



Your Trusted Partner for Moisture Analyzers

Ensuring Efficient Workflows and Quality Products



METTLER TOLEDO

Introduction

Fast and Precise Moisture Determination

METTLER TOLEDO moisture analyzers provide fast, precise, and reliable moisture content results. Robust and easy to use, they are ideal for quality control and in-process control applications. Thanks to the rapid measurement time, they empower you to make fast decisions at critical points in your production workflow to maintain product quality and consistency.

Our moisture analyzers are suitable for use in a wide range of industries, from highly regulated pharmaceutical laboratories to food production to plastics manufacturing.



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Moisture Determination

Overview of Various Technologies

	Drying Oven	Moisture Analyzer	Karl Fischer Titration	Near-Infrared Spectroscopy (NIR)
Description	Thermogravimetric principle	Thermogravimetric principle	Chemical oxidation reaction principle	Infrared spectroscopic principle
Advantages	<ul style="list-style-type: none">• Often is the reference method• Several samples can be analyzed at the same time• Large sample volumes possible	<ul style="list-style-type: none">• Fast measurement time (typically 5-15 min)• Simple handling• No manual calculations• Compact instrument, no balance or desiccator required• Suitable for at-line use	<ul style="list-style-type: none">• Water-specific (measure from 2ppm to 100% water)• Fast measurement time (typically 0.5 to 3 min)• Compact instruments• Automatic calculations• Possibility to have an autosampler	<ul style="list-style-type: none">• Fast measurement time (typically 0.5 to 1 min)• Little to no sample preparation• Recovery of intact sample• Multiparameter
Disadvantages	<ul style="list-style-type: none">• Very long measurement time (hours)• Substances other than water may evaporate• Prone to errors because of the high level of manual handling and the number of calculations required• Unsuitable for at-line use	<ul style="list-style-type: none">• Substances other than water may evaporate	<ul style="list-style-type: none">• No other solvent or "moisture" is determined• Requires dedicated chemical know-how• Sample preparation can be critical for complete water extraction	<ul style="list-style-type: none">• Calibration is difficult (typically, a moisture analyzer is needed)• Expensive devices• High maintenance costs• Can only measure down to 0.1 %MC



Benefits of METTLER TOLEDO Moisture Analyzers

Fast Results Without Compromising Precision



Accurate and reliable results: Thanks to halogen heating technology



Fast results: Results in just a few minutes



Trusted quality and durability: Built to last with high-quality easy-to-clean materials



Easy to use: User-friendly interface and intuitive controls for easy operation



Seamless data management: Easy data management and full connectivity



Fit-for-purpose accuracy: Verified using the METTLER TOLEDO Good Moisture Analysis Practice (GMAP)



Benefits of METTLER TOLEDO

METTLER TOLEDO is a leading global manufacturer of precision instruments and services for use in laboratories and manufacturing.



Global presence: Sales and Service organizations in 40 countries



Constant innovation: Driven to improve precision, customer workflows, and digitalization



Sustainability in focus: Strong corporate responsibility for sustainability



Comprehensive service portfolio: Highly trained service workforce with state-of-the-art service offerings



Introducing Good Moisture Analysis Practice

Ensuring Your Moisture Analyzer is Fit for Purpose

Good Moisture Analysis Practice (GMAP™) is a scientific, risk-based guideline for the quality management of moisture analyzers. GMAP helps to ensure that you are using an instrument appropriate to your needs. It includes how to calibrate and test your moisture analyzer to ensure that it is fit for purpose in terms of accuracy over time.

Following GMAP principles leads to:



Consistent and better product quality

Measure moisture content reliably and accurately based on your specific requirements.



Increased financial gains

Improve your process efficiency, optimize your testing for less downtime, and reduce waste and rework.



Worry-free compliance

Enhance your instrument qualification process with the GMAP information.



Selecting the Right Moisture Analyzer Based on Good Moisture Analysis Practice

How to Select a Fit-for-Purpose Device

To find a moisture analyzer that is right for you and your needs, you must consider the following aspects:

- 1 The lowest moisture or dry content you want to measure
- 2 Your process tolerances and process risks
- 3 Sample characteristics and the weight of the sample you want to analyze
- 4 Environmental and external influences
- 5 Data handling and user needs
- 6 Regulatory demands

GMAP Recommendation

METTLER TOLEDO can help you select the right moisture analyzer. Our free GMAP Recommendation service includes a risk-based fit-for-purpose check. The GMAP Recommendation document provides the expert information you need before making a purchase decision. Request your free [GMAP Recommendation](#).





Portfolio Overview

Different Levels for Different Needs

Excellence Level: High-Performance Analysis



With highly accurate and repeatable results for any sample type, these moisture analyzers are ideal for applications with low moisture content, high-risk processes, or highly regulated markets.

Products: HX204 and HS153

Advanced Level: Reliable Allrounder



This product is suitable for use in many industries. It offers user-guided touchscreen operation with method shortcuts for ease of use. The compact, robust design is ideal for both quality labs and in-process control applications.

Product: HC103

Standard Level: Entry to Moisture Analysis



These moisture analyzers are reliable, easy-to-use, and affordable instruments with simple functions for general moisture analysis. They offer straightforward, 3-step operation with method buttons.

Products: HE73 and HE53



Excellence Level

High-Performance Moisture Analyzers

What makes them unique:

- Highest accuracy (up to 0.1 mg readability) even for low moisture content (>0.01 %MC)
- Faster results:
 - Shortcuts and user guidance
 - Weigh-in aid
 - QuickPredict™ predicts results in a fraction of the usual time¹
- Data compliance:
 - LabX connectivity option²
 - User management with individual rights and password protection
 - Integrated routine testing
- Flexible connectivity:
 - Network connectivity
 - Various interfaces and export options

Who are they for:

Where moisture results are critical, these instruments offer the highest accuracy even for low moisture content (>0.01 %MC with HX204). They are perfect for processes where highly accurate moisture determination is required and/or where compliance is essential.

Products:

HX204 and HS153



¹ Optional on the HS153

² Exclusively available for the HX204



Advanced Level Solid, All-Round Performance

What makes it unique:

- Ease of use:
 - Large 7" touchscreen, suitable for operation with gloves
 - Shortcuts and user guidance
 - ID sample management
 - Weighing-in aid
 - Method Wizard for guided method development
- Designed to last:
 - Easy to clean
 - Small footprint
 - Fast results with halogen heating
 - Accurate results with proven weighing technology
- Flexible connectivity:
 - Various interfaces and connectivity options

Who it is for:

This moisture analyzer is perfect for determining moisture or dry content in laboratories or production environments in various industries such as chemicals or food and beverages. It is easy to handle by lab technicians and production workers.

Products:

HC103



Standard Level

Entry to Moisture Analysis

What makes them unique:

- Affordable quality:
 - Fast results with halogen heating
 - Accurate results with proven weighing technology
- Robust and compact design:
 - Easy to clean
 - Robust metal housing
 - Small footprint
 - Bright and clear LCD display
 - Designed to last
- Ease of use:
 - Simple 3-step operation
 - On-screen assistance
 - Suitable for untrained operators
 - Progress indication during operation

Who are they for:

Reliable, cost effective and simple instruments for determining the moisture content of common everyday samples in various industries.

Products:

HE73 and HE53





Comparison Table

Find the Instrument That Best Suits You

		HX204	HS153	HC103	HE73	HE53
Recommended %MC		>0.01%	>0.5%	>1.0%	>1.0%	>1.0%
Drying Temperature	Range [°C]	40 – 230	40 – 230	40 – 230	50 – 200	50 – 160
Repeatability (sd)	With 2 g sample	0.05%	0.05%	0.10%	0.15%	0.15%
	With 10 g sample	0.01%	0.01%	0.02%	0.05%	0.05%
Capacity		201 g	151 g	101 g	71 g	54 g
Drying Programs	Standard, rapid	✓	✓	✓	✓	✓
	Gentle	✓	✓	×	×	×
	Step	✓	×	×	×	×
Switch-Off Criteria	Weight loss / time (mg/s)	5 automatic, free	5 automatic, free	5 automatic, free	Auto, free	Auto
	Time (min)	1– 480	1– 480	1– 480	1–120	1–120
QuickPredict		✓	Optional	×	×	×
Test and Adjust	Temperature [°C]	Freely definable	Fixed at 100/160	Fixed at 100/160	Fixed at 100/160	Fixed at 100/160
	Automatic Internal Adjustment	✓	×	×	×	×
Result Handling	Control charts	✓	✓	×	×	×
	ID management	✓	✓	✓	×	×
User Management		User groups and multiple users with password protection		Protection of settings	×	×
Connectivity and Data Management	LabX ready	✓	×	×	×	×
	EasyDirect	✓	✓	✓	×	×
	Ethernet	✓	✓	×	×	×
	USB device / host	1/2	1/2	1/2	×	×
	SD card	✓	✓	×	×	×
	RS232	✓	✓	✓	✓	✓
	A4 network printing	✓	✓	×	×	×
	Export to sFTP server	✓	✓	×	×	×
Method Development Support		Method Wizard, test measurement, temperature assistant		Method Wizard	×	×
Storage	Methods	300	100	20	2	1
	Results	3000	3000	100	1	1
Ease of Use	Automatic lid	✓	×	×	×	×
	Real-time drying curve	✓	✓	✓	×	×
	Display	7-inch color touchscreen terminal		7-inch color touchscreen	LCD	



Supporting You With Moisture Methods

The Right Method at the Right Time

Different samples require specific drying methods based on their unique properties. A robust drying method includes proper sample preparation, a suitable drying temperature, an appropriate drying program, and the correct switch-off criterion.

Whether you are changing from a different technology, another brand, or a previous generation of moisture analyzers, we are here to help you with comprehensive method support to achieve the results you expect.

Thinking of changing technologies?

Our [white paper](#) proves that our moisture analyzer results are comparable to those from other methods, such as the drying oven. It also includes practical guidance and tips for moisture analysis.

Resources for drying methods

Take advantage of our years of experience in developing drying methods. On this page, there are multiple resources available to help you, including various [Application Notes and Method Collections](#).

Create your own method easily

Use the integrated Method Wizard* to help you create new drying methods. Simply follow the 3-step procedure, which consists of:

- 1 Questionnaire
- 2 Temperature assistant
- 3 Test measurement

Switch easily between methods

If you frequently need to switch methods for different sample types, you can benefit from the integrated method storage. Various storage options are available.



Learn more about drying methods and get methods for many different samples:
www.mt.com/moisture-methods

*Model dependent

Data Management

Simplify Your Data Handling

Correct data management is crucial. METTLER TOLEDO offers solutions for regulated as well as non-regulated environments.



LabX Software

LabX™ is a powerful software tool that helps optimize lab operations to streamline workflows, enhance efficiency, and support compliance through robust data integrity (adhering to ALCOA++ principles). LabX consolidates all METTLER TOLEDO instruments—including moisture analyzers¹—into one interface, enabling efficient information flow and simplified maintenance.

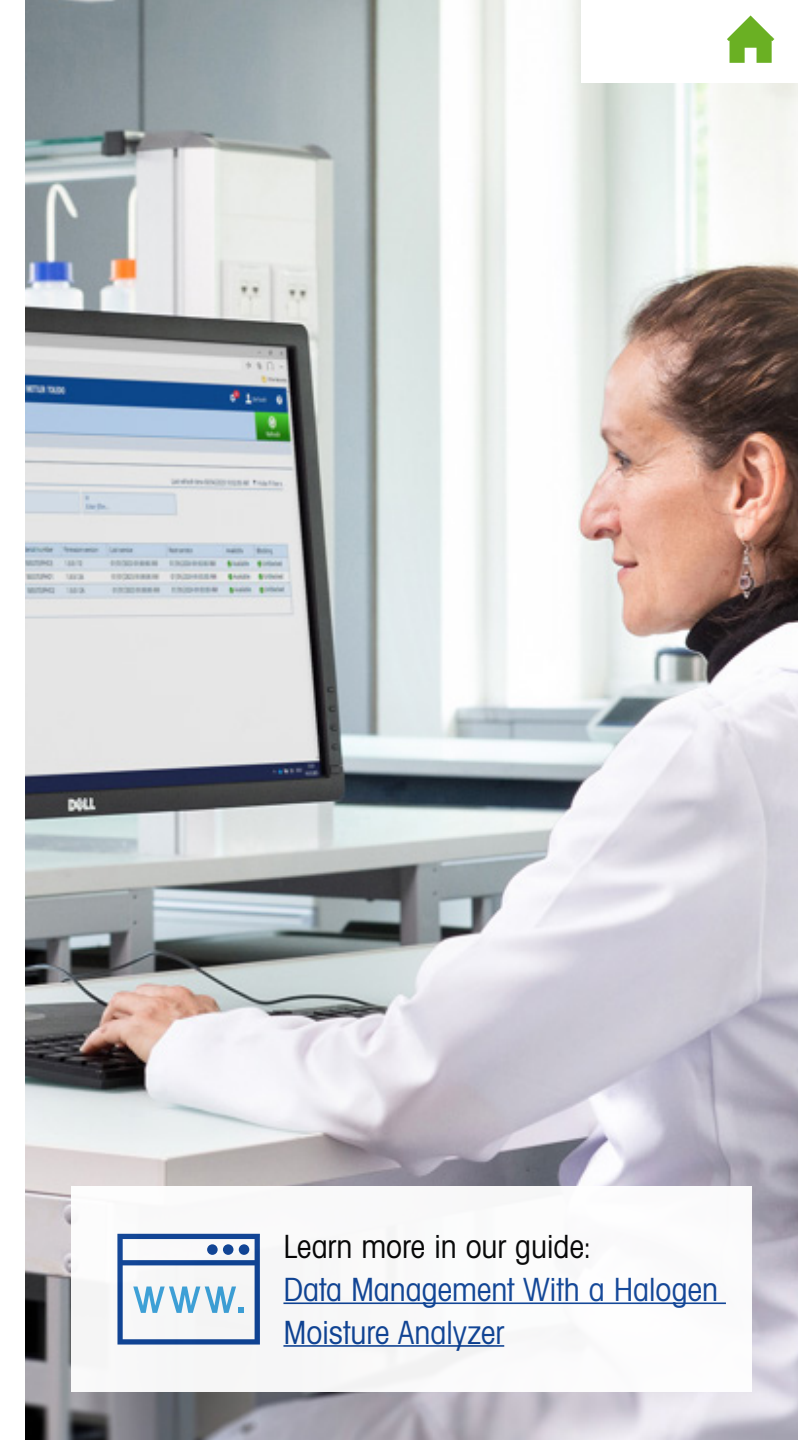
[Learn more](#)



EasyDirect Moisture Software

EasyDirect™ Moisture is a data management software that facilitates efficient result handling, statistical results evaluation, file export, and serves as a repository for instrument and settings backups. This PC software simplifies data management for up to five instruments, eliminating the need for tedious manual recording. [Learn more](#)

¹ Available in Q2/2025



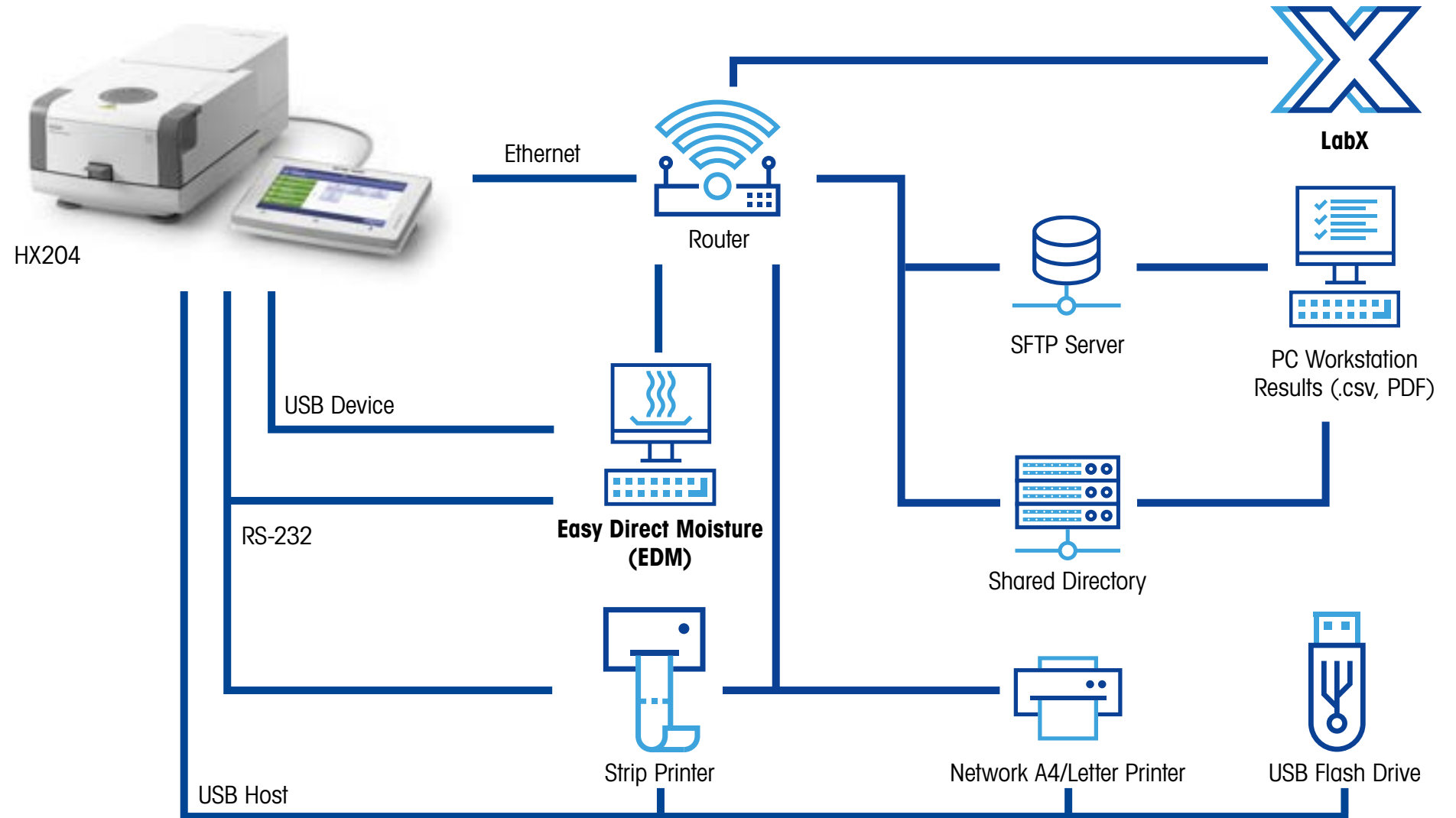
Learn more in our guide:
[Data Management With a Halogen
Moisture Analyzer](#)



Data Management and Connectivity

for HX204, HS153, HC103, HE73 and HE53

Connectivity options for

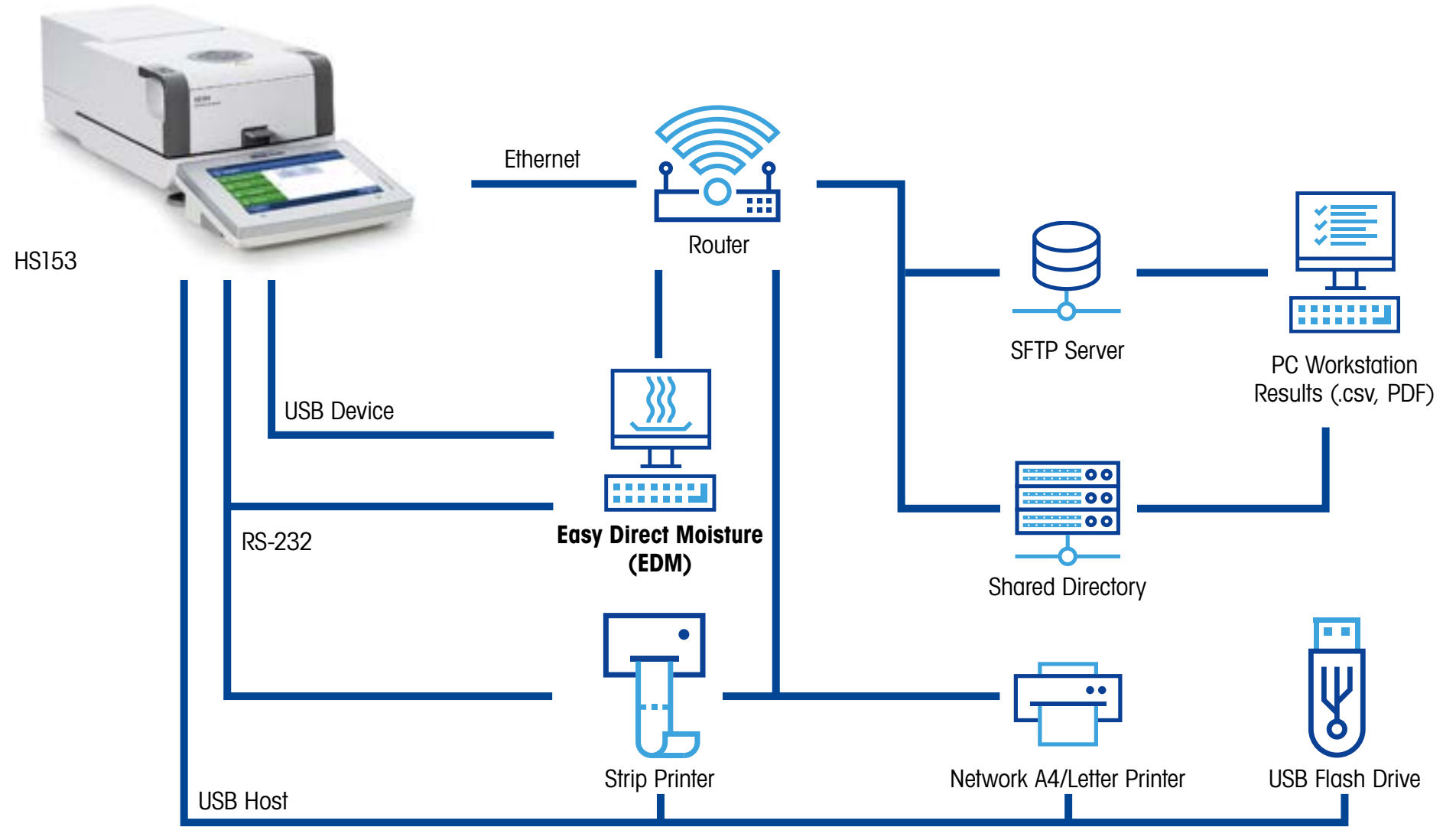


Please click on above product names to see Moisture Analyzer Connectivity



Data Management and Connectivity for HX204, HS153, HC103, HE73 and HE53

Connectivity options for



Please click on above product names
to see Moisture Analyzer Connectivity



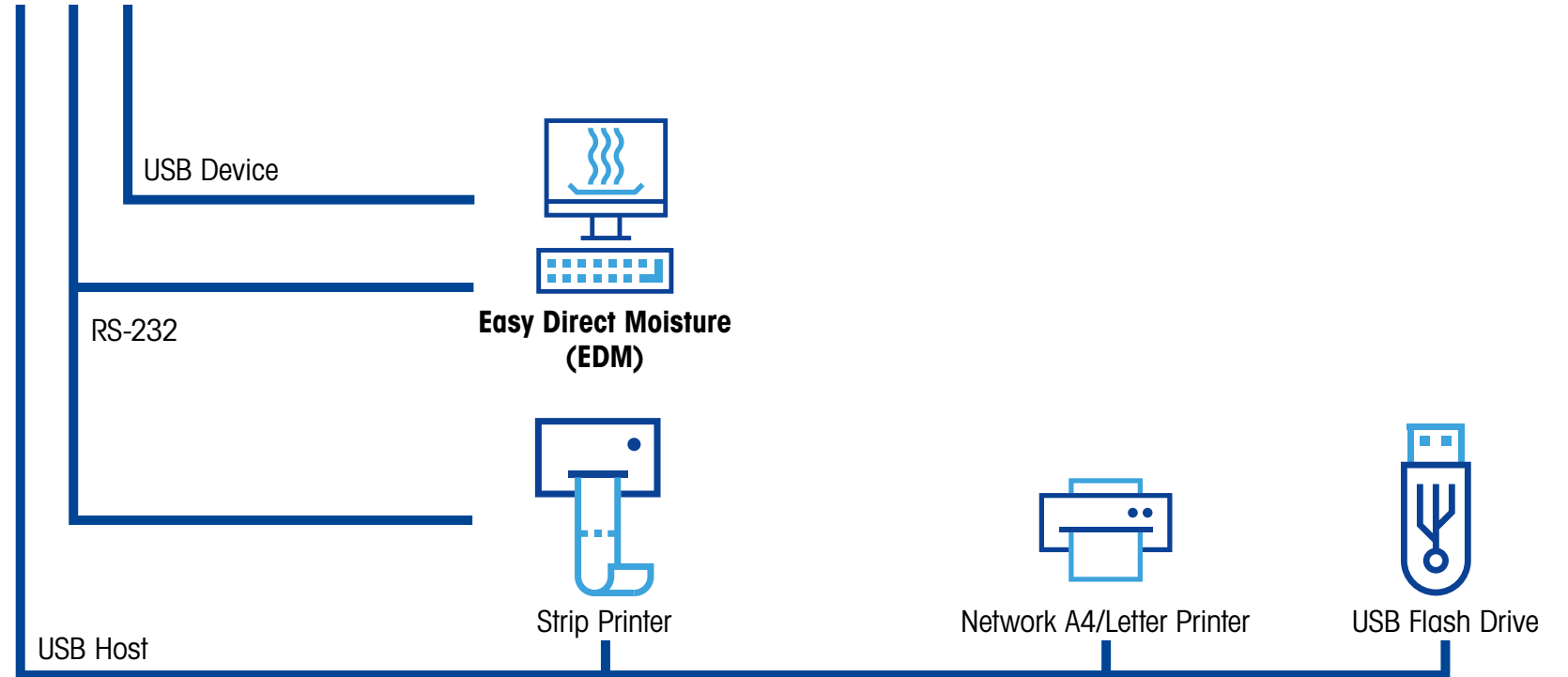
Data Management and Connectivity

for HX204, HS153, HC103, HE73 and HE53

Connectivity options for



HC103



Please click on above product names to see Moisture Analyzer Connectivity



Data Management and Connectivity

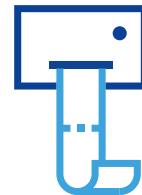
for HX204, HS153, HC103, HE73 and HE53

Connectivity options for



HE73 and HE53

RS-232



Strip Printer

Please click on above product names
to see Moisture Analyzer Connectivity



Streamline Your Process

With the Right Accessories and Consumables



SmartCal™
Unique routine testing substance



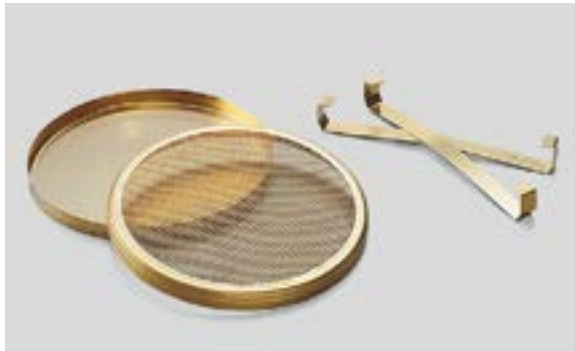
Aluminum Sample Pans
Suitable for all applications



Glass Fiber Filters
For liquid and pasty samples



Temperature Calibration Kit
To test and adjust the heating unit



Sample Cage
For bulky samples



Test Weight
To test and adjust the weighing unit



Downholder
For samples that tend to bend

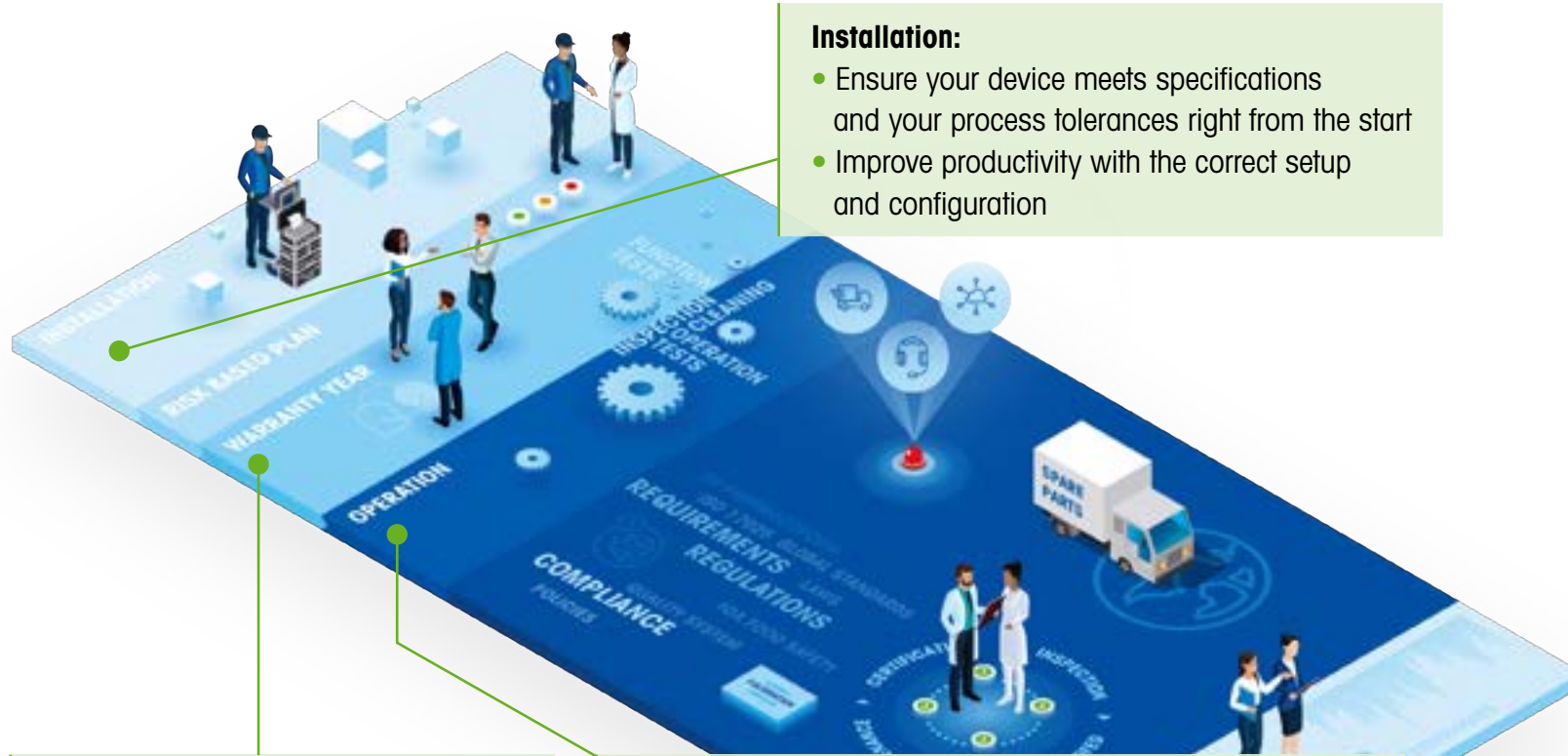


Strip Printer
Fast and easy documentation



Maintaining Performance Over Time

With METTLER TOLEDO Service



Installation:

- Ensure your device meets specifications and your process tolerances right from the start
- Improve productivity with the correct setup and configuration

Warranty Extension:

- Ensure uptime of your operations
- Have full cost control for 24 months
- Benefit from priority intervention onsite and technical hotline access

Calibration:

- Determine the performance of the weighing unit (measurement uncertainty) and the heating unit
- Overall performance test with the temperature-sensitive test substance, SmartCal™.

Why METTLER TOLEDO Service Is Different



Global presence



Comprehensive portfolio



Factory-trained technicians



Proprietary tools



Original spare parts



Maximize uptime, minimize disruptions, ensure accuracy and compliance



► www.mt.com/moisture

METTLER TOLEDO Group

Laboratory Weighing

Local contact: www.mt.com/contacts

Subject to technical changes.

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