

## Company Information

### WARRANTY

The Moisture Analyzer has a 1 Year Manufacturer's Warranty. Please contact the Fristaden Lab customer service department at [support@fristadenllc.com](mailto:support@fristadenllc.com) for more information.

### ABOUT US

Fristaden Lab is a lab and scientific equipment retailer established in 2013 in Chicago, Illinois.

We sell an array of popular products, including analytical balances, centrifuges, glassware, hematology counters, hot plates, magnetic stirrers, pH meters, pipettes and pressure pumps.

We stand behind all of our products, offering a 1-2 year warranty, 30-day returns, and a responsive customer service team committed to solving any questions or issues you may have.

### CONTACT

[FristadenLab.com](http://FristadenLab.com)  
[support@fristadenllc.com](mailto:support@fristadenllc.com)

Owned and operated by  
Fristaden & Company, LLC  
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Reno NV, 89502 USA

# Moisture Analyzer User Manual

Model: HCSFY105

±0.5% Moisture Content Accuracy

0.005g Weighing Accuracy

100g Capacity



Made in China

# FRISTADEN LAB

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# Troubleshooting

## UNRESPONSIVE TOUCHSCREEN

	REASON	SOLUTION
1		
1-2	• Transient	Reboot the machine.
2-3	interference.	
	• Incorrect power	Use the correct power supply.
3	supply voltage.	

4-5

## Maintenance

5

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### MAINTENANCE AND STORAGE

- 6 • IMPORTANT: Do not touch halogen light to avoid damage or injury.
- 6 • Keep the moisture analyzer plugged in to reduce warm-up time.
- 7 • Power off the moisture analyzer between uses.
- 7 • The moisture analyzer should be kept clean. Beware of dust and other items getting into the moisture analyzer.
- 8 • Always power off, unplug and wait for the unit to cool completely before cleaning or storing it.
- 8 • Do not clean the machine with elements that may corrode the machine. Use a mild detergent and a wet, smooth cloth to clean.
- 8 • Make sure no liquid enters the balance.
- 9 • Dry the balance after cleaning.
- 9-10
- 10
- 10
- 11-13

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# Troubleshooting

## LARGE INACCURACIES DURING CALIBRATION

REASON	SOLUTION
<ul style="list-style-type: none"><li>Sample pan contains additional object.</li></ul>	Remove object, tare, and re-calibrate.

## UNSTABLE WEIGHING RESULT

REASON	SOLUTION
<ul style="list-style-type: none"><li>High airflow.</li></ul>	Avoid, or move away from drafty areas.
<ul style="list-style-type: none"><li>Unstable platform.</li></ul>	Place balance on a stable platform

## SAMPLE IS TOO HEAVY

REASON	SOLUTION
<ul style="list-style-type: none"><li>The sample weighs more than the maximum load.</li></ul>	Reduce the load.

## INACCURATE WEIGHING RESULT

REASON	SOLUTION
<ul style="list-style-type: none"><li>Not 0 before weighing.</li></ul>	Calibrate the instrument before using.
<ul style="list-style-type: none"><li>Balance used before weighing,</li></ul>	Touch 0 key to tare balance.

# Summary

## IMPORTANT!

Thank you for purchasing the Fristaden Lab Moisture Analyzer. Please read the User Manual carefully before use and follow all operating and safety instructions!

## PRODUCT FEATURES

**RESULTS YOU CAN TRUST:** If you conduct moisture analysis for quality control or for lab work, a small inaccuracy can compromise your product or ruin your experiment. That's why the Fristaden Lab precision moisture analyzer is accurate to degree of magnitude higher than similar models (0.005g). Every moisture balance we sell is tested for accuracy and precision before sale.

**MOISTURE CONTENT ACCURATE TO  $\pm 0.5\%$ :** We know how a 1-3% change in moisture content can make all the difference in your product or sample's quality. That's why this moisture analyzer has a moisture accuracy of  $\pm 0.5\%$  (sample  $\geq 5g$ ). This is based on a moisture readability of 0.02% and a repeatability of 0.2%. These results are driven by a balance accurate up to 0.005g and a halogen light accurate to  $\pm 1^\circ C$ .

**MANY FEATURES, INTUITIVE CONTROLS:** The digital moisture analyzer clearly displays results on a 5.5" LCD Touch Screen. You can easily switch between manual, timed and automatic tests. With the automatic test, the measuring device will alert you once the sample has lost its moisture. (continued)

# Summary

## PRODUCT FEATURES (CONTINUED)

Heat samples, up to 100g, from 60~160°C. A calibration weight, pan holder, sample remover and 10 sample pans are included. The moisture scale can be set up in under 15 minutes and comes with a detailed, user-friendly instruction manual.

**RAPID RESULTS:** The Fristaden Lab moisture analyzer can quickly dry samples with a powerful and accurate (60~160°C) halogen lamp. Halogen lamps work faster than other methods often seen in moisture analyzers, saving you time and money. The scientific analyzer can be used with food, plants, grain, minerals, chemicals, soil, wood, plastics and more. All samples can be measured on a full 0-100% moisture content range.

## SPECIFICATIONS

Model	HCSFY105
Capacity	100g
Readability	0.005g
Moisture Readability	0.02%
Repeatability	0.2%
Display	5.5" LCD Touch Screen
Pan Diameter	100mm
Heating	High Efficiency Halogen Lamp
Accuracy for Moisture Measure	±0.5% (sample ≥5g)

# Troubleshooting

## THE MONITOR IS OFF

REASON	SOLUTION
• The display switch is not open.	Open the switch and touch screen again.
• Transient Interference	Unplug and restart the machine.
• Broken Fuse.	Change fuse.

## LOW OR NO LIGHT

REASON	SOLUTION
• Pan holder installed incorrectly.	Reinstall pan holder.
• Memory calibration is damaged.	Recalibrate the instrument.

## OVERWEIGHT OR ZERO OVERWEIGHT

REASON	SOLUTION
• Heavy objects on the weighing pan.	Remove objects from weighing pan.
• Over maximum load.	Reduce load.
• Memory calibration is damaged.	Recalibrate the instrument.

## LARGE INACCURACIES DURING CALIBRATION

REASON	SOLUTION
• Incorrect calibration weight.	Use correct weight.



# Operation

## COMPUTER CONNECTION

- Connect the balance to the computer using the RS-232 port.
- Download the XCOM V2.2 software. You should receive this in an email with your purchase. If not, contact support@fristadenllc.com.
- When you conduct a test, the test result will show on the display.
- Go to History.
- Press PRINT. The data will be entered in the computer program..

## DATE AND TIME SETTINGS

- Press the calibration key in the main menu.
- Press the timer key.
- Set the date and time. Press confirm

# Summary

## SPECIFICATIONS

Temp. Increase Step	±1 °C
Temp. Range	60-160 °C
Heating Time	1-99 min with 1 sec intervals
Time End Setting	Auto Stop/ Timed Stop
Amount of Storage	8
Moisture Range	0-100%
Material	Aluminum alloy base, ABS body
Modes	Timer Dry/ Auto Dry
Dimensions	330mm x 480mm x 140mm
N.W.	2.9kg/ G.W. 4.2kg

## Safety

### WARNING!

- Ensure everyone operating the machine reads the user manual and understands the operating instructions, cautions and dangers associated with the machine. Only trained staff should operate the machine.
- Do not operate the machine if you are under 18 years of age.
- Do not touch the halogen light or the top of the instrument when in use! The halogen light can cause severe burns and other injuries if touched.
- Be careful removing samples, as they still will be hot.

# Safety

## IMPORTANT!!

- Do not cover the instrument while in use. The cover will be hot.
- Check the machine and accessories prior to each use for damage. Do not use the machine if damaged. Contact the manufacturer.
- Always supervise the machine while in use! Never leave the machine alone or unattended when it is operating, hot or cooling down.
- Before plugging the machine into an electrical outlet, make sure the voltage and frequency matches that of the machine.
- Operate the machine in a safe environment away from hazards. Do not operate in a flammable, magnetic or dangerous environment. Keep the machine away from magnetic parts (e.g. watches, pacemakers, etc.)
- Keep the machine away from children, pets and other potential hazards.
- Place the machine on a flat and spacious work surface.
- Ensure the surface is non-slip, dry, fireproof, stable and away from any potential hazards.
- Operate the machine in a safe, dry and well ventilated environment. The environment temperature should not exceed 5-35°C and have less than or equal to 50-75% relative humidity.
- Do not cover the machine.

# Operation

## AUTOMATIC MEASURING FUNCTION

- Select Auto heating on the display.
- Input the desired temperature.
- Place samples in weighing area.
- Once the balance is stable, begin heating.

## TIMED MEASURING FUNCTION

- Select Time heating on the display.
- Input the desired temperature.
- Input the desired measurement time.
- Place samples in weighing area.
- Once the balance is stable, begin heating.

## STORED DATA

- \*The analyzer automatically stores the 8 previous recordings.
- Press history on the main menu.
- Select the saved sample folder.
- Click on the folder to enter and view the testing parameters.

## PRINTING FUNCTION

- Connect the balance to the micro printer using the RS-232 port.
- The test result will show on the display.
- Go to History.
- Press PRINT. The data will be printed.

## Operation

### PREPARE THE SAMPLE

- Press Tare on the display. Remove the sample pan.
- Clean the disposable sample pan. Place 5-10g of the sample into the sample pan. The sample should be a powder, for best results. Larger samples should be crushed in a grinder before moisture analysis.
- Set the heating parameters (time, temperature and ending method) before weighing the sample. Place the sample in the device and close the lid.

### DRYING TEMPERATURE SETTINGS

- On the homepage of the display, select the auto heating or timed heating key.
- Set the temperature in the display frame to the temperature.
- Press confirm to finish.

### END MODE SELECTION

- \*You can stop the drying with three different modes: Manual, Automatic and Timed.
- Manual: Manually end the drying time.
- Automatic: Once the sample remains steady (less than 1mg for a set time), the instrument will end the measurement process. The display will record the heating time.
- Timed: Enter the amount of time you would like to heat the sample for. Once that time is reached, the halogen light will shut off.

## Safety

### IMPORTANT (CONTINUED)

- DAMAGE: Do not use the machine if the machine or any parts are broken. Contact the manufacturer and do not attempt to repair it yourself.
- DAMAGE: Do not replace power cables, plugs or other parts unless they are directly from the manufacturer..
- Do not exceed the max weight (100g) to avoid damaging the sensor.

## Display and Controls

### DISPLAY



### CONTROLS

OFF	Turn off the device
CAL	Calibrate the device (or set date/time)
Time	Timed heating function
Auto	Automatic heating function
Latest	The most recent record
History	Saved records

# Operation

## PACKING LIST

- Moisture Analyzer
- Pan Remover
- Pan Holder
- Calibration Weight
- Power Cable
- 10x Sample Pan
- User Manual
- 100g Calibration Weight

## INSTALLATION

CHECK FOR DAMAGE - Open the package and ensure no parts were damaged during delivery. Make sure all parts shown in the packing list are included.

- Place moisture analyzer on a flat, stable working platform.
- Install sample pan holder and pan.
- Observe the position of the level bubble. If it is offset, adjust the feet until it is level.
- Attach power cord and plug in device.
- The scale accepts voltage of 110V. Please confirm the correct voltage before using the scale.
- Do not overload the full capacity of the balance.
- If there is an error, calibrate the scale.

# Operation

## GETTING STARTED

- Set the moisture analyzer on a flat, solid, dry surface away from liquids and hazardous materials.
- Plug in the instrument.
- Turn on the power for at least 30 minutes before use to allow the instrument to adapt to environmental fluctuations. If it is used in cold temperatures, turn on the heating lamp for 30 minutes, then allow the machine to cool to room temperature.

## CALIBRATION

- NOTE: The weighing scale should be calibrated under the tare function.
- NOTE: The calibration should ensure that the internal signal is stable.
- NOTE: Calibrate the scale before use.
- Clean the sample pan and place it on the sample pan holder in the center of the instrument.
- Close the cover and touch the calibration key on the main menu.
- Press the weight calibration key. The display will show the weight value.
- Place the corresponding weight on the pan. Close the upper cover. After 5 seconds, it will display the weight.
- After calibrating, if the display does not show "0", redo the calibration.