SGS

Report No: 10549631 / 1.1

CALIBRATION REPORT

Submitted By	:	**HOYA MEDICAL SINGAPORE PTE LTD** 455A Jalan Ahmad Ibrahim Singapore 639939
Instrument	:	Biomedical Freezer 2
Manufacturer	:	Sanyo
Model Number	:	MDF-U730M
Serial Number	:	11099311
Identification Number	:	05-800144-12
Ambient Temperature	:	26°C to 28°C
Relative Humidity	:	(45 to 55)% relative humidity
Date Calibrated (On Site)	:	27-DEC-2022
Recommended Due Date	:	26-DEC-2023
Date Issued	:	28-DEC-2022

SGS Standard Measurement Laboratory certifies that the above-named unit-under-test has been calibrated under the environment conditions as stated above.

The calibration was carried out with reference to the following calibration and measurement standards which are traceable to the International System of Units (SI) through National Metrology Institutes **NMC A*STAR, NIST or NPL.**

Method of Calibration:
The method of calibration is based on the procedure **PR-(SG)-[I&E]-[SMD-TEM-G]-CAL-008/REV04/28-09-2022.**
The calibration points are agreed and requested by customer.

Reference Standard(s) Used During Calibration:

Standard Used	Model No.	Serial No.	Cal Due Date
Hybrid Recorder	GP-10	S5R909047	01-NOV-2023

Results of Calibration:
The results of calibration are given on the attached calibration data.

The expanded measurement of uncertainties are estimated at a level of confidence of approximately 95% with a coverage factor **k=2**.

The temperature scale in use at this laboratory is the International Temperature Scale of 1990 (ITS 90).

Calibrated By
HARIKUMAR PILLAI
CALIBRATION OFFICER

Approved By
NALLUSAMY ARUNMOZHI
CALIBRATION OFFICER

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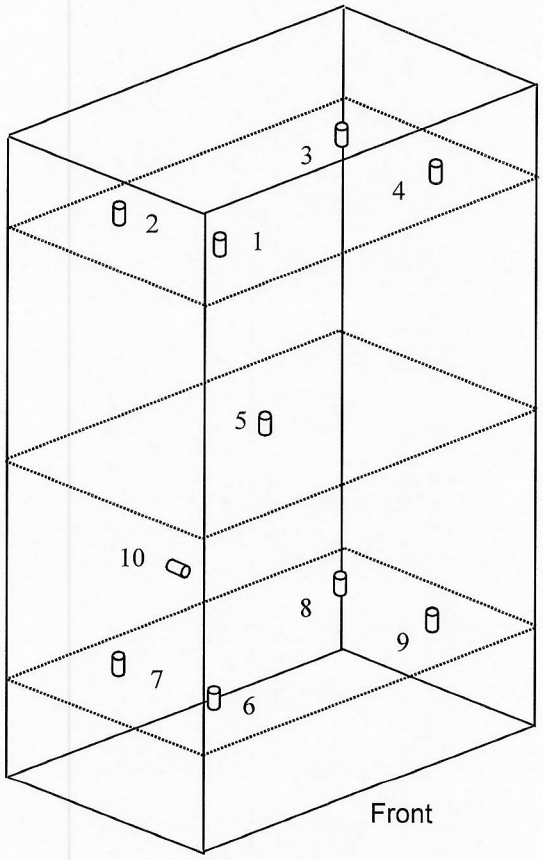

Diagram show position of TC Sensor in Biomedical Freezer

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Temperature Check			
I.	**Mean Achieved Readings (°C)**		
Set Point for Temperature Readout	-20	-25	-30
UUT Indicator Reading	-20	-25	-30
Indication at Probe # 1	-20.9	-24.1	-28.2
Indication at Probe # 2	-21.2	-24.3	-28.8
Indication at Probe # 3	-21.3	-24.5	-28.8
Indication at Probe # 4	-20.9	-24.0	-28.2
Indication at Probe # 5	-20.5	-23.6	-28.2
Indication at Probe # 6	-19.6	-23.2	-28.3
Indication at Probe # 7	-20.3	-23.8	-28.7
Indication at Probe # 8	-20.2	-23.5	-28.6
Indication at Probe # 9	-20.0	-23.1	-28.3
Indication at Probe # 10	-20.3	-23.9	-28.9
II. Maximum Mean Temperature (°C)	-19.6	-23.1	-28.2
Minimum Mean Temperature (°C)	-21.3	-24.5	-28.9
Temperature Gradient (°C)	1.7	1.4	0.6
III. Temperature Fluctuation (°C)	1.0	2.0	0.5
Interval of Time (minutes)	60.0	60.0	60.0
IV. Overall Mean Temperature (°C)	-20.5	-23.8	-28.4
Expanded Uncertainty (°C)	2.6	2.8	2.3

NOTE : **Temperature gradient** is the maximum difference in mean value, after stabilization, at any moment in time between two separate points in the working space.

Temperature fluctuation is the largest difference, after stabilization, between the maximum and minimum temperatures at any point in the working space during a specified interval of time.

Interval of Time means time taken after stabilization.

Overall Mean Temperature is the average of mean achieved temperatures.

REMARKS: The user should determine the suitability of the instrument for its intended use.

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