

Determining magnetic characteristics of mass standards
Minimum readability of $d = 0.1 \mu\text{g}$
Wide range of operation starting from 2 g up to 50 kg

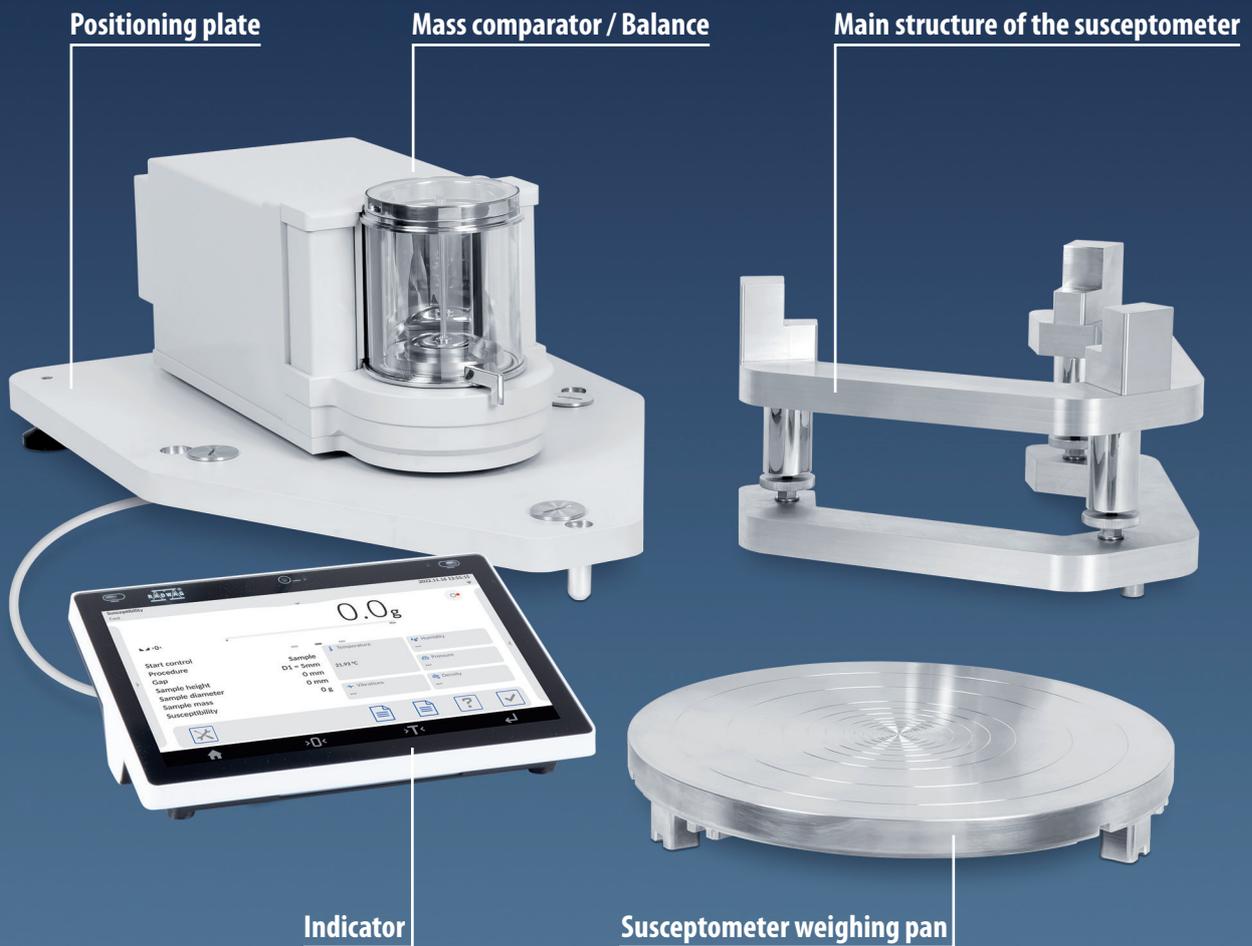


SM Susceptometer

DETERMINATION OF MAGNETIC CHARACTERISTICS

SM | Reliable solution for determination of susceptibility and polarisation

The OIML R111 determines susceptometer as a complete reference solution for specifying the magnetic characteristics of mass standards. The SM susceptometer measures magnetic susceptibility and magnetization of weights of E1 and lower classes with the highest accuracy. Modular design, upon disassembling respective module, enables using the susceptometer as a mass comparator or a balance.



Additional mass standard with magnetic susceptibility determined by NMI enables verification and calibration of the susceptometer.



Intuitive software for determination of magnetic susceptibility and polarization (residual magnetism) is characterised by high functionality and uncomplicated operation.

Determining magnetism of mass standards according to OIML R111

Compliance with OIML R111

Publication of the OIML R111 standard in 2004 made it necessary to determine magnetic characteristics of mass standards. There are different methods for determining mass standards magnetic characteristics. The susceptometer method is recommended for small mass standards, ranging from 2 g to 50 kg. Knowing the properties of permanent magnet located on the weighing pan, the geometry of the test mass standard and the constant known distance between the magnet and the standard, you can calculate mass standard's magnetic characteristics.

Measurements of Magnetic Susceptibility and Residual Magnetism

RADWAG-designed SM susceptometer enables determination of magnetic characteristics of mass standards of the following classes: E1, E2, F1 and F2. The device features 3 different heights, from the mass standard base to the centre of the magnet. The recommended distance between the mass standard and the magnet depends on the mass standard's class. The measurement result is magnetic susceptibility and polarisation, i.e. residual magnetism.

Modular Construction

Modular design, upon disassembling respective module and depending on the model, enables using the susceptometer as a mass comparator or a balance.

High Measuring Range

Innovative design of the susceptometer enables verification of magnetic characteristics of 2g-50kg mass standards.

Intuitive and Uncomplicated Operation

With use of modern indicator with very efficient processor, the susceptometer does not require additional external devices supporting calculations. Indicator software calculates magnetic susceptibility and polarisation, which facilitates and accelerates mass standards testing. The software automatically verifies measurements compliance with OIML R111. Mass standard status can be read on the test report.

Top-Class Materials

The materials used for designing the susceptometer undergo detailed control of magnetic parameters in order to eliminate the possibility of errors occurrence during mass standards testing.

Ergonomics and Comfort of Operation

5.7" colour touch screen ensures comfort of comparator operation. Easy access to numerous applications and functions is ensured by home screen customization. The indicator is equipped with two programmable proximity sensors.



A top-class magnet guarantees repeatability.



Positioners on the susceptometer weighing pan facilitate centring of the mass standard.



The modular design enables to use the susceptometer as a microbalance or a mass comparator.



Specially designed susceptometer weighing pan does not require any additional elements to change the measuring range of the device.



Weighing pans construction facilitates their easy replacement and quick switching between susceptometer, microbalance and mass comparator.



Measurement accuracy is guaranteed by an internal automatic adjustment carried out with regard to the dynamics of temperature changes and time.



SM-UYA-3.5Y
SM-UYA-5.5Y.KO



SM-MYA-5.5Y
SM-MYA-11.5Y

OIML calibration range	E1	2 g ÷ 50 kg	2 g ÷ 50 kg
OIML calibration range	E2	2 g ÷ 50 kg	2 g ÷ 50 kg
OIML calibration range	F1	2 g ÷ 50 kg	2 g ÷ 50 kg
OIML calibration range	F2	2 g ÷ 50 kg	2 g ÷ 50 kg
OIML calibration range	M1	–	–
OIML calibration range	M2	–	–
Maximum capacity [Max]		50 kg	50 kg
Readability [d]		0.1 µg	1 µg
Stabilization time		10 s	10 s
Adjustment		Internal	Internal
Dipole moment of magnets		≤ 0.1 Am ²	≤ 0.1 Am ²
Weighing platform-magnet centre distance		20 mm, 27 mm, 43 mm	20 mm, 27 mm, 43 mm
Magnetic field		2000 A/m, 800 A/m, 200 A/m	2000 A/m, 800 A/m, 200 A/m
Display		10" colour resistive touch screen	10" colour resistive touch screen
Communication interfaces		2×USB-A, Ethernet, 2×RS 232, 4×IN, 4×OUT, Wi-Fi®	2×USB-A, Ethernet, 2×RS 232, 4×IN, 4×OUT, Wi-Fi®
Operating temperature		+15 ÷ +30 °C	+15 ÷ +30 °C
Operating temperature change rate		±0,5 °C / 12 h (± 0.3 °C / 4 h)	±0,5 °C / 12 h (± 0.3 °C / 4 h)
Relative humidity change rate		±2% / 4h	±2% / 4h
Relative humidity *		40 ÷ 60%	40 ÷ 60%
Transport and storage temperature		-20 ÷ +50 °C	-20 ÷ +50 °C
Weighing pan dimensions		ø 300 mm	ø 300 mm
Indicator dimensions (L×W×H)		206 × 140 × 70 mm	206 × 140 × 70 mm
Overall dimensions (L×W×H)		525 × 246 × 350 mm	525 × 246 × 350 mm

*Non-condensing conditions | Wi-Fi® is a registered trademark of Wi-Fi Alliance.