

**CERTIFICADO DE CALIBRACIÓN / CALIBRATION CERTIFICATE****INNOVATECIS CIA LTDA**

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**Certificado No. (Certificate #):** 59813**Fecha de Recepción (Reception Date):** 2025-08-07**Fecha de Calibración (Calibration Date):** 2025-08-14**Próxima Fecha de Calibración (Calibration Due):** 2027-08**Fecha de Emisión (Emission Date):** 2025-08-14**Cliente (Client):** LABORATORIOS INDUSTRIALES FARMACEUTICOS ECUATORIANOS LIFE C.A.  
JUAN GALARZA OE2-22 Y AV. DE LA PRENSA, QUITO, PICHINCHA**Información del Instrumento (Instrument Information)**

|                             |             |                                                 |               |                                                         |                                             |
|-----------------------------|-------------|-------------------------------------------------|---------------|---------------------------------------------------------|---------------------------------------------|
| <b>Equipo (Instrument):</b> | Microbaño   | <b>Int. de Medición:</b><br>(Measurement Range) | (30 a 300) °C | <b>Ubicación:</b><br>(Location):                        | Instrumentación Bloque<br>56 (20--B56 -INS) |
| <b>Marca (Brand):</b>       | Techne      |                                                 |               |                                                         |                                             |
| <b>Modelo (Model):</b>      | UCAL 400+   | <b>División de escala:</b><br>(Resolution)      | 0.01 °C       | <b>Lugar de Calibración:</b><br>(Place of Calibration): | Lab. INNOVATEC<br>INNOVATEC's Lab.          |
| <b>Serie/Código:</b>        | 753250-03 / |                                                 |               |                                                         |                                             |

**Datos de Calibración (Calibration Info)****Procedimiento (Procedure):** INN-PC-29**Condiciones Ambientales (Environmental Conditions)****Temp. Inicial (Initial Temp.):** 21.5 °C**Hum. Inicial (Initial Hum.):** 54.6 %HR**Temp. Final (Final Temp.):** 22.3 °C**Hum. Final (Final Hum.):** 55.1 %HR**Trazabilidad (Traceability Info)**

| <b>Patrón (Standard)</b> | <b>Marca (Brand)</b> | <b>Cert. #</b> | <b>Última Calibración (Last Cal.)</b> | <b>Período (Period)</b> |
|--------------------------|----------------------|----------------|---------------------------------------|-------------------------|
| PRT                      | ISOTECH              | AC-31859       | 2025-06-30                            | 2                       |
| Advanced Multimeter      | Transmille           | 51065          | 2024-03-26                            | 2                       |
| Termocupla               | -                    | 51731 / 51732  | 2024-11-26                            | 1                       |
| -                        | -                    | -              | -                                     | -                       |
| -                        | -                    | -              | -                                     | -                       |
| -                        | -                    | -              | -                                     | -                       |

**Resultados (Results)**

Ver Resultados en Hoja Adjunta

See results in attached Sheet

El presente Certificado de Calibración posee la trazabilidad en esta magnitud hacia el Patrón Nacional, a través de la realización de la unidad de medida en el NPL, NIST, u otro Laboratorio Nacional reconocido al Sistema Internacional de Medidas. La calibración fue realizada bajo un Sistema de Gestión de Laboratorio conforme a la Norma ISO/IEC 17025:2017. Los resultados y su incertidumbre reportada con un nivel de confianza de k=2, 95% son relacionados a este instrumento y en el tiempo que se realizó las medidas. Este Laboratorio no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado del instrumento calibrado. La reproducción parcial es prohibida, la reproducción total deberá hacerse con la autorización escrita aprobada por INNOVATEC Industrial Solutions. *This Certificate of Calibration provides traceability of measurement to the National Standard, through units of measurement realized at the NPL, NIST or other recognized National Standard Laboratories to the International System of Units. The calibration was performed under a Laboratory Management System in accordance with the ISO/IEC 17025:2017 Standard. The results and the reported uncertainty at a confidence level of k=2, 95% are related only to this instrument and at the time of measurement. This Laboratory is not responsible for any damages that may result from improper use of the calibrated instrument. Partial reproduction is forbidden, the total reproduction must have an approved written authorization by INNOVATEC Industrial Solutions.*

**Comentarios:** Los resultados son un promedio de los datos tomados durante la calibración.**Comments****Calibrado por:** Jonathan Fonseca  
**Calibrated by:****Aprobado por:**  
**Approved by:****Fin de Certificado (End of Certificate)**

Certificado No.: 59813

Equipo (Instrument): Microbaño

Fecha de Calibración: 2025-08-14

Marca (Brand): Techne

| Nominal<br>(Nominal) | Patrón<br>(Standard) | UBP<br>(UUT) | Error<br>(Error) | Precisión<br>(Accuracy) | Estabilidad<br>(Stability) | Uniformidad<br>(Uniformity) | Incertidumbre<br>(Uncertainty) |
|----------------------|----------------------|--------------|------------------|-------------------------|----------------------------|-----------------------------|--------------------------------|
| 30 °C                | 30.089 °C            | 30.00 °C     | -0.089 °C        | ± 0.1 °C                | 0.081 °C                   | 0.05 °C                     | ± 0.06 °C                      |
| 100 °C               | 100.128 °C           | 100 °C       | -0.128 °C        | ± 0.1 °C                | 0.042 °C                   | 0.03 °C                     | ± 0.08 °C                      |
| 200 °C               | 202.23 °C            | 200 °C       | -2.229 °C        | ± 0.1 °C                | 0.119 °C                   | 0.085 °C                    | ± 0.18 °C                      |
| 300 °C               | 302.238 °C           | 300 °C       | -2.237 °C        | ± 0.1 °C                | 0.123 °C                   | 0.120 °C                    | ± 0.21 °C                      |

Diagram de Posición de Sensores (Sensor Position Diagram)

**Legenda:**

1: Patrón de Referencia

2: Sensor #1

2: Sensor #2

Las imágenes utilizadas solo son un ejemplo de los puntos de medida empleados y posición de los sensores.

Certificado No.: 59813

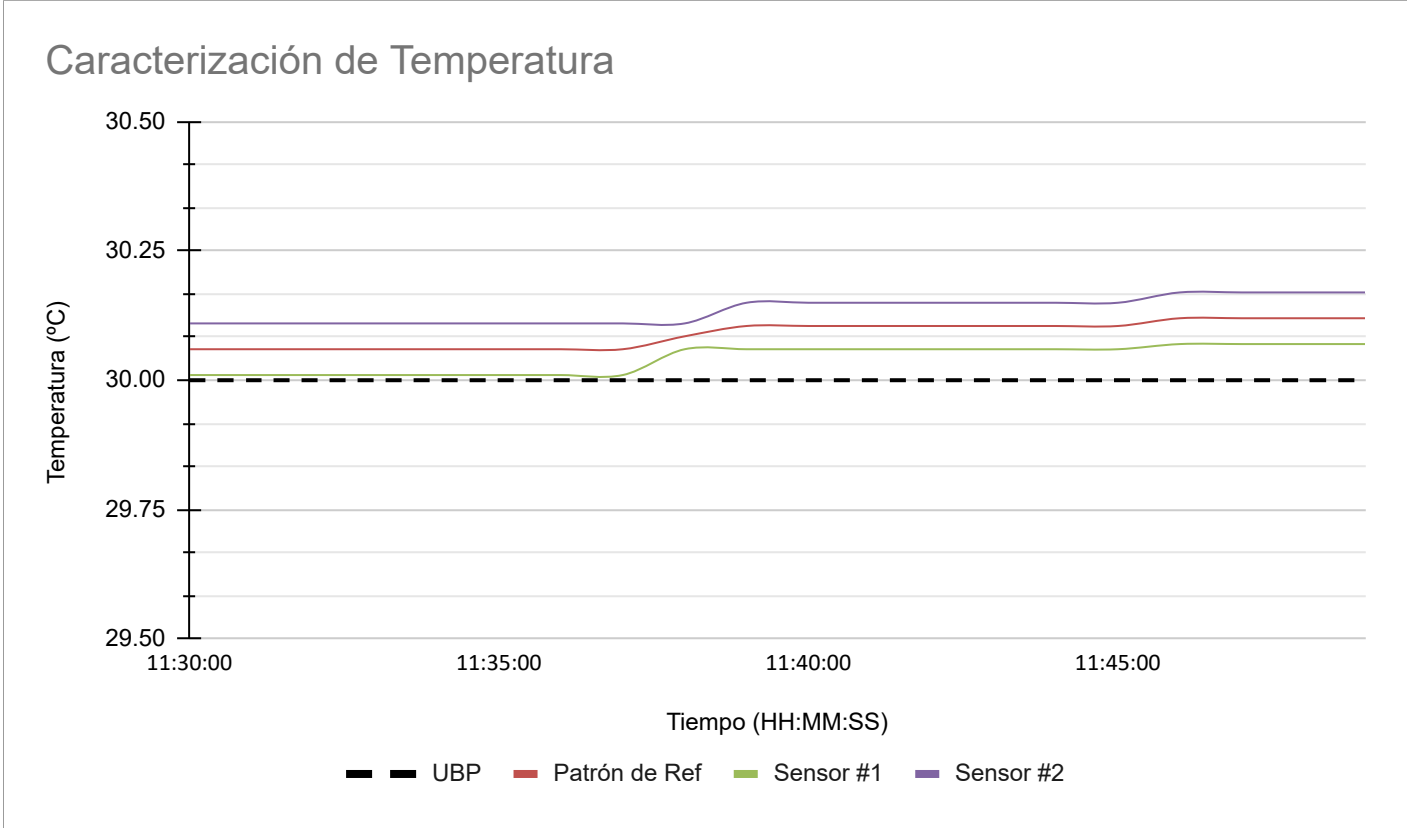
Equipo (Instrument): Microbaño

Fecha de Calibración: 2025-08-14

Marca (Brand): Techne

| Hora (Time) | UBP (UUT) | Patrón de Ref (Ref. Standard) | Sensor #1 (Sensor #1) | Sensor #2 (Sensor #2) | Sensor #3 (Sensor #3) | Sensor #4 (Sensor #4) | Sensor #5 (Sensor #5) | Sensor #6 (Sensor #6) | Sensor #7 (Sensor #7) | Sensor #8 (Sensor #8) | Error (Error) |
|-------------|-----------|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| 11:30:00    | 30 °C     | 30.06 °C                      | 30.010 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.06 °C      |
| 11:31:00    | 30 °C     | 30.06 °C                      | 30.010 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.06 °C      |
| 11:32:00    | 30 °C     | 30.06 °C                      | 30.010 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.06 °C      |
| 11:33:00    | 30 °C     | 30.06 °C                      | 30.010 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.06 °C      |
| 11:34:00    | 30 °C     | 30.06 °C                      | 30.010 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.06 °C      |
| 11:35:00    | 30 °C     | 30.06 °C                      | 30.010 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.06 °C      |
| 11:36:00    | 30 °C     | 30.06 °C                      | 30.010 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.06 °C      |
| 11:37:00    | 30 °C     | 30.06 °C                      | 30.010 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.06 °C      |
| 11:38:00    | 30 °C     | 30.085 °C                     | 30.060 °C             | 30.110 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.085 °C     |
| 11:39:00    | 30 °C     | 30.085 °C                     | 30.060 °C             | 30.150 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.105 °C     |
| 11:40:00    | 30 °C     | 30.085 °C                     | 30.060 °C             | 30.150 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.105 °C     |
| 11:41:00    | 30 °C     | 30.085 °C                     | 30.060 °C             | 30.150 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.105 °C     |
| 11:42:00    | 30 °C     | 30.085 °C                     | 30.060 °C             | 30.150 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.105 °C     |
| 11:43:00    | 30 °C     | 30.085 °C                     | 30.060 °C             | 30.150 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.105 °C     |
| 11:44:00    | 30 °C     | 30.105 °C                     | 30.060 °C             | 30.150 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.105 °C     |
| 11:45:00    | 30 °C     | 30.105 °C                     | 30.060 °C             | 30.150 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.105 °C     |
| 11:46:00    | 30 °C     | 30.105 °C                     | 30.070 °C             | 30.170 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.12 °C      |
| 11:47:00    | 30 °C     | 30.105 °C                     | 30.070 °C             | 30.170 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.12 °C      |
| 11:48:00    | 30 °C     | 30.105 °C                     | 30.070 °C             | 30.170 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.12 °C      |
| 11:49:00    | 30 °C     | 30.105 °C                     | 30.070 °C             | 30.170 °C             | -                     | -                     | -                     | -                     | -                     | -                     | -0.12 °C      |

Graficos (Graphs):

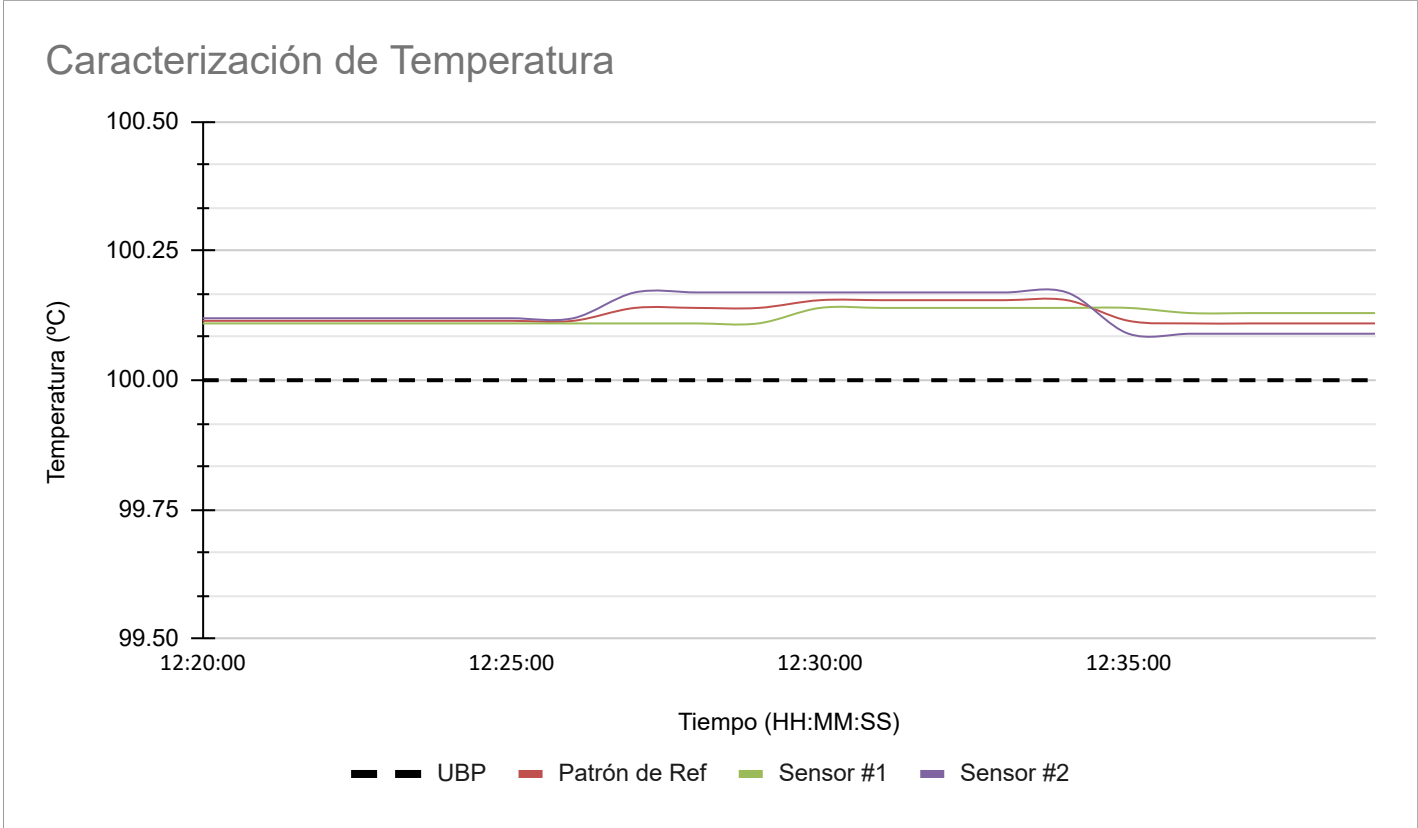


Certificado No.: 59813  
Fecha de Calibraci3n 2025-08-14

Equipo (Instrument): Microba1o  
Marca (Brand): Techne

| Hora (Time) | UBP (UUT) | Patr3n de Ref. Standard | Sensor #1 (Sensor #1) | Sensor #2 (Sensor #2) | Sensor #3 (Sensor #3) | Sensor #4 (Sensor #4) | Sensor #5 (Sensor #5) | Sensor #6 (Sensor #6) | Sensor #7 (Sensor #7) | Sensor #8 (Sensor #8) | Error (Error) |
|-------------|-----------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| 12:20:00    | 100 3C    | 100.115 3C              | 100.110 3C            | 100.120 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.115 3C     |
| 12:21:00    | 100 3C    | 100.115 3C              | 100.110 3C            | 100.120 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.115 3C     |
| 12:22:00    | 100 3C    | 100.115 3C              | 100.110 3C            | 100.120 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.115 3C     |
| 12:23:00    | 100 3C    | 100.115 3C              | 100.110 3C            | 100.120 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.115 3C     |
| 12:24:00    | 100 3C    | 100.115 3C              | 100.110 3C            | 100.120 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.115 3C     |
| 12:25:00    | 100 3C    | 100.115 3C              | 100.110 3C            | 100.120 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.115 3C     |
| 12:26:00    | 100 3C    | 100.115 3C              | 100.110 3C            | 100.120 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.115 3C     |
| 12:27:00    | 100 3C    | 100.14 3C               | 100.110 3C            | 100.170 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.14 3C      |
| 12:28:00    | 100 3C    | 100.14 3C               | 100.110 3C            | 100.170 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.14 3C      |
| 12:29:00    | 100 3C    | 100.14 3C               | 100.110 3C            | 100.170 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.14 3C      |
| 12:30:00    | 100 3C    | 100.155 3C              | 100.140 3C            | 100.170 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.155 3C     |
| 12:31:00    | 100 3C    | 100.155 3C              | 100.140 3C            | 100.170 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.155 3C     |
| 12:32:00    | 100 3C    | 100.155 3C              | 100.140 3C            | 100.170 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.155 3C     |
| 12:33:00    | 100 3C    | 100.155 3C              | 100.140 3C            | 100.170 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.155 3C     |
| 12:34:00    | 100 3C    | 100.155 3C              | 100.140 3C            | 100.170 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.155 3C     |
| 12:35:00    | 100 3C    | 100.115 3C              | 100.140 3C            | 100.090 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.115 3C     |
| 12:36:00    | 100 3C    | 100.110 3C              | 100.130 3C            | 100.090 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.110 3C     |
| 12:37:00    | 100 3C    | 100.110 3C              | 100.130 3C            | 100.090 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.110 3C     |
| 12:38:00    | 100 3C    | 100.110 3C              | 100.130 3C            | 100.090 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.110 3C     |
| 12:39:00    | 100 3C    | 100.110 3C              | 100.130 3C            | 100.090 3C            | -                     | -                     | -                     | -                     | -                     | -                     | -0.110 3C     |

Graficos (Graphs):



Certificado No.:59813

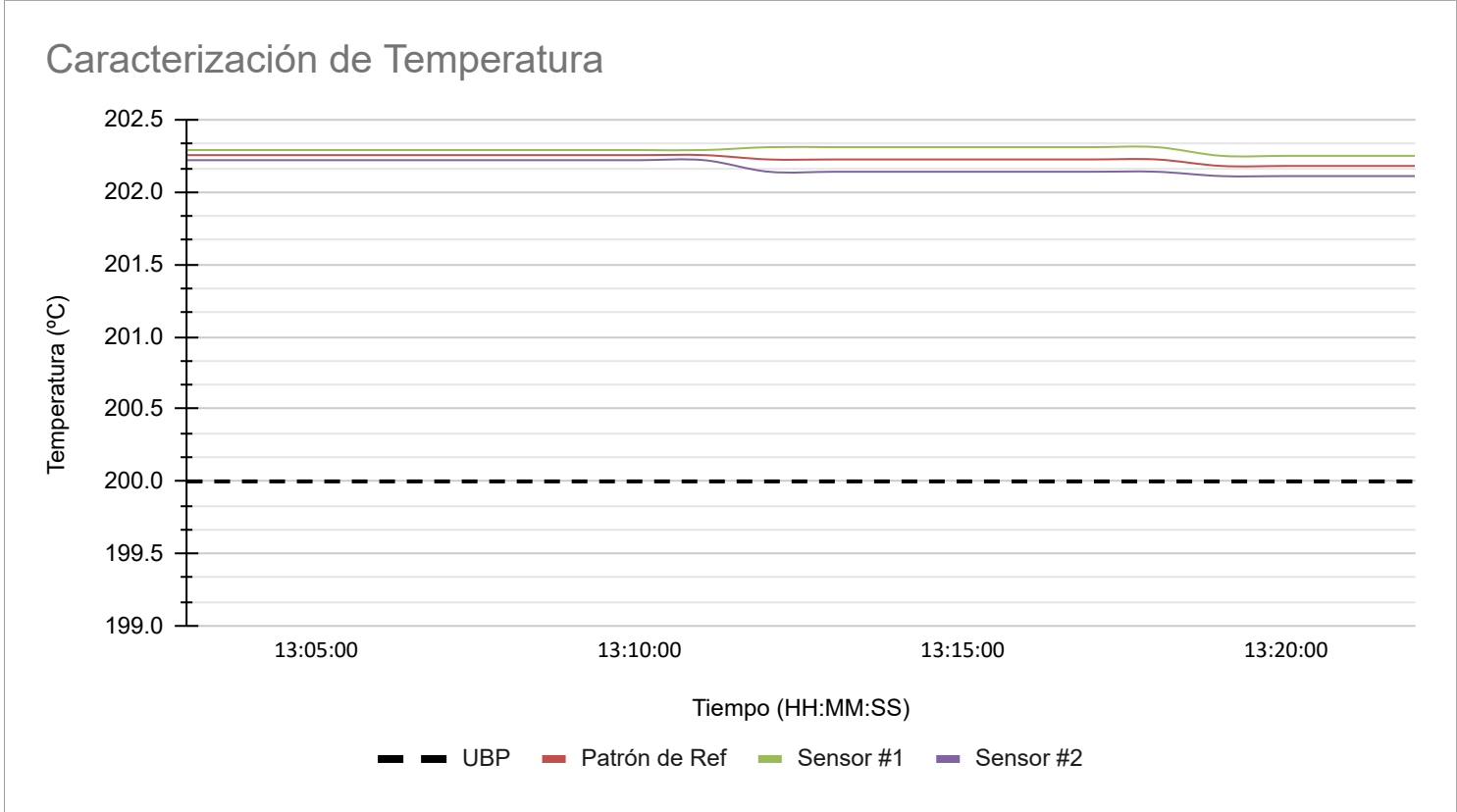
Equipo (Instrument):Microbaño

Fecha de Calibración:2025-08-14

Marca (Brand):Techne

| Hora<br>(Time) | UBP<br>(UUT) | Patrón de Ref.<br>Ref. Standard | Sensor #1<br>(Sensor #1) | Sensor #2<br>(Sensor #2) | Sensor #3<br>(Sensor #3) | Sensor #4<br>(Sensor #4) | Sensor #5<br>(Sensor #5) | Sensor #6<br>(Sensor #6) | Sensor #7<br>(Sensor #7) | Sensor #8<br>(Sensor #8) | Error<br>(Error) |
|----------------|--------------|---------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|
| 13:03:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:04:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:05:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:06:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:07:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:08:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:09:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:10:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:11:00       | 200 °C       | 202.255 °C                      | 202.290 °C               | 202.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.255 °C        |
| 13:12:00       | 200 °C       | 202.225 °C                      | 202.310 °C               | 202.140 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.225 °C        |
| 13:13:00       | 200 °C       | 202.225 °C                      | 202.310 °C               | 202.140 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.225 °C        |
| 13:14:00       | 200 °C       | 202.225 °C                      | 202.310 °C               | 202.140 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.225 °C        |
| 13:15:00       | 200 °C       | 202.225 °C                      | 202.310 °C               | 202.140 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.225 °C        |
| 13:16:00       | 200 °C       | 202.225 °C                      | 202.310 °C               | 202.140 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.225 °C        |
| 13:17:00       | 200 °C       | 202.225 °C                      | 202.310 °C               | 202.140 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.225 °C        |
| 13:18:00       | 200 °C       | 202.225 °C                      | 202.310 °C               | 202.140 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.225 °C        |
| 13:19:00       | 200 °C       | 202.18 °C                       | 202.250 °C               | 202.110 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.18 °C         |
| 13:20:00       | 200 °C       | 202.18 °C                       | 202.250 °C               | 202.110 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.18 °C         |
| 13:21:00       | 200 °C       | 202.18 °C                       | 202.250 °C               | 202.110 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.18 °C         |
| 13:22:00       | 200 °C       | 202.18 °C                       | 202.250 °C               | 202.110 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.18 °C         |

Graficos (Graphs):



Certificado No.:59813

Equipo (Instrument):Microbaño

Fecha de Calibración:2025-08-14

Marca (Brand):Techne

| Hora<br>(Time) | UBP<br>(UUT) | Patrón de Ref<br>Ref. Standard | Sensor #1<br>(Sensor #1) | Sensor #2<br>(Sensor #2) | Sensor #3<br>(Sensor #3) | Sensor #4<br>(Sensor #4) | Sensor #5<br>(Sensor #5) | Sensor #6<br>(Sensor #6) | Sensor #7<br>(Sensor #7) | Sensor #8<br>(Sensor #8) | Error<br>(Error) |
|----------------|--------------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|
| 14:00:00       | 3000 °C      | 302.260 °C                     | 302.310 °C               | 302.210 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.260 °C        |
| 14:01:00       | 3000 °C      | 302.260 °C                     | 302.310 °C               | 302.210 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.260 °C        |
| 14:02:00       | 3000 °C      | 302.260 °C                     | 302.310 °C               | 302.210 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.260 °C        |
| 14:03:00       | 3000 °C      | 302.260 °C                     | 302.310 °C               | 302.210 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.260 °C        |
| 14:04:00       | 3000 °C      | 302.260 °C                     | 302.310 °C               | 302.210 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.260 °C        |
| 14:05:00       | 3000 °C      | 302.260 °C                     | 302.310 °C               | 302.210 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.260 °C        |
| 14:06:00       | 3000 °C      | 302.26 °C                      | 302.310 °C               | 302.210 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.26 °C         |
| 14:07:00       | 3000 °C      | 302.26 °C                      | 302.310 °C               | 302.210 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.26 °C         |
| 14:08:00       | 3000 °C      | 302.205 °C                     | 302.190 °C               | 302.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.205 °C        |
| 14:09:00       | 3000 °C      | 302.205 °C                     | 302.190 °C               | 302.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.205 °C        |
| 14:10:00       | 3000 °C      | 302.205 °C                     | 302.190 °C               | 302.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.205 °C        |
| 14:11:00       | 3000 °C      | 302.205 °C                     | 302.190 °C               | 302.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.205 °C        |
| 14:12:00       | 3000 °C      | 302.205 °C                     | 302.190 °C               | 302.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.205 °C        |
| 14:13:00       | 3000 °C      | 302.205 °C                     | 302.190 °C               | 302.220 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.205 °C        |
| 14:14:00       | 3000 °C      | 302.24 °C                      | 302.360 °C               | 302.120 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.24 °C         |
| 14:15:00       | 3000 °C      | 302.240 °C                     | 302.360 °C               | 302.120 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.240 °C        |
| 14:16:00       | 3000 °C      | 302.240 °C                     | 302.360 °C               | 302.120 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.240 °C        |
| 14:17:00       | 3000 °C      | 302.240 °C                     | 302.360 °C               | 302.120 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.240 °C        |
| 14:18:00       | 3000 °C      | 302.240 °C                     | 302.360 °C               | 302.120 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.240 °C        |
| 14:19:00       | 3000 °C      | 302.240 °C                     | 302.360 °C               | 302.120 °C               | -                        | -                        | -                        | -                        | -                        | -                        | -2.240 °C        |

Graficos (Graphs):

