

## CERTIFICADO DE CALIBRACIÓN / CALIBRATION CERTIFICATE

**INNOVATECIS CIA LTDA**

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**Certificado No. (Certificate #):** 60589

**Fecha de Recepción (Reception Date):** 2025-08-26

**Fecha de Calibración (Calibration Date):** 2025-08-26

**Próxima Fecha de Calibración (Calibration Due):** 2026-08

**Fecha de Emisión (Emission Date):** 2025-08-26

**Cliente (Client):** CONSTRUCCIONES Y PRESTACIONES PETROLERAS S.A. CPP  
LA CORUÑA N28-14 Y MANUEL ITURREY, QUITO, PICHINCHA (SEDE PRINCIPAL)

### Información del Instrumento (Instrument Information)

|                             |                                |                                                 |              |                                                         |                    |
|-----------------------------|--------------------------------|-------------------------------------------------|--------------|---------------------------------------------------------|--------------------|
| <b>Equipo (Instrument):</b> | Horno                          | <b>Int. de Medición:</b><br>(Measurement Range) | (45 a 80) °C | <b>Ubicación:</b><br>(Location):                        |                    |
| <b>Marca (Brand):</b>       | OMRON                          |                                                 |              |                                                         |                    |
| <b>Modelo (Model):</b>      | E5CC                           | <b>División de escala:</b><br>(Resolution)      | 10 °C        | <b>Lugar de Calibración:</b><br>(Place of Calibration): | In Situ<br>On Site |
| <b>Serie/Código:</b>        | SECADOR 7137 /<br>SECADOR 7137 |                                                 |              |                                                         |                    |

### Datos de Calibración (Calibration Info)

**Procedimiento (Procedure):** INN-PC-29

### Condiciones Ambientales (Environmental Conditions)

|                                       |         |                                     |          |
|---------------------------------------|---------|-------------------------------------|----------|
| <b>Temp. Inicial (Initial Temp.):</b> | 23.3 °C | <b>Hum. Inicial (Initial Hum.):</b> | 56.7 %HR |
| <b>Temp. Final (Final Temp.):</b>     | 23.4 °C | <b>Hum. Final (Final Hum.):</b>     | 57.4 %HR |

### Trazabilidad (Traceability Info)

| Patrón (Standard) | Marca (Brand) | Cert. #               | Última Calibración (Last Cal.) | Período (Period) |
|-------------------|---------------|-----------------------|--------------------------------|------------------|
| Termocupla        | -             | 56690 / 56700 / 56701 | 2025-05-14                     | 1 año            |
| Termocupla        | -             | 56702 / 56703 / 56704 | 2025-05-14                     | 1 año            |
| Termocupla        | -             | 56698 / 56699 / 56706 | 2025-05-14                     | 1 año            |
| -                 | -             | -                     | -                              | -                |
| -                 | -             | -                     | -                              | -                |
| -                 | -             | -                     | -                              | -                |

### 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:**

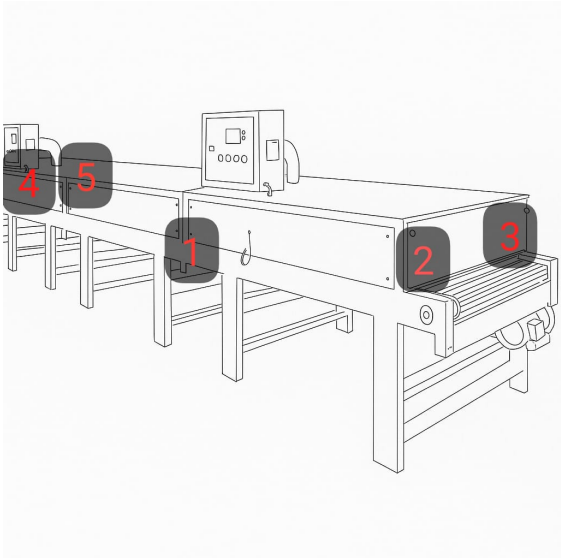
**Calibrado por:** Ing. Isaac Calle  
**Calibrated by:**

**Aprobado por:**  
**Approved by:**

**Fin de Certificado (End of Certificate)**

| Certificado No.:      | 60589                | Equipo (Instrument): Horno |                  |                         |                            |                             |                                |
|-----------------------|----------------------|----------------------------|------------------|-------------------------|----------------------------|-----------------------------|--------------------------------|
| Fecha de Calibración: | 2025-08-26           | Marca (Brand): OMRON       |                  |                         |                            |                             |                                |
| Nominal<br>(Nominal)  | Patrón<br>(Standard) | UBP<br>(UUT)               | Error<br>(Error) | Precisión<br>(Accuracy) | Estabilidad<br>(Stability) | Uniformidad<br>(Uniformity) | Incertidumbre<br>(Uncertainty) |
| 45 °C                 | 31.948 °C            | 45 °C                      | 13.052 °C        |                         | 9.392 °C                   | 9.5 °C                      | ± 9.6 °C                       |
| 62.5 °C               | 42.559 °C            | 62 °C                      | 19.441 °C        |                         | 14.471 °C                  | 14.594 °C                   | ± 24 °C                        |
| 80 °C                 | 62.807 °C            | 80 °C                      | 17.193 °C        |                         | 16.727 °C                  | 16.56 °C                    | ± 28 °C                        |

Diagram de Posición de Sensores (Sensor Position Diagram)



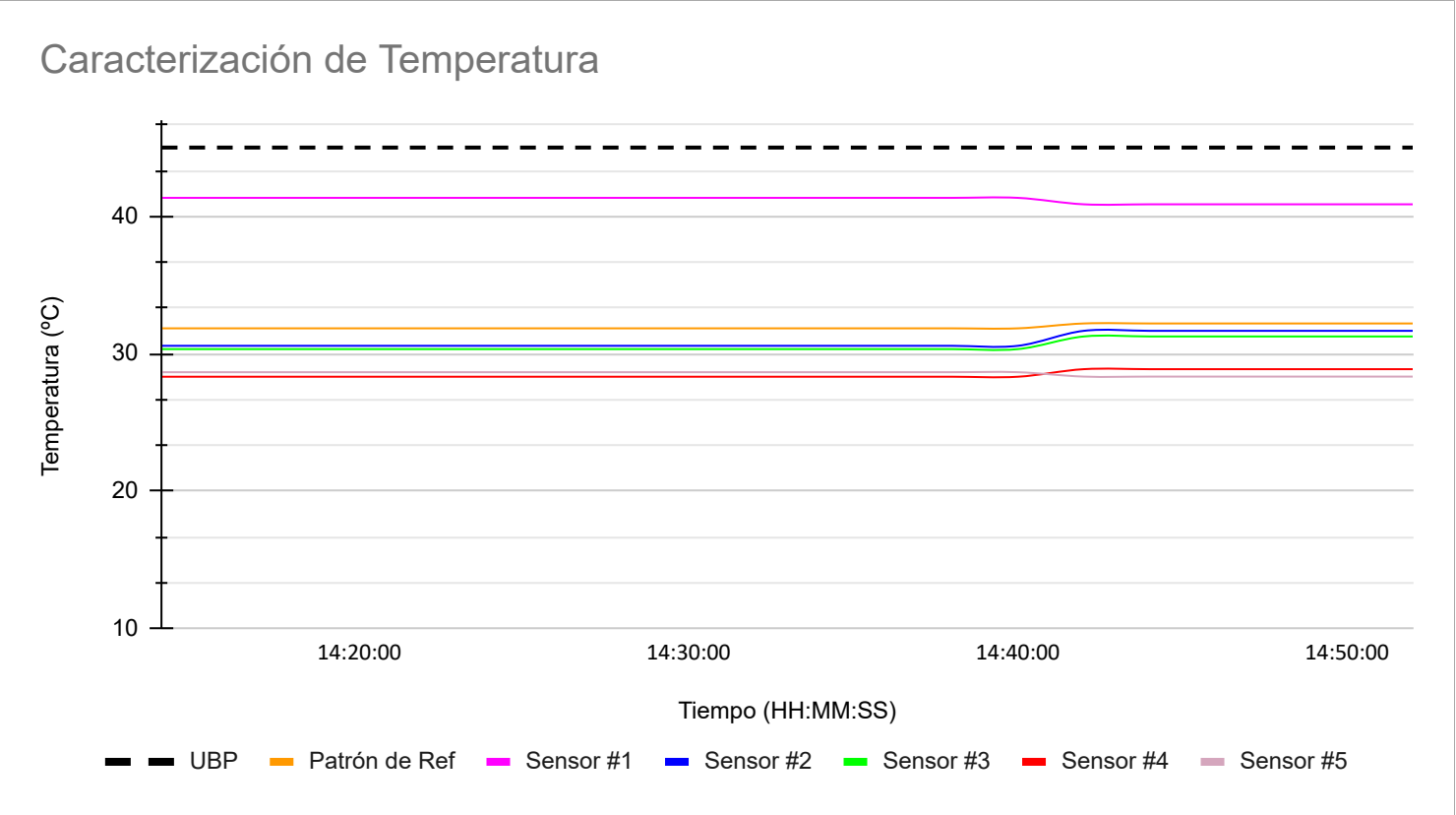
- Leyenda:**
- PR:** Patrón de Referencia
- 1: Sensor #1
  - 2: Sensor #2
  - 3: Sensor #3
  - 4: Sensor #4
  - 5: Sensor #5

(Imagen referencial)

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

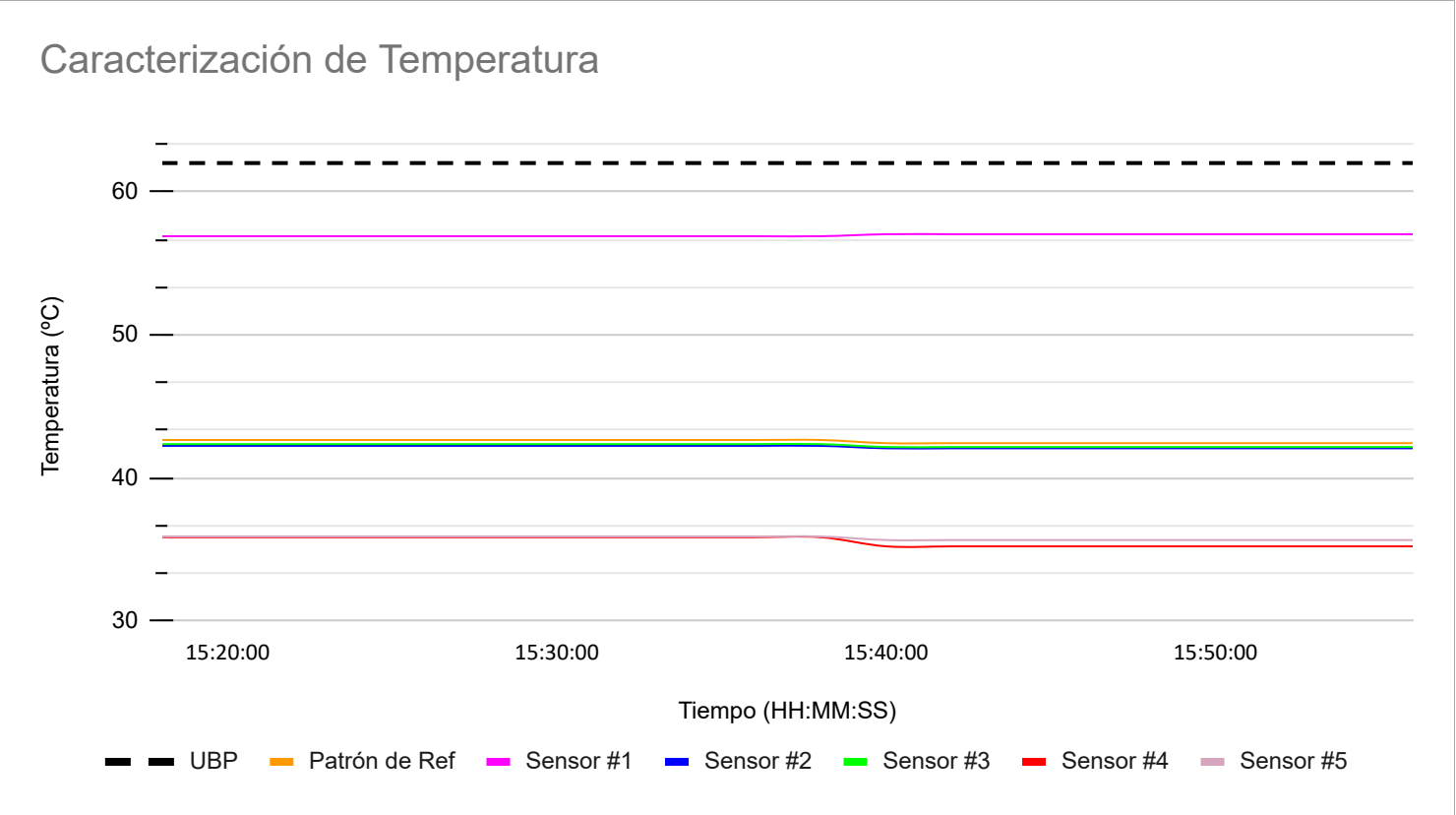
| Hora<br>(Time) | UBP<br>(UUT) | Patrón de Ref<br>(Ref. Standard) | Sensor #1<br>(Sensor #1) | Sensor #2<br>(Sensor #2) | Sensor #3<br>(Sensor #3) | Sensor #4<br>(Sensor #4) | Sensor #5<br>(Sensor #5) | Sensor #6<br>(Sensor #6) | Sensor #7<br>(Sensor #7) | Sensor #8<br>(Sensor #8) | Error<br>(Error) |
|----------------|--------------|----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|
| 14:14:00       | 45 °C        | 31.8420 °C                       | 41.340 °C                | 30.57 °C                 | 30.330 °C                | 28.320 °C                | 28.650 °C                | -                        | -                        | -                        | 13.1580 °C       |
| 14:16:00       | 45 °C        | 31.842 °C                        | 41.340 °C                | 30.57 °C                 | 30.330 °C                | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:18:00       | 45 °C        | 31.842 °C                        | 41.340 °C                | 30.57 °C                 | 30.330 °C                | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:20:00       | 45 °C        | 31.842 °C                        | 41.340 °C                | 30.57 °C                 | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:22:00       | 45 °C        | 31.842 °C                        | 41.340 °C                | 30.57 °C                 | 30.330 °C                | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:24:00       | 45 °C        | 31.842 °C                        | 41.340 °C                | 30.57 °C                 | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:26:00       | 45 °C        | 31.842 °C                        | 41.340 °C                | 30.57 °C                 | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:28:00       | 45 °C        | 31.842 °C                        | 41.34 °C                 | 30.57 °C                 | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:30:00       | 45 °C        | 31.842 °C                        | 41.340 °C                | 30.57 °C                 | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:32:00       | 45 °C        | 31.842 °C                        | 41.34 °C                 | 30.57 °C                 | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:34:00       | 45 °C        | 31.842 °C                        | 41.34 °C                 | 30.57 °C                 | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:36:00       | 45 °C        | 31.842 °C                        | 41.34 °C                 | 30.570 °C                | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:38:00       | 45 °C        | 31.842 °C                        | 41.34 °C                 | 30.57 °C                 | 30.33 °C                 | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:40:00       | 45 °C        | 31.842 °C                        | 41.34 °C                 | 30.570 °C                | 30.330 °C                | 28.32 °C                 | 28.650 °C                | -                        | -                        | -                        | 13.158 °C        |
| 14:42:00       | 45 °C        | 32.196 °C                        | 40.87 °C                 | 31.66 °C                 | 31.250 °C                | 28.87 °C                 | 28.330 °C                | -                        | -                        | -                        | 12.804 °C        |
| 14:44:00       | 45 °C        | 32.196 °C                        | 40.87 °C                 | 31.66 °C                 | 31.250 °C                | 28.87 °C                 | 28.330 °C                | -                        | -                        | -                        | 12.804 °C        |
| 14:46:00       | 45 °C        | 32.196 °C                        | 40.870 °C                | 31.66 °C                 | 31.250 °C                | 28.87 °C                 | 28.330 °C                | -                        | -                        | -                        | 12.804 °C        |
| 14:48:00       | 45 °C        | 32.196 °C                        | 40.870 °C                | 31.66 °C                 | 31.250 °C                | 28.87 °C                 | 28.330 °C                | -                        | -                        | -                        | 12.804 °C        |
| 14:50:00       | 45 °C        | 32.196 °C                        | 40.870 °C                | 31.66 °C                 | 31.250 °C                | 28.87 °C                 | 28.330 °C                | -                        | -                        | -                        | 12.804 °C        |
| 14:52:00       | 45 °C        | 32.196 °C                        | 40.870 °C                | 31.660 °C                | 31.250 °C                | 28.870 °C                | 28.330 °C                | -                        | -                        | -                        | 12.804 °C        |

Graficos (Graphs):



| 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) |
|----------------|--------------|----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|
| 15:18:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.250 °C                | 42.370 °C                | 35.870 °C                | 35.920 °C                | -                        | -                        | -                        | 19.34 °C         |
| 15:20:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.250 °C                | 42.370 °C                | 35.870 °C                | 35.920 °C                | -                        | -                        | -                        | 19.34 °C         |
| 15:22:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.250 °C                | 42.37 °C                 | 35.87 °C                 | 35.920 °C                | -                        | -                        | -                        | 19.34 °C         |
| 15:24:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.250 °C                | 42.37 °C                 | 35.87 °C                 | 35.92 °C                 | -                        | -                        | -                        | 19.34 °C         |
| 15:26:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.250 °C                | 42.37 °C                 | 35.87 °C                 | 35.92 °C                 | -                        | -                        | -                        | 19.34 °C         |
| 15:28:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.25 °C                 | 42.37 °C                 | 35.87 °C                 | 35.92 °C                 | -                        | -                        | -                        | 19.34 °C         |
| 15:30:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.25 °C                 | 42.37 °C                 | 35.87 °C                 | 35.92 °C                 | -                        | -                        | -                        | 19.34 °C         |
| 15:32:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.25 °C                 | 42.37 °C                 | 35.87 °C                 | 35.92 °C                 | -                        | -                        | -                        | 19.34 °C         |
| 15:34:00       | 62 °C        | 42.66 °C                         | 56.890 °C                | 42.250 °C                | 42.37 °C                 | 35.87 °C                 | 35.92 °C                 | -                        | -                        | -                        | 19.34 °C         |
| 15:36:00       | 62 °C        | 42.66 °C                         | 56.89 °C                 | 42.25 °C                 | 42.37 °C                 | 35.87 °C                 | 35.92 °C                 | -                        | -                        | -                        | 19.34 °C         |
| 15:38:00       | 62 °C        | 42.66 °C                         | 56.890 °C                | 42.25 °C                 | 42.37 °C                 | 35.87 °C                 | 35.92 °C                 | -                        | -                        | -                        | 19.34 °C         |
| 15:40:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.08 °C                 | 42.17 °C                 | 35.23 °C                 | 35.670 °C                | -                        | -                        | -                        | 19.564 °C        |
| 15:42:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.08 °C                 | 42.17 °C                 | 35.23 °C                 | 35.67 °C                 | -                        | -                        | -                        | 19.564 °C        |
| 15:44:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.08 °C                 | 42.170 °C                | 35.23 °C                 | 35.670 °C                | -                        | -                        | -                        | 19.564 °C        |
| 15:46:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.080 °C                | 42.17 °C                 | 35.23 °C                 | 35.670 °C                | -                        | -                        | -                        | 19.564 °C        |
| 15:48:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.080 °C                | 42.170 °C                | 35.23 °C                 | 35.670 °C                | -                        | -                        | -                        | 19.564 °C        |
| 15:50:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.080 °C                | 42.170 °C                | 35.23 °C                 | 35.670 °C                | -                        | -                        | -                        | 19.564 °C        |
| 15:52:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.080 °C                | 42.170 °C                | 35.23 °C                 | 35.670 °C                | -                        | -                        | -                        | 19.564 °C        |
| 15:54:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.080 °C                | 42.170 °C                | 35.23 °C                 | 35.670 °C                | -                        | -                        | -                        | 19.564 °C        |
| 15:56:00       | 62 °C        | 42.436 °C                        | 57.030 °C                | 42.080 °C                | 42.170 °C                | 35.230 °C                | 35.670 °C                | -                        | -                        | -                        | 19.564 °C        |

Graficos (Graphs):



| 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) |
|----------------|--------------|----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|
| 16:25:00       | 80 °C        | 62.88 °C                         | 76.230 °C                | 70.570 °C                | 70.830 °C                | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:27:00       | 80 °C        | 62.88 °C                         | 76.230 °C                | 70.57 °C                 | 70.830 °C                | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:29:00       | 80 °C        | 62.88 °C                         | 76.230 °C                | 70.57 °C                 | 70.830 °C                | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:31:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.57 °C                 | 70.830 °C                | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:33:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.57 °C                 | 70.830 °C                | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:35:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.57 °C                 | 70.830 °C                | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:37:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.57 °C                 | 70.830 °C                | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:39:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.57 °C                 | 70.830 °C                | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:41:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.57 °C                 | 70.83 °C                 | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:43:00       | 80 °C        | 62.88 °C                         | 76.230 °C                | 70.57 °C                 | 70.83 °C                 | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:45:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.570 °C                | 70.83 °C                 | 48.320 °C                | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:47:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.570 °C                | 70.83 °C                 | 48.32 °C                 | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:49:00       | 80 °C        | 62.88 °C                         | 76.23 °C                 | 70.570 °C                | 70.83 °C                 | 48.32 °C                 | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:51:00       | 80 °C        | 62.88 °C                         | 76.230 °C                | 70.570 °C                | 70.83 °C                 | 48.32 °C                 | 48.450 °C                | -                        | -                        | -                        | 17.12 °C         |
| 16:53:00       | 80 °C        | 62.638 °C                        | 75.93 °C                 | 72.540 °C                | 72.36 °C                 | 46.08 °C                 | 46.280 °C                | -                        | -                        | -                        | 17.362 °C        |
| 16:55:00       | 80 °C        | 62.638 °C                        | 75.93 °C                 | 72.540 °C                | 72.36 °C                 | 46.080 °C                | 46.280 °C                | -                        | -                        | -                        | 17.362 °C        |
| 16:57:00       | 80 °C        | 62.638 °C                        | 75.930 °C                | 72.540 °C                | 72.36 °C                 | 46.080 °C                | 46.280 °C                | -                        | -                        | -                        | 17.362 °C        |
| 16:59:00       | 80 °C        | 62.638 °C                        | 75.93 °C                 | 72.540 °C                | 72.36 °C                 | 46.080 °C                | 46.280 °C                | -                        | -                        | -                        | 17.362 °C        |
| 17:01:00       | 80 °C        | 62.638 °C                        | 75.93 °C                 | 72.540 °C                | 72.36 °C                 | 46.080 °C                | 46.280 °C                | -                        | -                        | -                        | 17.362 °C        |
| 17:03:00       | 80 °C        | 62.638 °C                        | 75.930 °C                | 72.540 °C                | 72.360 °C                | 46.080 °C                | 46.280 °C                | -                        | -                        | -                        | 17.362 °C        |

Graficos (Graphs):

