C054-E053D

SHIMADZU
Excellence in Science

Electronic Moisture Balance

# MOC-120H

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## Accurate moisture measurement with new weight sensor

## Features

1. Large sample pan allows even a large amount of sample to be placed evenly in a thin layer. The result is accurate and fast measurements.

2. Mid-wave infrared quartz heater provides effective drying without interference for a wide range of samples. Besides the excellent drying performance, it offers a long operational life of 20,000 to 30,000 hours.

3. The internal precision weighing balance is engineered with a Shimadzu UniBloc cell. The mechanism provides excellent stability and a long operational life against repeated temperature changes.

4. Digital control allows a selection of measurement modes. 10 sets of measurement settings can be stored for quick recall. Select one of the 9 combinations of drying and halting modes to optimize the measurement of your sample.

5. Weight loss rate in the previous thirty seconds is monitored and visually presented in the bar graph display. This feature is especially useful to show that the measurement is close to completion.

6. Shimadzu's unique WindowsDirect function is standard. Measurement data can be sent to an application such as Excel® without any software installation to the computer. All you need to add is an RS-232C cable.

   If you'd like to use "WindowsDirect" with "Windows 7", "Windows Vista", or a USB port, please contact our distributors.

7. A larger sample pan contributes to accurate measurements, but the larger heat capacity normally produces larger zero drift due to temperature fluctuation. The MOC-120H is equipped with a unique auto-taring mechanism, which adjusts the zero drift automatically and ensures high accuracy, even with a larger sample pan.

8. Bias function allows adjustment to the data obtained by other measuring methods or other testers.

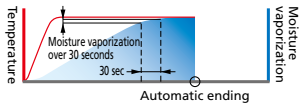
9. Large backlit LCD is easily read even under poor lighting conditions.

## Choice of measuring modes meets your application.

# Ending modes

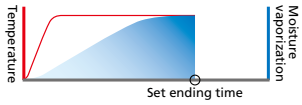
### ● Automatic ending mode

Automatically ends measurement when moisture loss over the previous 30 seconds becomes smaller than specified percentage.




### ● Timed ending mode

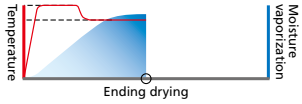
Automatically ends measurement when the specified amount of time has elapsed.




# Alternate drying modes

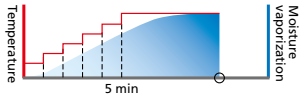
### ● Rapid drying mode

First dries with the highest temperature for the specified period, then shifts to the specified temperature shortening measurement time.



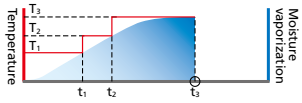

### ● Slow drying mode

Gently heats samples that might solidify at the surface or samples that reduce under high temperature.



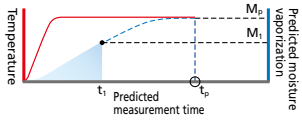

### ● Step drying mode

Allows step by step change of drying conditions. This feature is useful when measuring samples that contain a large amount of water.




# Predictive measuring mode

With preparatory measurements of the sample, the final result is predicted from the drying process, saving time in repeated measurements.




## Bar graph display monitors moisture vaporization

### ● Bar graph display

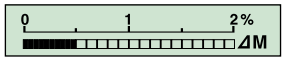



Figure 1

### ● Vaporized moisture and vaporization rate

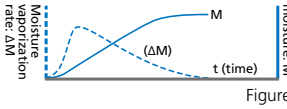



Figure 2

### ● What is moisture vaporization rate display

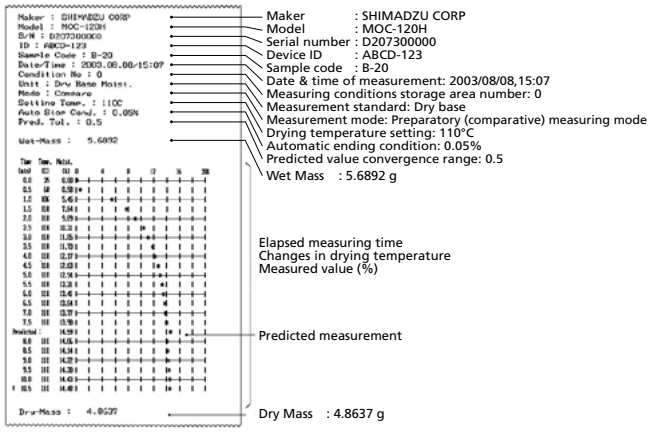
In drying by infrared heater, a large amount of moisture vaporizes in early stage and vaporization slows towards the end of measurement.

The M curve in Figure 2 shows a typical vaporization of moisture.

ΔM indicates the rate of vaporization. Monitoring ΔM makes it possible to gauge how close the measurement is to completion. The bar graph display makes it visible. (Figure 1)

## Data output with the optional printer

### ● Example of print out in the graph output mode




## Different forms of samples can be measured.

Most samples which vaporize only moisture and cause no hazardous reaction under heating can be measured

● Powder ● Particles ● Paste or liquid

## Various materials can be measured.

● Cereals ● Other foods ● Chemical resin

Cereal, starch, flour, noodles, brewed products, sea foods, meat products, spices, sweets, diary products, vegetable oil, soil, ore, cokes, glass, cement, chemicals fertilizer, paper, pulp, cotton, fibers.

## Meets demands of various industries and fields

Pharmaceuticals, agriculture, food processing, textiles, chemicals, fertilizer, paper, construction.

## Specifications

| Model (P/N) | MOC-120H (321-63300-10) |
|---|---|
| Measuring method | Heat drying and weight loss |
| Sample pan size | 130 mm dia |
| Minimum display in weighing | 0.001 g |
| Measurement range of moisture content | 0.01% to 100.00% |
| Moisture content minimum display | 0.01% |
| Sample capacity | 120 g |
| Measurement modes | Automatic or Timed ending modes, Standard, Rapid, Slow and Step drying modes, Predictive Measuring mode |
| Drying heater | Mid-wave infrared quartz heater |
| Setting temperature range | 30 to 200°C by 1°C increments (Sample position temperature) |
| Dimensions | 220W × 415D × 190H (mm) |
| Weight | 4.5 kg |
| Operational temperature and humidity range | 5 to 40°C, 85% RH or lower |
| Power requirements | AC 100 to 120 / 220 to 240 V, 640 W maximum |
| Standard accessories | Sample pan 2 pcs, Sample pan handler 2 pcs, Aluminum sheet 20 pcs, Spoon, Spatula |
| Stored procedures | 10 |

## Peripherals, Accessories

**Electronic Printer (w/o AC adapter)**

**AC Adapter for Electronic Printer 120 V**

**AC Adapter for Electronic Printer 230 V**

GLP/GMP/ISO conforming calibration report can be produced. Intermediate status and final results of measurements can be printed out graphically.

(Includes connection cable, printer paper 1 roll.
AC Adapter should be separately ordered.)

**Temperature Calibration Kit**

For temperature calibration at sample position, with calibration report.

**RS-232C cable**

For connecting with computer.
Data can be sent without software (WindowsDirect).

## Consumables, Supplies

**Aluminum sheet 500 pcs**

**Printer paper for optional electronic printer 10 rolls**

**In use protection cover (1 pc as standard)**

### ⚠ Safety Precautions

Read Instruction manual and understand before use of this instrument.

- Use this instrument for measurements in which water vaporizes from the sample under heating.
- The temperature of the heater installed in this instrument becomes higher than the set heating temperature for the sample.
- Any sample that is explosive, inflammable or may cause hazardous reaction under heating must not be measured with this instrument.

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