



User Manual

Humimeter FLM PLUS Marijuana Moisture Meter



Calibration curve	Explanation	Compressed density	Unit	Measuring range	Sensor
Marijuana Curve	Marijuana loose bud	100 to 160 kg/m ³	% wc	6 - 40%	13736
Digit	special products	-		0 - 100	13736
Empty ¹	special products	-			13736
Empty 2	special products	-			13736
Empty 3 RT	special products	-			13736
Test block	Only for device check, not for measuring!				13736

The device automatically recognizes the connected sensor and provides the corresponding calibration curves.

Explanation of calibration curves:

Marijuana Curve: Shows the current water content in % of marijuana loose bud using the cone (bud) sensor!

Digit: The digit curve is a unit less calibration curve with a range from 0 up to 100, which corresponds to the entire measurement range of the device. With this curve, special products can be measured.

The higher the value the wetter the material. By means of a comparative measurement by a reference method, a table with comparison values can be created.

Very dry: 0 **very wet: 100**

¹ RT - room temperature

Free calibration curves 1-3: There are four free calibration curves which can be used for measuring special products (temperature compensated).

On request Scigiene / Schaller GmbH can develop customer specific calibration curves for your product.

Test block: This calibration curve is only used for checking the instrument with the optional test block accessories; part# HM-13888-M (Calibration Test block for FLM Humimeter cone/bud sensor)

Determination of the material reference moisture

The humimeter FLM determines the water content, which means that it calculates the moisture referred to the total mass:

$\%F \square$ _____

$MnMn \square Mt \square 100$

Mn:	mass of sample with average moisture content
Mt :	mass of the dried sample
%F:	calculated absolute moisture (water content)

Humimeter FLM With cone (loose bud) sensor





Start-up

Insert the four delivered 1.5V Alkaline AA batteries as described below:

- 1.) At first remove the rubber protection cover. For that, hold the rubber housing at the upper side and pull it over. In case of an optional USB interface you must remove the protection cap before.
- 2.) Press with your finger onto the arrow of the battery cap and pull it back.
- 3.) Put four new batteries 1.5 Volt AA Alkaline batteries in the device. Make sure that the position of the battery poles is correct.
- 4.) Press down the batteries and close the cap.




For switching on the instrument, press the button  for approx. 3 seconds. Now the LCD display lights up. After switching on, the serial number, the software version, the battery status and the memory allocation are displayed. Then the instrument is ready for use. For switching off the instrument, press the button  again for approx. 3 seconds. If no button is pressed for 10 minutes, the instrument switches off automatically.

Changing the sensor





For changing the sensor, just screw the desired sensor on the humimeter device. The instrument automatically recognises the sensor and shows the corresponding calibration curves.

Measuring procedure

1. For a correct measurement please ensure that the device has the same temperature than the material to measure. For that reason, let your device adjust to the surrounding temperature of the material for at least half an hour before measuring (protect from direct sunlight!)

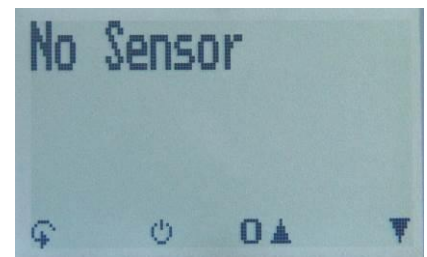
2. Switch on the device: Press the  key for 3 seconds.

3. Connect the desired sensor (if no sensor is connected, the display shows “no sensor”).

4. Now select the desired calibration curve by pressing the buttons  or . (Pressing the  or  key in the measuring window for at least 3 seconds, a list with all available sorts will appear. Curves displayed in grey are not available for the currently connected sensor.)

The currently set calibration curve is indicated in the upper part of the display.

For the explanation of the different curves, please see page 2 of this manual.



4.1. Marijuana cone (loose bud) sensor: To ensure correct measuring results, the measuring chamber has to be full to the brim with material, but must not be precompressed (see illustration picture). Put the cap (compressing fixture) onto the measuring chamber and tighten it to the stop. As soon as the measuring chamber is completely closed, the display shows the measuring value.



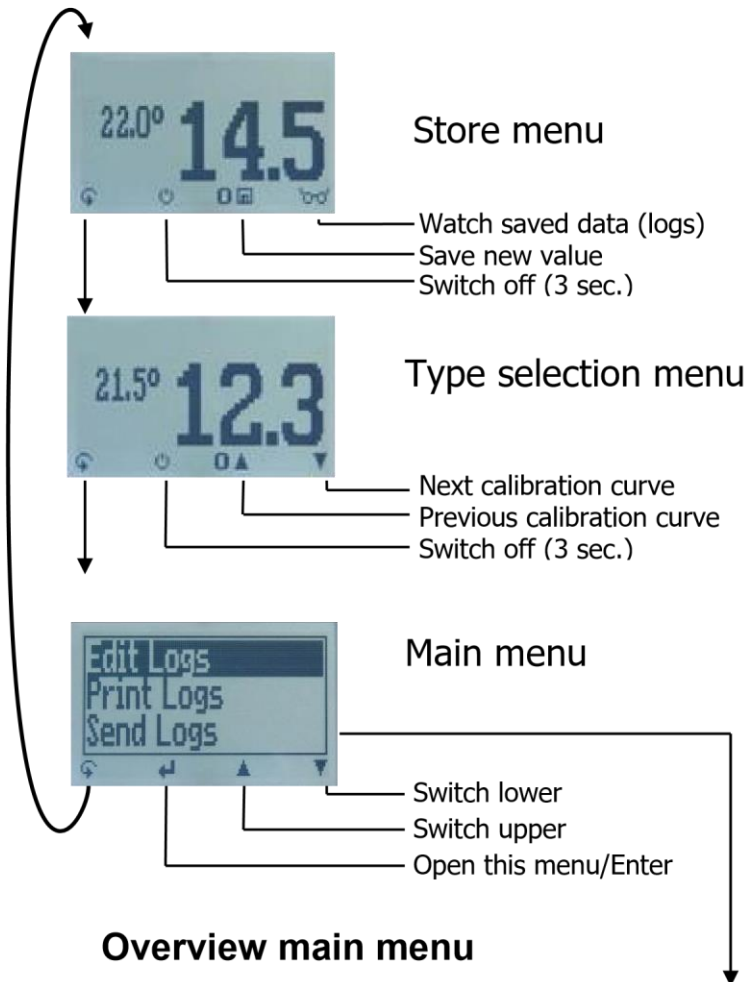
Cleaning instruction : In case of pollution, clean the contacts and the cap with a cloth and ethyl alcohol.

4.2 Marijuana cone/ground samples gravimetric procedure

To ensure correct measuring results, Using the provided scale and beaker wight out 3.0gm of cannabis products (whole buds or ground products) and add this to the Umberl chamber Put the cap (compressing fixture) onto the measuring chamber and tighten it to the stop. As soon as the measuring chamber is completely closed, the display shows the measuring value.



Menu level overview



Overview main menu

<i>Edit Logs</i> Manual Logs Clear Logs	<i>Options</i> Date / Time Log Time Language Unlock °C/°F o Userlevel BL On time Auto Off time Material calib. Password Reset SN. Logo Admin
<i>Print Logs</i> Last Log All Logs Clear Logs	
<i>Send Logs</i> Manual Logs Clear Logs	
<i>Options</i> <i>Status</i>	

Keypad symbols

Measuring window:

- Rolling Menu
- Power ON / OFF
- Switch upper
- Switch lower
- Save
- Hold
- Watch the saved data
- Add suppliers data



Menu:


- Enter
- Switch upper
- Switch lower
- Exit
- Enter numbers
- Enter letters
- Next or right
- Left
- Yes
- No
- Shift
- OK


Operating the instrument


Switching on: Press the button  for 3 seconds.

Setting date and time: 2 times  -> Options -> Date/Time

Saving measuring data: The shown value can be saved by pressing the button . Name the saved value by pressing the .

Hold: Select the menu item “Datalog time“ in the menu “Options“. Activate “Hold” there and change to the measuring window again. Pressing the button below the symbol , the measuring value will remain on the display until another button is pressed.

Display lighting: Press the  key briefly; the display lighting switches off automatically after approx. 30 seconds. Pressing any key activates the display lighting again.



Switching off: Press the  key for 3 seconds. The instrument switches off after releasing the key. The instrument switches off automatically after approx. 10 minutes.

Measuring range: If the measuring value is blinking in grey, the valid measuring range is exceeded. In this case the accuracy will be decreasing.



Activation of the “super user” function

2 times  - Options – Unlock

Enter the 4-digit password by using the  button (standard is the 4-digit serial number) and confirm by pressing the  button.

Changing the user level



Changing from advanced user to single user:


Make sure that you have activated the “super user” functions as per the instructions above. Afterwards change to the menu and choose “Options”.

In the submenu please select “o Userlevel” (2 times  - *Options – o Userlevel*)

Confirm by pressing the  button. Now the single user is activated.

Changing from single user to advanced user:

Keep both the buttons  and  pressed directly after switching on the device. Your humimeter automatically starts the main menu. Activate the “super user” functions as per the instructions above.

Navigate to “*Options – o Userlevel*” and confirm by pressing the  button.

Changing the batteries

If the battery symbol appears in the measuring window or if a critical charge of battery is shown in the status (!), the batteries must be changed IMMEDIATELY. If you do not use your humimeter device for a longer period, remove the batteries. For eventual resulting damages, we cannot provide any warranty.



Exemption from liability

For misreadings and wrong measurements and of this resulting damage we refuse any liability.




This is a device for quick determination of moisture. The moisture depends on multiple conditions and multiple materials. Therefore, we recommend a plausibility check of the measuring results.

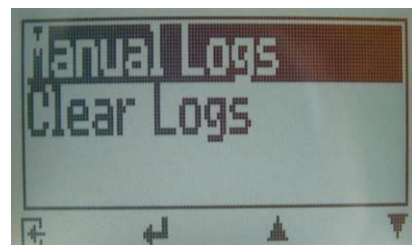
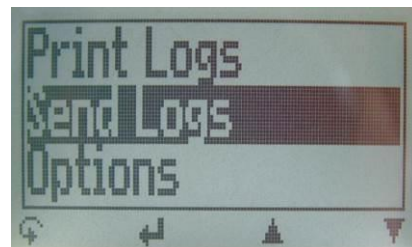
Each device includes a serial number and the guarantee stamp. If those are broken, no claims for guarantee can be made. In case of a faulty device, please contact Scigiene (www.scigiene.com).

Transfer saved data to the PC (only with optional USB data interface module)

To send your saved logs to the PC, connect the humimeter device to your PC using the USB cable that was provided with your device. Carefully loosen the protection cap on your humimeter and plug in the USB mini B connector. The bigger connector should be connected to a USB slot on your PC. Start the LogMemorizer software on your PC and switch on your humimeter. The data transfer can be started on your humimeter or on the software.

Starting the data transfer on the humimeter:

Press the  key until you reach the menu  (see image on the right). Then choose "Send Logs" and confirm by pressing the key. Now choose "Manual Logs" and confirm with  again. All saved logs will be sent to your PC.

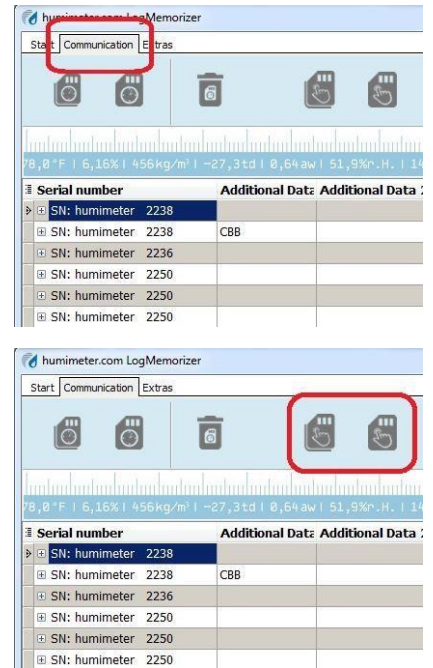


Starting the data transfer on your PC:

Press the field “communication” in the LogMemorizer software. The menu window shown on the right opens.

For transferring the data you can select “Import last manual log” (the last saved measuring series is transferred) or “Import all manual logs” (all saved logs are transferred). If you click on one of these menu items, the transfer starts immediately.

For the initial configuration of the software, please press the F1 key of your PC and read the help file.






Print saved data

(only with optional USB data interface module and Schaller thermo printer)

To print your saved data, connect the device to the printer using the printer cable that was delivered with your device. Carefully loose the protection cap on the humimeter. At first plug in the side of the connector with the close plastic casing at the humimeter.

Then switch on the device.

Not till then the other side of the cable has to be plugged in at the printer. Switch on the printer by pressing . Now the green LED is blinking. If it does not blink, please change the batteries and try again.

Press the  button at your humimeter until you reach the menu (see image on the right). Choose “Print Logs” and confirm by pressing .

Now you can select if you want to print the last saved measuring series or all saved measuring series (logs).

Confirm by pressing  again. The selected logs are printed out now.

To save paper, please think of clearing the data storage regularly.



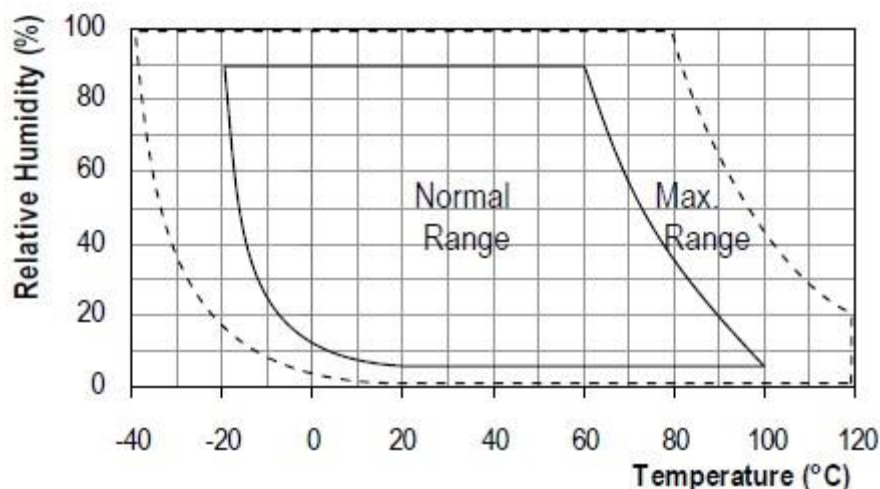
Device maintenance instructions

To ensure your device lasts for a long time, please do not expose it to strong mechanical loads or heat e.g. dropping it or direct sunlight exposure. Clean your device using a dry cloth. Any kind of wet cleaning damages the device.

The instrument is not rainproof. Keep it in dry areas. When the device isn't used for a longer period (2 months) or when the batteries are empty, they should be removed to prevent a leakage of the battery acid.

Application range air humidity sensors

Within the normal application range (normal range) the accuracy of the device is as indicated. A long-term application beyond the normal application range (max. range), particularly at an air humidity of more than 80%, can lead to higher measuring errors (+3% after 60 hours). Back in the normal application range, the sensor will return to the indicated accuracy automatically.



Packaging

If the device isn't used for a long duration of time, store it in the cardboard cylinder (or optionally the wooden or plastic case) that the device was delivered with. Do not discard the packaging! In case of returning the instrument for warranty or repair, use the original packaging. For damages in transport due to inadequate packaging; we refuse any liability.

Technical data

Resolution of display	0.1% material moisture (Marijuana) 0.5°C temperature
Operating temperature	0°C to 40°C / 32 to 104°F
Temperature range	-15°C to 85°C / 5 to 185°F
Storage temperature	-20°C to 60°C / -4 to 140°F
Temperature compensation	automatically
Power supply	4 pcs. of 1.5Volt AA <u>Alkaline</u> batteries
Auto Switch Off	after approx. 10 minutes
Current consumption	55 mA (with lighting)
Display	128 x 64 matrix display, lighted
Dimensions	145 x 65 x 27 mm
Weight	approx. 250g (with batteries and rubber protection cover)
Degree of protection	IP 40
Scope of supply	Humimeter FLM and cones (marijuana bud) sensor with rubber protection cover, 4 of 1.5Volt AA Alkaline batteries
Optional accessories	External sensors, test block, software etc.

External sensors

Measurement: **measuring range / resolution / accuracy**

Marijuana cones (loose bud) moisture sensor (13736):

water content: 6 to 40% / 0.1%

temperature °C: -15 to +85°C / 0.5°C / ±0.5°C (at 25°C)

temperature °F: 5 to 185°F / 0.9°F / ±0.5°F (at 77°F)

ATTENTION: Risk of injury by measuring head!

IMPORTANT! Please read!

Keep away from children younger than 16 years!

Most common reasons for misreadings

- **Product temperature out of application range**
Material below 0°C or above +40°C may cause faulty measurements. The storage of cold material in a warm storage area usually creates condensed water which may lead to major measuring errors.
- **Too short conditioning time**
- **Discrepancy in temperature between device and material**
Please ensure that the device and the material under test are being stored at the same temperature before measuring. Protect your measuring device from direct sunlight for a reasonable time period before taking a measurement. A high temperature difference has a negative effect on the stability of the measurement results.
- **Wrong calibration curve for warmed-up insertion probe**
- **Wrong calibration curve**
Double check the correct selection of the calibration curve before measuring.
- **Wet or mouldy material**
- **Frozen measuring material or material containing snow** This leads to a major decrease in accuracy.
- **Plug-in direction (for bales)**
The plug-in direction has a great influence on the accuracy. Necessarily follow the instructions according to page 13 of this manual!
- **Compressed density outside the application range** If the compressed density differs from that specified, there may be deviations.
- **Moving the measuring head after plugging in leads to misreading!**
- **Water film at the measuring head**
After measuring wet material a water film can arise on the sensor head. This may cause a too high result in the following measurements. After measuring wet material, clean both black plastic parts of the measuring head accurately with a dry cloth.



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