Troubleshooting Guide

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1. # Sample Result Concerns

Microvolume Sample Concentration Accuracy

Possible Causes	Suggested Actions
Sample solutions not well mixed	• Ensure samples are vortexed and well mixed before taking each aliquot for measurement. • Note: Some samples may need to warm to room temp or even be heated to ensure sample solutions are in solution.
Dirty sample surfaces at time of Blank or sample measurement	• Clean both microvolume surfaces. Refer to Tech Note 110. • Perform new Blank measurement.
Sample concentration too low	• Samples that are low in concentration (e.g.>10 ng/µL dsDNA) will exhibit high CV's since they are near the lower detection limit of the instrument. Concentrate the sample or use the cuvette mode.
Blank was performed with sample or wrong buffer	• Perform a new Blank measurement. • Note: Some buffers have high absorbance at the wavelength of interest (e.g. RIPA buffers}. Use Colorimetric app instead of Protein A280 when using RIPA buffers.
Sample type option not correct	• Select appropriate sample type from Run screen dropdown menu.
Labeled concentration not correct	• Verify expected concentration and proper storage conditions. Consider effects of evaporation on frequently used samples.
Repeated measurement of same aliquot	• Use a fresh aliquot for each measurement to avoid sample evaporation.
Same tip used to deliver multiple aliquots of sample	• Use a fresh tip to deliver each sample aliquot.
Insufficient sample volume delivered to measurement surface	• Confirm that pipette is calibrated and that the sample is delivered to the instrument measurement surface. • Note: Some sample types may wick up the side of the tip and not be delivered to the surface as expected.
Sample contains contaminants	• Optimize sample extraction protocol.
Comparing against fluorescent technique	• Due to the specificity of fluorescent techniques, absorbance measurements may result in higher concentration values.
Dilution errors	• Review mathematical calculations.
No baseline correction applied	• Review custom method set-up and apply appropriate baseline correction.
Hardware issue	• Run the Diagnostics app Self Test and Verification check. If Self Test fails, perform a Lamp Reset- accessed from the Overflow menu. Refer to Tech Notes 123 and 131. • Contact customer support or your distributor.

Microvolume Sample Concentration Reproducibility

Possible Causes	Suggested Actions
Sample solutions not well mixed	• Ensure samples are vortexed and well mixed before taking each aliquot for measurement. • Note: Some samples may need to warm to room temp or even be heated to ensure sample solutions are in solution.
Dirty sample surfaces at time of Blank or sample measurement	• Clean both microvolume surfaces. Refer to Tech Note 110. • Perform new Blank measurement.
Sample concentration too low	• Samples that are low in concentration (e.g.>10 ng/µL dsDNA) will exhibit high CV's since they are near the lower detection limit of the instrument. Concentrate the sample or use the cuvette mode.
Blank was performed with sample or wrong buffer	• Perform a new Blank measurement. • Note: Some buffers have high absorbance at the wavelength of interest (e.g. RIPA buffers}. Use Colorimetric app instead of Protein A280 when using RIPA buffers.
Repeated measurement of same aliquot	• Use a fresh aliquot for each measurement to avoid sample evaporation.
Same tip used to deliver multiple aliquots of sample	• Use a fresh tip to deliver each sample aliquot.
Insufficient sample volume delivered to measurement surface	• Confirm that pipette is calibrated and that the sample is delivered to the instrument measurement surface. • Note: Some sample types may wick up the side of the tip and not be delivered to the surface as expected.
Comparing against fluorescent technique	• Due to the specificity of fluorescent techniques, absorbance measurements may result in higher concentration values.
Hardware issue	• Run the Diagnostics app Self Test and Verification check. If Self Test fails, perform a Lamp Reset-accessed from the Overflow menu. Refer to Tech Notes 123 and 131. • Contact customer support or your distributor.

Cuvette Sample Concentration Accuracy

Possible Causes	Suggested Actions
Incorrect Z-height for cuvette	• Use cuvettes with Z heights of 8.5 mm.
Cuvette inserted in wrong orientation	• Insert following notched arrow guidance for light path.
Cuvette mode not selected	• Use Run screen dropdown to select correct mode.
UV transparent or quartz cuvette not used for UV region	• Use UV transparent or quartz cuvettes for nucleic acid and protein A280 measurements as well as for all other methods including wavelengths under 400 nm.
Blank was performed with sample or wrong buffer	• Perform a new Blank measurement. • Note: Some buffers have high absorbance at the wavelength of interest (e.g. RIPA buffers). Use Colorimetric app instead of Protein A280 when using RIPA buffers.
Sample too concentrated	• Dilute samples or use microvolume mode.
Sample type option not correct	• Select appropriate sample type from Run screen dropdown menu.
Labeled concentration not correct	• Verify expected concentration and proper storage conditions. Consider effects of evaporation on frequently used samples.
Sample contains contaminants	• Optimize extraction protocol.
Comparing against fluorescent technique	• Due to the specificity of fluorescent techniques, absorbance measurements may result in higher concentration values when compared to fluorescence.
Hardware issue	• Run Diagnostics app cuvette Self Test. If the Self Test fails, perform a Lamp Reset accessed from the Overflow menu. Refer to Tech Note 131. • Contact customer support or your distributor.

Cuvette Sample Concentration Reproducibility

Possible Causes	Suggested Actions
Sample solutions not well mixed	• Ensure samples are vortexed and well mixed before taking adding to cuvette. • Note: Some samples may need to warm to room temp or even be heated to ensure sample solutions are in solution.
Cuvette inserted in wrong orientation	• Insert following notched arrow guidance for light path.
UV transparent or quartz cuvette not used for UV region	• Use UV transparent or quartz cuvettes for nucleic acid and protein A280 measurements as well as for all other methods including wavelengths under 400 nm.
Sample too concentrated	• Dilute samples or use microvolume mode.
Sample contains contaminants	• Optimize extraction protocol.
Hardware issue	• Run Diagnostics app cuvette Self Test. If the Self Test fails, perform a Lamp Reset accessed from the Overflow menu. Refer to Tech Note 131. • Contact customer support or your distributor.

Bad Purity Ratios

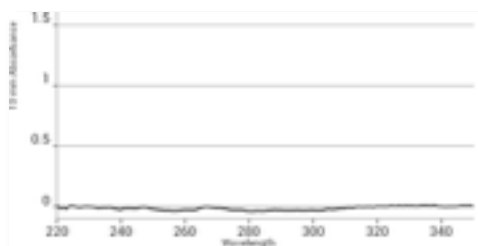| Possible Causes	Suggested Actions
Low concentration samples	• Ratios for samples with 10 mm equivalent absorbance values less than 0.2 may be unreliable due to the shallowness of the curve. (e.g. >10 ng/μL dsDNA)
Poor isolation / contaminants in sample	• Optimize sample extraction protocol. Refer to Tech Note 130.
Blank made using wrong buffer	• Use the same solution (water or buffer) a sample is suspended or diluted in for the Blank measurements. Refer to Tech Note 130.
Dirty sample surfaces	• Clean both microvolume surfaces. Refer to Tech Note 110. • Perform new Blank measurement.
Instrument to instrument variation	• Up to about a 0.4 difference in the 260/280 ratio may be observed when measuring the same sample on two spectrophotometers that are working within a 1 nm wavelength accuracy specification. Refer to Tech Note 130.
pH of sample buffer impacting expected ratio	• The pH of buffer may have an impact on the purity ratios. Acidic solutions may under-represent the 260/280 ratio value by 0.2-0.3, while a basic solution may over-represent the ratio value by 0.2-0.3. Refer to Tech Note 130.

Negative Numbers or Inverted Spectra

Possible Causes	Suggested Actions
Dirty sample surfaces at the time of the Blank measurement	• Clean both microvolume surfaces then perform a new Blank measurement. Refer to Tech Notes 110 and 129.
Blank was performed with sample or wrong buffer	• Perform a new Blank measurement. • Note: Some buffers have high absorbance at the wavelength of interest (e.g. RIPA buffers). Use Colorimetric app instead of Protein A280 when using RIPA buffers.
Insufficient sample volume delivered to measurement surface	• Confirm that pipette is calibrated and that the sample is delivered to the instrument measurement surface. • Note: Some sample types may wick up the side of the tip and may not be delivered to the surface as expected.

Water or Buffer has Significant Absorbance

Note: Water or buffer sample measurements will not result in perfectly flat lines.

The image to the right is typical of what is expected of a water sample.

Possible Causes	Suggested Actions
Dirty sample surfaces	• Clean both microvolume surfaces. Refer to Tech Note 110. • Perform a new Blank measurement.
Blank was performed with sample	• Perform a new Blank with water or appropriate buffer.

Results Differ between UV-Vis versus dsDNA or Protein A280

Possible Causes	Suggested Actions
Baselines and analysis wavelengths may be handled differently between apps	• Modify baseline correction selection. • Confirm analysis wavelength is identical between apps or methods.

Jagged or Choppy Spectra

Possible Causes	Suggested Actions
Dirty sample surfaces	• Clean both microvolume surfaces. Refer to Tech Note 110. • Perform a new Blank measurement.
Blank was performed with sample	• Perform a new Blank with water or appropriate buffer.
Sample concentration close to lower detection limit	• Review instrument specifications. Consider use of alternative mode (cuvette).
Insufficient sample volume delivered to measurement surface	• Confirm that pipette is calibrated and that the sample is delivered to the instrument measurement surface. • Note: Some sample types may wick up the side of the tip and may not be delivered to the surface as expected.
Sample too concentrated	• Dilute samples. • Use microvolume mode.
Lamp Reset performed with dirty surface.	• Clean the sample surfaces and repeat the Lamp Reset. Refer to Tech Note 110.
Hardware issue	• Run the Diagnostics app Self Test and Verification procedure. If Self Test fails, perform a Lamp Reset-accessed from the Overflow menu. Refer to Tech Notes 123 and 131.

Shifts in Expected Peaks

Possible Causes	Suggested Actions
Sample too concentrated	• Dilute samples. • Use microvolume mode.
Sample contains contaminants	• Optimize sample extraction protocol.
Solvent used affects spectra	• The pH, temperature and concentration of interfering solvent/buffer components may affect the absorbance profile of some biomolecules.
Hardware issue	• Run the Diagnostics app Self Test and Verification procedure. If Self Test fails, perform a Lamp Reset-accessed from the Overflow menu. Refer to Tech Notes 123 and 131.

Fluorescence Results Not as Expected

Possible Causes	Suggested Actions
Assay sample to reagent ratios not optimal for assay kit	• Ensure total mass of biomolecule is taken into account when varying sample to reagent volumes. Refer to Tech Note 162.
Sample concentration not within assay kit concentration or total mass limits	• Dilute or concentrate sample as necessary. Use an alternate kit better suited for the expected sample concentrations.
The sample holder lid is not closed	• Ensure the lid is closed prior to the measurement.
The samples are not at room temperature	• Ensure all samples and standards are measured at room temperature unless stated otherwise by the kit manufacturer's protocol.
Dilution and pipetting errors	• Due to the high sensitivity of fluorescent assays, accurate pipetting is essential. Use low volume, calibrated pipettes to set up reactions.
Wrong LED selection	• Confirm that the correct LED excitation source was used for all user-defined assays and methods.
Assay dye quenched due to repeated measurements of the same tube	• Set up individual tubs for replicate samples. Keep reactions protected from light.
Samples varying in temperature at the time of measurement	• Ensure all samples are measured at room temperature.
Hardware issue	• Run Fluoro Diagnostics Self Test. • Contact customer support or your distributor.

2. Hardware Issues

Instrument Does Not Turn On

Red power indicator LED at the rear of the instrument should be lit when instrument power switch is turned on.

Possible Causes	Suggested Actions
Power supply contacts do not contact the outlet adaptor	• Ensure that the contacts that insert into the outlet are extending straight out and that both are aligned.
Bad Power Outlet	• Plug the power cord into another wall outlet.
Hardware Issue	• Contact customer support or your distributor.

Display Does Not Turn On

Possible Causes	Suggested Actions
The instrument is not on	• Confirm that the red power indicator LED is on at the rear of the instrument to confirm that the issue is with the display.
Hardware Issue	• Contact customer support or your distributor.

Start-up Logo Loops Indefinitely

Possible Causes	Suggested Actions
The instrument start-up process was interrupted	• Turn off power and restart.
Hardware issue	• Contact customer support or your distributor.

Display Not Responsive to Touch

Possible Causes	Suggested Actions
The instrument start-up process was interrupted	• Turn of power and restart.
Hardware issue	• Contact customer support or your distributor.

Display Appearance is Unusual (Lines, Patterns, Colors not correct)

Possible Causes	Suggested Actions
The instrument start-up process was interrupted	• Turn off power and restart.
Hardware issue	• Contact customer support or your distributor.

Home Screen Not Correct

Possible Causes	Suggested Actions
Incorrect Incomplete software update	• Reset Home Screen. • Refer to Tech Note 163.

No Sound

Possible Causes	Suggested Actions
Volume settings too low	• Launch Settings app, increase all volume settings.
Hardware issue	• Contact customer support or your distributor.

Time Not Maintained Without WiFi

Possible Causes	Suggested Actions
Battery needs to be replaced.	• Contact customer support or your distributor. Note: Our service team will replace the battery with a long lasting model. Replacing this part is not something that can be done by a user.

Cuvette Block Heater not Reaching or Holding Temperature

Possible Causes	Suggested Actions
Heater not turned on	• Tap the On button under the heater temperature box.
Temperature equilibrium not reached	• Wait for cuvette and cuvette black to reach equilibrium.
Heater temperature not selected in method	• Set the temperature in the method set-up.
Expected temperature not within specifications	• Temperature range is 37-45 °C +/-0.5 °C
Hardware issue	• Contact customer support or your distributor.

Cuvette does not Fit in Cuvette Block

Possible Causes	Suggested Actions
Cuvette is the wrong size	• Cuvettes requirements: 12.5 mm X 12.5 mm X 45 mm

3. Connectivity Issues

WiFi Not Connecting to Network or Connecting Intermittently

Possible Causes	Suggested Actions
WiFi turned off	Launch Settings App, turn WiFi setting to On.
Not connected to a network	• Log into a valid network using appropriate credentials. • Note: Most issues are the result of institute or company specific log-on security measures. Please contact your local IT department for help before contacting DeNovix customer support.
Low WiFi signal	• Move instrument to another location. • Choose another WiFi account. • Use Ethernet or USB flash drive as alternative means for exporting data.
Hardware issue	• Contact customer support or your distributor.

Ethernet Not Connecting

Possible Causes	Suggested Actions
Not connected to a network	• Log into a valid network using appropriate credentials. • Note: Most issues are the result of institute or company specific log-on security measures. Please contact your local IT department for help before contacting DeNovix customer support.
Hardware issue	• Contact customer support or your distributor.

Cannot Send Email from DS-11

Possible Causes	Suggested Actions
Email account not set-up	• Launch Email app and set-up account. Refer to Tech Note 117.
No network connection	• Turn on WiFi and log into network or connect using the Ethernet port. • Log into a valid network using appropriate credentials. • Note: Most issues are the result of institute or company specific log-on security measures. Please contact your local IT department for help before contacting DeNovix customer support.

Export to Network Folder Not Working

Possible Causes	Suggested Actions
Network folder not set-up	• Launch the Account app to set up access to a network folder. Refer to Tech Note 122.
No network connection	• Turn on WiFi and log into network or connect using the Ethernet port.
Login credentials not valid	• Confirm that the login credentials are valid for the network folder option selected and that the host name is correct.
Too many files or folders within the destination network folder	• When setting up a network folder connection, it is recommended that the target destination be a new folder with few to no preexisting files. • If the export process starts to slow down, remove older files from the folder.

Data App: Data Not Found

Possible Causes	Suggested Actions
Incorrect Account selected	• Search results are account specific. Change accounts and redo search. • Refer to the User Guide for additional information.
Quick Search does not yield Diagnostics or Kinetics data	• Use Advanced Search option for Diagnostics and Kinetics results.
No data matching search criteria	• Redefine search criteria.
Data has been erased due to user archive event	• Data not recoverable.
Software update required	• Launch the Updater app and install all available app updates. Refer to Tech Note 118.

Data App: Exported Data Corrupted when Opening in EXCEL

Possible Causes	Suggested Actions
Language or regional settings on DS-11 is different than that of the computer used to open the file	• Ensure the language setting of the computer match the language setting used in the DS-11 at the time of the measurement. Comma versus decimal usage must be the same. • Language accessed through the Setting app.
Software update required	• Launch the Updater app and install all available app updates. Refer to Tech Note 118.

4. **Accessories**

USB Flash Drive Not Recognized

Possible Causes	Suggested Actions
USB flash drive not compatible or inconsistent	• Use a flash drive from a quality manufacturer such as Sandisk or PNY. • Note: Many promotional USB flash drives give erratic performance. • The flash drive must be a FAT32 formatted device and not NTFS. Check the formatting of the flash drive by inserting it into a computer and then right click to check the device properties. Reformat to FAT32 if necessary.
Possible hardware issue	• Confirm USB operation by following the steps below: 1. Plug flash drive into a different USB port on the instrument without turning instrument off. If the flash drive works on the second port, the first port is faulty. 2. Turn the instrument off/on, then retry the flash drive. If the flash drive is now operational, then the flash drive is erratic. Use an alternate flash drive. 3. If the flash drive still is not operational after performing step 2, then tray an alternate USB device such as a USB mouse, keyboard or handheld scanner. If the alternate device is operational, then the flash drive is faulty. 4. If no device works from any of the USB ports even after turning instrument off/on, then the USB operation on the instrument is faulty. Contact customer service or your distributor.

Dymo Printing Incomplete or Excess Information

Possible Causes	Suggested Actions
Paper misaligned	• Reinsert the paper, then use the black button to fine-tune the alignment.
Wrong paper type selected	• Swipe up the bottom notifications bar to select alternative paper type.

Dymo Not Recognized

Possible Causes	Suggested Actions
Wrong Dymo model	• Refer to www.denovix.com for supported models.
Power supply not inserted properly into the printer	• Reinsert the power supply into the Dymo.
Hardware issue	• Confirm USB port operation by inserting a USB mouse into the USB ports. A cursor should appear and the mouse should be active. • Try alternative port. • Contact customer support or your distributor.

USB Barcode Reader Not Recognized

Possible Causes	Suggested Actions
USB device not compatible, drawing too much power	• Use Opticon OPI 3601 USB barcode reader.
Hardware issue	• Confirm USB port operation by inserting a USB mouse into the USB ports. A cursor should appear and the mouse should be active. • Try alternative port. • Contact customer support

5. Software Error Messages

Abs Too High

Possible Causes	Suggested Actions
Sample concentration too high for app	• Dilute sample. • Ensure correct mode (e.g. microvolume) is selected.
Sample outside the measured standard curve	• Dilute sample or extend curve range using higher concentration standards.

Abs Too Low

Possible Causes	Suggested Actions
Sample concentration outside the measured standard curve	• Extend standard curve range using lower concentration standards. • Concentrate sample.

Unfortunately " App Name" has Stopped

Possible Causes	Suggested Actions
Software update required	• Launch the Updater app and install all available app updates. Refer to Tech Note 118.
Too many apps open at one time	• Close each unused apps using the Exit function accessed from the Run screen Overflow feature.
Software is corrupt	• Contact customer support or your distributor.

Unfortunately " Database Manager" has Stopped

Possible Causes	Suggested Actions
Software update process incomplete	• Restore the Database Manager. Refer to Tech Note 164.

Wavelength Check Error

Possible Causes	Suggested Actions
Dried sample on the upper and lower measurement surface	• Clean both microvolume surfaces and then perform a Lamp Reset using the Diagnostics app.
Hardware Issue	• Contact customer support or your distributor.

Mechanism is Busy

Possible Causes	Suggested Actions
Multiple functions occurring	• Tap the OK button to proceed.

Process Time Out

Possible Causes	Suggested Actions
Outdated software	• Close all apps, launch the Updater app and follow all instructions.

Error Code 508

Possible Causes	Suggested Actions
Outdated software	• Close all apps, launch the Updater app and follow all instructions.
Hardware Issue	• Contact customer support or your distributor.

Error Code 608

Possible Causes	Suggested Actions
Outdated software	• Close all apps, launch the Updater app and follow all instructions.
Hardware Issue	• Contact customer support or your distributor.

Lamp Reset Error

Possible Causes	Suggested Actions
Dried sample on the upper and lower measurement surface	• Clean both microvolume surfaces and repeat the Lamp Reset.
Plastic Cuvette in DS-11+ cuvette holder	• Remove cuvette and repeat the Lamp Reset.
Custom method generated with narrow wavelengths range in low UV or high Vis ranges	• Close all apps, launch the Updater app and follow all instructions. • Delete methods and regenerate with wider nm ranges.
Hardware Issue	Contact customer support or your distributor.

Access to Settings App Options Not Visible

Possible Causes	Suggested Actions
Not an administrator	• Access setting through an administrator account. • Set up new accounts via the Accounts app.

Colorimetrics, Std Curve Apps: Saved Curves or Lists Not Shown

Possible Causes	Suggested Actions
Assay or method specific	• Select appropriate assay or method on app Run screen.

6. Diagnostics App

Microvolume Self Test Failure

Possible Causes	Suggested Actions
Dirty measurement surfaces.	• Clean the surfaces, then repeat the Self Test. Refer to the User guide or DeNovix Technical Note 110 for surface cleaning information. • If a second attempt at the Self Test fails, then use the Lamp Reset option accessed from the Overflow icon (3 vertical dots top right) to initiate a system re-optimization.

Cuvette Self Test Failure

Possible Causes	Suggested Actions
Cuvette left in the cuvette block.	• Remove the cuvette, then repeat the Self Test. • If a second attempt at the Self Test fails, then use the Lamp Reset option accessed from the Overflow icon (3 vertical dots top right) to initiate a system re-optimization.

Microvolume Verification Test Failure-High Variability in Replicates

Possible Causes	Suggested Actions
Multiple measurements made using the same aliquot.	• Use a fresh aliquot for each measurement.
Pipette tips not changed between aliquots.	• Use a fresh tip to pipette each aliquot onto the sample surface.
The sample surfaces are not adequately cleaned between measurements.	• Remove the previous sample by wiping both the top and bottom surfaces that come in contact with the solution.

Microvolume Verification Test Failure- Low Absorbance Values

Possible Causes	Suggested Actions
Incorrect LC-NA target absorbance value entered.	• Confirm correct value is entered. The lot specific target value can be found on the LC-NA vial label.
Dirty measurement surfaces or improper blank.	• Clean the surfaces, measure a new Blank using fresh source of dH20 and restart the procedure using a new vial of solution.

Microvolume Verification Test Failure-High Absorbance Values

Possible Causes	Suggested Actions
Incorrect LC-NA target absorbance value entered.	• Confirm correct value is entered. The lot specific target value can be found on the LC-NA vial label.
Multiple measurements made using the same aliquot.	• Use a fresh aliquot for each measurement.
Pipette tips not changed between aliquots.	•Use a fresh tip to pipette each aliquot onto the sample surface.
The sample surfaces are not adequately cleaned between measurements.	Remove the previous sample by wiping both the top and bottom surfaces that come in contact with the solution.
The solution has concentrated due to prolonged exposure.	· Use a fresh vial of solution.

7. Customer Support

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Please include the serial number of your instrument when contacting Customer Support by email. If sending Customer Support a Screen Capture or a report .csv file using the DS-11 email feature, include your name, institute/company, phone number and return email address. **Please note responses will not be sent directly to the email account used by the instrument.**

Outside of the US, please contact your local distributor for assistance.

Warranty

All product(s) and accessories sold by DeNovix Inc. are under warranty against manufacturing defects in parts for the 36 month period from the date of delivery.

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