

CERTIFICADO DE CALIBRACIÓN / CALIBRATION CERTIFICATE

INNOVATECIS CIA LTDA

General José María Guerrero N69-170 y Alfonso del Hierro

Quito, Ecuador

(+593) 02 6040 607

innovatec@innovatec.com.ec

Certificado No. (Certificate #): 55643**Fecha de Recepción (Reception Date):** 2025-04-04**Fecha de Calibración (Calibration Date):** 2025-04-04**Próxima Fecha de Calibración (Calibration Due):** -**Fecha de Emisión (Emission Date):** 2025-04-07**Cliente (Client):** PRODUCTOS ALIMENTICIOS PASCUAL S A
Av. José Agustín Arango Juan Díaz, PANAMÁ, PANAMÁ**Información del Instrumento (Instrument Information)**

Equipo (Instrument):	Cámara ambiental	Int. de Medición:	(5 a 70) °C	Ubicación (Location):	Laboratorio de Investigación y Desarrollo Planta de Producción Pascual
Marca (Brand):	MEMMERT	(Measurement Range)	(10 a 90) %HR	Lugar de Calibración:	In Situ / On Site
Modelo (Model):	HPP410eco	División de escala:	0.1 °C	(Place of Calibration):	
Serie (Serial #):	W723.0084	(Resolution)	0.1 % HR		
Código (Code):	LI&D-CCC-01				

Datos de Calibración (Calibration Info)**Condiciones Ambientales (Environmental Conditions)****Procedimiento (Procedure):** INN-PC-29**Temperatura (Temp):** (25.2 °C ± 25.9 °C)**Humedad (Humidity):** (69 %HR ± 66 %HR)**Trazabilidad (Traceability Info)**

Patrón (Standard)	Marca (Brand)	Cert. #	Última Calibración (Last Cal.)	Período (Period)
Termohigrómetro	Elitech	47516 al 47521	2024-06-10	1
Termohigrómetro	Elitech	43461 al 43466	2025-02-04	1
Termohigrómetro	Elitech	53103	2025-01-15	1

Resultados (Results)

Patrón (Standard)	UBP (UUT)	Error (Error)	Incertidumbre (Uncertainty)	Estabilidad (Stability)	Uniformidad (Uniformity)
°C	°C	°C			Axial / Radial
39.6	40.1	0.5	± 1.1 °C	± 0.1 °C	± 0.8 °C / ± 0.7 °C
-	-	-	-	-	-

Patrón (Standard)	UBP (UUT)	Error (Error)	Incertidumbre (Uncertainty)	Estabilidad (Stability)	Uniformidad (Uniformity)
%HR	%HR	%HR			Axial / Radial
79.8	79.9	0.1	± 2.8 °C	± 0.9 %HR	± 2.4 %HR / ± 4.0 %HR
-	-	-	-	-	-

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, o 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:**Comments** Ninguno.**Calibrado por:** Ing. Rubén Ortega
Calibrated by:**Aprobado por:**
Approved by:

Certificado No.:55643

Equipo (Instrument):Cámara ambiental

Fecha de Calibración:2025-04-04

Marca (Brand):MEMMERT

Tabla 1.0: Lecturas de los sensores durante desplazamiento en la zona de trabajo @ 40 °C										
Tiempo (hh:mm:ss)	Lectura del Patrón °C @ 40 °C									
	PC	P1	P2	P3	P4	P5	P6	P7	P8	P9
11:02:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.8	39.4	39.7	39.7
11:03:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.8	39.4	39.7	39.7
11:04:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.8	39.4	39.7	39.7
11:05:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
11:06:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.7	39.7
11:07:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
11:08:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
11:09:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
11:10:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
11:11:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.7	39.7
11:12:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.7	39.7
11:13:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.8	39.7
11:14:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.7	39.7
11:15:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
11:16:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
11:17:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.8	39.7
11:18:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.8	39.7
11:19:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.8	39.7
11:20:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.8	39.7
11:21:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.8	39.7
11:22:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.8	39.7
11:23:06 AM	40.1	39.6	39.6	39.5	40.2	39.5	38.9	39.4	39.8	39.7
11:24:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.8	39.7
11:25:06 AM	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
Promedio	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.7	39.7
Desviación	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Max	40.1	39.6	39.6	39.6	40.2	39.5	38.9	39.4	39.8	39.7
Min	40.1	39.6	39.6	39.5	40.2	39.5	38.8	39.4	39.7	39.7
ΔT Est.	0.1									
ΔT Radial	0.7									
ΔT Axial	0.8									

Certificado No.: 55643

Equipo (Instrument): Cámara ambiental

Fecha de Calibración: 2025-04-04

Marca (Brand): MEMMERT

Tabla 1.0: Lecturas de los sensores durante desplazamiento en la zona de trabajo @ 80 %HR										
Tiempo (hh:mm:ss)	Lectura del Patrón °C @ 80 %HR									
	PC	P1	P2	P3	P4	P5	P6	P7	P8	P9
11:02:06 AM	79.9	80.3	79.9	76.9	80.4	79.5	80.8	80.2	78.9	80.5
11:03:06 AM	79.9	80.3	79.9	76.8	80.4	79.5	80.8	80.2	78.8	80.5
11:04:06 AM	79.9	80.3	79.9	76.7	80.4	79.5	80.8	80.1	78.8	80.5
11:05:06 AM	79.9	80.3	79.9	76.9	80.4	79.5	80.8	80.1	78.8	80.5
11:06:06 AM	79.9	79.9	79.9	76.5	80.5	79.9	80.8	80.1	78.9	80.5
11:07:06 AM	79.9	80.3	80.3	76.8	80.4	79.9	80.8	80.1	78.8	80.5
11:08:06 AM	79.9	80.4	80.3	76.7	80.4	79.9	80.8	80.2	78.8	80.5
11:09:06 AM	79.9	80.3	80.3	77.2	80.5	79.9	80.8	80.2	78.7	80.5
11:10:06 AM	79.9	80.3	80.3	76.8	80.5	79.9	80.8	80.0	78.7	80.5
11:11:06 AM	79.9	80.3	79.9	77.1	80.5	79.9	80.8	80.1	78.7	80.5
11:12:06 AM	79.9	79.9	79.9	76.8	80.5	79.9	80.8	80.2	78.7	80.5
11:13:06 AM	79.9	80.3	79.9	76.8	80.5	79.9	81.3	80.1	78.7	80.5
11:14:06 AM	79.9	79.9	80.3	76.9	80.5	79.9	81.2	80.0	78.7	80.5
11:15:06 AM	79.9	80.3	79.9	76.8	80.4	79.9	80.8	80.0	78.7	80.5
11:16:06 AM	79.9	80.3	79.9	77.0	80.5	79.9	80.8	80.0	78.6	80.5
11:17:06 AM	79.9	80.3	80.3	76.8	80.5	79.9	80.8	80.0	78.7	80.5
11:18:06 AM	79.9	80.3	80.3	77.0	80.5	79.9	81.3	80.2	78.7	80.5
11:19:06 AM	79.9	80.3	79.9	77.2	80.5	79.9	81.3	80.1	78.7	80.5
11:20:06 AM	79.9	80.3	80.3	77.1	80.5	79.9	81.3	80.1	78.6	80.5
11:21:06 AM	79.9	80.3	80.3	77.0	80.5	79.9	81.3	80.1	78.6	80.5
11:22:06 AM	79.9	80.3	80.3	77.1	80.5	79.9	81.3	80.1	78.7	80.5
11:23:06 AM	79.9	80.3	80.3	77.3	80.5	79.9	81.3	80.1	78.6	80.5
11:24:06 AM	79.9	80.3	80.3	77.0	80.5	80.4	81.3	80.1	78.7	80.5
11:25:06 AM	79.9	80.3	80.3	77.1	80.5	80.4	81.3	80.2	78.7	80.5
Promedio	79.9	80.3	80.1	76.9	80.5	79.9	81.0	80.1	78.7	80.5
Desviación	0.0	0.1	0.2	0.2	0.0	0.2	0.2	0.1	0.1	0.0
Max	79.9	80.4	80.3	77.3	80.5	80.4	81.3	80.2	78.9	80.5
Min	79.9	79.9	79.9	76.5	80.4	79.5	80.8	80.0	78.6	80.5
ΔT Est.	0.9									
ΔT Radial	4.0									
ΔT Axial	2.4									