



PLUM Sp. z o.o.
CALIBRATION LABORATORY

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AP 074

Calibration laboratory accredited by
Polish Centre for Accreditation, a signatory to EA MLA and ILAC MRA
that include recognition of calibration certificates.
Accreditation No AP 074.

CALIBRATION CERTIFICATE



Date of issue: 18 October 2018

Certificate No: 4221/472/LA/TH/2018

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OBJECT OF CALIBRATION	Thermo-hygrometer (data logger) type: NB-IoT, serial number: 282C02400FBC, manufacturer: EFENTO, year of production: N/A.
APPLICANT	Efento Sp. J. ul. Dietla 93/6 31-031 Kraków
CALIBRATION METHOD	The calibration was performed in compliance with calibration laboratory PLUM procedure ILAJ 5.4/11 Wzorcowanie termohigrometrów, issue 4D, 12 July 2016.
ENVIRONMENTAL CONDITIONS	Ambient temperature: (22,5 ÷ 24,1) °C Relative humidity: (37 ÷ 52) %
DATE OF CALIBRATION	17, 18 October 2018
TRACEABILITY	This certificate is issued under the agreement EA MLA in the field of calibration and provides traceability of measurement results to the International System of Units (SI).
CALIBRATION RESULTS	The results have been presented on page 2 of this certificate including uncertainty of measurement.
UNCERTAINTY OF MEASUREMENT	Uncertainty of measurement has been evaluated in compliance with EA-4/02 M:2013. The expanded uncertainty assigned corresponds to a coverage probability of 95 % and the coverage factor $k = 2$.

KIEROWNIK
Laboratorium Pomiarowego
M. Szpakowski
mgr inż. Marek Szpakowski



CALIBRATION RESULTS

Calibration results are the following:

1. Temperature and relative humidity.

Reference quantity value		Measured quantity value		Correction		Uncertainty of measurement	
t	RH	t_m	RH_m	Δt	ΔRH	U_t	U_{RH}
°C	%	°C	%	°C	%	°C	%
20,0	41	20,2	41	-0,2	0	0,2	2

2. Temperature.

Reference value of temperature	Measured value of temperature	Correction	Uncertainty of measurement
t	t_m	Δt	U
°C	°C	°C	°C
-18,0	-17,6	-0,4	0,2
20,0	20,2	-0,2	0,2

Δt – difference between the reference value of temperature and the measured value of temperature indicated by the calibrated instrument.

ΔRH – difference between the reference value of relative humidity and the measured value of relative humidity indicated by the calibrated instrument.

The presented values of temperature refer to the International Temperature Scale of 1990 (ITS-90).

Device was read out by EFENTO's web platform.

Authorized by:

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Łukasz Kozłowski