




Certificate of Calibration No 111-02036

Translation

<i>Object</i>	Swiss Committee Meter 1000 mm <i>Conforme à la Loi du 18 Germinal an 3</i> <i>Présenté le 4 Messidor an 7</i> <i>Fait par LENOIR</i> Identification: 
<i>Order</i>	Calibration of the central length.
<i>Applicant</i>	METAS Lindenweg 50 CH-3003 Bern-Wabern
<i>Traceability</i>	The reported measurement values are traceable to national standards and thus to internationally supported realizations of the SI-units.
<i>Date of calibration</i>	21 March 2007
<i>Marking</i>	none

CH-3003 Bern-Wabern, 21 March 2007

For the measurement

Section Length, Optics and Time



Jörg Scheidegger



Dr. Rudolf Thalmann, Head of section



Mutual recognition

This certificate is consistent with Calibration and Measurement Capabilities (CMCs) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures (CIPM). Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for the quantities, ranges and measurement uncertainties specified in Appendix C (for details see <http://www.bipm.org>).

This document may not be published or forwarded other than in full.

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Extent of calibration

The central length of the gauge block was measured according to ISO 3650.

Measurement procedure

The gauge block was supported in horizontal orientation on the Airy points and calibrated in comparison with a 1000 mm reference gauge block on a length measurement machine with a laser interferometer and mechanical probing.

Measurement probes: Ruby spheres, \varnothing 8 mm

Measurement force: 2 N



Measurement conditions

The temperature of the gauge block during the measurements was situated between 20.08°C and 20.09°C. The measured value was corrected to the reference temperature of 20 °C assuming a linear coefficient of thermal expansion of $11.6 \cdot 10^{-6} \text{ K}^{-1}$.

Measurement results

Identification	Nominal length	Deviation	Measurement uncertainty
	1000 mm	+232.6 μm	3.0 μm

Measurement uncertainty

The reported uncertainty of measurement is stated as the combined standard uncertainty multiplied by a coverage factor $k = 2$. The measured value (y) and the associated expanded uncertainty (U) represent the interval ($y \pm U$) which contains the value of the measured quantity with a probability of approximately 95%. The uncertainty was estimated following the ISO-guidelines.

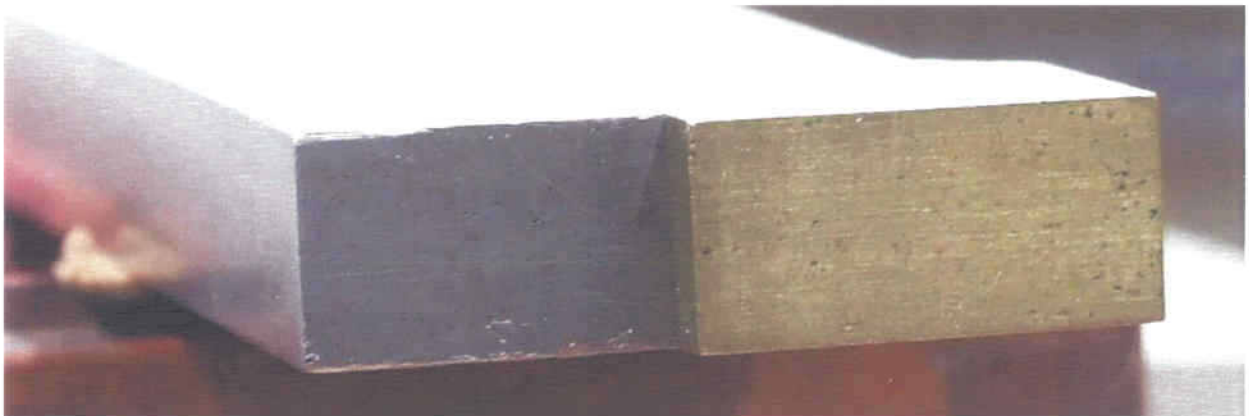
The measurement uncertainty contains contributions originating from the measurement standard, from the calibration method, from the environmental conditions and from the object being calibrated.



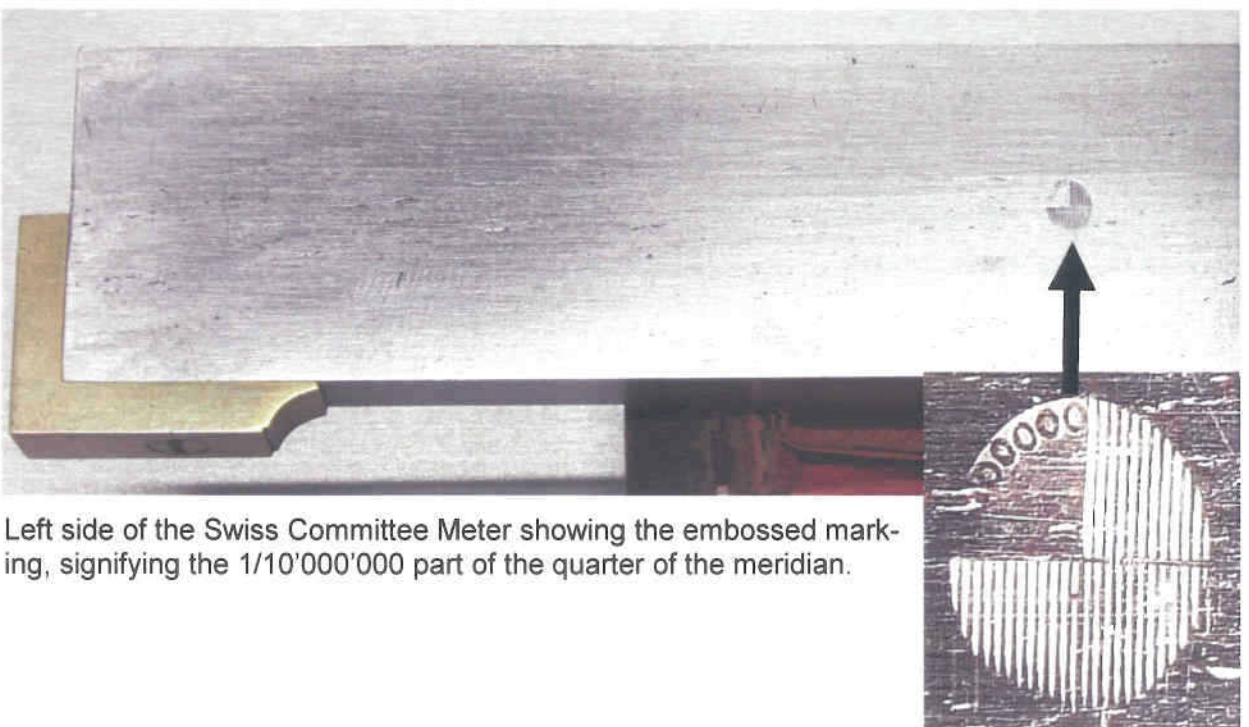
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Cover plate of the wooden box containing the Swiss Committee Meter.



End face of the Swiss Committee Meter with mounted brass protection.



Left side of the Swiss Committee Meter showing the embossed marking, signifying the $\frac{1}{10'000'000}$ part of the quarter of the meridian.