

Cubis[®] MCM32002

Manual Mass Comparator

User Benefits

- Complete mass standard laboratory in a single unit
- Integrated workflow control for efficient and error-free mass comparison
- Removable Display



Highlighted Performance Features

- Cubis[®] MSA colour touch screen for fast and simple configuration of parameters and workflows
- Integrated calibration workflows for ABA, ABBA, AB_n...B_nA cycles to ensure efficient, error-free mass comparison
- Fully integrated function for determining the measurement uncertainty in accordance with OIML and ASTM recommendations
- Filters for optimal adaptation of the mass comparator to ambient conditions
- Monolithic weighing system
- All MCM mass comparators featuring eccentric (off-center) load compensation for easy loading of weights without automatic centering
- Additional applications for density determination, statistics and individual identifiers are integrated as standard programs
- Built-in SD card slot for storage and transfer of all data and settings
- Graphical level indicator for interactive user guidance during levelling
- Easy logging of reference weight data
- Continuous weighing range display: any weight between 0 g and the maximum capacity can be displayed
- USB, RS-232C and Ethernet interface ports to integrate the mass comparator into networks or to enable it to communicate with external software via third-party protocols, standardised communication protocols or web services

Technical Specifications

Metrological Specifications

Maximum capacity	32 kg
Application range	0 – 32 kg
Readability	10 mg
Repeatability, optimal ¹⁾	10 mg
Repeatability, standard E ²⁾	15 mg
Repeatability standard, F ³⁾	25 mg
Electronic weighing range and tare range	32 kg
Linearity	50 mg
Eccentric load deviation	2 mg mm
Stabilization time	5 s
Cycle time, ABBA in s	120

Basic Equipment

Interfaces	RS232C USB LAN
isoCAL	indication of calibration drift only, external adjustment is required
Application programs	Basic weighing, mass calibration, mass unit conversion, individual identifiers, density determination, statistics
Below-comparator weighing port	✓
PC connecting cable	USB

Ambient Conditions

Permissible operating temperature range	10 – 30 °C
Recommended operating temperature	22 °C
Temperature fluctuations	0.3°C/h 0.5°C/12h
Max. air current	< 0.2 m/s
Humidity range	40 – 70 %
Humidity fluctuations	5% 4 h
Power supply	100 – 240 V AC/50 – 60 Hz
Power consumption	< 35 VA

Dimensions

Weighing pan diameter	230 mm
Weigh cell (W × D × H)	400 × 300 × 126 mm
Net weight	17.5 kg
Gross weight	21 kg
Number of packages	1
Packaging data	73 × 60 × 36 cm
Optimal height for setup	800 mm

Applications

OIML calibration range RS	-
OIML calibration range E1	-
OIML calibration range E2	-
OIML calibration range F1	20 kg
OIML calibration range F2	10 kg – 20 kg
OIML calibration range M1	5 kg – 20 kg
OIML calibration range M2	1 kg – 20 kg
OIML calibration range M3	500 g – 20 kg
ASTM E617 calibration range Class 000	-
ASTM E617 calibration range Class 00	-
ASTM E617 calibration range Class 0	-
ASTM E617 calibration range Class 1	30 kg
ASTM E617 calibration range Class 2	20kg – 30 kg
ASTM E617 calibration range Class 3	10 kg – 30 kg
ASTM E617 calibration range Class 4	10 kg – 30 kg
ASTM E617 calibration range Class 5	3 kg – 30 kg
ASTM E617 calibration range Class 6	2 kg – 30 kg
ASTM E617 calibration range Class 7	200 g – 30 kg

Optional Accessories

Tripod for raising the control unit	YDH02MS
External calibration weight	20 kg YCW722-02
Optional draft shield	YDS05C YDS03C

The standard deviation "s" is the repeatability calculated from 5 ABA cycles under the following conditions:


- Optimal conditions: automatic measurement without operator influence measured in a laboratory under E1 conditions, on a decoupled weighing stone no drafts from above
- Standard conditions E: measured by hand in a laboratory under E1 conditions, on a decoupled weighing stone; no drafts from above
- Standard conditions F: measurement performed manually in a laboratory under at least F1 conditions, on a non-decoupled weighing stone, air conditioning and minimal drafts from above

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