

Certificate Number: K008-1134236
Customer: VTG, LLC
520 SE Columbia River Dr #223
Vancouver, WA 98661
Canada
Manufacturer: Vaisala Oyj
Instrument: SP-2000-20R Humidity and Temperature Logger
Serial Number: 23182010

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The measurement results were calculated from recorded values by using adjustment coefficients and averaging. The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95 %.

The conformity status for each measurement point is determined using a guard band equal to the expanded ($k=2$, 95% confidence level) measurement uncertainty.

Pass: Error is less than or equal to the specification limit minus the measurement uncertainty.
*Pass or N/A: Error is less than the specification limit plus the measurement uncertainty.
Fail: Error is more than or equal to the specification limit plus the measurement uncertainty.

The calibration results and the statement of conformity with specification/acceptance limit relate only to the calibrated instrument and the calibration points

The statement of conformity is based on 95 % confidence level acceptance, whether the calibration result is within or outside the manufacturer's specification/acceptance limits. The expanded calibration uncertainty ($k=2$, 95 % confidence level) is taken into account in the statement of conformity. The probability of accepting a non-conforming result or rejecting a conforming result can be as large as 2.5 % with this acceptance rule when the calibration result is close to the acceptance limit.

The measurement results are traceable to the international system of units (SI) through national metrology institutes (NIST USA or equivalent) or via ISO/IEC 17025 accredited calibration laboratories.

Note(s):

This is new instrument without before adjustment data

Calibration Date: May 02, 2023 **Next Calibration:** May 02, 2024

Issue Date: May 04, 2023

Signature: 
Onni Mäntylä
Calibration Technician

Calibration Certificate

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The internal temperature sensor of the logger was calibrated by comparing the logger readings to a reference thermometer in Vaisala Measurement Standards Laboratory (MSL). Calibration procedure DOC227678.

Measurement results after adjustment:

Reference		Channel 1			
Temperature	Observed	Error	Uncertainty	Limit	Pass/Fail
°C	°C	°C	°C	°C	
-25.11	-25.11	0.00	0.10	±0.2	Pass
9.96	9.96	0.00	0.07	±0.2	Pass
25.01	25.02	0.01	0.06	±0.1	Pass
29.98	29.98	0.00	0.07	±0.1	Pass
40.02	40.02	0.00	0.07	±0.2	Pass
44.99	44.99	0.00	0.07	±0.2	Pass
70.14	70.14	0.00	0.09	±0.2	Pass

Reference(s):

Fluke 1560/2560

Instrument Number

16027/1

Calibration Date

November 10, 2022

Certificate

K008-F06063

Next Calibration

November 30, 2023

Note(s):

This is new instrument without before adjustment data

Calibration Date: May 02, 2023

Next Calibration: May 02, 2024

Ambient Condition(s):

23.0 °C ±2.2 °C

32.5 %rh ±2.9 %rh

1016.0 hPa ±9.0 hPa

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Vaisala Oyj, PO Box 26, FI-00421 Helsinki, Finland Telephone +358 9 894 91 | Fax +358 9 8949 2227
Email helpdesk@vaisala.com | www.vaisala.com Domicile Vantaa, Finland | VAT FI01244162 | Business
ID 0124416-2

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The humidity sensor of the logger was calibrated by comparing the logger readings to the generated reference humidity readings in Vaisala Measurement Standards Laboratory (MSL). Calibration procedure DOC227678.

Measurement results after adjustment:

Reference		Channel 2				
Humidity	Temperature	Observed	Error	Uncertainty	Limit	Pass/Fail
%rh	°C	%rh	%rh	%rh	%rh	
45.18	9.96	45.26	0.08	0.80	±2	Pass
11.01	24.99	11.08	0.07	0.70	±1	Pass
45.04	25.01	45.05	0.01	0.80	±1	Pass
60.04	25.02	60.03	0.02	0.80	±1	Pass
79.92	25.03	79.98	0.06	0.80	±1	Pass
65.07	29.98	65.10	0.03	0.80	±1	Pass
74.97	40.02	75.00	0.03	0.90	±2	Pass
45.04	44.99	45.10	0.06	0.80	±2	Pass

Reference(s):

Thunder 2500
Fluke 1560/2560
PTU303

Instrument Number

UG 14325
16027/1
PA 14642

Calibration Date

March 24, 2023
November 10, 2022
November 10, 2022

Certificate

K008-G01867
K008-F06063
K008-F06064

Next Calibration

March 31, 2024
November 30, 2023
November 30, 2023

Note(s):

This is new instrument without before adjustment data

Calibration Date: May 02, 2023

Next Calibration: May 02, 2024

Ambient Condition(s):

23.0 °C ±2.2 °C
32.5 %rh ±2.9 %rh
1016.0 hPa ±9.0 hPa