



An ISO 17025-2017 registered company

Certificate of Calibration

Reference No.:
32916-AC300-AC300001189



Certificate #3035.01

Instrument Identification


Manufacturer:	Quest	Calibration Date:	January 22, 2020
Model Number:	AC-300	Date of Issue:	January 27, 2020
Serial Number:	AC-300001189	Calibration Due Date:	January 22, 2022
Service Order:	32916	Customer Name:	Gruentec Cia Ltda.
Reference Number:	32916-AC300-AC300001189	Customer Address:	San Juan de Cumbaya, Eloy Alfaro S7-157 y Belisario Quevedo

CIH Equipment Company Inc. certifies that the instrument listed above meets or exceeds manufacturing tolerance limits as stated in the referenced test procedure (unless otherwise noted). This instrument has been calibrated using standards with accuracies traceable to the National Institute of Standards and Technology. CIH Equipment Company Inc. calibration system is A2LA accredited to ISO/IEC 17025-2017, ANSI/NCSL Z540-1-1994. This report may not be reproduced, except in full, without the written approval CIH Equipment Company Inc. Unless stated otherwise; the expanded measurement uncertainty of the measurement process does not exceed 25% of the tolerance allowed for the individual characteristics measured. A coverage factor of $k=2$ has been applied to the standard uncertainty to express the expanded uncertainty at 95% confidence level. This calibration was done by comparing the unit under test to the listed calibration standards, there was no sampling used in this calibration. The results reported herein apply only to the calibration of the items described above and no limitations of use apply to the calibrated unit. A PASS (in tolerance) or FAIL (out of tolerance) result indicates all measured values fall within or outside unmodified limits. The statement of compliance does not take the reported measurement uncertainty into account. In addition, reported uncertainties do not include instabilities due to transportation, usage, passage of time etc.

Calibration Standards Used

Manufacturer	Description	Model	Serial Number	Certificate Number	Due Date
GRAS	Piston Phone	42AA	16295	43146	July 1, 2020
Stanford Research	Function Generator	DS360	33001	A3361766	October 8, 2020
E-MU	DAQ	EM8740A	8740050000648H	N/A	February 8, 2021
Virtins Technology	Spectrum Analyzer	Pro v3.2	B0D1DD6C	N/A	February 8, 2021
PCB	Microphone	377A07	306030	439250	July 15, 2020

Certified By:


 Tyler Rutherford - Calibration Technician

Date:

Jan 22, 2020



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Calibration Data

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AS FOUND DATA

Instrument Received	In Tolerance
Temperature	72.3 °F
Relative Humidity	30 %RH
Barometric Pressure	30.17 inHg
Test Procedure	Acoustics - WS-0101K

Test Description		Frequency	Reference Data	As Found	THD	Difference	Amplitude	Pass/Fail	
Center Freq.(Hz)		Tolerance	(dB)	(dB)	(%)	(dB)	Tolerance		
Expected	Actual	0.50%					0.40 dB		
1	1000.00	1000.00	± 5.00	114.0000	114.0869	0.0053	0.0869	± 0.40	Pass
2	1000.00	1000.11	± 5.00	114.0000	114.0803	0.0053	0.0803	± 0.40	Pass
1	251.20	251.20	± 1.26	114.0000	114.1134	0.0102	0.1134	± 0.40	Pass
2	251.20	251.17	± 1.26	114.0000	114.1139	0.0102	0.1139	± 0.40	Pass

Date: Jan 22, 2020

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Calibration Data

Reference No.:
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AS LEFT DATA

Instrument Returned	In Tolerance
Temperature	72.7 °F
Relative Humidity	29 %RH
Barometric Pressure	30.16 inHg
Test Procedure	Acoustics - WS-0101K

Test Description	Frequency		Reference Data (dB)	As Left (dB)	THD (%)	Difference (dB)	Amplitude Tolerance	Uncertainty (dB)	Pass/Fail	
	Center Freq.(Hz)	Tolerance								
	Expected	Actual	0.50%				0.40 dB			
1	1000.00	1000.00	± 5.00	114.0000	114.0869	0.0053	0.0869	± 0.40	2.50E-01	Pass
2	1000.00	1000.11	± 5.00	114.0000	114.0803	0.0053	0.0803	± 0.40	2.50E-01	Pass
1	251.20	251.20	± 1.26	114.0000	114.1134	0.0102	0.1134	± 0.40	2.50E-01	Pass
2	251.20	251.17	± 1.26	114.0000	114.1139	0.0102	0.1139	± 0.40	2.50E-01	Pass

Date: Jan 22, 2020

End of Report