Cubis® MCM6.7

Manual Mass Comparator

User Benefits

– Complete mass standard laboratory in a single unit

– Integrated climate sensors for recording all data relevant for determining measurement uncertainty

– Integrated workflow control for efficient and error-free mass comparison

– Fast measurement cycles according to the ABA, ABBA or $AB_1...B_nA$ method

Highlighted Performance Features

– Cubis® MSA color touch screen for fast and simple configuration of parameters and workflows
– Sensor-equipped climate module integrated into the draft shield for recording the temperature, humidity and air pressure
– Integrated calibration workflows for ABA, ABBA, $AB_1...B_nA$ 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
– For display and evaluation, complete electronics and power supply separated from the weighing system to prevent heat from affecting the results
– 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, standardized communication protocols or Web services

Technical Specifications

Metrological Specifications

Maximum capacity	6.1 g
Application range	0-6 g
Readability	0.1 µg
Repeatability, optimal [1]	0.15 µg
Repeatability, standard E [2]	0.3 µg
Repeatability, E ⅓ load [2]	0.2 µg
Repeatability standard, F [3]	0.6 µg
Electronic weighing range and tare range	6.1 g
Linearity	1 µg
Eccentric load deviation	0.25 µg │ mm
Stabilization time	10 s
Cycle time, ABBA in s	90 s

Basic Equipment

Interfaces	RS232C │ USB │ LAN
isoCAL	✓
Draft shield	✓
Application programs	Basic weighing, mass unit conversion, individual identifiers, density determination, statistics
Below-comparator weighing port	✓
Air temperature sensor	✓
Air humidity sensor	✓
Air pressure sensor	✓
PC connecting cable	USB

Ambient Conditions

Permissible operating temperature range	10-30 ℃
Recommended operating temperature	22 ℃
Temperature fluctuations	0.3℃/h │ 0.5℃/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	16 mm
Sample size (D × H)	16 × 70 mm
Weigh cell (W × D × H)	122 × 343 × 141 mm
Electronic unit (W × D × H)	239 × 320 × 56 mm
Net weight	7.6 kg
Gross weight	11.9 kg
Number of packages	1
Packaging data 1	76 × 60 × 50 cm
Optimal height for setup	800 mm

Applications

OIML R111, class E1	1 mg – 5 g
OIML R111, class E2	1 mg – 5 g
OIML R111, class F1	1 mg – 5 g
OIML R111, class F2	1 mg – 5 g
OIML R111, class M1	
OIML R111, class M2	
OIML R111, class M3	
ASTM E617, class 0	1 mg – 5 g
ASTM E617, class 1	1 mg – 5 g
ASTM E617, class 2	1 mg – 5 g
ASTM E617, class 3	1 mg – 5 g
ASTM E617, class 4	
ASTM E617, class 5	
ASTM E617, class 6	

Optional Accessories	
External calibration weight	5 g │ E2 YCW352-00
Climate module, uncalibrated, for all MCM models	YCM20MC
Calibration of a YCM20MC climate module with DAkkS calibration certificate	YCM20DAkkS
Climate module with DAkkS calibration certificate for all MCM models	YCM20MC–DAkkS
Optional draft shield	YDS20C
Weighing table	YWT03

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

[1] Optimal conditions: automatic measurement without operator influence measured in a laboratory under E1 conditions, on a decoupled weighing stone no drafts from above

[2] Standard conditions E: measured by hand in a laboratory under E1 conditions, on a decoupled weighing stone; no drafts from above

[3] Standard conditions F: measurement performed mannually in a laboratory under at least F1 conditions, on a non-decoupled weighing stone, air conditioning and minimal drafts from above