# 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 |

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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)