TORONTECH

AUTOMATIC-DOOR HALOGEN MOISTURE ANALYZER

Automatic-Door Halogen Moisture Analyzer - ToronMA™ AH Series

ToronMA™ AH Series halogen moisture analyzer uses a split-type design that places the indicator unit separately from the heating chamber, allowing each component to be repositioned or serviced independently. Four models cover 110g and 210g capacities, each with 1mg weighing precision and 0.01% moisture readability across a 40–230°C halogen heating range. Plus variants add a 10000mAh lithium battery and wireless communication for portable deployment. A fully automatic chamber door, dual-motor and dual-fan system, and multi-layer stainless steel heating chamber are standard across all configurations.

Intelligent dual-temperature control monitors the heating chamber and ambient conditions, adapting the halogen lamp output to maintain the target drying temperature throughout each cycle. A transparent viewing window lets the operator observe the sample during drying without opening the door or interrupting the measurement. The 7-inch full-color touchscreen presents the real-time drying curve, moisture content in percentage, and dry mass values throughout each test. Fifteen functional settings cover heating mode, temperature calibration, sample method selection, and data storage across 20 addresses and 20 historical records.

The split-type design places the indicator unit (200 × 135 × 80 mm) separately from the heating chamber (415 × 215 × 195 mm), allowing each component to be repositioned or serviced independently. The multi-layer stainless steel chamber and high-temperature molded polymer housing provide durability in continuous moisture testing environments. The 400W halogen element operates on 220V or 110V mains, with a 24V dual-motor system powering the door and fan. RS232 is standard; optional USB adds PC data export and printer connectivity.

APPLICATIONS

Automatic-Door Halogen Moisture Analyzer - ToronMA™ AH Series Applications

The ToronMA™ AH Series suits production-line and laboratory moisture testing where the split-type design supports flexible instrument placement and the wireless plus variants extend deployment to battery-powered and cable-free testing stations.

- **Food and Grain Processing**: moisture determination in soybeans, corn, rice, white sugar, and other agricultural commodities where moisture content affects storage stability, weight-based pricing, and processing parameters
- **Pharmaceutical and Traditional Medicine**: moisture testing of tablets, capsules, and herbal products for quality verification and compliance with pharmacopoeial moisture specifications
- **Plastics and Polymer Manufacturing**: moisture content determination in polymer pellets and resins before extrusion or injection molding to prevent processing defects from excess water
- **Paper and Packaging Materials**: moisture verification in paper, board, and packaging materials where water content affects dimensional stability, strength, and print quality
- **Chemical Processing and Raw Materials**: incoming material moisture verification and in-process moisture monitoring for chemical intermediates and specialty materials
- **Agricultural and Commodity Grading**: moisture measurement for storage-lot acceptance, commodity trading, and drying process control of harvested agricultural products
- **Cosmetics and Personal Care**: moisture content verification of raw materials and finished formulations where water activity affects product texture, stability, and microbial risk
- **Industrial Production QC**: continuous production-floor moisture monitoring where wireless connectivity and battery backup support flexible deployment at batching stations and production lines

Soybean
13%

Western medicine
5%

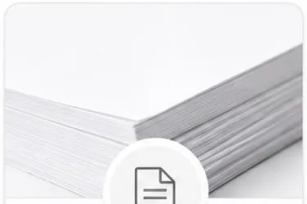
Chinese herbs
7–15%

Corn
14%

Rice
15%

Plastic
0.25%

White sugar
5.5%



Paper
6%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TeronMA™ AH Series
Automatic Dual Halogen Moisture Analyzer
2014/01/02
12:00:09
120 °C
Auto
00:00
Auto drying
15:00:00
Method 1
Tare : 0.000 g
Dry : 120 °C
End : Auto
0. 000
g
MOISTURE ANALYZER

FEATURES

Automatic-Door Halogen Moisture Analyzer - ToronMA™ AH Series Key Features

The ToronMA™ AH Series delivers split-type halogen moisture analysis with automatic door, dual-fan cooling, and optional battery and wireless connectivity across four models.

7 Inch
Touch Screen

Print Setting

RS232

Ext. Cal.

Automatic Door

USB (Optional)

- **Split-Type Design**: indicator unit and heating chamber are housed separately, enabling independent repositioning, maintenance, and component access without disturbing the weighing assembly
- **Fully Automatic Chamber Door**: dual-motor mechanism opens and closes the chamber without operator contact, reducing vibration-induced weighing error during sample loading and unloading
- **High-Brightness Halogen Lamp (400W)**: rapid radiant heating reaches the target drying temperature faster than convective oven methods, with 400W output maintaining consistent thermal conditions across the φ100 mm pan
- **Intelligent Dual-Temperature Control**: monitors both the heating chamber and the ambient environment, adjusting lamp output to maintain the target drying temperature despite room temperature variation

- **Dual-Motor and Dual-Fan System**: independent motors drive the automatic door and cooling fan, with the dual fans accelerating chamber cool-down between consecutive tests
- **Multi-Layer Stainless Steel Heating Chamber**: layered construction distributes heat uniformly around the sample and withstands repeated thermal cycling in production and laboratory testing schedules
- **High-Temperature Molded Polymer Housing**: outer casing sustains the thermal loads generated by continuous moisture testing with a 400W halogen lamp
- **Transparent Viewing Window**: allows the operator to observe the sample during drying without opening the door or interrupting the measurement cycle
- **7-Inch Full-Color Touchscreen**: displays the real-time dynamic drying curve, moisture percentage, and dry mass values on a large, clear interface across the full test duration
- **Real-Time Dynamic Drying Curve**: plots moisture content against elapsed time throughout the drying cycle, letting the operator monitor equilibrium and confirm test completion
- **Moisture and Dry Mass Display in Percentage**: shows both moisture percentage and residual dry mass percentage simultaneously for complete sample characterization
- **10000mAh Lithium Battery (Plus Models)**: built-in rechargeable battery enables untethered operation for portable deployment on production lines and field testing
- **Wireless Communication (Plus Models)**: eliminates the data cable between indicator and heating chamber, supporting flexible component positioning on bench or production line

- **15 Functional Settings**: heating mode, stop mode, temperature calibration, sample testing method selection, environment calibration, baud rate, data storage, date/time, and language
- **20-Set Data Storage**: stores 20 test programs and 20 historical records supporting standard production QC and laboratory testing throughput
- **RS232 Interface (Standard) and USB (Optional)**: connects to PCs, printers, and thermal printers for GLP-format data export and result label printing
- **CN/EN Bilingual Interface**: switchable Chinese/English language setting supports multi-region laboratory and production environments
- **Time Setting (1–99 min, 10s Step)**: test duration is configurable in 10-second increments for sample-specific drying protocols
- **External Calibration**: all models calibrate with a user-supplied reference weight, maintaining weighing traceability at user-defined intervals

THEORY & METHOD

Theory and Method

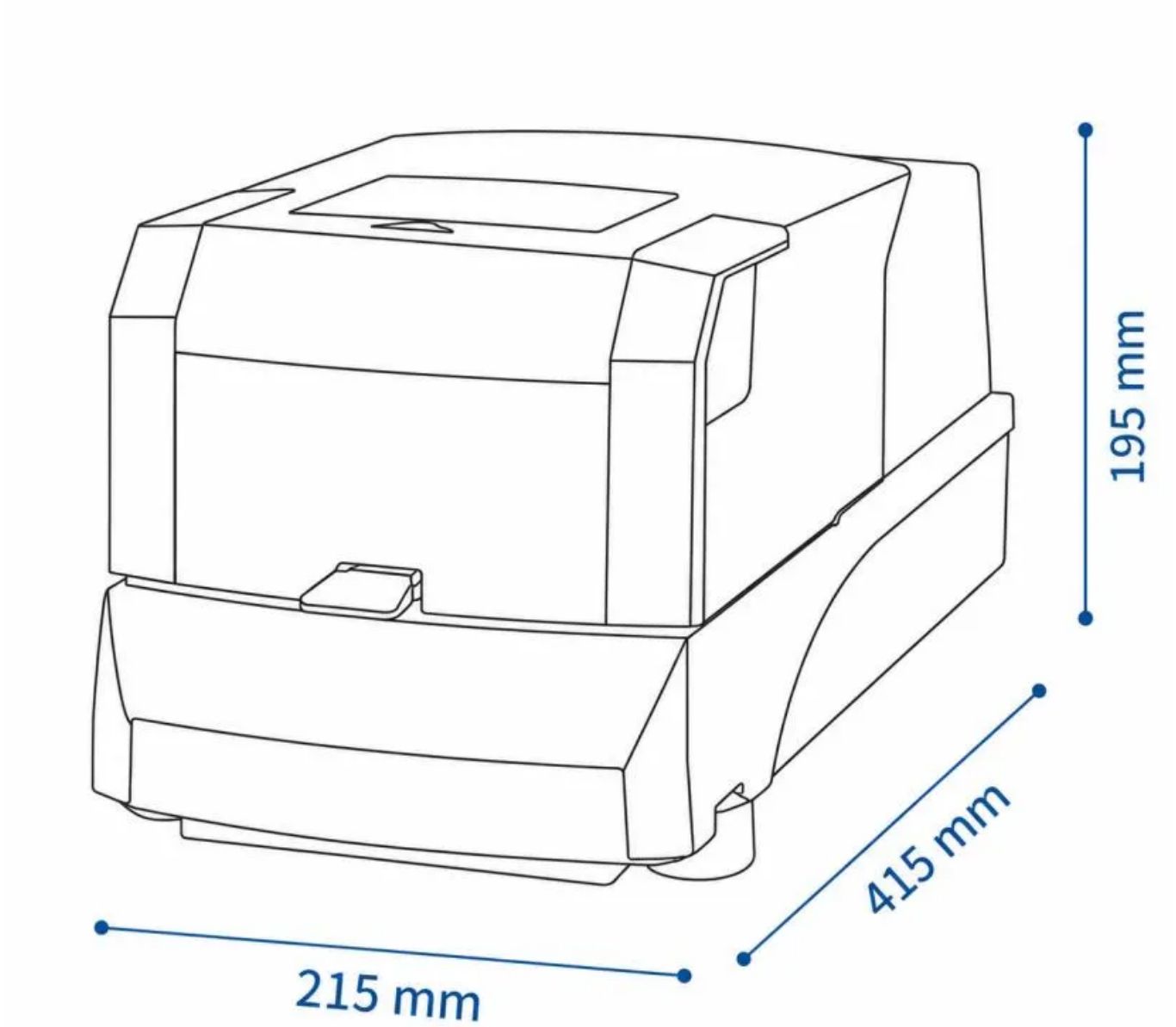
The ToronMA™ AH Series applies the drying loss principle: the balance continuously weighs the sample during halogen lamp heating, and moisture content is calculated as the percentage of initial mass lost. Halogen radiation delivers rapid, top-down heat to the φ100 mm pan, reaching set temperature faster than convective methods. Intelligent dual-temperature control adjusts lamp output using both the chamber sensor and an ambient sensor. A real-time curve on the touchscreen plots mass loss against time as drying progresses.

The split-type housing separates the balance electronics and display from the heating chamber, isolating the weighing cell from vibrations and thermal effects of the halogen lamp assembly. The fully automatic door opens and closes via a dual-motor mechanism without operator contact, reducing vibration-induced error at the start and end of each drying cycle. A dual-fan cooling system accelerates post-test cool-down, reducing the time between consecutive measurements. The multi-

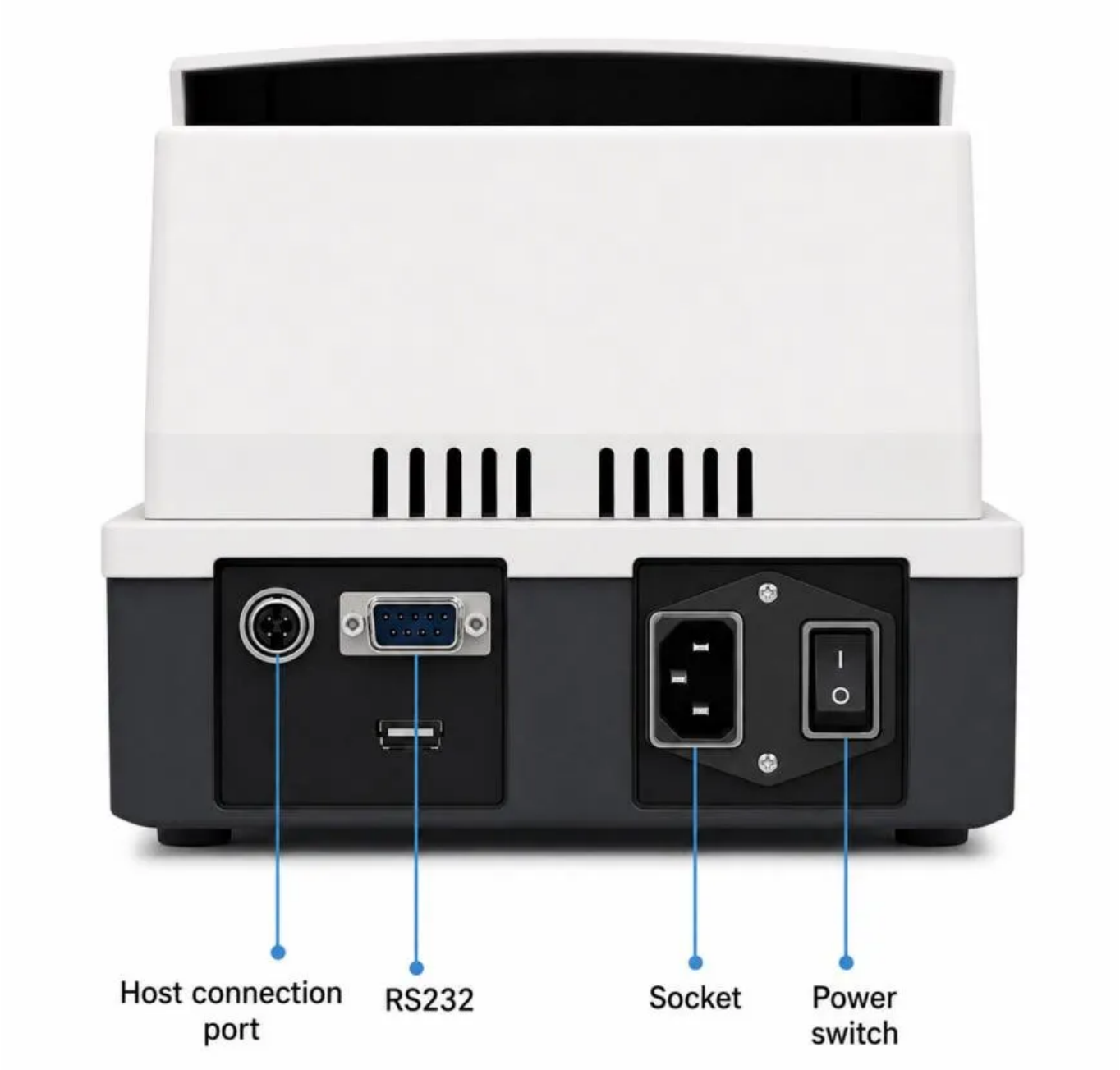
layer stainless steel chamber and high-temperature polymer housing sustain repeated thermal cycling in production testing schedules.

TECHNICAL SPECIFICATIONS

Automatic-Door Halogen Moisture Analyzer - ToronMA™ AH Series Technical Specifications


195 mm
415 mm
215 mm


80 mm
135 mm
200 mm
Standard
130°C
4:55
4:55
Auto
Moisture
0.000
%
Dry Basis
20.000 g
Tare
Settings


Host connection port
RS232
Socket
Power switch

MOISTURE DETERMINATION

Model:	ToronMA™ AH100
Heating Mode:	STANDARD
Stop Mode:	AUTOMATIC
Heating Temp:	130°C
Heating Time:	4:05
Wet W:	20.000g

ToronMA™ AH Series Models

Parameter	ToronMA™ AH100	ToronMA™ AH100+	ToronMA™ AH200	ToronMA™ AH200+
Capacity	110 g	110 g	210 g	210 g
Readability	1 mg (0.001g)	1 mg (0.001g)	1 mg (0.001g)	1 mg (0.001g)
Moisture Readability	0.01%			
Moisture Range	0.00%–100.00%			
Dry Range	100.00%–0.00%			
Dry Readability	0.01%	0.01%	0.01%	0.01%
Lithium Battery	Not included	10,000 mAh	Not included	10,000 mAh
Communication	Data cable	Wireless	Data cable	Wireless
Calibration Mode	External			

Common Specifications

Parameter	Specification
Pan Size	φ100 mm
Heat Source	Halogen lamp
Temperature Sensor	High-precision thermal resistance
Temperature Range	40°C–230°C, 1°C Step
Time Setting	1–99 min, 10s Step
Working Temperature	15–30°C

Parameter	Specification
Display	7-inch HD touch screen
Open Mode	Fully automatic chamber door
Data Storage	20 storage addresses, 20 historical records
Interface	RS232 (Standard), USB (Optional)
Heater Power	220V ±15%, 50Hz / 110V ±15%, 60Hz; 400W
Balance Power	Input: 220V 50Hz / 110V 60Hz; Output: 9V
Complete Instrument	Input: 220V / 110V; Output: 24V; Dual-motor system
Operation Height	275 mm
Chamber Height	35 mm
Indicator Dimensions (W × D × H)	200 × 135 × 80 mm
Product Dimensions (W × D × H)	415 × 215 × 195 mm
Packing Dimensions	575 × 375 × 455 mm
Gross Weight	10 kg

TORONTECH.com

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