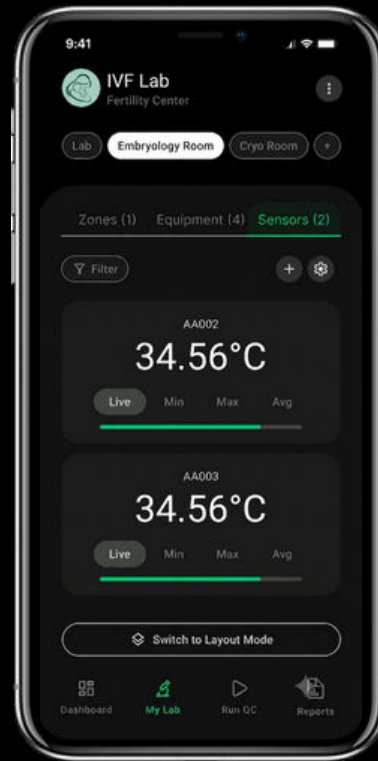




Automating temperature validation, calibration and mapping

with purpose-built precision sensors

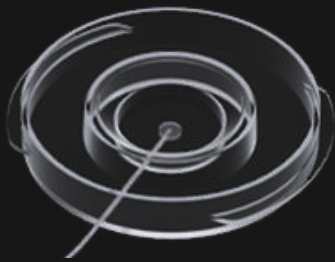
MG-TM Temperature Sensors



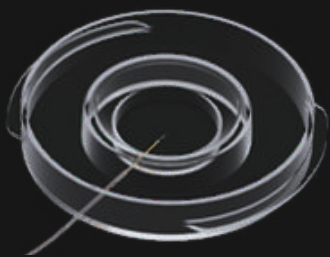
Accurate temperature control !

Why is it so critical within the media droplet for IVF success?

METRUM GENIE Petri Dish Probes



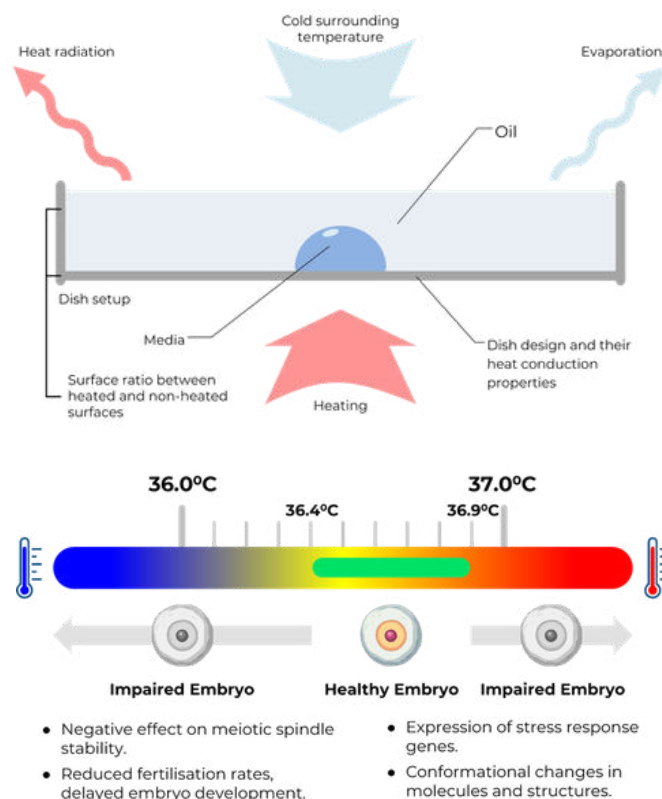
T-IUFT



T-ITNDL

Controlling the temperature of media droplets in petri dishes during manipulation remains challenging despite the use of heated surfaces. The media droplet temperature is influenced by a complex interaction of heated and non-heated surfaces, evaporation, heat transfer, radiation, dish design, and setup conditions, making surface temperature measurements alone insufficient.

Metrum Genie sensor-integrated dish probes overcome these limitations by directly measuring media droplet temperature under actual operating conditions, enabling accurate temperature control and precise calibration of heating equipment.



"Ideal" Temperature > 36.4°C and < 36.9°C

Measuring the temperature of media droplets in petri dishes involves more than simply placing a probe in the dish. The design and characteristics of the temperature probe can influence both the measurement process and the temperature reading itself.

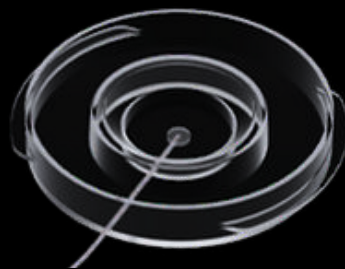
Why choose METRUM GENIE

Temperature Sensors

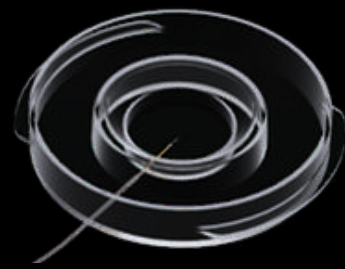


Achieve a precise 37 °C in a media droplet

Enables direct temperature measurement in media droplets using our proprietary sensor-integrated Petri dish probes. This allows embryologists to precisely fine-tune heating equipment to maintain the critical 37 °C in the media droplet.



T-IUFT



T-ITNDL



Comprehensive sensor portfolio

An advanced device engineered to address the full spectrum of temperature measurement requirements in IVF clinics and a wide range of precision-driven laboratory equipment and applications.

- Heated work surfaces.
- Benchtop incubators.
- Time-lapse incubators.
- Big box incubators.
- Heated glass stages.
- Tube warmers.
- Cryo tanks, fridges, and freezers.



Accuracy ± 0.03 °C

Accurate temperature measurements and precise temperature control in the IVF lab are essential for achieving optimal results.



Sensor Calibration

Calibration performed by returning only the temperature probe, minimising equipment downtime and disruption to laboratory operations.

What you can do with METRUM GENIE

Temperature Sensors



Precise Thermal Control

Maintain a stable, optimal environment for embryo development



Heating Equipment Calibration

Calibrate heating equipment to achieve precise target temperatures



Temperature Spot Checks

Perform precise temperature spot-check measurements



Surface Temperature Mapping

Enable accurate mapping of surface temperature variations



Environmental Temperature Mapping

Enable accurate mapping of environmental temperature variations



Advance Dual-Sensor Calibration

Automated advance calibration using two temperature sensors



Continuous Temperature Monitoring

Perform continuous real-time temperature monitoring



37 °C Media Calibration

Calibrate heating equipment to achieve a precise 37 °C in a media droplet

Temperature Sensor Portfolio

T-IUFT

Petri dish probe with integrated Thin Flexible Sensor

Temperature Measurement Use Case

Designed for temperature measurements in media droplets, incubators, and laboratory equipment to precisely fine-tune heating equipment to maintain the critical 37 °C in the media droplet.

Typical measurement applications:

- Media droplets in petri dishes inside and outside incubators.
- Calibration of heating equipment to achieve 37°C in liquids within petri dishes.

Note: Sensors can be integrated with petri dishes from any manufacturer.

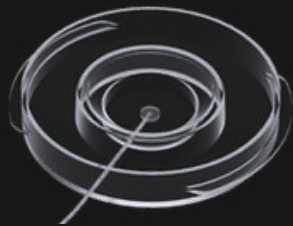
Technical Specification

Order Code	T-IUFT-M-MPN
Description	Petri dish with integrated thin flexible sensor probe
Sensor type	T-Type thermocouple
Measuring range	-50 °C to +100 °C
Accuracy	±0.03 °C in the physiological range
Temperature resolution	0.01 °C
Temperature drift	±0.02 °C / year
Response time	0.5 s to 1 s
Plug & play compatible	Yes
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor tip Ø = 0.635 mm; cable length = 910 mm; cable thickness = 0.635 mm

Labware Manufacturers

BIRR • Nunc • Oosafe • VitroLife • Astec • Falcon • Geri

Petri Dish Probe Construction Detail



Sensor glued to the
petri dish bottom
surface

Our Petri dish probe with integrated temperature sensors is the only direct and accurate way to achieve and verify the critical 37°C temperature within the media droplet.



Ultrasonic Cleaner
for petri dish probe
cleaning

Temperature Sensor Portfolio

T-ITNDL

Petri dish probe with integrated Thin Needle Sensor

Temperature Measurement Use Case

Designed for temperature measurements in media droplets, incubators, and laboratory equipment to precisely fine-tune heating equipment to maintain the critical 37 °C in the media droplet.

Typical measurement applications:

- Media droplets in petri dishes inside and outside incubators.
- Calibration of heating equipment to achieve 37°C in liquids within petri dishes.

Note: Sensors can be integrated with petri dishes from any manufacturer.

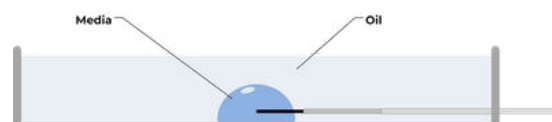
Technical Specification

Order Code	T-ITNDL-M-MPN
Description	Petri dish with integrated thin needle sensor probe
Sensor type	T-Type thermocouple
Measuring range	-50 °C to +100 °C
Accuracy	±0.03 °C in the physiological range
Temperature resolution	0.01 °C
Temperature drift	±0.02 °C / year
Response time	0.5 s to 1 s
Plug & play compatible	Yes
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor tip Ø = 0.1 mm; sensor tip length = 2 mm; cable length = 1500 mm; cable thickness = 0.72 mm

Labware Manufacturers

BIRR • Nunc • Oosafe • VitroLife • Astec • Falcon • Geri

Petri Dish Probe Construction Detail



Sensor suspended
1 mm above the
petri dish bottom
surface

Our Petri dish probe with integrated temperature sensors is the only direct and accurate way to achieve and verify the critical 37°C temperature within the media droplet.



Ultrasonic Cleaner
for petri dish probe
cleaning

Temperature Sensor Portfolio

T-UFT

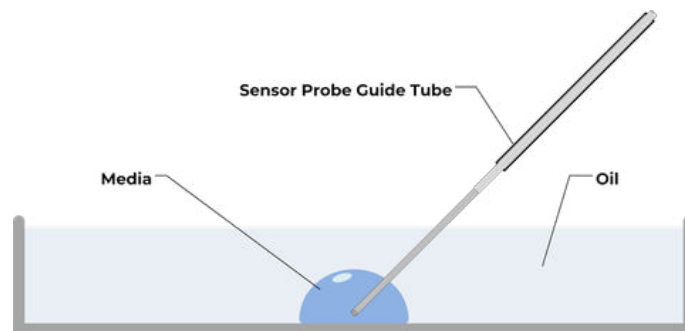
Thin Flexible Sensor

Temperature Measurement Use Case

Designed for temperature measurements in media droplets, incubators, and laboratory equipment, where a thin and flexible probe is required to access small openings or confined spaces.

Typical measurement applications:

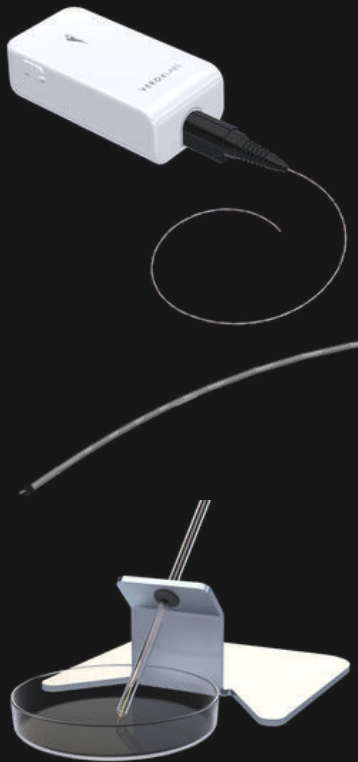
- Media droplets in Petri dishes outside incubators.
- Measurement inside test tubes or small liquid samples.
- Surface temperature measurements on heated glass stages and heated work surfaces.
- Measurement inside time-lapse incubators.



Technical Specification

Order Code	T-UFT
Description	Thin flexible sensor probe
Sensor type	T-Type thermocouple
Measuring range	-50 °C to +100 °C
Accuracy	±0.03 °C in the physiological range
Temperature resolution	0.01 °C
Temperature drift	±0.02 °C / year
Response time	0.5 s to 1 s
Plug & play compatible	Yes
Included Accessories	Probe stand, sensor tube guide, and test tube guide
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor tip Ø = 0.635 mm; cable length = 910 mm; cable thickness = 0.635 mm

Thin Flexible Sensor Construction Detail



Probe stand with guide tube



Test tube guide

Temperature Sensor Portfolio

T-NDL

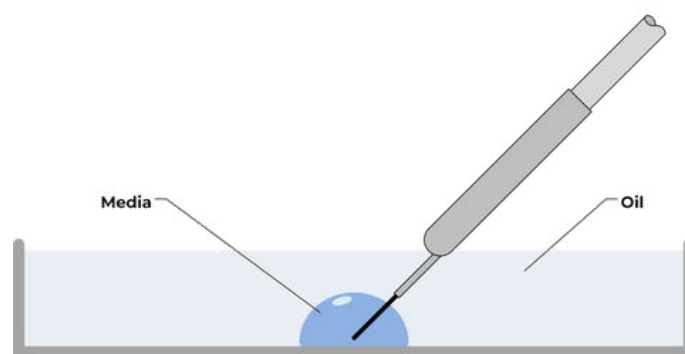
Needle Sensor

Temperature Measurement Use Case

Designed for temperature measurements in media droplets, incubators, and laboratory equipment, where a rigid needle probe is required.

Typical measurement applications:

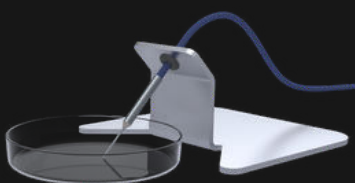
- Media droplets in Petri dishes outside incubators.
- Measurement inside test tubes or small liquid samples.



Technical Specification

Order Code	T-NDL
Description	Needle sensor probe
Sensor type	T-Type thermocouple
Measuring range	-50 °C to +200 °C
Accuracy	±0.03 °C in the physiological range
Temperature resolution	0.01 °C
Temperature drift	±0.03 °C / year
Response time	0.13 s to 0.25 s
Plug & play compatible	Yes
Included Accessories	Probe stand, sensor tube guide, and test tube guide
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor tip Ø = 0.34 mm; sensor tip length = 12 mm; cable length = 1500 mm; cable thickness = 2.5 mm

Needle Sensor Construction Detail



Probe stand



Test tube guide

Temperature Sensor Portfolio

T-TNDL

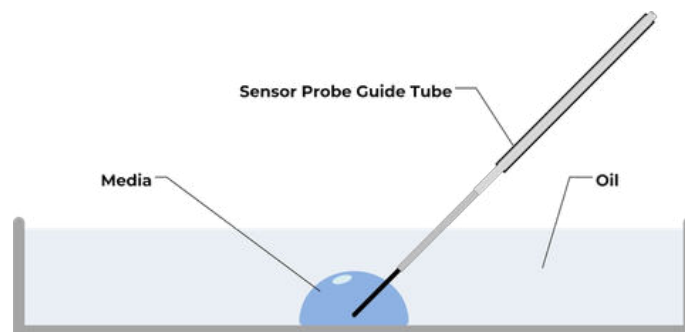
Thin Needle Sensor

Temperature Measurement Use Case

Designed for temperature measurements in media droplets, incubators, and laboratory equipment, where a thin and flexible probe is required to access small openings or confined spaces.

Typical measurement applications:

- Media droplets in Petri dishes outside incubators.
- Measurement inside test tubes or small liquid samples.
- Measurement inside time-lapse incubators.



Technical Specification

Order Code	T-TNDL
Description	Thin needle sensor probe
Sensor type	T-Type thermocouple
Measuring range	-50 °C to +100 °C
Accuracy	±0.03 °C in the physiological range
Temperature resolution	0.01 °C
Temperature drift	±0.02 °C / year
Response time	0.5 s to 1 s
Plug & play compatible	Yes
Included Accessories	Probe stand, sensor tube guide, and test tube guide
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor tip Ø = 0.1 mm; sensor tip length = 2 mm; cable length = 1500 mm; cable thickness = 0.72 mm

Thin Needle Sensor Construction Detail



Probe stand with guide tube



Test tube guide

Temperature Sensor Portfolio

T-SFC

Surface Sensor

Temperature Measurement Use Case

Designed for accurate surface temperature measurements on metal heated surfaces, particularly in IVF laboratory workstations and incubator compartments.

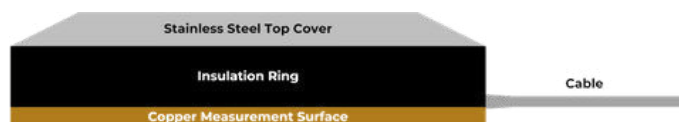
Typical measurement applications:

- Surface temperature measurement of heated work surfaces and benchtop incubator chambers.
- Temperature mapping of heated worksurfaces.

Technical Specification

Order Code	T-SFC
Description	Surface sensor
Sensor type	3-wire PT100 RTD
Measuring range	-50 °C to +200 °C
Accuracy	±0.03 °C in the physiological range
Temperature resolution	0.01 °C
Temperature drift	±0.02 °C / year
Response time	< 50 s
Plug & play compatible	Yes
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor disk Ø = 32 mm; disk height = 8.5 mm; cable length = 1000 mm; cable thickness = 0.8 mm

Surface Sensor Construction Detail



Temperature Sensor Portfolio

T-FSFC

Flexible Surface Sensor

Temperature Measurement Use Case

Designed for accurate surface temperature measurements on metal-heated surfaces and glass stages.

Typical measurement applications:

- Surface temperature measurement of heated work surfaces, heated glass stages and benchtop incubator chambers.
- Temperature mapping of heated surfaces.

Technical Specification

Order Code	T-FSFC
Description	Flexible surface sensor
Sensor type	3-wire PT100 RTD
Measuring range	-40 °C to +50 °C
Accuracy	±0.03 °C in the physiological range
Temperature resolution	0.01 °C
Temperature drift	±0.02 °C / year
Response time	< 1 s
Plug & play compatible	Yes
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor width = 3 mm; sensor thickness = 1.35 mm; cable length = 1000 mm; cable thickness = 0.8 mm

Flexible Surface Sensor Construction Detail



Temperature Sensor Portfolio

T-FFC

Fridge Freezer Sensor

Temperature Measurement Use Case

Designed for reliable temperature monitoring in laboratory refrigeration and freezer systems.

Typical measurement applications:

- Laboratory refrigerators.
- Laboratory freezers.

Technical Specification

Order Code	T-FFC
Description	Fridge freezer sensor
Sensor type	3-wire PT100 RTD
Measuring range	-200 °C to +200 °C
Accuracy	±0.1 °C @ 0°C
Temperature resolution	0.01 °C
Temperature drift	±0.02 °C / year
Response time	< 60 s
Plug & play compatible	Yes
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor Ø = 4 mm; sensor length = 50 mm; cable length = 3 m; cable thickness = 1.25 mm

Fridge Freezer Sensor Construction Detail



Temperature Sensor Portfolio

T-CTP

Cryogenic sensor

Temperature Measurement Use Case

Designed for temperature monitoring in liquid nitrogen tanks.

Typical measurement applications.

- Cryo tanks (LN₂ tanks).

Technical Specification

Order Code	T-CTP
Description	Cryogenic sensor
Sensor type	3-wire PT100 RTD
Measuring range	-200 °C to +200 °C
Accuracy	±0.1 °C @ 0°C
Temperature resolution	0.01 °C
Temperature drift	±0.02 °C / year
Response time	< 60 s
Plug & play compatible	Yes
Transmission interval	1s to 30s configurable
Interface	Wireless
Dimensions	Sensor Ø = 3 mm; sensor length = 300 mm; cable length = 3 m; cable thickness = 3.5 mm

Cryogenic sensor Construction Detail





Temperature Sensor Portfolio

Custom Temperature Sensors

Customised Solutions

We offer custom sensor probes designed to meet your specific requirements.

Industry-Leading Performance

Our capabilities ensure that we can match or surpass the performance of sensor probes from other manufacturers in the industry.

Precision Engineering

Our expertise in design and engineering ensures the highest level of accuracy.

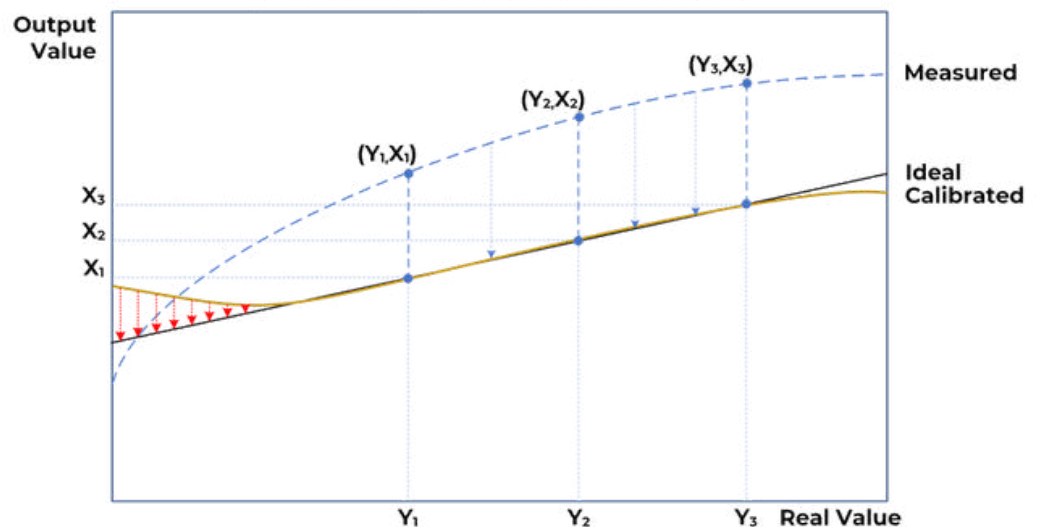


Temperature Sensor Calibration

Calibration performed by returning only the temperature probe, minimising equipment downtime and disruption to laboratory operations.

- Inbuilt calibration function eliminates the need to add correction factors during readings.
- Unique calibration algorithm eliminates fluctuations.
- 3 - Point calibration (32°C, 37°C, 40°C) enhances accuracy.
- Traceable calibration certificate included for each sensor.

3- Point Calibration Effect





Lanka Calibration Services
 40/4, New Road, Colombo
 Sri Lanka
 Tel: +94 (0)11 25000000
 Email: info@lankacal.com
 Web: www.lankacal.com

Lanka Calibration Services Pvt Ltd
 40/4, New Road, Colombo
 Sri Lanka
 Tel: +94 (0)11 25000000
 Email: info@lankacal.com
 Web: www.lankacal.com



CERTIFICATE OF CALIBRATION

Page 22 of 22

Certificate No: LCS/CR/26/10488

Lanka Calibration Services Pvt Ltd

Date of Issue: 2020-04-20

No 211/4, New Road, Colombo

Reg No: PY 03477

Customer Details

Name: Verimatic PVT Ltd
 Address: 28C/7A, Anuradha Mawatha,
 Maruthamulla, Sri Lanka

Test Item Calibration

Description: Dual Channel Digital Thermometer with Two Flexible Sensor Probe

Manufacturer: Verimatic PVT Ltd
 Model: 100000001
 Serial No: M00000000000000000000
 Date received: 2020-04-20

Item: 0101
 Manufacturer: Verimatic PVT Ltd
 Model: 100000001
 Serial No: M00000000000000000000

Reference standard(s) used in calibration

Description	Responsibility	Calibration Base
Working Standard Temperature	Verimatic PVT Ltd	2020-04-20
Reference Temperature	Verimatic PVT Ltd	2020-04-20
Measurement Uncertainty	Verimatic PVT Ltd	2020-04-20

Traceability - The standards used by Lanka Calibration Services (Lanka) are traceable to relevant international measurement standards and are part of a calibration programme to ensure continued accuracy and traceability. The calibration certificate is valid for the duration of the calibration. The calibration certificate is valid for the duration of the calibration.

Test Method: ISO 9001:2015
 Date of Calibration: 2020-04-20
 Ambient conditions: Temperature: 25.0 ± 1.5 °C
 Relative Humidity: 50.0 ± 2.0 %
 Location: 001-001-001

Comments:

www.lankacal.com
 40/4, New Road, Colombo
 Sri Lanka

This is a sample certificate. The actual certificate will be issued in a separate document. The certificate is valid for the duration of the calibration. The calibration certificate is valid for the duration of the calibration.

Certificate No: LCS/CR/26/10488		Calibration Results	
Normal Temperature	Reference Value	Indicated Value	Error ¹
32 °C	32.00 °C	32.00 °C	0.00 °C
37 °C	37.00 °C	37.00 °C	0.00 °C
40 °C	40.00 °C	40.00 °C	0.00 °C
1. Deviation of the indicated value from the reference value.			
Notes The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of 2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with ISO requirements.			
Source of uncertainty - The expanded uncertainty reported includes the uncertainty of calibration of the standard used, and of the standard used, the uncertainty of the standard and the measurement conditions and the uncertainty of the standard and the measurement conditions.			

Temperature Sensor

Application Matrix

Description	Order Code	Assisted with Integrated Sensors		Manual					
		Petri dish surface measurement (Inside & outside incubators)	Petri dish liquid measurement (Inside & outside incubators)	Liquid measurement (Outside incubators)	Liquid measurement (Inside incubators)	Surface measurement (Excluding Heated Glass stage)	Surface measurement (Incubator top, bottom, Heated surfaces)	Incubator/Time-lapse incubator measurement (1.1mm Ø opening)	Test tube measurement
Petri dish probe with integrated Thin needle sensor	T-ITNDL-M-MPN		✓						
Petri dish probe with integrated Thin flexible sensor	T-IUFT-M-MPN	✓							
Thin flexible sensor	T-UFT			✓	✓			✓	✓
Needle sensor	T-NDL			✓					✓
Thin needle sensor	T-TNDL			✓	✓				✓
Surface sensor	T-SFC					✓			
Flexible surface sensor	T-FSFC					✓	✓		

Ultrasonic Cleaner

for Petri Dish Probes



Technical Specification

Order Code	UCK
Description	Ultrasonic Cleaner
Ultrasonic frequency	43 Hz
Tank material	Stainless steel SUS304
Tank capacity	600 ml
Times	5 cycles: 180 s; 280 s; 380 s; 480 s; 90 s
Power supply	AC100-120V, 60Hz/ AC200-240V, 50Hz
Ultrasonic power	35W
Tank dimensions	150 mm x 90 mm x 50 mm (L x W x H)
Overall dimensions	206 mm x 145 mm x 133 mm (L x W x H)

Ordering Guide

Temperature Sensors

Order Code	Description
MG-TM T-UFT	• Temperature module • Thin flexible sensor
MG-TM T-NDL	• Needle sensor • Temperature module
MG-TM T-TNDL	• Temperature module • Thin needle sensor
MG-TM T-SFC	• Temperature module • Surface sensor
MG-TM T-FSFC	• Temperature module • Flexible surface sensor
MG-TM T-FFC	• Temperature module • Fridge-freezer sensor
MG-TM T-CTP	• Temperature module • Cryo-tank sensor
MG-TM T-IUFT-M-MPN	• Temperature module • Integrated dish probe with thin, flexible sensor
MG-TM T-ITNDL-M-MPN	• Temperature module • Integrated dish probe with thin needle sensor

Accessories

Order Code	Description
UCK	Ultrasonic cleaner