Automatic Refractometer - Digital Abbe Refractometer - 1.30000-1.70000 nD - ±0.0002 nD

Model **MSRFT-A756SWISS, MSRFT-A733SWISS, MSRFT-A731SWISS** | Brand **Master Science**







The Master Science Automatic Refractometer measures the refractive index and Brix of liquids quickly and without operator judgement. A high-resolution CCD detector reads the critical angle automatically, and built-in temperature compensation removes the main source of manual error.

KEY HIGHLIGHTS

- Operator-independent results
- Minimal sample use
- Long, stable service
- Easy data sharing

AT A GLANCE

1.30000 to 1.70000 nD REFRACTIVE INDEX RANGE	**0 to 100 %** BRIX RANGE
±0.0002 nD REFRACTIVE INDEX ACCURACY	**±0.1 %** BRIX ACCURACY

Request a Quotation
Contact us for pricing, configuration options and delivery details.

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Overview

Refractive index results relate directly to sucrose concentration, soluble solids in beverages, water content in honey and the purity of chemicals and flavours, making the instrument useful across QC and process labs.

The Master Science Automatic Refractometer is available in three versions. Specifications are listed below.

Optical QC labs often pair refractive index with color data from the Master Science portable colorimeter.

Key Benefits

Operator-independent results
CCD detection and automatic temperature compensation remove reading errors.

Minimal sample use
only 0.5 mL is needed and the sample can be recovered after measurement.

Long, stable service
the Master Science Automatic Refractometer has no moving parts and an LED source rated for 100,000 hours.

Regulated lab ready
the top model offers user levels, electronic signatures and optional audit trail.

Easy data sharing
PDF reports, U-disk export and LIMS connection simplify documentation.

Technical Specifications

GENERAL

Brand	Master Science
Model Number	MSRFT-A756SWISS, MSRFT-A733SWISS, MSRFT-A731SWISS
SKU	MSRFT-A756SWISS, MSRFT-A733SWISS, MSRFT-A731SWISS
Models	MSRFT-A756SWISS, MSRFT-A733SWISS, MSRFT-A731SWISS
Refractive Index Range	**1.30000 to 1.70000 nD**
Refractive Index Resolution	0.00001 nD
Refractive Index Accuracy	**±0.0002 nD**
Brix Range	**0 to 100 %**
Brix Resolution	0.01 %
Brix Accuracy	**±0.1 %**
Temperature Control (MSRFT-A756SWISS)	Peltier, 5 to 85 °C, accuracy ±0.02 °C
Temperature Control (MSRFT-A733SWISS)	Peltier, 10 to 60 °C, accuracy ±0.1 °C
Temperature Control (MSRFT-A731SWISS)	Not included (temperature compensation)
Minimum Sample Volume	0.5 mL
Prism	Sapphire (A756) or high-hardness glass (A733/A731)
User Management	Four levels, 500 users, electronic signature (A756)
Audit Trail	Optional 21 CFR Part 11 software (A756)
LIMS / PC Connection	Yes
Light Source	LED, 100,000 h life, 589 nm
Power Supply	AC 100 to 240 V, 150 W (A756); 220 V ±22 V, 50 W (A733/A731)

DISPLAY & DATA

Display	8-inch touchscreen (A756); 7-inch touchscreen (A733/A731)
Storage	16 GB (A756); 1000 records (A733/A731)
Interfaces	USB, keyboard, mouse, Ethernet (A756); RS232, USB, U-disk (A733/A731)
Data integrity audits	audit trail and electronic signatures are available.

DIMENSIONS & WEIGHT

Dimensions (L × W × H)	430 × 260 × 150 mm (A756); 345 × 245 × 165 mm (A733/A731)
Net Weight	5 kg (A756); 4 kg (A733/A731)

COMMON LABORATORY PROBLEMS AND HOW THIS REFRACTOMETER HELPS

Common Laboratory Problems and How This Refractometer Helps	How the Master Science Automatic Refractometer handles typical refractometry problems:
Different readings between operators	automatic detection gives the same result every time.
Temperature errors	Peltier control and compensation hold the reading stable.
Expensive or limited samples	a 0.5 mL sample is enough.
Prism wear	sapphire or hard glass resists scratches and chemicals.

The Master Science Automatic Refractometer is used in

Pharmaceuticals
glycosides, organic acids, esters and antibiotics

Food and beverage
sauces, extracts, sugar and soy products

Flavours and fragrances

Petrochemicals
gasoline, diesel and liquid hydrocarbons

Metalworking fluids and fine chemicals

Measurement

- High-resolution CCD detection
- Refractive index and Brix with 0.00001 nD resolution
- Peltier temperature control on A756 and A733
- Up to 12 industry measurement scales

Construction

- Corrosion and scratch-resistant prism
- No mechanical moving parts
- Long-life 589 nm LED source

Data Management

- Large internal database
- PDF export, U-disk and printer output
- User hierarchy and LIMS connectivity on A756

Optional Accessories

- Thermal or stylus printer
- Audit trail software (MSRFT-A756SWISS)