Room temperature range	+40 °F to 86 °F (+4 °C to 30 °C) No direct sunlight Do not place directly under air conditioning vents. 20¬80% relative humidity
Sample temperature and environment	Controlled to user-selected temperature between 16 °C and 42 °C, but at least 8 °C above ambient temp, No gas or humidity control
Data interface	RS-232 USB Type B – 64-bit barcode reader
Equipment class	Class 1 (PE connected)
Pollution degree	2
Installation (overvoltage) category	II
Mains supply voltage fluctuations	±10%

Technical Specifications: Flex Controller

Table 5 Seahorse XF Flex Controller Technical Specifications

Model Number	S7851A
Dimensions	Width × height × depth 21" × 18" × 13" 54 cm × 46 cm × 33 cm
Weight	21 lbs/10 kg
Power requirements	100–240 V AC, 50/60Hz, 3.2 A
Operating System	Windows 11 Enterprise LTSC 2024
Processor	i5-1145G7E
Memory (RAM)	16 GB
Hard Disk Drive	2 TB 2.5" SATA III SSD
USB 3.0	4 ports
USB 2.0	5 ports
Ethernet Port	Gigabit Ethernet RJ45
Wireless LAN	802.11 b/g/n/ac/ax (WiFi 6)
Bluetooth	5.2 version
Display Size	21.5”
Resolution	1920 x 1080
Touch Screen	10-point projected capacitive touch
Camera	2MP
Speakers	Stereo
Microphone	1
Imaging & Normalization Ready	Yes

Customer Information

Correct site preparation is the key first step in ensuring that your instruments and software systems operate reliably over an extended lifetime.

If you have questions or problems in providing anything described as part of Customer Responsibilities below, please contact your local Agilent or partner support / service organization for assistance prior to delivery. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.

Should your site not be ready for any reason, please contact Agilent as soon as possible to re-schedule any services that have been purchased.

Other optional services such as additional training, operational qualification (OQ) and consultation for user-specific applications may be ordered with the system but should be contracted separately.

Customer Responsibilities

Ensure that your site meets the following specifications before the installation date. For details, see specific sections within this checklist, including:

- The necessary laboratory or bench space is available.
- The required environmental conditions for the lab as well as laboratory gases, tubing.
- The power requirements related to the product (e.g. number & location of electrical outlets).
- The required operating supplies necessary for the product and installation.
- While Agilent is delivering Installation and Introduction services, users of the instrument should be present throughout these services; otherwise, they will miss important operational, maintenance and safety information.
- Please consult the Special Requirements and Other Considerations section below for other product-specific information

Please communicate any PPE requirements to the visiting Agilent representative before the day of the visit.

Special Notes

Please communicate any PPE requirements to the visiting Agilent representative before the day of the visit.

Table 6 Customer Provided Items Required for Installation

Item Description	Recommended Quantity
Non-CO2 incubator set to 37°C	1
Inverted phase microscope	1
20-200uL Multichannel pipette, within calibration date	1
200uL Pipette Tips	1 box
Water bath set to 37°C	1
Bottle mixer (Vortex Genie or equivalent)	1
Biosafety Cabinet	1
Distilled Water	< 200mL
70% ETOH	<200mL
Biohazard container for liquid waste	1
Trash barrel for non-hazardous waste	1

Special Requirements and Other Considerations

Waste liquid and gas management See the Required Operating Supplies by Customer for Installation section.

Tools Your Agilent instrument does not come with any hand tools for installation and introduction.

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2 Installation

This chapter provides unpacking and installation instructions for the Agilent Seahorse XF Flex Analyzer.

Unpacking and Component Identification

The XF Flex Analyzer system is packaged in two boxes.

Upon receipt, immediately check each box for damage. Shipping damage must be reported to the transportation company and Agilent. See Worldwide Technical Support section for how to contact Agilent Technical Support.

WARNING **The XF Flex Analyzer requires two people to lift and handle.**

- **Each person should firmly grasp the base of the unit at opposite ends to each other. Use Occupational Safety and Health Administration standards for lifting techniques.**

CAUTION **XF Flex instruments must be installed by trained Agilent personnel.**

The analyzer is shipped with protection components that must be removed prior to use. Agilent recommends these components be removed by Agilent personnel during installation.

To prevent damage during shipping, the instrument is shipped with a cartridge loaded onto the probe head and lowered onto a plate on the tray. These items must be removed prior to running the first assay. Agilent personnel will remove these shipping protection components from the XF Flex Analyzer during installation.

Table 7 Packing List

Instrument/Component	Quantity	Image
Seahorse XF Flex Instrument	1	
Flex Controller	1	
Power cord (instrument)	1	
Power cord (controller)	1	
Power supply (controller)	1	
USB-to-RS232 adaptor Cable	1	

Table 7 Packing List

External barcode reader (optional)	1	
USB Cable	1	

Installation Procedure

The following items are included in a Seahorse XF Flex system:

- Seahorse XF Flex Analyzer – The analyzer is a temperature-controlled instrument containing all optical and electronic measurement components to measure oxygen and proton flux of cells grown in XF cell culture plates. The analyzer is used in conjunction with XF sensor cartridges.
- Flex Controller – Operation of the Analyzer is done through a high-resolution color LCD touch screen with stand, that may be installed in front of or beside the XF Flex. The controller communicates with the analyzer using a single USB-to-RS-232 adapter cable and a single USB A-B cable.

Suitable Locations for the XF System

XF Flex Analyzers are designed for laboratory use. The internal environment of the analyzer is controlled to a preset temperature defined by the user; therefore, laboratory room temperature must be maintained within the range listed in the specification table.

Sample temperature control can be monitored using the LCD status display on the right side of the analyzer or on the Wave application display.

The XF Flex uses optical detection technology to measure extremely low levels of fluorescent emission from analyte sensors. While the analyzer has been designed to shield room light, excessive light (such as direct sunlight) should be avoided.

WARNING **The electrical connection at the back of the XF Flex is the primary disconnect for the instrument. The XF Flex should be positioned to allow accessibility to the power cord for easy disconnection.**

CAUTION **Avoid drafty areas, as well as areas experiencing significant vibration (such as a centrifuge).**

Internal Components of the XF Flex Analyzer

Removing the side doors reveals the measurement chamber in which the assay is conducted. The electro-optics hardware is enclosed in a card cage in the rear chamber, and this is connected to the probe head through a set of fiber optic cable bundles. The base of the enclosure contains the primary controller board and heater assembly. (See Figure 1 and Figure 2).

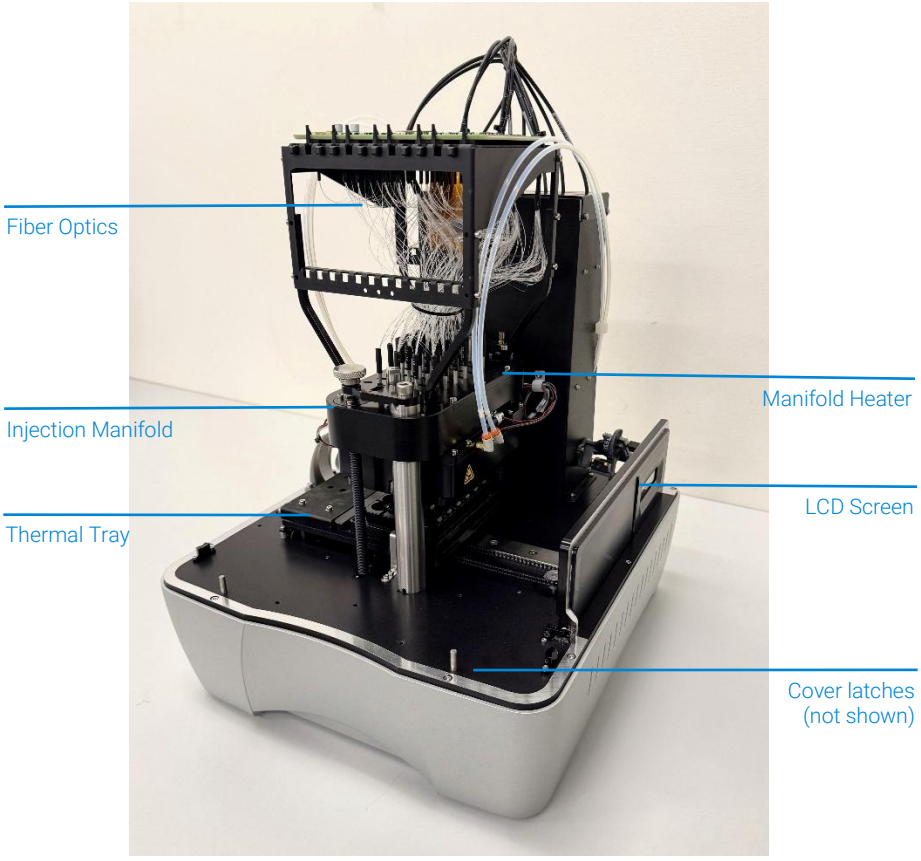


Figure 1. XF Flex front/side view. Base color may vary.

- LCD screen - Displays current instrument action, setpoint temperature, and sample temperature.
- Cover latches - Pull on indented handholds molded into the side doors (not shown) to lift them up, exposing the internal components of the instrument. Magnets hold in the side doors in place.

- Probe head and injection manifold - The probe head consists of 24 "light guides" to carry the optical signals to and from the sensors. The injection manifold uses compressed air to inject compounds loaded into sensor cartridge ports into the assay wells

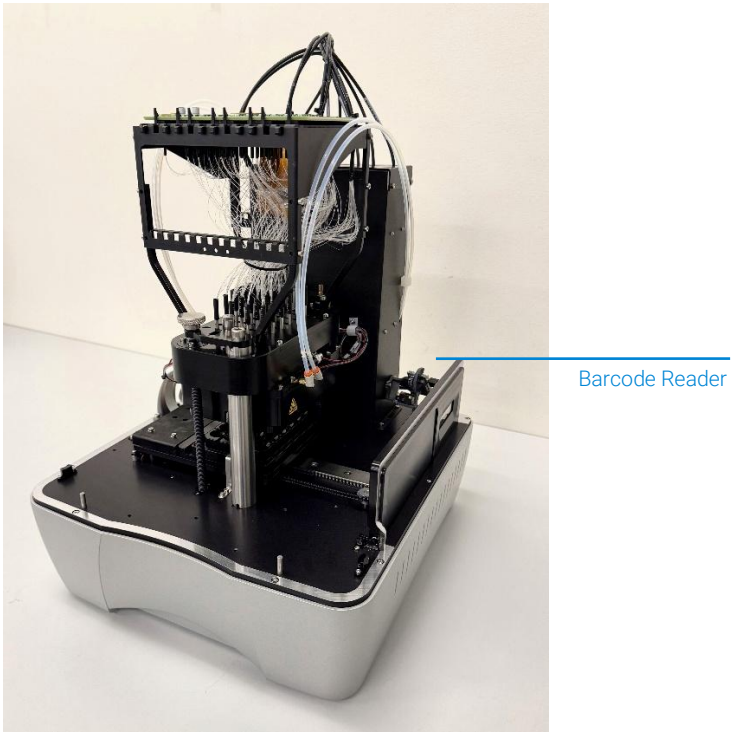


Figure 2. XF Flex front view

- Barcode Reader – Reads the barcode on the sensor cartridge and cell plate.

Setup and Interconnects: Cable Installation

The XF Flex Analyzer is operated from a touch screen computer monitor mounted to a stand, referred to as a controller. One USB-to-RS-232 adapter cable and one USB cable handle the communication of commands and data between the instrument and the controller.

The controller may be connected to a network through the ethernet port on the underside or via Wi-Fi.

Cable Installation Procedure

Steps	Detailed Instructions
1 Connect Power Cords	One power cord is used to connect the instrument to a grounded AC (mains) outlet. A second power cord is used to connect the controller power supply module to the AC supply. The power supply module is then connected to the socket at the bottom of the controller. (See Figure 3).
2 Connect the RS-232 (COM) cable to the analyzer.	One USB-to-RS-232 adapter cable connects the controller serial port to the analyzer socket labeled "COM." (See Figure 4). The other end of the cable connects to the "USB-to-RS-232 Adapter cable" labeled USB 3.0 port. (See Figure 3).
3 Connect the USB barcode reader	A second cable (USB) connects the analyzer socket labeled "USB" to the "XF Instrument barcode reader" labelled USB 3.0 port on the controller. This port must be used for proper functioning of the instrument and barcode reader. (See Figure 3).
4 Connect external network cables.	The controller may be networked via the Ethernet port on the controller.
5 Connect the AC power cord to the AC input.	Connect the AC power cord to the AC input on the XF Flex rear panel and then switch the power switch to the on position. (See Figure 5).

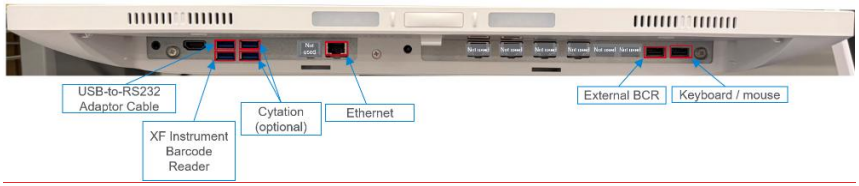


Figure 3. Controller Ports (underside)

Figure 4. XF Flex rear panel.

Cable Installation Procedure

Figure 5. XF Flex rear panel. AC Input and power switch.

WARNING **The door opens automatically when the tray is extended, allowing the operator to place or remove the well plate/cartridge consumables. The operator must exercise caution during the loading of the well plate/cartridge to avoid the possibility of a pinch hazard. After the well plate/cartridge is securely on the tray, the operator's hand must be removed from the area of the tray before continuing the assay. After the command is given to continue the assay via the controller, the tray will move slowly back into the instrument and the door will close.**

CAUTION **Safe operation of the instrument requires that the cover be securely attached, and well plate tray door is closed. This also prevents heat loss, which can affect data quality.**

The XF Flex has a temperature control system with two heaters that maintain a stable internal system temperature and sample temperature. Typically, the temperature will be maintained at 37 °C, as monitored by temperature sensors and controllers embedded in the tray and above the tray. A thermal fuse will disable the sample tray heater should it reach an abnormally high temperature. The manifold heater will not be disabled if this situation occurs. The user should power off the instrument, unplug the analyzer and controller from the wall outlet, and contact technical support. In this situation, the user should not attempt to open the instrument covers.

3 Basic Operation

This chapter provides information on power and warm-up, launching the flex controller software, managing software licenses, performing XF assays, Flex Software Widgets, and more.

Power and Warm-up

To power on the touch screen controller, press the power switch on the side of the controller. To prevent accidental power down of the controller, the switch may be disengaged in the Power Options menu of the Windows OS control panel under the Advanced tab. Turn on the instrument using the power switch on the rear panel.

On the right side of the instrument near the access door, there is an LCD message screen. When the instrument is powered up the LCD message screen will show WAITING FOR WAVE. (See Figure 6).

Figure 6. LCD message screen (WAITING FOR WAVE)

Launch Flex Controller Software

When Flex Controller Software is launched, the LCD message screen will update and show the following display. (See Figure 7).

Figure 7. LCD message screen (Ready)

NOTE It is recommended to keep the analyzer powered on and set to the desired sample temperature at least one day before running an assay. This allows the analyzer to equilibrate to the setpoint temperature.

CAUTION **Data quality may be impacted if the instrument is not powered on, and set to the sample temperature at least one day prior to running the assay.**

Software Licenses

The Options > Licenses view is where software licenses can be managed for the XF Controller. (See Figure 8)

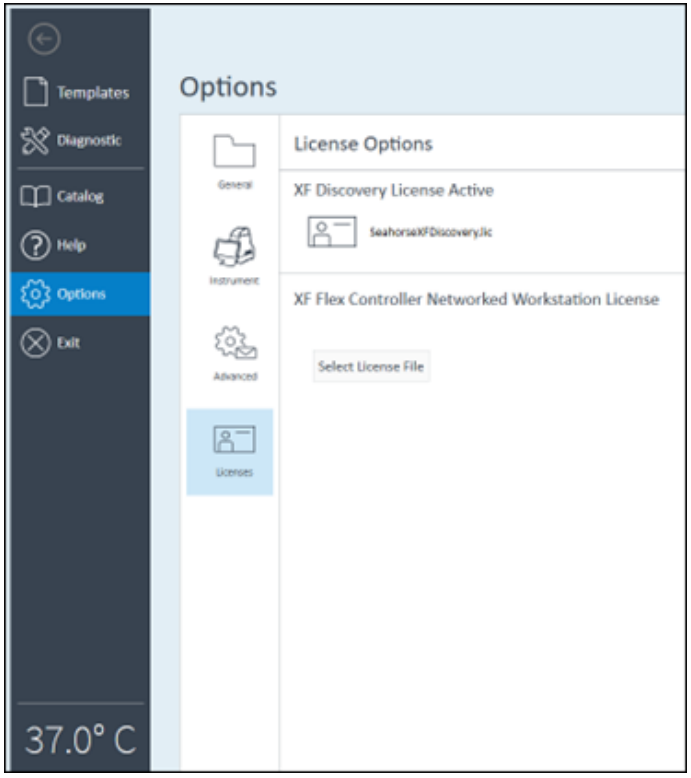


Figure 8. Options > Licenses View

The XF Discovery license is a single-use node license installed within the XF Controller software application. Data files generated by an XF Analyzer with the XF Discovery license will have access to valuable data analysis features in Wave software and Seahorse Analytics, such as data plotting in a dose response curve, analysis of multiple result files, and more. Seahorse XF Analyzers with the XF Discovery license also will have access to the automation service, enabling automation of the XF assay workflow, from template selection to swapping plates and executing an assay.

For more information on how to claim and activate the XF Discovery license, please read the Agilent Seahorse Wave & XF Controller Software user manual.

Performing XF Assays

Information and protocols for preparing medium associated with XF assays, experimental design, running XF assays and analyzing XF data can be found online at https://www.agilent.com/en/product/cell-analysis/how-to-run-an-assay.

XF Flex status indicator

During an assay, the Status Indicator light on the top of the XF Flex Analyzer will change from green to amber if a task requires user interaction, such as:

- Waiting for Wave (not connected to Wave and/or controller).
- To load a sensor cartridge or cell plate.
- To remove a used sensor cartridge or cell plate.
- To accept or cancel an assay if one or more wells did not calibrate properly after calibration.
- User interaction timeout.

Cover not properly attached or tray door left open.

The Status Indicator light will change from green to red if an error has occurred, such as:

- Any errors that can occur during the run, such as barcode read errors for the sensor cartridge, cell plate, or a protocol error.

- Cannot connect to the barcode.
- Motion error/motor stall.
- Other instrument errors.

Flex Controller Software Widgets

The widget icons are located on the lower left side of the XF Controller software and display the status of the XF Analyzer and current temperature.

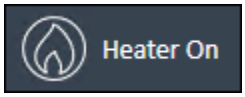


Figure 9. Temperature widget: Current tray temperature and heater status display.

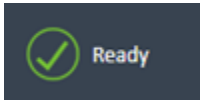


Figure 10. Status widget: Connection status between the Flex Controller (computer), Flex Controller (software), and the XF Flex Analyzer

XF Flex Assays at Non-37°C Temperatures

Seahorse XF Flex Analyzers have been validated to deliver desired target temperatures in the range of 16 to 42 °C, provided the ambient room temperature is 8 to 20 °C below the target temperature, and in the validated operational room temperature range of 4 to 30 °C. To understand the relationship between the desired sample temperature and required ambient temperature, see the temperature chart in Figure 11.

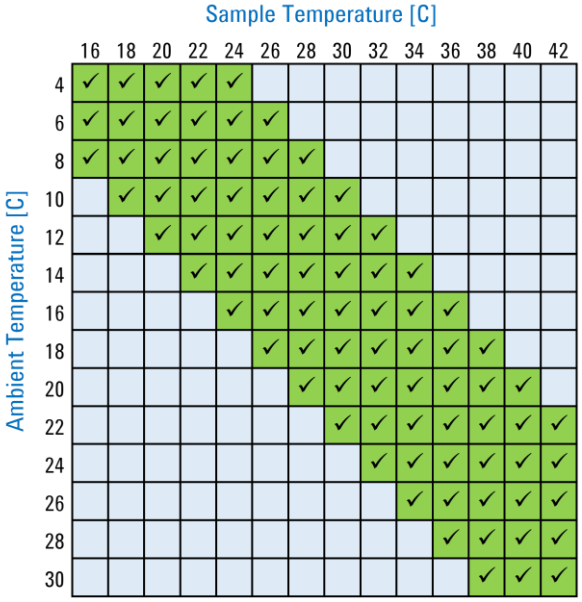


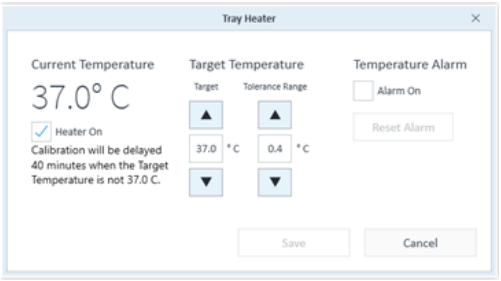
Figure 11. Valid temperature range chart.

Operational and assay guidelines for non-37°C assays

- For all non-37 °C operation, the XF Flex Analyzer must equilibrate overnight in the required ambient temperature.
- If it is required to set up the XF Flex Analyzer in a cold room, avoid direct fan sources.
- For all non-37 °C operation, the tray heater must remain On. Do not turn the tray heater Off.
- For assay temperatures below 30 °C, hydrate the sensor cartridge in the dark at room temperature.
- Prior to starting an assay, an additional 30 minutes of pre-calibration equilibration time is added to the assay ensure temperature stability.

To adjust the Target Temperature (set point) using the up/down arrows, do the following:

Setting Sample Temperature

Steps	Detailed Instructions
1 Click the temperature widget.	 **Figure 12.** Temperature widget
2 Set the tray heater temperature.	The Tray Heater dialog box will be displayed. Set the tray heater temperature by editing the target temperature and tolerance range.  **Figure 13.** Edit temperature settings (Tray Heater dialog box) Ensure your ambient conditions support the desired target temperature (8 to 20 °C above ambient). See Figure 11 for more details.
3 Save the changes.	To save any changes on the Tray Temperature window, click Save.

NOTE Changing the Target Temperature requires overnight equilibration to the new set point.

Other temperature widget functions are:

- Turn the heater On/Off.

- Set the tolerance range for temperature fluctuation. If the temperature is above or below the acceptable tolerance range from the temperature set point, the temperature widget will change color, and the Status Indicator light (top of the XF Flex Analyzer) will change from green to amber. For networked XF Flex controllers, Wave Flex Controller software automatically sends an email notification to specified recipients.

Set alarm (temperature tolerance range)

To set the alarm:

1. Select the Alarm On check box in the Tray Temperature window. (See Figure 13).
2. Click Save.

To disable the alarm, clear the Alarm On check box, then click Save.

If the Tray Temperature exceeds the Tolerance Range and the alarm is activated, click Reset Alarm to acknowledge and reset the Tray Temperature alarm.

To ensure the Tray Temperature starts within the Tolerance Range, check the current temperature of the XF Flex Analyzer before beginning an assay. For any suspected temperature issues or unexpected temperature fluctuations, contact Technical Support. Refer to the Worldwide Technical Support section for how to contact Agilent Technical Support.

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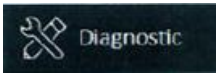
4 Maintenance

This chapter provides basic maintenance information for the XF Flex Analyzer. This includes cleaning and routine maintenance, barcode read failures, and power sequencing the instrument.

XF Flex Maintenance

The maintenance options (in the Diagnostic menu) allow for ejection/insertion of the instrument tray, and to raise/lower the probes.

Instructions to access maintenance control options.

Steps	Detailed Instructions
1 Select the Diagnostic menu.	Click the Diagnostic menu icon at the top left of the main ribbon.  **Figure 14.** Diagnostic Widget
2 Select Maintenance, the last option in the list.	Select one of the following options • Tray control: Manually eject or insert tray, with or without a utility plate or cell culture plate. • Probe control: Manually raise/lower the probes of the XF Flex Analyzer. • Cartridge control: Manually load or unload a sensor cartridge.

Instructions to access maintenance control options.

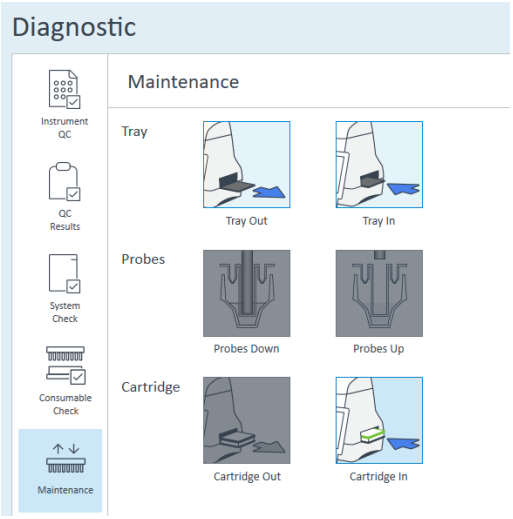


Figure 15. Diagnostic options

Cleaning and Routine Maintenance

The XF Flex instrument is designed for minimal cleaning, and user maintenance is not required. All consumables are disposable and none of the instrument components contact the cell plate or reagents during routine use, preventing cross-contamination of biological or chemical materials.

Agilent strongly recommends an annual service contract with Preventative Maintenance to keep your system in good working order.

CAUTION **If you encounter a spill of any reagents or liquids into the sample tray or system, please contact Technical Support. Do not attempt to open the instrument unless specifically instructed to do so by an Agilent technical support representative.**

WARNING **If the Seahorse XF Flex Analyzer requires decontamination, it is recommended that the decontamination process be carried out by a certified vendor. For specific vendor recommendations, please email Cell Analysis technical support at cellanalysis.support@agilent.com.**

Barcode Read Failures

The XF Flex Analyzer reads and records the cell plate and sensor cartridge barcodes before beginning an assay. A Barcode Read error is displayed on the rare occasion the barcode cannot be read. Contact Agilent Seahorse Technical Support to assist with resolving this error, and to start the assay.

Cartridge barcode read failure

For any sensor cartridge barcode read errors, Wave Flex Controller displays a dialog box and a choice of three corrective actions. See Figure 16.

Figure 16. Cartridge Barcode Read Failure dialog box.

- Open Tray: Eject the sensor cartridge to inspect barcode quality or to reverse the sensor cartridge.
- Manual: Manually input the sensor cartridge barcode information. Contact Agilent Seahorse Technical Support for this step. (See “Contact Information” on page 36).
- Cancel Assay: Cancel the assay.

Telephone number on the Cartridge Barcode Manual Entry dialog box for assistance with entering the sensor cartridge barcode info. See Figure 17.

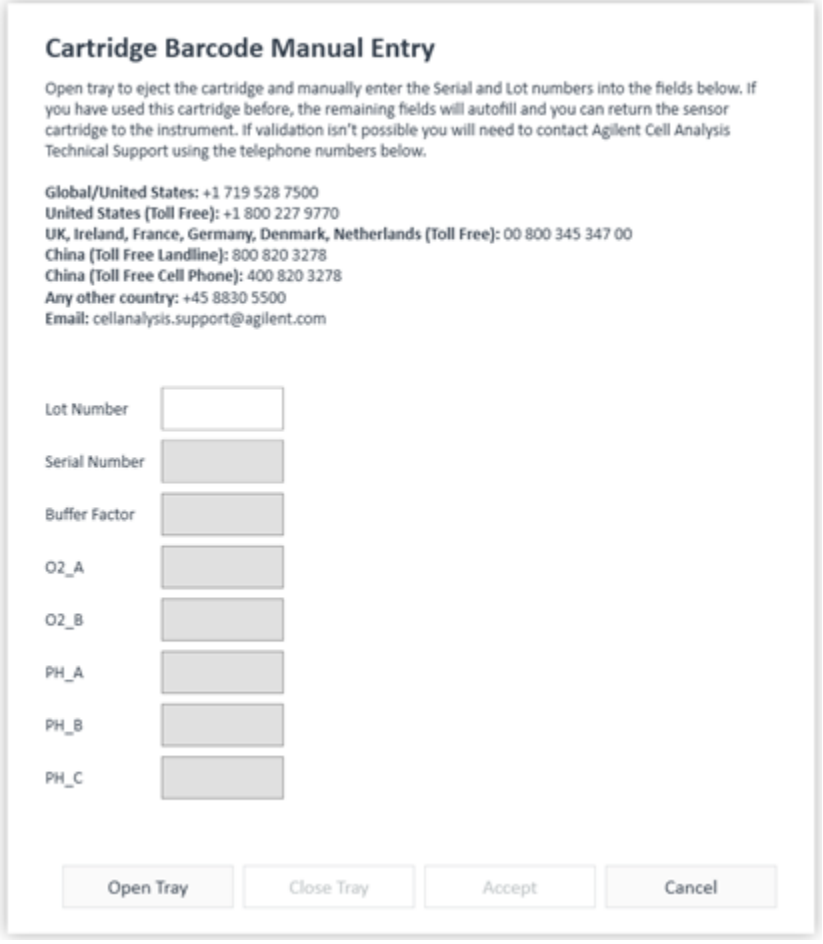


Figure 17. Cartridge Barcode Manual Entry dialog box

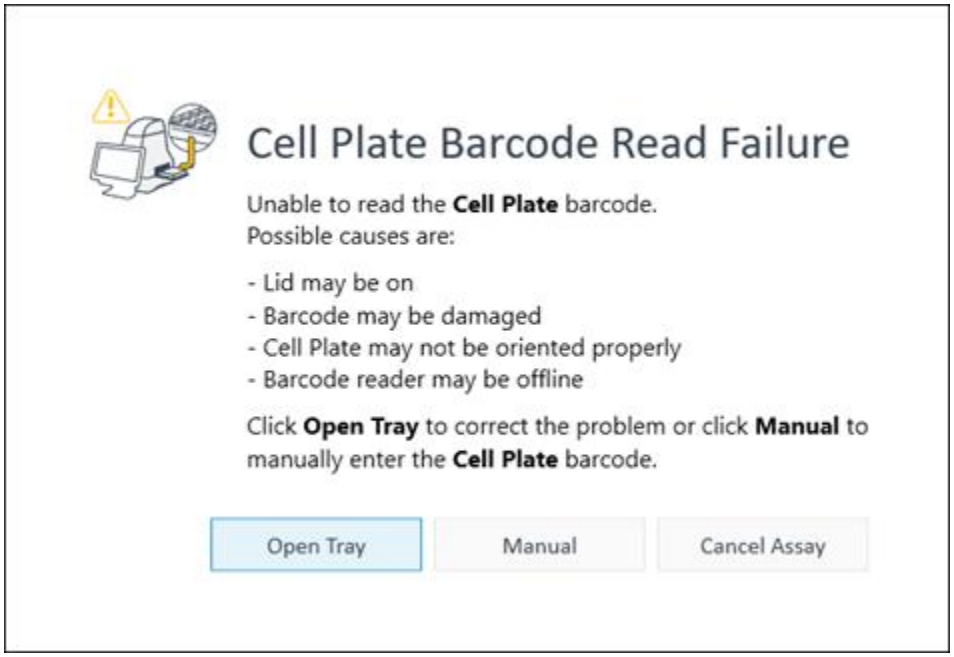


Figure 18. Cell Plate Barcode Read Failure dialog box

- Open Tray: Eject the cell plate to inspect barcode quality or to reverse cell plate.
- Manual: Manually input the cell plate barcode info.
- Cancel Assay: Cancel the assay.

Manually enter cell plate barcode information as follows:

1. Click the Tray Widget. Cartridge Barcode Read Failure dialog box appears.
2. To eject the cell plate, click Open Tray.
3. The cell plate barcode is located on the side of the plate. Write down the barcode information.
4. Click Close Tray. The Cartridge Barcode Manual Entry dialog box appears.
5. Enter the Cell Plate barcode and click Accept.

Power Sequence

To power cycle the controller and analyzer:

1. Click the Exit button on the user interface to close the Controller software.
2. Use the Microsoft Windows Shutdown command to close the operating system and power the controller OFF.
3. Power the Analyzer OFF at the rear switch.
4. Wait one minute.
5. Power the Analyzer ON at the rear switch.
6. Power the Controller ON at the side switch.
    a. Let the operating system initialize.
7. Open the Controller Software.
8. Wait until the user interface shows a temperature reading on the home window.

5 Version History

Table 8 Version History Table

Date	Description
28-February-2025	Initial release
01-October-2025	Typographical errors have been corrected.
16-October-2025	Added missing technical specifications

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6 Appendix

This chapter provides technical support information, ordering information, and additional resources.

Worldwide Technical Support

For questions about XF technology, the XF Flex Analyzer, XF experimental design, data analysis, troubleshooting and other information, contact Agilent Cell Analysis Technical Support:

Email: cellanalysis.support@agilent.com

Table 9 Worldwide Technical Support Phone Numbers

Region/Country	Phone Number
Global/United States	+1 719 528 7500
United States (toll free)	+1 800 227 9770
UK, Ireland, France, Germany, Denmark Netherlands (Toll Free)	00 800 345 347 00
China (Toll Free Landline)	800 820 3278
Chine (Toll Free Cell Phone)	400 820 3278
Any other country	+45 8830 5500

Ordering

Link to online store: https://www.chem.agilent.com/store/

US Direct Ordering:

- Email: css_afo_fax@agilent.com
- Phone: +1 800 227 9770 option #1 #1
- Fax Purchase Orders to: 302 633 8901

Contact your local Customer Care Center at https://www.agilent.com/en-us/contact-us/page

Additional Resources

Table 10 Additional Resources

Item	Link/URL
Wave User Guide	https://www.agilent.com/cs/library/usermanuals/public/Wave_2_6_User_Guide.pdf
Software Download Page	https://www.agilent.com/en/support/cell-analysis/seahorse-xf-software
XF Consumables Web Page	https://www.agilent.com/en/products/cell-analysis/seahorse-xfe-consumables
Links to other useful information	https://www.agilent.com/en/promotions/cell-analysis-technology https://www.agilent.com/en/product/cell-analysis/how-to-run-an-assay

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In This Book

The manual describes the following:

- General Information
- Installation
- Basic Operation
- Maintenance
- Version History
- Appendix

This information is subject to change without notice.

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