



Agilent BioTek Epoch 2

Absorbance Microplate Spectrophotometer

INSTRUCTIONS FOR USE

ERRATA NOTICE: This document contains references to BioTek. Please note that BioTek is now **Agilent**. For more information, go to www.agilent.com/lifesciences/biotek.

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For In Vitro Diagnostic Use 

The IVD mark is a square box containing the letters "IVD".

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Preface

Copyright

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Worldwide Sales and Support

www.agilent.com/en/contact-us/page

Technical Support and Service

www.agilent.com/en/support

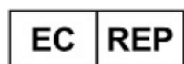
bio.tac@agilent.com

Instrument service and repair is available worldwide at one of our international service centers and in the field at your location.

Customer Care

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European Coordination Center



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Intended Use Statement

The Epoch 2 is an absorbance microplate spectrophotometer and intended to be used for the examination of clinical specimens to analyze their characteristics in relation to a variety of analytes including in human serum and cells.

Incident Reporting

Any serious incident that has occurred in relation to the device shall be reported to the manufacturer and the competent authority, or appropriate regulatory body, in the country or region in which the user is established.

Quality Control

It is considered good laboratory practice to run laboratory samples according to instructions and specific recommendations included in the assay package insert for the test to be conducted. Failure to conduct Quality Control checks could result in erroneous test data.

Safety Notices

Pay special attention to the following safety notices in all product documentation.

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.

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.

Warnings and Precautions

Electrical Hazards

- WARNING** **Internal Voltage.** Always turn off the power switch and unplug the power supply before cleaning the outer surface of the instrument.
- WARNING** **Power Rating.** The instrument's power supply or power cord must be connected to a power receptacle that provides voltage and current within the specified rating for the system. Use of an incompatible power receptacle may produce electrical shock and fire hazards.
- WARNING** **Electrical Grounding.** Never use a plug adapter to connect primary power to the external power supply. Use of an adapter disconnects the utility ground, creating a severe shock hazard. Always connect the power cord directly to an appropriate receptacle with a functional ground.
- WARNING** **Service.** Only qualified technical personnel should perform service procedures on internal components.
- CAUTION** **Power Supply.** Use only the power supply shipped with the instrument, and operate it within the range of line voltages listed on it.

Chemical/Environmental

- WARNING** **Potential Biohazards.** Some assays or specimens may pose a biohazard. Adequate safety precautions should be taken as outlined in the assay's package insert. Always wear safety glasses and appropriate protective equipment, such as chemical-resistant rubber gloves and apron.
- 
- WARNING** **Liquids.** Avoid spilling liquids on the instrument; fluid seepage into internal components creates a potential for shock hazard or instrument damage. If a spill occurs while a program is running, stop the program and turn off the instrument. Wipe up all spills immediately. Do not operate the instrument if internal components have been exposed to fluid.
- CAUTION** **Liquids.** Do not immerse the instrument, spray it with liquid, or use a dripping-wet cloth on it. Do not allow water or other cleaning solution to run into the interior of the instrument. If this happens, contact Technical Support. Do not soak the touchscreen.
- CAUTION** **Environmental Conditions.** Do not expose the instrument to temperature extremes. For proper operation, temperature near the instrument should remain within the range in the *Specifications* section of this document. Performance may be adversely affected if temperatures fluctuate above or below this range.
- CAUTION** **Sodium Hypochlorite.** Do not expose any part of the instrument to the recommended diluted sodium hypochlorite solution for more than 20 minutes. Prolonged contact may damage the instrument surfaces. Be certain to rinse and thoroughly wipe all surfaces.

CAUTION

Lubricants. Do not apply lubricants to moving parts. Lubricant on components in the carrier compartment will attract dust and other particles, which may cause the instrument to produce an error.

Components

WARNING

Accessories. Only accessories that meet the manufacturer's specifications shall be used with the instrument.

CAUTION

Shipping Hardware. All shipping hardware must be removed before operating the instrument and reinstalled before repackaging the instrument for shipment.

CAUTION

Touchscreen. Use your fingertip to operate the touchscreen. Do not use a sharp stylus or pencil on the touchscreen. Doing so will damage the touchscreen's surface. You can use a stylus designed for resistive touchscreens.

CAUTION

Touchscreen. Avoid strong solvents, such as alcohol, acetone, ammonium chloride, methylene chloride, and hydrocarbons. These will permanently damage the touchscreen. Avoid fibrous materials, such as paper towels, which can scratch the touchscreen. Dirt particles and cleaning agents will get trapped in the scratches. Never spray solutions directly on the touchscreen.

CAUTION

Spare Parts. Only approved spare parts should be used for maintenance. The use of unapproved spare parts and accessories may result in a loss of warranty and potentially impair instrument performance or cause damage to the instrument.

CAUTION

Service. Only qualified technical personnel should perform service procedures on internal components.

Intended Product Use

WARNING

Software Quality Control. The operator must follow the manufacturer's assay package insert when modifying software parameters and establishing reading methods. It is considered good laboratory practice to run laboratory samples according to instructions and specific recommendations included in the assay package insert for the test to be conducted. Failure to conduct quality control checks could result in erroneous test data.

WARNING

Data Reduction. No limits are applied to the raw measurement data. Data exported via computer control must be analyzed by the operator. The performance characteristics of the data reduction software have not been established with any laboratory diagnostic assay. Users must evaluate this instrument and PC-based software in conjunction with their specific assay(s). This evaluation must include the confirmation that performance characteristics for the specific assay(s) are met.
















WARNING






Unspecified Use. Failure to operate equipment according to the guidelines and safeguards specified in the product user documentation could result in a hazardous condition.

CAUTION

Use of labware other than described in this document can result in positioning errors during program execution.

Symbols

	Caution
	Warning; Biological hazard
	Disposal Notice: Dispose of the instrument according to Directive 2012/19/EU, “on waste electrical and electronic equipment (WEEE)” or local ordinances
	Consult instructions for use or consult electronic instructions for use
	<i>In vitro</i> diagnostic medical device
	CE Marking — indicates compliance with the requirements of the In Vitro Diagnostic Regulation (2017/746)
	Authorized representative in the European Community/European Union
	Manufacturer
	Date of manufacture
	Catalogue number
	Serial number
	TÜV SÜD Certification Mark – Type tested; production monitored
	Ingress Protection - Product protected against solid objects up to 12 millimeters. Not protected from liquids.
	This product complies with environmental protection use period as defined in People’s Republic of China Electronic Industry Standard SJ/T11364-2006. Toxic or hazardous substances will not leak or mutate under normal operating conditions for 40 years.
	UK Conformity Assessed marking is a certification mark that indicates conformity with the applicable requirements for products sold within Great Britain.

	Temperature limit
	Humidity limitation
	Unique device identifier
	Model number
	Importer

Conformance to Standards

The Epoch 2 meets the requirements of the following standards:

2014/35/EU – Low Voltage Directive

2014/30/EU – EMC Directive

2017/746 – In Vitro Diagnostic Regulation

2011/65/EU (with exemptions) and (EU) 2015/863 – RoHS Directives

2012/19/EU – WEEE Directive as amended by (EU) 2018/849

2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery

Standard	Description
IEC QC 080000	IEC Quality Assessment System for Electronic Components (IECQ System) - Hazardous Substance Process Management (HSPM) System Requirements
UL 61010-1	UL Standard for Safety Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements
EN 61010-1	Safety Requirements for Electrical Equipment For Measurement, Control, and Laboratory Use – Part 1: General Requirements
EN 61010-2-010	Safety Requirements for Electrical Equipment For Measurement, Control, and Laboratory Use – Part 2-010: Particular requirements for laboratory equipment for the heating of materials
EN 61010-2-101	Safety Requirements for Electrical Equipment For Measurement, Control, and Laboratory Use – Part 2-101: Particular requirements for in vitro diagnostic (IVD) medical equipment
CAN/CSA C22.2 No. 61010-1	Safety Requirements for Electrical Equipment For Measurement, Control, and Laboratory Use – Part 1: General Requirements
CAN/CSA C22.2 No. 61010-2-010	Safety Requirements for Electrical Equipment For Measurement, Control, and Laboratory Use – Part 2-010: Particular requirements for laboratory equipment for the heating of materials
CAN/CSA C22.2 No. 61010-2-101	Safety Requirements for Electrical Equipment For Measurement, Control, and Laboratory Use – Part 2-101: Particular requirements for in vitro diagnostic (IVD) medical equipment

EMC Information and Technical Description

The Epoch 2 conforms to:

Emissions:

EN55011/CISPR 11, Class A

CFR Title 47 FCC Part 15 Subpart B, Class A

ICES-001, Issue 5, Class A (CAN ICES-001(A)/NMB-001(A))

ACMA AS/NZS CISPR 11, Class A

Immunity:

EN/IEC 61326-1 and 61326-2-6

ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL AND LABORATORY USE

PART 2-6: PARTICULAR REQUIREMENTS FOR (IVD) MEDICAL EQUIPMENT

Ingress Protection Code

IP 20. Protected against solid foreign objects of 12.5 mm diameter and greater. No protection against water.

Disposal

Dispose of the instrument according to Directive 2012/19/EU, “on waste electrical and electronic equipment (**WEEE**)” or local ordinances.

Installation

Important Information

CAUTION **Shipping Hardware.** All shipping hardware must be removed before operating the instrument and reinstalled before repackaging the instrument for shipment.

- This chapter contains installation and setup tasks for the Epoch 2 and accessories. Perform the tasks in the order presented.
- Save all packaging materials. Be sure to use packaging materials supplied by the manufacturer when shipping the reader. Using other forms of commercially available packaging, or failing to follow the repackaging instructions, may void your warranty.
- During the unpacking process, inspect the packaging, reader, and accessories for shipping damage. If the reader is damaged, notify the carrier and your Agilent representative. Keep the shipping boxes and the packaging materials for the carrier's inspection.

Package Contents

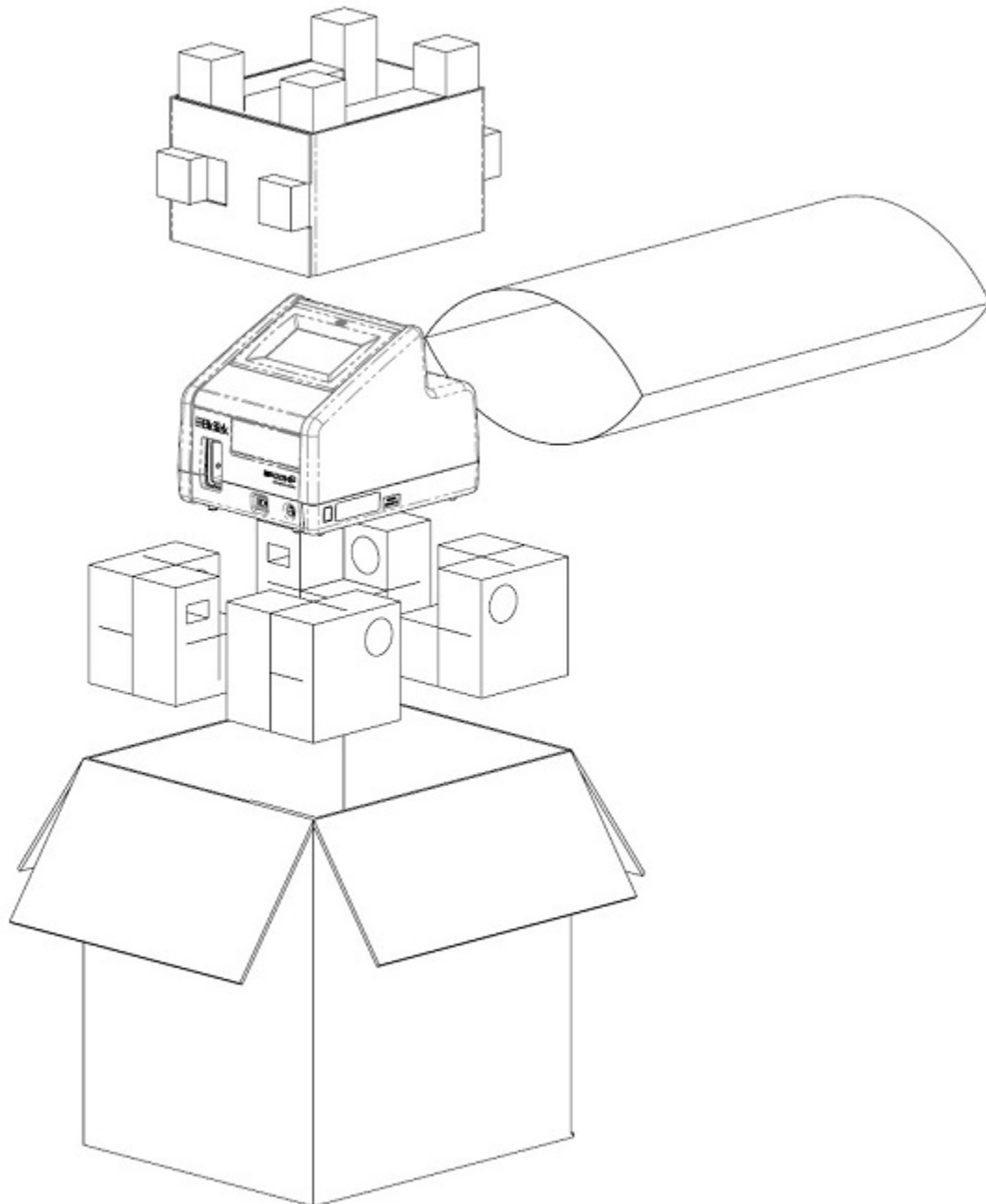
- Epoch 2 instrument model per the sales order
- *Epoch 2 User Manual* on USB flash drive
- Power supply
- Power cord
- USB cable
- Screwdriver
- Cuvette holder ("C" models)
- Software and optional accessories per the sales order, unless shipped separately

Models

Part Number	Touchscreen	Cuvette Port	Incubation	Shaking
EPOCH2NS-SI	No	No	Yes	Yes
EPOCH2NSC-SI	No	Yes	Yes	Yes

EPOCH2TS-SI	Yes	No	Yes	Yes
EPOCH2TSC-SI	yes	Yes	Yes	Yes

Unpack the Box

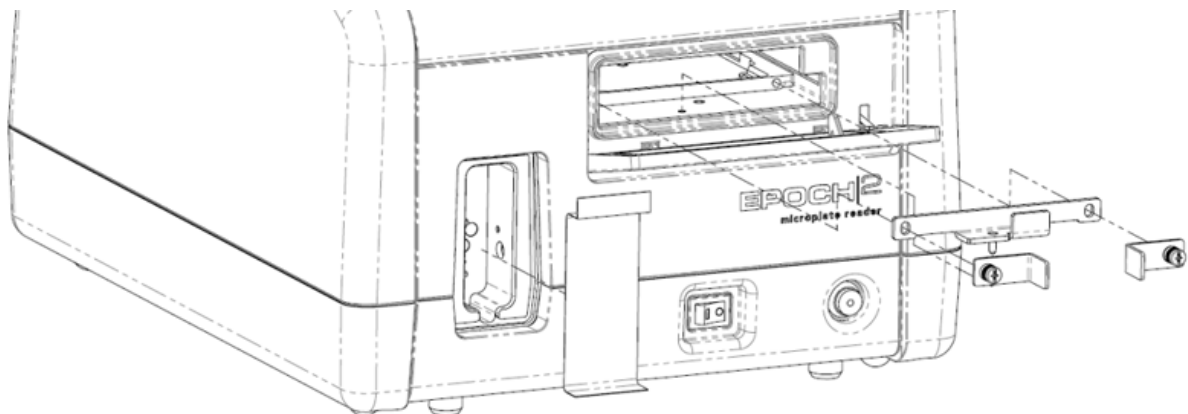


Save the packaging, in case you need to ship the instrument for service/repair.

Remove the Shipping Hardware

CAUTION **Shipping Hardware.** All shipping hardware must be removed before operating the instrument and reinstalled before repackaging the instrument for shipment.

1. Pull open the microplate carrier access door.
2. Use the supplied screwdriver to remove the two shipping bracket holders (PN 1032190).
3. Remove the carrier shipping bracket (PN 1332048) by lifting it up to disengage the pin from the floor of the instrument.
4. Store the bracket and holders in case the instrument needs to be shipped.
5. Remove the tape covering the cuvette port, if equipped.



Select an Appropriate Location

Install the reader on a level, stable surface in an area where an operating temperature between 18°C and 30°C (models with a touchscreen; “**TS**”) or 18°C and 40°C (models without a touchscreen; “**NS**”) can be maintained.

The reader is sensitive to extreme environmental conditions. Avoid:

- Excessive humidity. Condensation directly on the sensitive electronic circuits can cause the instrument to fail internal self-checks. The humidity must be in the range of 10–85%, non-condensing.
- Excessive ambient light. Bright light may affect the reader’s optics and readings, reducing its linear range.
- Dust. Readings may be affected by extraneous particles in the microplate wells. A clean work area is necessary to ensure accurate readings.

Prepare the Host Computer

Follow instructions supplied with Gen5 to install the necessary software.

- Ensure the computer meets the minimum system requirements as described in the *Gen5 Instructions for Use*.
- You must have administrator privileges to install Gen5. Log in to Windows as “Administrator” or consult your IT department for assistance.

Connect the Host Computer and Reader

1. Turn off the computer.
2. Using the supplied USB cable, connect the square end of the cable to the USB port on the rear of the reader.
3. Connect the other end of the cable to an available USB port on the computer.
4. Turn on the computer.

Install the Power Supply

WARNING

Power Rating. The instrument’s power supply or power cord must be connected to a power receptacle that provides voltage and current within the specified rating for the system. Use of an incompatible power receptacle may produce electrical shock and fire hazards.

WARNING

Electrical Grounding. Never use a plug adapter to connect primary power to the external power supply. Use of an adapter disconnects the utility ground, creating a severe shock hazard. Always connect the power cord directly to an appropriate receptacle with a functional ground.

CAUTION

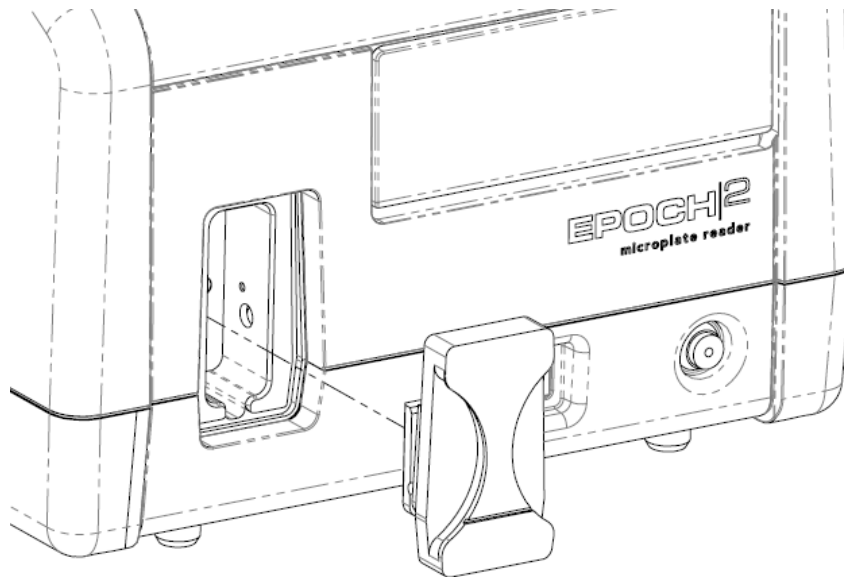
Power Supply. Use only the power supply shipped with the instrument, and operate it within the range of line voltages listed on it.

1. Connect the power cord to the external power supply.
2. Locate the power inlet on the rear of the reader.
3. Plug the rounded end of the power supply's cord into the power inlet.
4. Plug the other end of the power cord into an appropriate power receptacle.

Install the Cuvette Holder

Applies only to models with a cuvette port.

Insert the cuvette holder into the cuvette port on the front of the reader. Magnets secure the holder in place.



Turn on the Reader and Run a System Test

Allow the reader to settle at room temperature before you turn it on.

1. On the front of the reader, at the base, locate the power switch.
2. Turn on the reader and allow it to run its power-up system test. Wait at least two minutes. When the test is completed, the reader ejects the microplate carrier. If the reader is equipped with a touchscreen (and not connected to a computer), the Main Menu is displayed.

If the test fails: Touchscreen models: an error message indicating the problem appears. If the problem is something you can fix, turn off the instrument, fix the problem, and turn the instrument back on. If the test continues to fail, contact Technical Support. Other models: contact Technical Support.

3. (Optional) Press the lighted blue button on the front of the reader to store the microplate carrier in its chamber.

Establish Communication

On the host computer, start Gen5 and log in if prompted.

1. From the main screen, select **System > Instrument Configuration** and click **Add**.
2. Set the Reader Type to **Epoch 2**.
3. Perform one of the following steps, as applicable:
 - Select **Plug & Play**.
 - Set the **Com Port** to the computer's COM port to which the reader is connected.
4. To verify that Gen5 can communicate with the instrument, click **Test Comm**.

Troubleshooting

If the communication attempt is successful, Gen5 displays a success message. Return to the main screen. If the communication attempt is not successful, try the following:

- Is the reader connected to the power supply and turned on?
- Is the communication cable firmly attached to both the reader and the computer?
- Did you select the correct Reader Type/instrument in Gen5?
- Try a different COM Port or use Plug & Play.
- Did you install the USB driver software?

If you remain unable to get Gen5 and the reader to communicate with each other, contact Technical Support.

Verify Performance

Refer to the *Instrument Testing* section for Absorbance Test procedures.

Repackaging and Shipping Instructions

Please read the information provided below before preparing the Epoch 2 for shipment.

- Contact Technical Support before returning equipment for service.
- Decontamination prior to shipment is required by the U.S. Department of Transportation regulations.
- If the Epoch 2 has been exposed to potentially hazardous material, decontaminate it to minimize the risk to all who come in contact with the instrument during shipping, handling, and servicing. The Maintenance chapter contains decontamination instructions.
- Ensure the microplate carrier is empty. Spilled fluids can contaminate the optics and damage the instrument.
- Install the shipping hardware (see next section).
- The instrument's packaging design is subject to change. If the instructions in this document do not apply to the packaging materials you are using, contact Technical Support for guidance.
- Be sure to use packaging materials supplied by the manufacturer. Other forms of commercially available packaging are not recommended and can void the warranty.
- If the packaging materials have been damaged or lost, or if the same set has been used more than four times, order replacement part number 7203003.
- The shipping box, accessories box, foam caps, and other items are included as a whole set under this part number and cannot be ordered separately.

Install the Shipping Hardware

CAUTION **Shipping Hardware.** All shipping hardware must be removed before operating the instrument and reinstalled before repackaging the instrument for shipment.

Refer to the drawing on page 17.

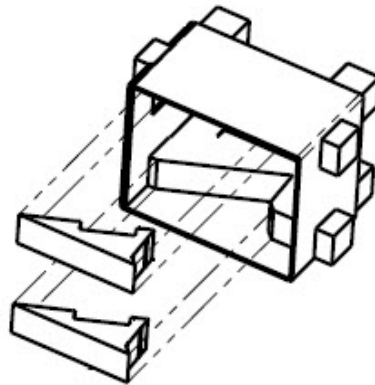
1. Retract the microplate carrier.
2. Turn off the reader. Unplug the power supply from the outlet and from the connector on the back of the reader.
3. Disconnect the USB cable from the reader (if using a computer).
4. Using a screwdriver, reattach the shipping bracket to the carrier.
5. If applicable, remove the cuvette holder and apply tape over the cuvette port to prevent contamination during shipment.

Repackage the Instrument and Accessories

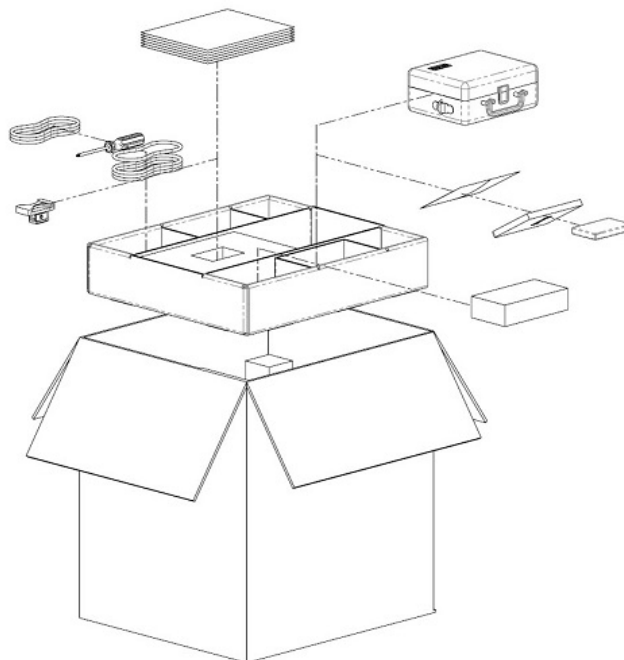
Refer to the drawing on page 16.

1. Place the foam corner cubes into the bottom of the shipping box.
2. Place the reader inside the original plastic bag. Set the reader into the foam cubes in the bottom of the box.
3. Slide the packing sleeve over the reader.

Touchscreen models: If you are using replacement packaging materials, remove the two pullouts so the sleeve fits over the touchscreen:



4. Place the accessory tray in the box. Place accessories in the tray as shown below:



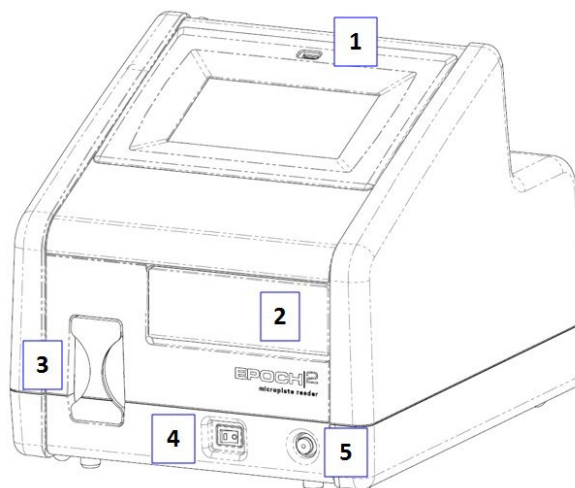
5. Close the box. Secure it with shipping tape.

Getting Started

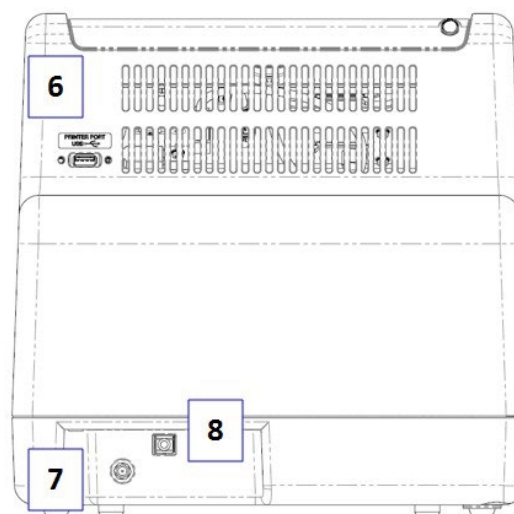
External Components

Touchscreen Models

1. **USB** port for data output
2. microplate carrier access door
3. cuvette holder (if equipped)
4. power on/off
5. carrier in/out, status **LED**

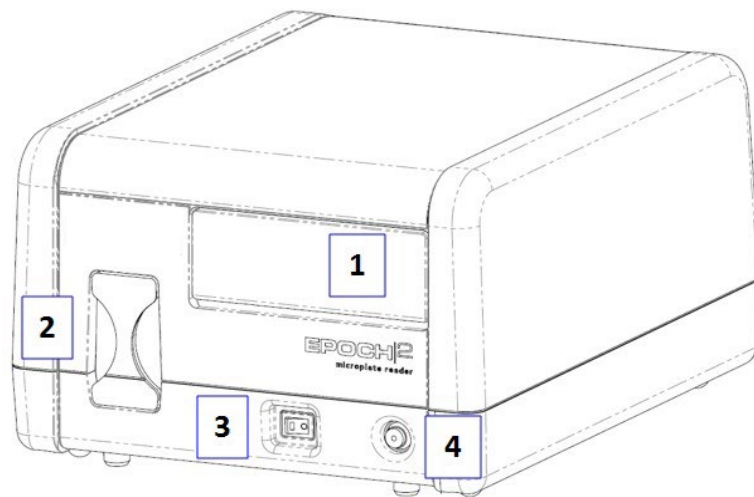


6. USB port for printer
7. power inlet
8. USB port for host computer (if used)

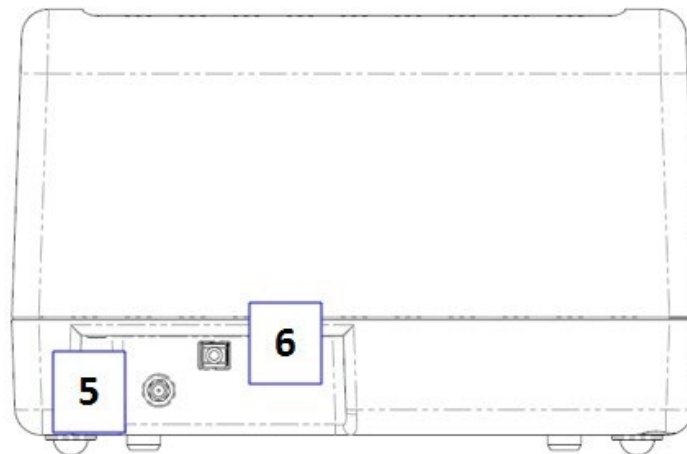


Non-Touchscreen Models

1. microplate carrier access door
2. cuvette holder (if equipped)
3. power on/off
4. carrier in/out, status LED



5. power inlet
6. USB port for host computer



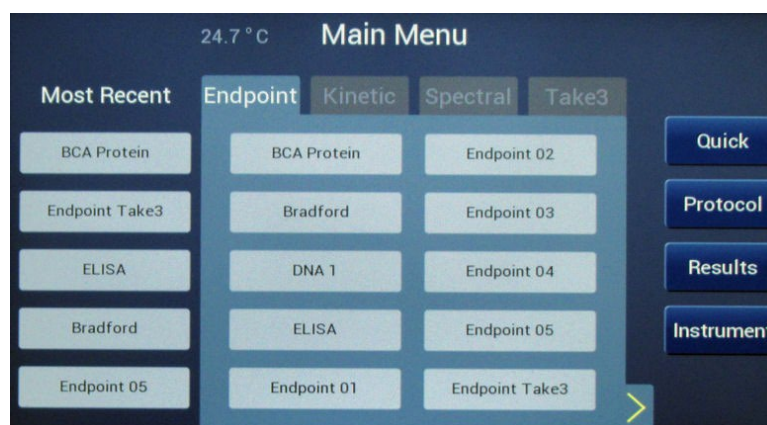
Optional Printer

Refer to the printer's manual for installation and setup instructions.

Using the Touchscreen

CAUTION **Touchscreen.** Use your fingertip to operate the touchscreen. Do not use a sharp stylus or pencil on the touchscreen. Doing so will damage the touchscreen's surface. You can use a stylus designed for resistive touchscreens.

Main Menu



Up to 60 uniquely named protocols can be saved on the reader at one time, excluding the predefined **Take3** protocols.

Protocols created through the touchscreen are limited to a single read step and, for **Endpoint**, **Kinetic**, and **Take3** protocols, up to 12 blank wells. Use Gen5 if your assays require more complex reading methods or plate layouts.

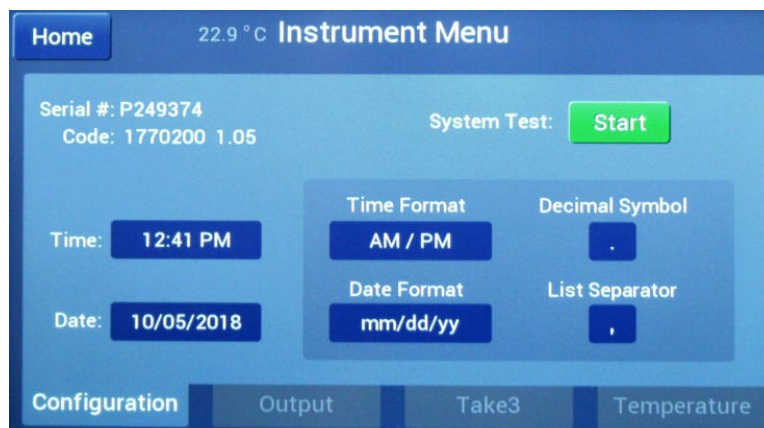
The left side of the Main Menu lists the five most recently used protocols. The tabbed sections in the middle contain the protocols created for each protocol type, and the **Take3** plate (if used). To run an existing protocol, tap its name, define the wells to be read if fewer than the full plate, and tap **Start**.

The right side of the Main Menu provides access to the following features:

Quick	Define and run an Endpoint read, perform a standalone shake, or incubate a plate. Quick reads do not support shake or delay actions, and they read the full plate.
Protocol	Edit, create (and save), delete, and copy protocols. Through this menu option, protocols support shake and delay actions.
Results	Provides access to results for the 12 most recently run protocols. Tap a protocol name to view its results, and then tap the screen to cycle through the available data sets (e.g., Raw data , Delta OD , Blanked data).
Instrument	Run a system test, define date/time settings, enable output to a printer and/or USB flash drive, configure a Take3 plate, and control temperature.

Confirm or Set the Time and Date

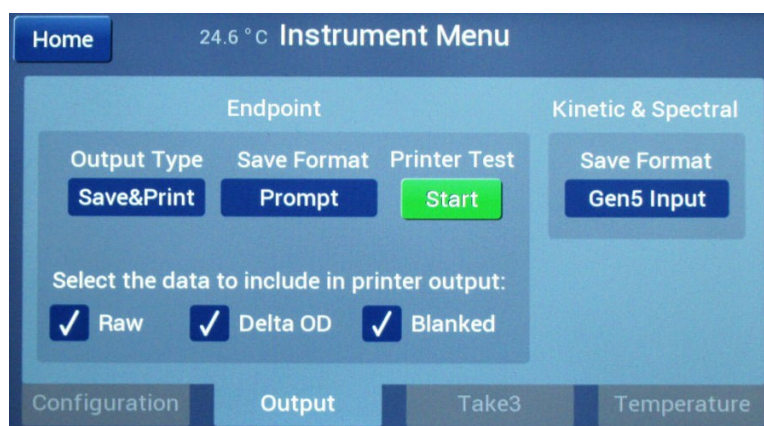
From the **Main Menu**, tap **Instrument** and select the **Configuration** tab.



- Tap the **Time / Time Format** and **Date / Date Format** fields to change the current settings.
- Set the **Decimal Symbol** to a period or comma.
- Set the **List Separator**, used in exported **.csv** files, to a comma or semicolon.

Define Output Formats for Results Data

From the **Main Menu**, tap **Instrument** and select the **Output** tab.



Output Types

- To print results (**Endpoint** only), select **Print** or **Save&Print**.
- To save results to a **USB** flash drive, select **Save to USB** or **Save&Print**.

Data Types

- **Raw**: The raw measurement value for each well.
- **Delta OD**: Applicable when a secondary wavelength is selected in an absorbance protocol. This is the calculated value for each well of the

primary wavelength measurement minus the secondary wavelength measurement.

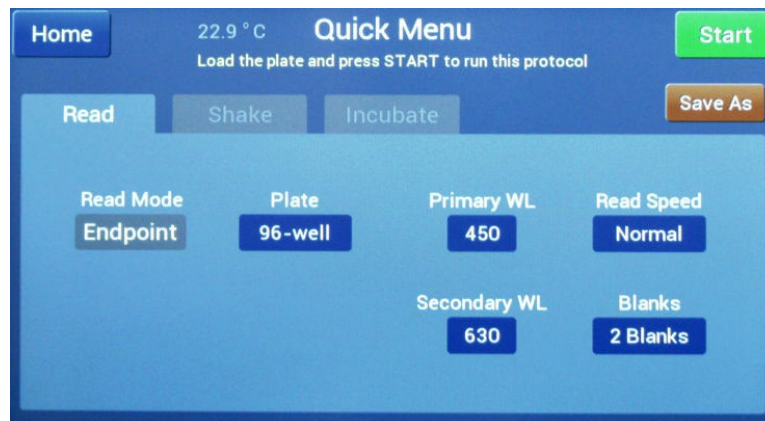
- **Blanked:** The calculated value for each well, after subtracting the average of the blank well(s).

Save Format options

- **Report:** .csv file containing raw data, Delta OD, and/or blanked data, as available. This file can be opened in Excel or other spreadsheet software.
- **Gen5 Input:** .txt file containing only raw data. This file can be opened in Gen5 using the Read from File option.
- **Prompt:** Choose an output format after the plate has been read.

Define and Start a Quick Endpoint Read

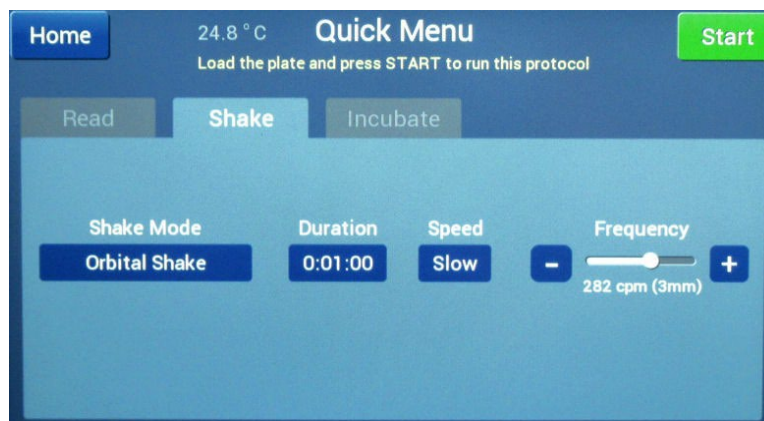
From the **Main Menu**, tap **Quick**.



1. Select the **Plate** type and define the appropriate settings for your assay.
2. Place the plate on the carrier and tap **Start** to run the protocol.
3. When the read is finished, the results are displayed and ready for output according to the settings defined under **Instrument > Output**.

Define and Start a Standalone Shake

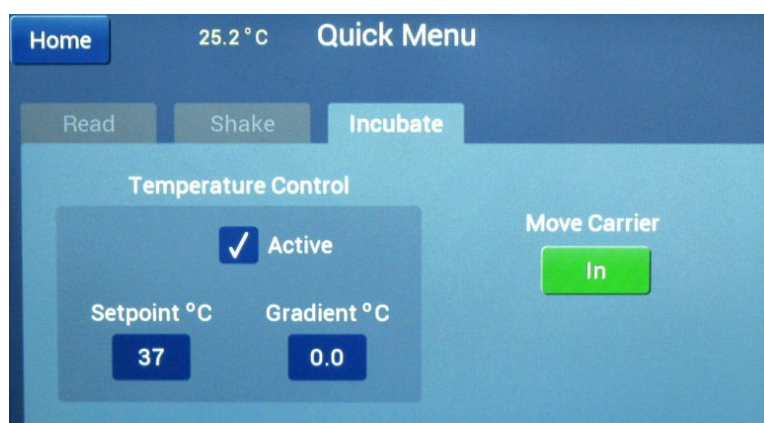
From the **Main Menu**, tap **Quick** and select the **Shake** tab.



1. Set **Shake Mode** to **Linear** (side-to-side), **Orbital** (circle), or **Double Orbital** (in a figure-eight pattern).
2. Set the **Duration**, from 1 second to 2 hours 45 minutes.
3. For **Orbital** shake modes, set the **Speed** to Slow or Fast.
4. Adjust the **Frequency**, if needed. The cycles per minute updates as the slider moves. The measurement in mm indicates the distance the carrier travels during the shake.
5. Place the plate on the carrier and tap **Start** to shake the plate.

Incubate a Plate

From the Main Menu, tap **Quick** and select the **Incubate** tab.



1. Check the **Active** box.
2. Define a **Set point** from 18°C to 65°C (64.4°F to 149°F). Heating begins immediately.
3. Move the plate carrier in, if it is currently out.

4. When the temperature displayed at the top of the screen reaches the set point, move the carrier out, insert the plate, and move the carrier back in.

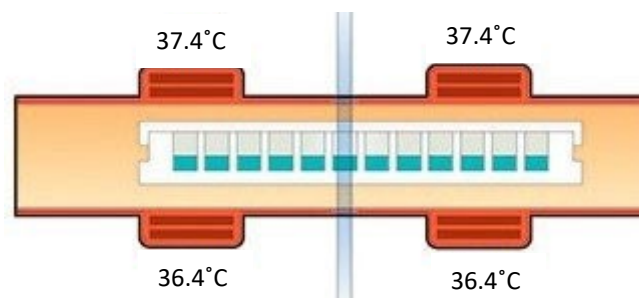
The minimum set point must be ambient room temperature plus 4°C.

Condensation Control

A temperature **Gradient** can be applied to reduce the risk of condensation when using microplate lids. When no gradient (0) is applied, the heaters above and below the plate operate at the same (setpoint) temperature. This is recommended if the plate has no lid, or condensation is not a problem when lids are used.

When a gradient (0.1 to 2.0) is applied, the heaters above the plate operate slightly higher than the set point and the heaters below the plate operate slightly lower than the set point. The gradient represents the temperature separation between the top and bottom heaters. This differential should serve to reduce or eliminate condensation.

In the example below, the Set point is 37°C and the Gradient is 1.0:



Some experimentation with the gradient setting may be necessary to achieve optimal results with your assay.

Create and Save a Protocol

1. From the Main Menu, tap **Protocol > Create**.
2. Use the onscreen keyboard to enter a name for the protocol, then tap **Save**. Note that the protocol name is limited to 18 characters.
3. Set the **Read Mode** to Endpoint, Kinetic, or Spectral.
4. Define the protocol parameters and then tap **Save**.

Endpoint Protocols

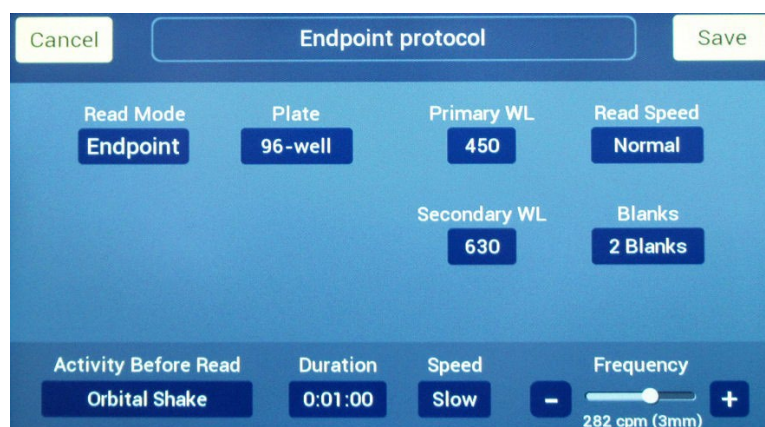


Plate: Options include standard 6-, 12-, 24-, 48-, 96-, and 384-well plates, **Cuvette** (if equipped), and **Take3** (if configured).

Primary WL and (optional) **Secondary WL:** Define the primary and (optional) secondary wavelength in the range 200 to 999 nm.

Microplates and **Take3** only:

Read Speed: Select **Normal** (optimum performance) or **Sweep** (optimum speed). See the **Specifications** section to compare the performance and timing specifications.

Blanks: Tap to open a plate matrix and select up to 12 **Blank** wells. For a 384-well plate, the matrix is displayed in quadrants; tap the 1-2-3-4 box to change the view.

Activity Before Read options:

- Set a delay (up to 2 hours, 45 minutes) before the read.
- Select a shake mode of **Linear** (side-to-side), **Orbital** (circle), or **Double Orbital** (in a figure-eight pattern). Set a **Duration** (up to 2 hours 45 minutes) to shake the plate before the read begins. Adjust the **Frequency**, if needed. The cycles per minute updates as the slider moves. The measurement in **mm** indicates the distance the carrier travels during the shake.

When finished, tap **Save**. The protocol name is added to the **Main Menu**.

If your **Endpoint** assay requires incubation, activate **Temperature Control** before reading the plate. From the **Main Menu**, select **Instrument** and tap the **Temperature** tab.

Kinetic Protocols



Time: Specify the full duration of the kinetic analysis, up to 272:15:00 (hh:mm:ss). Note: You can stop a protocol while it is running, before the **Time** expires; results will be saved.

Interval: Specify the interval (delay) between reads, up to 2:45:00 (hh:mm:ss). The Interval must be shorter than the Time.

Number of kinetic reads: Calculated automatically, based on the Time and Interval settings. Cannot exceed 100 reads.

Considerations: The Interval must be long enough to support the protocol parameters and the number of microplate wells selected for reading. If a shake is specified, its Duration may result in a longer interval than defined in the protocol. To test the settings, save the protocol and return to the **Main Menu**. Tap the protocol to run it, select the wells if not reading the full plate, and tap **Start**. The Minimum Kinetic Interval will display if the defined Interval is too short. Run the protocol using the displayed interval, or return to the protocol and modify its parameters.

Plate: Options include standard 6-, 12-, 24-, 48-, 96-, and 384-well microplates, Cuvette (if equipped), and **Take3** (if configured).

Primary WL: Define a wavelength in the range 200-999 nm. Only one wavelength is supported through the touchscreen; use **Gen5** if your assay has other requirements.

Microplates and **Take3** only:

Read Speed: Select **Normal** (optimum performance) or **Sweep** (optimum speed). See the **Specifications** section to compare performance and timing specifications.

Blanks: Tap to open a plate matrix and select up to 12 **Blank** wells. For a 384-well plate, the matrix is displayed in quadrants; tap the 1-2-3-4 box to change the view.

Options (tap **Edit**):

If applicable, check **Eject the plate when done**. If unchecked, the plate will remain in the chamber after the last kinetic read.

If the assay requires incubation:

1. Check the **Active** box.
2. Define a **Setpoint** from 18°C to 65°C. Heating will begin when you start to run the protocol.
3. Check **Turn off when done** to turn the incubator off after the last kinetic read is completed.

The minimum setpoint must be ambient room temperature plus 4°C. See the *Specifications* section for more information on temperature control.

Shake Before Each Read: Select a shake mode of **Linear** (side-to-side), **Orbital** (circle), or **Double Orbital** (in a figure-eight pattern). Set a **Duration** (up to 2 hours 45 minutes) to shake the plate before each kinetic read or select **Continuous** to shake the plate whenever it is not being read. Adjust the **Frequency**, if needed. The cycles per minute updates as the slider moves. The measurement in mm indicates the distance the carrier travels during the shake.

- Continuous shaking typically results in higher **ODs** and lower **CVs**.
- To define a kinetic protocol with a shake before the first read only, use **Gen5**.

When finished, tap **Save**. The protocol name is added to the **Main Menu**.

Spectral Scan Protocols



Plate: Options include standard 6-, 12-, 24-, 48-, 96-, and 384-well plates, Cuvette (if equipped), and **Take3** (if configured).

Start WL and **End WL:** Define the start and end wavelengths. The full spectral range is 200 to 999 nm.

Step Size: Define an increment (in **nm**) for measurement. For example, if the **Start WL** is 200 and the **Step Size** is 10, measurements are taken at 200, 210, 220, and so on until the End WL is reached.

The number of spectral data points cannot exceed 100.

Microplates and **Take3** only:

Calibrate first: Set to **Yes** (optimum performance) to perform calibration at all of the specified wavelengths when a plate read is initiated. Set to **No** (optimum speed) to perform calibration at only those wavelengths not yet calibrated since the reader was turned on.

Shake Before Read: Select a shake mode of **Linear** (side-to-side), **Orbital** (circle), or **Double Orbital** (in a figure-eight pattern). Set a **Duration** (up to 2 hours 45 minutes) to shake the plate before spectral scanning begins. Adjust the **Frequency**, if needed. The cycles per minute updates as the slider moves. The measurement in mm indicates the distance the carrier travels during the shake.

When finished, tap **Save**. The protocol name is added to the **Main Menu**.

Run a Protocol

Kinetic protocols: If a temperature set point is defined in the protocol, you can turn the incubator on manually by selecting **Instrument > Temperature**. Otherwise, the incubator will turn on when you start the protocol. Wait until the set point is reached, or tap **Override** to read the plate.

1. From the **Main Menu**, tap a protocol in the **Most Recent** list or under one of the available tabs. The **Run Protocol** screen displays the defined parameters:



2. To read a partial plate, tap **Full Plate** and select the well(s) to read. Tap **Save**.
3. Press the blue lighted button on the front of the reader to eject the plate carrier.
4. Place the microplate on the carrier and tap **Start**.

When the read is finished, the results are displayed and ready for output according to the settings defined under **Instrument > Output**.

The reader saves results for the last 10 **Endpoint/Take3** and last 2 **Kinetic/Spectral** protocols that were run. The next set of saved results will overwrite the oldest set for the read mode only with your acknowledgment.

Edit, Delete, or Copy a Protocol

Edit a Protocol

1. In the **Main Menu**, tap **Protocol**.
2. Tap the protocol that you want to modify, then tap **Edit**.
3. Make any desired changes, then tap **Save**.

Delete a Protocol

1. From the **Main Menu**, tap **Protocol**.
2. Tap the protocol you want to delete, then tap **Delete**.

Copy a Protocol

1. In the **Main Menu**, tap **Protocol**.
2. Tap the protocol you want to copy, then tap **Copy**.
3. Enter a name for the new protocol, then tap **Save**.
4. Make any desired changes, then tap **Save**.

View or Output Results Stored on the Reader

1. In the **Main Menu**, tap **Results**. Results for the last 10 Endpoint/**Take3** and last 2 Kinetic/Spectral protocols are listed by read mode/file name. Tap the protocol for which you want to view or output results. The results are displayed on the touchscreen.
 - Tap the data set name at the top of the screen to view protocol details, including the start date/time, final status, and protocol parameters.
 - Endpoint: Tap the screen to toggle through the available data sets.
 - Kinetic/Spectral: Tap a well to view its kinetic curve or spectral scan.
 - If a well displays “**OVR**,” the measurement exceeds (overflow) the maximum absorbance measurement range: 4.000 **OD** (normal read speed, or cuvette); 3.000 **OD** (sweep read speed).
 - If a well displays “**???**,” a result (for example, blank subtraction) could not be calculated.
2. Tap the **green** button in the upper-right corner of the display. The results are printed and/or saved to the USB flash drive, depending on the read mode and defined output format.

	13	14	15	16	17	18	19	20	21	22	23	24
I	0.126	0.126	0.126	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.127
J	0.136	0.136	0.136	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137
K	0.146	0.146	0.146	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
L	0.156	0.156	0.156	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157
M	0.166	0.166	0.166	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
N	0.176	0.176	0.176	0.177	0.177	0.177	0.177	0.177	0.177	0.177	0.177	0.177
O	0.186	0.186	0.186	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187
P	0.196	0.196	0.196	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197

Run a Take3 Session

Using the Touchscreen

The Epoch 2 is preprogrammed with seven Take3 protocols, available for use after a Take3 plate has been defined and aligned on the reader.

The protocols measure at 260, 280, and 320 nm and cannot be edited. For the nucleic acid protocols, a secondary wavelength of 230 nm can be selected at run time. For all seven protocols, a spectral scan may also be selected.

Protocol name	Mass Extinction coefficient	Secondary Ratio WL (run time option)	Spectral Scan (run time option)
dsDNA	50	230 nm	240–300 nm
RNA	40	230 nm	240–300 nm
ssDNA	33	230 nm	240–300 nm
1 Abs@1cm = 1 mg/mL	10	-	260–320 nm
BSA	6.7	-	260–320 nm
IgG	13.7	-	260–320 nm
Lysozyme	26.4	-	260–320 nm

Define and Align a **Take3** Plate

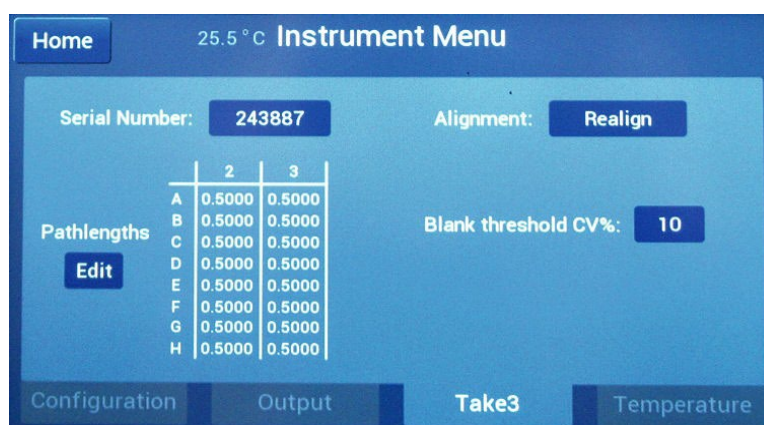
Ensure that the glass slide is clean before running the alignment procedure. Refer to the *Take3/Take3 Trio User Manual* for cleaning instructions.

If you remove or replace the glass slide, perform the Pathlength Calibration procedure described in the *Take3/Take3 Trio User Manual* and then run the alignment procedure described below. Update the Pathlength Values on the touchscreen with the new values generated through the Pathlength Correction procedure described in the user manual.

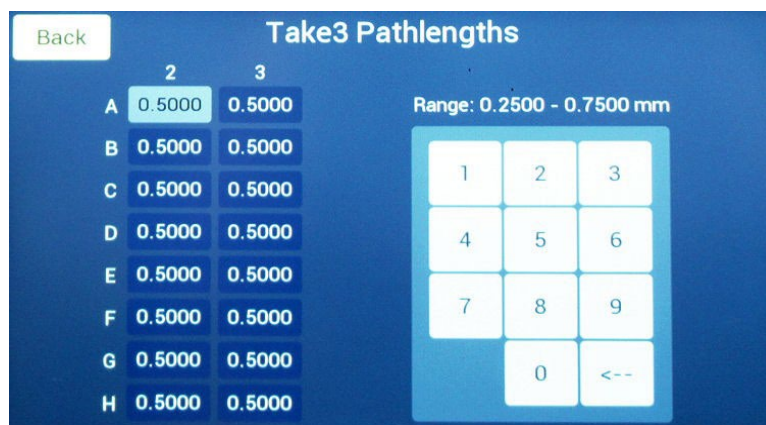
The reader can be configured with only one Take3 plate at a time.

This procedure ensures that the Take3 slide's microspot positions are captured correctly in the reader's software. Upon completion, the Take3 tab appears on the Main Menu and contains the preprogrammed Take3 protocols.

1. From the **Main Menu**, tap **Instrument** and select the **Take3** tab.



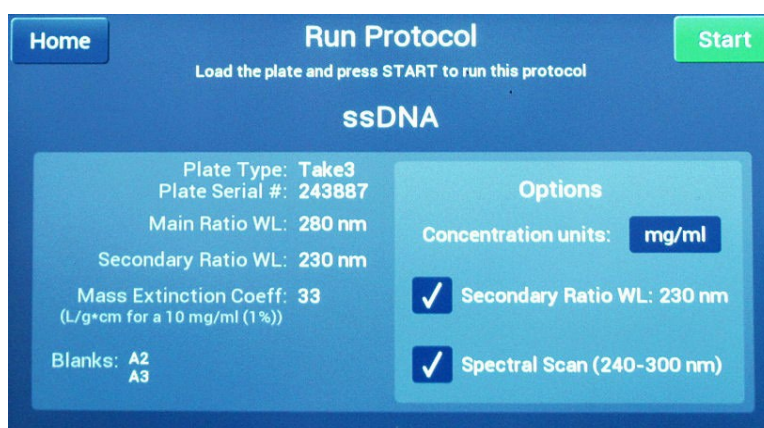
2. Enter the plate's **Serial Number**.
3. Place the plate on the carrier. Tap **Required** (or **Realign**) and then **Start** to perform the alignment. The process takes several minutes to complete.
4. Change the **Blank threshold CV%** if the default value does not meet your assay requirements. This setting compares all replicates of a blank to determine cleanliness of the microspots (dirty microspots can skew the %CV). Set the value smaller to have a tighter tolerance on the deviation of cleanliness of the microspots, or set it higher to relax the tolerance.
5. Tap **Edit** and enter the pathlength values that either came with the Take3 plate or were generated through the Pathlength Correction procedure in the *Take3 User Manual*.



- When finished, tap **Back** and **Home** to return to the **Main Menu**.

Run a Take3 Protocol

- On the Main Menu, tap the **Take3** tab and select the protocol to run.
- Select 1 to 12 wells as **Blank** and tap **Continue**.
- On the **Run Protocol** screen, select options as applicable:
 - Concentration units:** Select the unit of measure for the export file.
 - Secondary Ratio WL (230 nm):** Available for nucleic acid protocols.
 - Spectral Scan:** Perform a spectral scan for the wavelength range displayed (1 nm step size), in addition to the endpoint reads.



- Place the **Take3** plate on the carrier and tap **Start**.
 - If the **Take3 Blank Masking** screen appears and reports that the **CV Status** is **DIVERGING**, the **%CV** of the blank wells is higher than the Blank threshold **CV%** defined for the plate. Invalid blank wells are highlighted in red. Tap a well to mask (exclude) it from blank average and **%CV** calculations. When the remaining unmasked blank wells are valid, the **Approve** button illuminates. If the number of valid blank wells is sufficient for the assay, tap **Approve**, otherwise select **Cancel** and address the problem (e.g., clean the slides).

- At least one blank well is required. If all blank wells are masked, the **CV Status** is **INVALID**.
 - Each masked blank well will be flagged with an asterisk in the printed and exported results.
5. When the read is finished, the results are displayed and ready for output according to the settings under **Instrument > Output**.

Gen5 Software


Gen5 software supports all Epoch 2 reader models. This section provides brief instructions for creating a protocol and running an experiment. For more information, refer to publications provided with Gen5 and the Gen5 help system (**Help > Help Topics**).

In Gen5, a **protocol** contains instructions for controlling the reader and (optionally) instructions for analyzing the data retrieved from the reader. At a minimum, a protocol must specify the procedure you wish to run. After creating a protocol, create an **experiment** that references the protocol. You will run the experiment to read plates and analyze the data.

1. In the **Gen5 Task Manager**, select **Protocol > Create New**.
2. Open the **Procedure** dialog. If prompted to select a reader, select **Epoch 2** and click **OK**.
3. Select a **Plate Type**.

Gen5 stores measurements and other characteristics for individual plate types in a database. It is essential that you select (or define) the plate type to match the assay plate. Otherwise, results may be invalid. See the “**Plate Type Database**” topic in the Gen5 Help for instructions.

4. Add steps to the procedure for reading the plate. Click **Validate** to verify that the reader supports the defined steps, and then click **OK**.
5. Optionally, perform any of these steps to analyze and report the results:
 - Open the **Plate Layout** dialog and assign blanks, samples, controls, and/or standards to the plate.
 - Open the **Data Reduction** dialog to add data reduction steps. Categories include **Transformation**, **Well Analysis**, **Curve Analysis**, and **Qualitative Analysis**.
 - Create a report or export template via the **Report/Export Builders**.
6. Select **File > Save** and give the protocol an identifying name.
7. In the **Gen5 Task Manager**, select **Experiment > Create using an existing protocol**.
8. Select the desired protocol and click **OK**.

9. Select a plate in the menu tree and click .
10. When the read is complete, measurement values appear in Gen5. Select the desired data set from the **Data** list.
11. Select **File > Save** and give the experiment an identifying name.

Maintenance

Warnings and Precautions

WARNING

Internal Voltage. Always turn off the power switch and unplug the power supply before cleaning the outer surface of the instrument.

WARNING

Liquids. Avoid spilling liquids on the instrument; fluid seepage into internal components creates a potential for shock hazard or instrument damage. If a spill occurs while a program is running, stop the program and turn off the instrument. Wipe up all spills immediately. Do not operate the instrument if internal components have been exposed to fluid.

CAUTION

Liquids. Do not immerse the instrument, spray it with liquid, or use a dripping-wet cloth on it. Do not allow water or other cleaning solution to run into the interior of the instrument. If this happens, contact Technical Support. Do not soak the touchscreen.

CAUTION

Lubricants. Do not apply lubricants to moving parts. Lubricant on components in the carrier compartment will attract dust and other particles, which may cause the instrument to produce an error.

WARNING

Potential Biohazards. Wear protective gloves when handling contaminated instruments. Gloved hands should be considered contaminated at all times; keep gloved hands away from eyes, mouth, nose, and ears.

Mucous membranes are considered prime entry routes for infectious agents. Wear eye protection and a surgical mask when there is a possibility of aerosol contamination. Intact skin is generally considered an effective barrier against infectious organisms; however, small abrasions and cuts may not always be visible. Wear protective gloves when handling contaminated instruments.

Schedule

Task	Frequency
Clean the touchscreen (if applicable)	As needed
Clean exposed surfaces	As needed
Decontamination	Before shipment, storage, or disposal

Clean the Touchscreen (if applicable)

CAUTION

Touchscreen. Avoid strong solvents, such as alcohol, acetone, ammonium chloride, methylene chloride, and hydrocarbons. These will permanently damage the touchscreen. Avoid fibrous materials, such as paper towels, which can scratch the touchscreen. Dirt particles and cleaning agents will get trapped in the scratches. Never spray solutions directly on the touchscreen.

Materials

- Deionized or distilled water
- Dish soap or other mild cleaner
- Lint-free disposable towels

Procedure

1. Turn off and unplug the instrument.
2. Moisten a clean, lint-free disposable cloth with water, or with water and mild detergent, then thoroughly wring it out so that liquid does not drip from it. **Do not soak the cloth.**
3. Wipe the touchscreen gently with the moist cloth.
4. If detergent was used, wipe the touchscreen with a cloth moistened with water.
5. Dry the screen gently using another cloth.

Clean Exposed Surfaces

This procedure is for the housing of the reader. See the previous section for cleaning the touchscreen.

A regular cleaning regimen is recommended to keep the instrument free from dust and particulates that can cause erroneous readings. Exposed surfaces may be cleaned (not decontaminated) with a cloth moistened (not soaked) with water or water and a mild detergent.

1. Turn off and unplug the instrument from the power supply.

2. Moisten a clean, lint-free disposable cloth with water, or with water and mild detergent, then thoroughly wring it out so that liquid does not drip from it. **Do not soak the cloth.**
3. Wipe the plate carrier and all exposed surfaces of the instrument.
4. If the reader is equipped with a cuvette holder, remove the holder and clean its exposed surfaces.
5. If detergent was used, wipe all surfaces with a cloth moistened, not soaked, with water.
6. Use a clean, dry, lint-free cloth to dry all wet surfaces.
If liquid is spilled inside the reader, contact Technical Support.

Decontamination

- The Epoch 2 requires decontamination prior to shipping, storage, and disposal.
- Decontamination is required by the U.S. Department of Transportation regulations.
- Persons performing the decontamination process must be familiar with the basic setup and operation of the instrument.
- Agilent recommends the use of the following decontamination solutions and methods based on our knowledge of the instrument and recommendations of the Centers for Disease Control and Prevention (CDC). Neither Agilent nor the CDC assumes any liability for the adequacy of these solutions and methods. Each laboratory must ensure that decontamination procedures are adequate for the biohazard(s) they handle.

Required Materials

- Sodium hypochlorite (NaClO)
- 70% isopropyl alcohol (as an alternative to sodium hypochlorite)
- Deionized or distilled water
- Safety glasses
- Surgical mask
- Protective gloves
- Lab coat
- Biohazard trash bags
- 125-mL beakers
- Clean, lint-free cotton cloths

Procedure

1. Turn off and unplug the reader from the power supply.
2. Prepare a disinfecting solution: an aqueous solution of 0.5% sodium hypochlorite (NaClO). If the effects of sodium hypochlorite are a concern, 70% isopropyl alcohol may be used.

3. Moisten a clean, lint-free cloth with the disinfecting solution, then thoroughly wring it out so that liquid does not drip from it. Do not soak the cloth.
4. Wipe the plate carrier and all exposed surfaces of the instrument, including the inside of the microplate carrier access door and, if equipped, the cuvette holder.
5. If the instrument is equipped with a touchscreen, place the moistened cloth on the touchscreen and let it rest there for 15 minutes, then remove it.
6. Wait 20 minutes.
7. Moisten a cloth with deionized or distilled water and wipe all surfaces of the instrument that have been cleaned with the disinfecting solution. Do not soak the cloth.
8. Use a clean, dry lint-free cloth to wipe all wet surfaces.
9. Discard the used gloves and cloths, using a biohazard trash bag and an approved biohazard container.

Instrument Testing

Schedule

Recommendations for an Epoch 2 used two to five days per week:

Test	Frequency
System Test	Monthly
Absorbance Tests	Monthly

System Test

Each time the Epoch 2 is turned on, it automatically performs a series of tests on the reader's motors, lamp, and various subsystems. This test can take a few minutes to complete. If all tests pass, the microplate carrier is ejected and the green LED on the power switch remains on.

If any test results do not meet the internally coded Failure Mode Effects Analysis (FMEA) criteria, the reader beeps repeatedly and the green LED on the power switch flashes. If this occurs, press the carrier eject button to stop the beeping.

If the test fails: Touchscreen models: an error message indicating the problem appears. If the problem is something you can fix, turn off the instrument, fix the problem, and turn the instrument back on. If the test continues to fail, contact Technical Support. Other models: contact Technical Support.

To run the system test manually:

1. Turn on the reader and launch Gen5.
2. Select **System > Diagnostics > Run System Test**.
3. When the test is complete, a dialog appears, requesting additional information. Enter your user name and other information (if desired), and then click **OK**.
4. The results report appears. It should show "**SYSTEM TEST PASS**". If it shows "**SYSTEM TEST FAIL**" contact Technical Support.

Absorbance Plate Test

Description

This test uses the 7-Filter Absorbance Test Plate (Part Number 7260522) to confirm the mechanical alignment; optical density accuracy, linearity, and repeatability; and wavelength accuracy to NIST-traceable values. The Absorbance Plate Test compares the reader's optical density and wavelength measurements to NIST-traceable values.

Test Plate Certificates

To run this test on the Epoch 2, you will need the 7-Filter Absorbance Test Plate (Part Number 7260522) with its accompanying certificates.

Define the Absorbance Test Plate Parameters

1. Obtain the certificates that came with the Test Plate.
2. Start Gen5. From the main screen, click **System > Diagnostics > Test Plates > Add/Modify Plates**.
3. Click **Add/Add Plate**. The **Absorbance Test Plate** dialog appears.
4. Select the appropriate plate type and enter the plate's serial number.
5. Enter the last and next certification dates, found on the calibration sticker on the Test Plate. Click **Help** for guidance when setting the wavelengths and entering the **OD** and peak wavelength values.
6. Review the values you entered, and then click **OK** to save the data. The wavelengths and corresponding calibration data that have been entered will now be available in Gen5 each time the Absorbance Plate Test is performed.

Procedure

1. From the main screen, click **System > Diagnostics > Test Plates > Run**.
2. If prompted, select the desired Test Plate and click **OK**.
3. When the **Absorbance Test Plate Options** dialog appears, select **Perform Peak Wavelength Test**, if it is not already selected.
4. Highlight the wavelength or wavelengths to be included in this test. Select only those wavelengths that are most appropriate for your use of the reader. Enter any comments, if desired.
5. Click **Start Test**.
6. Place the Test Plate in the microplate carrier so that well **A1** is in the left-rear corner of the carrier (as you are facing the carrier).
7. Click **OK** to run the test.

8. When the test is completed, the results report appears. Scroll through the report; every result should show **PASS**. If any result shows "**FAIL**", try the following and rerun the test. If the test continues to fail, contact Technical Support.
 - ◆ Make sure the information entered into Gen5 matches the Test Plate's Certificate.
 - ◆ Verify that the Test Plate is within its calibration certification period. If it is out of date, contact Technical Support to schedule a recertification.
 - ◆ Ensure that the Test Plate is correctly seated in the microplate carrier.
 - ◆ Check the alignment (corner) holes on the Test Plate to ensure they are clear of debris.
 - ◆ Check the filters on the Test Plate to ensure they are clean. If necessary, clean them with lens paper. Do not remove the filters from the test plate. Do not use alcohol or other cleaning agents.

Specifications

General Specifications

Microplates	
The Epoch 2 accommodates standard 6-, 12-, 24-, 48-, 96-, and 384-well microplates with 128 x 86 mm geometry; and the Take3 and Take3 Trio Micro-Volume Plates.	
Hardware and Environmental	
Light Source	Xenon flash light source
Dimensions	31.8 cm D x 30.5 cm W x 19.6 cm H
Weight	< 6.804 kg (without power supply)
Environment	Operational temperature: 18°C to 30°C (models with a touchscreen; "TS") 18°C to 40°C (models without a touchscreen; "NS") Storage temperature range: -25°C to 50°C
Humidity	Operational: 10% to 85% relative humidity (non-condensing) Storage: 10% to 80% relative humidity (non-condensing)
Power Supply	24-volt external power supply compatible with 100–240 V~; +/- 10% @50–60 Hz
Power Consumption	< 120W

Read Specifications

All read speeds are +/- 2 seconds.

Endpoint Measurements			
96 Well			
Mode	Delay Time	630 nm	630/450 nm
Normal	100 msec	49	95
Rapid	0 msec	38	75
Sweep	N/A	15	30
384 Well			
Mode	Delay Time	630 nm	630/450 nm
Normal	100 msec	169	333
Rapid	0 msec	131	257
Sweep	N/A	31	56

Kinetic Measurements		
96 Well		
Mode	Delay Time	630 nm
Normal	100 msec	50
Rapid	0 msec	42
Sweep	N/A	13
Mode	Delay Time	630 nm
Normal	100 msec	169
Rapid	0 msec	129
Sweep	N/A	30

Optical Performance

Accuracy, Linearity, Repeatability	
All qualifications were conducted using 96-/384-well, flat-bottom microplates. For the performance described here, the Gain on the Optics Test should be ≤ 8 .	
Measurement Range: 0.000 to 4.000 OD	Resolution: 0.0001 OD
Accuracy, NIST Filters 96-well plate, normal read speed , 100-ms delay after plate movement 0.000–2.000 OD +/-1% +/-0.010 OD 2.000–2.500 OD +/-3% +/-0.010 OD 384-well plate, normal read speed, 100-ms delay after plate movement 0.000–1.500 OD +/-2% +/-0.010 OD 1.500–2.000 OD +/-5% +/-0.010 OD 96-well and 384-well plate, sweep read speed 0.000–1.000 OD +/-1% +/-0.010 OD	
Linearity 96-well plate, normal read speed, 100-ms delay after plate movement 0.000–2.000 OD +/-1% +/-0.010 OD 2.000–2.500 OD +/-3% +/-0.010 OD 384-well plate, normal read speed, 100-ms delay after plate movement 0.000–1.500 OD +/-2% +/-0.010 OD 1.500–2.000 OD +/-5% +/-0.010 OD 96-well and 384-well plate, sweep read speed 0.000–1.000 OD +/-1% +/-0.010 OD	
Repeatability, NIST Filters, Standard Deviation 96-well plate, normal read speed, 100-ms delay after plate movement 0.000–2.000 OD +/-1% +/-0.005 OD 2.000–2.500 OD +/-3% +/-0.005 OD 384-well plate, normal read speed, 100-ms delay after plate movement 0.000–1.500 OD +/-1% +/-0.005 OD 1.500–2.000 OD +/-3% +/-0.005 OD 96-well and 384-well plate, sweep read speed 0.000–1.000 OD +/-2% +/-0.010 OD	

Optics	
λ range	200 to 999 nm
λ accuracy	± 2 nm
λ repeatability	± 0.2 nm
λ bandpass	< 5 nm
Detector	Photodiodes (2)

In This Book

This document contains installation, operation, maintenance, and qualification information for all models of the Epoch 2.

Document Revision History			
Part Number	Revision	Date	Modifications
1771011I	C	May 2022	Added Agilent brand information. Updated content and symbols to support 2017/746 – In Vitro Diagnostic Regulation. Replaced the Notices section with Copyright information. Added Customer Care contact information. Removed the Warranty and Product Registration section. Added information for Getting Started with Gen5.

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