

Certificate Number: K008-1133663
Customer: VTG, LLC
520 SE Columbia River Dr #223
Vancouver, WA 98661
Canada
Manufacturer: Vaisala Oyj
Instrument: VL-2000-20R Humidity and Temperature Logger
Serial Number: 23162061

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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: April 25, 2023 **Next Calibration:** April 25, 2024

Issue Date: April 27, 2023

Signature: 
Harri Munter
Calibration Technician

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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	
-25.17	-25.17	0.00	0.10	±0.2	Pass
9.95	9.95	0.00	0.07	±0.2	Pass
24.95	24.95	0.00	0.06	±0.1	Pass
45.02	45.02	0.00	0.07	±0.2	Pass
69.92	69.92	0.00	0.09	±0.2	Pass

Reference(s):

Fluke 1560/2560

Instrument Number

TP 14459/1

Calibration Date

December 23, 2022

Certificate

K008-F06938

Next Calibration

December 31, 2023

Note(s):

This is new instrument without before adjustment data

Calibration Date: April 25, 2023

Next Calibration: April 25, 2024

Ambient Condition(s):

23.1 °C ±1.4 °C

33.1 %rh ±2.6 %rh

999.8 hPa ±1.9 hPa

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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	
45.11	9.95	45.13	0.02	0.80	±2	Pass
11.02	24.94	11.05	0.03	0.70	±1	Pass
45.12	24.95	45.12	0.00	0.80	±1	Pass
80.21	24.98	80.07	-0.14	0.80	±1.5	Pass
44.91	45.02	44.92	0.01	0.80	±2	Pass

Reference(s):	Instrument Number	Calibration Date	Certificate	Next Calibration
Thunder 2500	UG 14780	June 09, 2022	K008-F03078	June 30, 2023
Fluke 1560/2560	TP 14459/1	December 23, 2022	K008-F06938	December 31, 2023
PTU303	20377	November 03, 2022	K008-F05904	November 30, 2023

Note(s):

This is new instrument without before adjustment data

Calibration Date: April 25, 2023

Next Calibration: April 25, 2024

Ambient Condition(s):

23.1 °C ±1.4 °C
33.1 %rh ±2.6 %rh
999.8 hPa ±1.9 hPa