CERTIFICATE OF CALIBRATION

Issued by ABSOLUTE CALIBRATION LIMITED

DATE OF ISSUE

30 March 2023

CERTIFICATE NUMBER 0520941





Absolute Calibration Limited

14 Murrills Estate, Portchester Hampshire, England, PO16 9RD Telephone 023 92321712 Facsimile 023 92210034 Service Facsimile 023 92327100 www.absolute-cal.co.uk

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Approved Signatory	
A Watson	

Manuf	acturer:
Type N	lumber:

TT1 PFM3000

Description:

High Res Frequency Counter

Serial Number: Customer Reference: 539276 498726-1

Customer Code:

PUL001

Customer:

Pullman Instruments (UK) Limited

ESG House

Chatsworth Road

Harrogate

North Yorkshire

Order Number:

253945

Instrument Receipt Date:

29 March 2023

Laboratory Temperature:

20.0 °C ± 3.0 °C

Laboratory Humidity:

50 %rh ± 25 %rh

Unit Stabilisation Time:

One Hour

Calibration Procedure:

CP146

Calibration Engineer:

W. Smith

Calibration Date:

30 March 2023

This report contains:

Recorded results with no adjustments

Pre and post adjustment results

Post repair results

Results recorded at Customer site

The following calibration results relate to the items defined above or uniquely identified in the following pages.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written permission of the issuing laboratory.

FM56/6

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UKAS Accredited Calibration Laboratory no. 0078

Parameter Tested

'X' Tal Accuracy at 10 MHz

Applied Frequency 10.000 000 000 MHz Uncertainty ± of
Applied Value
± 2 in 108

<u>Deviation from</u> <u>Applied Frequency</u> <3 in 10⁷

The internal crystal oscillator was checked by applying a standard 10 MHz signal to the input of the counter and evaluating the resultant reading.

Time Base Accuracy

Gate <u>Time</u> 0.3 s	<u>Applied</u> <u>Frequency</u> 10.00000 MHz	<u>Uncertainty ± of</u> <u>Applied Value</u> 2 in 10 ⁸	<u>PFM3000</u> <u>Display</u> 10.00000 MHz
1 s	10.000000		9.999997
10 s	100.0000000		9.9999982

Frequency Response - Channel A

PFM3000	Applied	Uncertainty ± of Applied Value 2 in 10 ⁸	<u>PFM3000</u>
Setting	Input		<u>Display</u>
1 s	3.000 000 Hz		2.999924 Hz
0.3 s	10.000 00 Hz 50.000 0 100.000 0 300.000 500.000 700.000 1.000 000 MHz 5.000 00 100.000 0 125.000 0	2 in 10 ⁸	10.00001 Hz 50.0000 100.0000 300.000 500.000 700.000 1.000000 MHz 5.00000 100.0000

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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Parameter Tested

Frequency Response - Channel B

PFM3000	<u>Applied</u>	Uncertainty ± of	<u>PFM3000</u>
Setting	<u>Input</u>	Applied Value	<u>Display</u>
0.3 s	80.000 00 MHz	2 in 10 ⁸	80.0001 MHz
0.3 s	3000.00 MHz	2 in 10 ⁸	3000.00 MHz

An additional uncertainty of 1 lsd for the resolution of the display should be calculated using summation in quadrature.

The uncertainty reported refers to the applied values only, with no account being taken of the instruments ability to maintain its calibration.

--- End ---

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.







Certificate of Calibration

CUSTOMER:

DJB LABCARE LTD

JOB No:

0520941

ORDER NO:

253945

CUST. REF:

498726-1

MAKE:

TTI

TYPE:

PFM3000

DESCRIPTION:

HIGH RES FREQUENCY COUNTER

SERIAL No:

539276

AMBIENT TEMPERATURE*: 20 ± 3 °C

HUMIDITY: ダウ± 25

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

[]

Found to meet that specification after adjustment/repair []

specification

Measurements recorded

in absence of relevant

Found NOT to meet that specification - Calibration restrictions apply []

Pre-Calibration repair performed]

Optimising adjustment performed [1

Calibration performed away from laboratory* Calibration performed by subcontractor*

1

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

30/03/23 DATE:

Absolute Calibration Limited

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