

# ~ Calibration Certificate ~

Per ISO 16063-21

SNCW230805

Model Number: 356A01

Serial Number: LW230805 (x axis)

Description: ICP® Triaxial Accelerometer

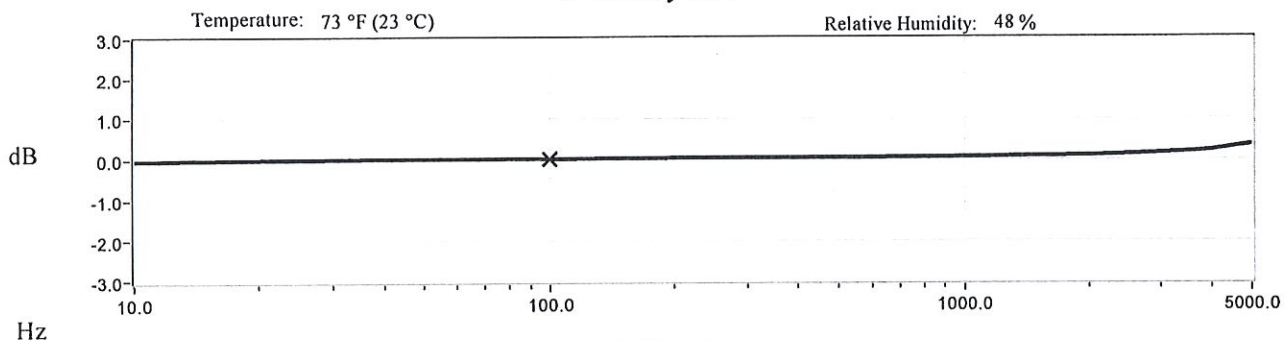
Manufacturer: PCB

Method: Back-to-Back Comparison AT401-3

## Calibration Data

Sensitivity @ 100 Hz 4.48 mV/g  
(0.457 mV/m/s<sup>2</sup>)  
Output Bias 10.2 VDC  
Transverse Sensitivity 4.7 %  
Discharge Time Constant 0.44 seconds

## Sensitivity Plot



## Data Points

Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)
10	-0.5	300	0.3
15	-0.3	500	0.3
30	-0.1	1000	0.5
50	0.0	3000	1.7
REF. FREQ.	0.0	5000	4.1

Mounting Surface: Tungsten Adapter Fastener: Adhesive Fixture Orientation: Inverted Vertical

Acceleration Level (pk): 10.0 g (98.1 m/s<sup>2</sup>)

\*The acceleration level may be limited by shaker displacement at low frequencies. If the listed level cannot be obtained, the calibration system uses the following formula to set the vibration amplitude: Acceleration Level (g) = 0.008 x (freq)<sup>2</sup>. \*The gravitational constant used for calculations by the calibration system is: 1 g = 9.80665 m/s<sup>2</sup>.

## Condition of Unit

As Found: n/a

As Left: New Unit, In Tolerance

## Notes

1. Calibration is NIST Traceable thru Project 683/287323 and PTB Traceable thru Project 17014.
2. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.
3. Calibration is performed in compliance with ISO 9001, ISO 10012-1, ANSI Z540.3 and ISO 17025.
4. See Manufacturer's Specification Sheet for a detailed listing of performance specifications.
5. Measurement uncertainty (95% confidence level with coverage factor of 2) for frequency ranges tested during calibration are as follows: 5-9 Hz; +/- 2.0%, 10-99 Hz; +/- 1.5%, 100-1999 Hz; +/- 1.0%, 2-10 kHz; +/- 2.5%.

Technician: Robert Zsebehazy R.Z. Date: 9/21/2017



CALIBRATION CERT #1862.02

PCB PIEZOTRONICS

VIBRATION DIVISION

Headquarters: 3425 Walden Avenue, Depew, NY 14043

Calibration Performed at: 10869 Highway 903, Halifax, NC 27839

TEL: 888-684-0013 FAX: 716-685-3886 www.pcb.com

CAL2-3588846918,864+0



# ~ Calibration Certificate ~

Per ISO 16063-21

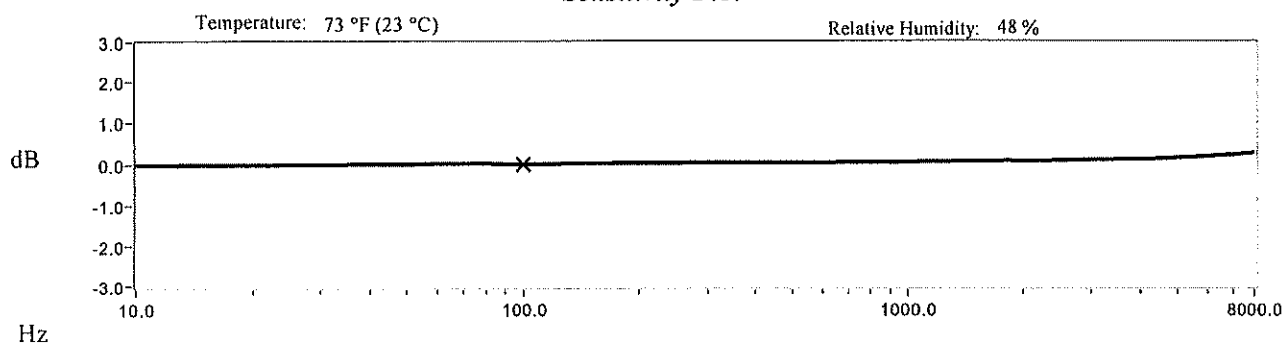
Model Number: 356A01  
Serial Number: LW230805 (y axis)  
Description: ICP® Triaxial Accelerometer  
Manufacturer: PCB

Method: Back-to-Back Comparison AT401-3

## Calibration Data

Sensitivity @ 100 Hz      4.36 mV/g  
(0.445 mV/m/s<sup>2</sup>)      Output Bias      10.4 VDC  
Transverse Sensitivity      4.5 %  
Discharge Time Constant      0.39 seconds

## Sensitivity Plot



## Data Points

Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)
10	-0.3	300	0.4	7000	2.7
15	-0.2	500	0.5	8000	3.2
30	-0.0	1000	0.6		
50	0.1	3000	1.2		
REF. FREQ.	0.0	5000	1.8		

Mounting Surface: Tungsten Adapter    Fastener: Adhesive    Fixture Orientation: Vertical  
Acceleration Level (pk): 10.0 g (98.1 m/s<sup>2</sup>)

\*The acceleration level may be limited by shaker displacement at low frequencies. If the listed level cannot be obtained, the calibration system uses the following formula to set the vibration amplitude: Acceleration Level (g) = 0.008 x (freq)<sup>1.5</sup>. \*The gravitational constant used for calculations by the calibration system is: 1 g = 9.80665 m/s<sup>2</sup>.

## Condition of Unit

As Found: n/a  
As Left: New Unit, In Tolerance

## Notes

1. Calibration is NIST Traceable thru Project 683/287323 and PTB Traceable thru Project 17014.
2. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.
3. Calibration is performed in compliance with ISO 9001, ISO 10012-1, ANSI Z540.3 and ISO 17025.
4. See Manufacturer's Specification Sheet for a detailed listing of performance specifications.
5. Measurement uncertainty (95% confidence level with coverage factor of 2) for frequency ranges tested during calibration are as follows: 5-9 Hz; +/- 2.0%, 10-99 Hz; +/- 1.5%, 100-1999 Hz; +/- 1.0%, 2-10 kHz; +/- 2.5%.

Technician: Robert Zsebehazy R.Z.      Date: 9/21/2017



CALIBRATION CERT #1862.02

PAGE 1 of 1

**PCB PIEZOTRONICS**  
VIBRATION DIVISION

Headquarters: 3425 Walden Avenue, Depew, NY 14043  
Calibration Performed at: 10869 Highway 903, Halifax, NC 27839  
TEL: 888-684-0013    FAX: 716-685-3886    www.pcb.com

CAL2-3588848335-496+0



# ~ Calibration Certificate ~

Per ISO 16063-21

Model Number: 356A01

Serial Number: LW230805 (z axis)

Description: ICP® Triaxial Accelerometer

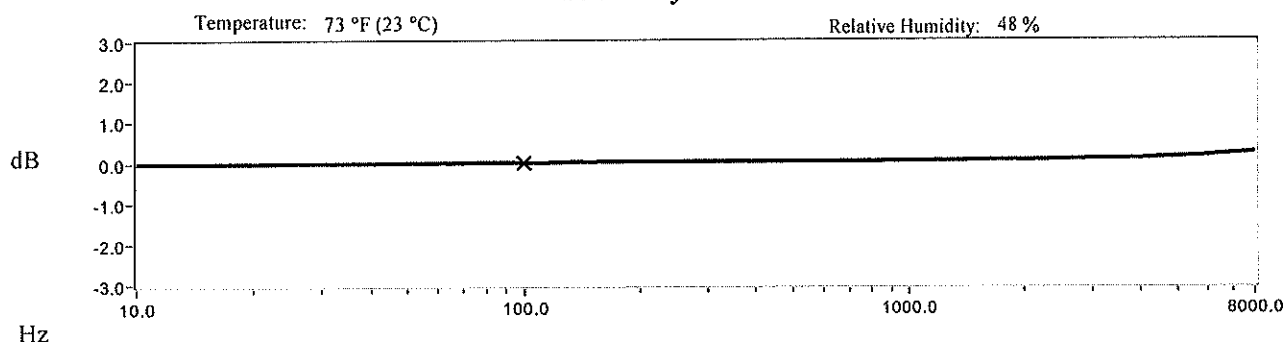
Manufacturer: PCB

Method: Back-to-Back Comparison AT401-3

## Calibration Data

Sensitivity @ 100 Hz      4.39 mV/g  
(0.448 mV/m/s<sup>2</sup>)      Output Bias      10.5 VDC  
Transverse Sensitivity      4.3 %  
Discharge Time Constant      0.46 seconds

## Sensitivity Plot



## Data Points

Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)
10	-0.1	300	0.3	7000	2.4
15	-0.2	500	0.3	8000	2.9
30	-0.1	1000	0.5		
50	0.0	3000	1.0		
REF. FREQ.	0.0	5000	1.5		

Mounting Surface: Tungsten Adapter    Fastener: Adhesive    Fixture Orientation: Vertical  
Acceleration Level (pk): 10.0 g (98.1 m/s<sup>2</sup>)

\*The acceleration level may be limited by shaker displacement at low frequencies. If the listed level cannot be obtained, the calibration system uses the following formula to set the vibration amplitude: Acceleration Level (g) = 0.008 x (freq)<sup>2</sup>    \*The gravitational constant used for calculations by the calibration system is: 1 g = 9.80665 m/s<sup>2</sup>

## Condition of Unit

As Found: n/a

As Left: New Unit, In Tolerance

## Notes

1. Calibration is NIST Traceable thru Project 683/287323 and PTB Traceable thru Project 17014.
2. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.
3. Calibration is performed in compliance with ISO 9001, ISO 10012-1, ANSI Z540.3 and ISO 17025.
4. See Manufacturer's Specification Sheet for a detailed listing of performance specifications.
5. Measurement uncertainty (95% confidence level with coverage factor of 2) for frequency ranges tested during calibration are as follows: 5-9 Hz; +/- 2.0%, 10-99 Hz; +/- 1.5%, 100-1999 Hz; +/- 1.0%, 2-10 kHz; +/- 2.5%.

Technician: Robert Zsebehazy R.Z.

Date: 9/21/2017



CALIBRATION CERT #1862.02

PAGE 1 of 1

**PCB PIEZOTRONICS**  
VIBRATION DIVISION

Headquarters: 3425 Walden Avenue, Depew, NY 14043

Calibration Performed at: 10869 Highway 903, Halifax, NC 27839

TEL: 888-684-0013    FAX: 716-685-3886    www.pcb.com

CAL2-3588848327.586+0

