



# Certificate of Calibration

CUSTOMER: TOTAL LABORATORY SERVICES LTD      JOB No: 0541090

ORDER NO: 2024106      CUST. REF: NO CUST REF

MAKE: BENETECH      TYPE: GM63B

DESCRIPTION: VIBRATION METER      SERIAL No: 2948744

AMBIENT TEMPERATURE\*: 20 ± °C      HUMIDITY: ± %RH

This is to certify the above instrument has been calibrated in accordance with a relevant specification and at those points tested the result(s) were\*:

Found to meet that specification on receipt	[ <input checked="" type="checkbox"/> ]	Found to meet that specification after adjustment/repair	[ <input type="checkbox"/> ]	Measurements recorded in absence of relevant specification	[ <input type="checkbox"/> ]	Found NOT to meet that specification – Calibration restrictions apply	[ <input type="checkbox"/> ]
Pre-Calibration repair performed	[ <input type="checkbox"/> ]	Optimising adjustment performed	[ <input type="checkbox"/> ]	Calibration performed away from laboratory*	[ <input type="checkbox"/> ]	Calibration performed by subcontractor*	[ <input checked="" type="checkbox"/> ]

**Absolute Calibration Complies with BS EN ISO 17025 and BS EN ISO 9001**

\*For calibration performed away from our laboratory or by a subcontractor please see the attached certificate for environmental conditions and calibration/measurement details.  
The above statement of conformity (e.g. Pass/Fail) to specification is made without taking measurement uncertainty into account unless stated otherwise in the report.

In order to comply with the above standards Absolute Calibration has to ensure that all measurements carried out in its laboratories are traceable to national standards.

**Approved Signatory**

  
DATE: 20-05-2024

**Absolute Calibration Limited**  
14 Murrills Estate, Portchester, Hampshire, England, PO16 9RD  
T: 023 9232 1712 | W: absolutecal.co.uk | E: califi@absolute-cal.co.uk

# CERTIFICATE OF CALIBRATION

ISSUED BY: CALIBRATION MAINTENANCE & REPAIR LTD

DATE OF ISSUE: 20 May 2024

CERTIFICATE NUMBER: 1162582

BS EN ISO  
9001:2015  
APPROVED  
BY  
**LRQA**

CERT No 10045223



11 Frensham Road  
Norwich  
Norfolk  
NR3 2BT

Tel: +44 (0)1603 279557

Page 1 of 3

Approved Signatory

Electronically Authorised Document

P K CLARK  
 R J WADE  
 M A FROST  
 M S PARDOE

J FRYER  
 M FOY

Customer

**ABSOLUTE CALIBRATION LTD  
O/B OF TOTAL LABORATORY SERVICES LTD**

Order No

**0000102783**

Equipment Description

**VIBRATION METER**

Manufacturer

**NOT KNOWN**

Model

**GM63B**

Serial No

**2948744**

Ident No

**NOT KNOWN**

Calibrated By

**Richard Wade**

Date Of Calibration

**20 May 2024**

## INSTRUMENT CONDITION

Adjustments Made

**NO**

Repairs Made

**NO**

## ENVIRONMENT

The instrument was placed in the laboratory environment for a minimum period of 4 hours and was operated prior to calibration.

Measurements were made in ambient conditions of 22 °C ± 3 °C and 45 %RH ± 15 %RH.

## PROCEDURE

Measurements were performed in accordance with the in house laboratory procedure 14116. All equipment used has been calibrated/verified against measurement standards or reference equipment traceable to International or National Measurement Standards as specified in our control procedure WI64. The results attached to this certificate refer to measurements made at the time of test and not to the instrument's ability to maintain calibration.

The attached results are a true record of the levels required to confirm the instrument meets the original stated manufacturer's specification and accuracy where shown.

# CERTIFICATE OF CALIBRATION

ISSUED BY: CALIBRATION MAINTENANCE & REPAIR LTD

BS EN ISO 9001:2015 APPROVAL CERTIFICATE No. 10045223



CERTIFICATE NUMBER

1162582

Page 2 of 3

## Calibration Equipment Used:

Cert Number	Ident Number	Model	Serial Number	Test Equipment Calibration Due
1137681IH	182	Laser	11633408	20 Dec 2024
1154040IH	149	301A11	1934	1 Dec 2024

## Notes:

### Measurement Uncertainties

The expanded uncertainty quoted refers to the measured values only, with no account being taken of the instruments ability to maintain its calibration. The expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level of confidence of approximately 95%.

### PARAMETER

d.c. Resistance

d.c. Voltage

d.c. Voltage

d.c. Current

a.c. Voltage

a.c. Current

Frequency

Capacitance

Time

Distortion

Temperature (Dry Block)

Temperature (Simulation)

Pressure

Dynamic Pressure

Torque

Weight

Humidity

Shock & Impulse Hammers

Spring Hammers

Sound

Sound

Tachometers

Anemometers

Vibration Meters

Vibration Calibrators

Mechanical Measurement

Inductance

Power (VA)

Power (RF)

Light Meters

Force (Compression)

### RANGE

0.01 $\Omega$  - 400M $\Omega$

400M $\Omega$  - 1T $\Omega$

0V - 1kV

1.01kV-15kV

0mA - 20A

0mV - 1.05kV

0mA - 20A

0.5Hz - 20GHz

0.5nF - 40mF

0 - 1 Hour

10mV - 100V

-30 $^{\circ}$ C - 350 $^{\circ}$ C

-270 $^{\circ}$ C - 1800 $^{\circ}$ C

10mBar - 35Bar

1.38 - 103.5MPa

0.1 - 1100Nm

2g - 157kg

0% - 90%

Frequency

Level

60rpm - 96000rpm

2.5m/s to 15m/s

10Hz - 1kHz

<200mm

>200mm

20-2000Lux

0.25N - 50kN

### EXPANDED UNCERTAINTY

$\pm$  409ppm

$\pm$  1%

$\pm$  79ppm

$\pm$  2.2%

$\pm$  437ppm

$\pm$  1.2%

$\pm$  0.5%

$\pm$  0.1ppm

$\pm$  1.1%

$\pm$  1s

$\pm$  1.4mV

$\pm$  1%

$\pm$  0.57%

$\pm$  0.04%

$\pm$  5.0%

$\pm$  1.5%

$\pm$  0.03%

$\pm$  1%

$\pm$  4%

$\pm$  0.015J

$\pm$  0.06%

$\pm$  0.16dB

$\pm$  0.1%

$\pm$  2.0%

$\pm$  5%

$\pm$  3%

$\pm$  0.01 $\mu$ m

$\pm$  0.002mm

$\pm$  0.1%

$\pm$  1%

$\pm$  0.5dB

$\pm$  3.5%

$\pm$  0.25%

These uncertainties are only applicable if no uncertainties are shown on the result sheet.

This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

# CERTIFICATE OF CALIBRATION

ISSUED BY: CALIBRATION MAINTENANCE & REPAIR LTD



CERTIFICATE NUMBER

1162582

## RESULT SHEET 14116 - GM63B VIBRATION METER

BATTERIES REPLACED

NO

AS FOUND

### 1) ACCELERATION

Frequency	Applied	Limits	Measured	Units	Error %
160Hz	1.0	±25.0%	0.9	m/s <sup>2</sup>	-10.00
160Hz	10.0	±7.0%	9.7	m/s <sup>2</sup>	-3.00

### 2) VELOCITY

Frequency	Applied	Limits	Measured	Units	Error %
160Hz	10.0	±7.0%	9.8	mm/s	-2.00
160Hz	100.0	±5.2%	99.6	mm/s	-0.40

### 3) DISPLACEMENT

Frequency	Applied	Limits	Measured	Units	Error %
160Hz	0.01	±25.0%	0.010	mm/s	0.00
160Hz	0.10	±7.0%	0.099	mm/s	-1.00

### 4) TEMPERATURE

Applied	Limits	Measured	Units	Error %
21.4	±2.0°C	21	°C	-0.40