



CERTIFICADO DE CALIBRACIÓN / CALIBRATION CERTIFICATE

INNOVATECIS CIA LTDA

Certificado No. (Certificate #): 57134

General José María Guerrero N69-170 y Alfonso del Hierro

Fecha de Recepción (Reception Date): 2025-05-20

Quito, Ecuador

Fecha de Calibración (Calibration Date): 2025-05-20

(+593) 02 6040 607

Próxima Fecha de Calibración (Calibration Due): -

innovatec@innovatec.com.ec

Fecha de Emisión (Emission Date): 2025-05-21

Cliente (Client): Productos Alimenticios Pascual, S.A
Av. José Agustín Arango Juan Díaz, PANAMÁ, PANAMÁ

Información del Instrumento (Instrument Information)

Equipo (Instrument): Cámara Climática Int. de Medición: -3 a 40 °C/Amb. a 95% Ubicación (Location): Laboratorio de Investigación y Desarrollo
Marca (Brand): Salva (Measurement Range) Planta de Producción Pascual
Modelo (Model): 15 División de escala: 1 °C/1% Lugar de Calibración: In Situ / On Site
Serie (Serial #): 284318 (Resolution) (Place of Calibration):
Código (Code): LI&D-FER-02

Datos de Calibración (Calibration Info)

Condiciones Ambientales (Environmental Conditions)

Procedimiento (Procedure): INN-PC-29

Temperatura (Temp): (22.3 °C ± 26.8 °C)

Humedad (Humidity): (63 %HR ± 62 %HR)

Trazabilidad (Traceability Info)

Patrón (Standard)	Marca (Brand)	Cert. #	Última Calibración (Last Cal.)	Período (Period)
Termohigrómetro	Elitech	47512 al 47521	2024-06-11	1 año
Termohigrómetro	Elitech	53106	2025-01-15	1 año

Resultados (Results)

Patrón (Standard)	UBP (UUT)	Error (Error)	Incertidumbre (Uncertainty)	Estabilidad (Stability)	Uniformidad (Uniformity)
°C	°C	°C			Axial / Radial
25.0	19	-6.0	± 1.2°C	± 0.6 °C	± 1.3 °C / ±1.1 °C
34.6	30	-4.6	± 1.3°C	± 0.8 °C	± 1.5 °C / ±1.2 °C

Patrón (Standard)	UBP (UUT)	Error (Error)	Incertidumbre (Uncertainty)	Estabilidad (Stability)	Uniformidad (Uniformity)
%HR	%HR	%HR			Axial / Radial
71.5	79	7.5	± 15°C	± 20.6 %HR	±11.7%HR / ±11.2%HR
76.6	80	3.4	± 15°C	± 21.9 %HR	±12.0%HR / ±8.6 %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: Ninguno
Comments

Calibrado por: Ing. Rubén Ortega
Calibrated by:

Aprobado por:
Approved by:



Certificado No.: 57134
Fecha de Calibración: 2025-05-20

Equipo (Instrument): Cámara Climática
Marca (Brand): Salva

Tabla 1.0: Lecturas de los sensores durante desplazamiento en la zona de trabajo @ 25 °C										
Tiempo (hh:mm:ss)	Lectura del Patrón °C @ 25 °C									
	PC	P1	P2	P3	P4	P5	P6	P7	P8	P9
9:17:23 AM	18	25.3	25.3	25.5	25.3	24.6	24.5	24.9	24.4	25.3
9:18:23 AM	20	25.5	25.5	25.7	25.5	24.6	24.6	25.0	24.4	25.4
9:19:23 AM	20	25.6	25.6	25.7	25.5	24.6	24.7	25.0	24.4	25.4
9:20:23 AM	20	25.6	25.6	25.7	25.5	24.7	24.7	25.0	24.5	25.5
9:21:23 AM	19	25.6	25.6	25.6	25.5	24.7	24.7	25.0	24.4	25.5
9:22:23 AM	19	25.4	25.2	25.4	25.3	24.6	24.6	24.9	24.4	25.4
9:23:23 AM	19	25.2	25.1	25.3	25.2	24.6	24.5	24.8	24.4	25.4
9:24:23 AM	18	25.2	25.1	25.2	25.1	24.6	24.4	24.7	24.4	25.4
9:25:23 AM	20	25.1	25.0	25.2	25.0	24.6	24.3	24.7	24.4	25.3
9:26:23 AM	20	25.2	25.2	25.4	25.2	24.7	24.4	24.7	24.5	25.3
9:27:23 AM	20	25.4	25.4	25.5	25.4	24.7	24.5	24.9	24.5	25.4
9:28:23 AM	19	25.5	25.5	25.5	25.4	24.7	24.5	24.9	24.5	25.4
9:29:23 AM	20	25.5	25.5	25.6	25.5	24.7	24.6	25.0	24.5	25.5
9:30:23 AM	20	25.5	25.4	25.5	25.4	24.7	24.6	24.9	24.5	25.5
9:31:23 AM	20	25.3	25.3	25.3	25.2	24.7	24.5	24.8	24.4	25.4
9:32:23 AM	20	25.2	25.1	25.2	25.1	24.7	24.3	24.7	24.4	25.4
9:33:23 AM	20	25.1	25.0	25.1	25.1	24.7	24.3	24.7	24.4	25.4
9:34:23 AM	20	25.1	25.0	25.1	25.1	24.6	24.3	24.6	24.4	25.3
9:35:23 AM	20	25.2	25.1	25.3	25.1	24.7	24.3	24.7	24.5	25.3
9:36:23 AM	20	25.4	25.3	25.4	25.3	24.7	24.5	24.8	24.5	25.4
9:37:23 AM	20	25.4	25.4	25.4	25.4	24.7	24.5	24.8	24.5	25.4
9:38:23 AM	19	25.5	25.5	25.4	25.5	24.7	24.5	24.8	24.5	25.5
9:39:23 AM	17	25.5	25.3	25.4	25.4	24.7	24.6	24.8	24.5	25.5
9:40:23 AM	19	25.3	25.0	25.2	25.2	24.7	24.5	24.7	24.5	25.5
Promedio	19	25.4	25.3	25.4	25.3	24.7	24.5	24.8	24.5	25.4
Desviación	0.8	0.2	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.1
Max	20.0	25.6	25.6	25.7	25.5	24.7	24.7	25.0	24.5	25.5
Min	17.0	25.1	25.0	25.1	25.0	24.6	24.3	24.6	24.4	25.3
ΔT Est.	0.6									
ΔT Radial	1.1									
ΔT Axial	1.3									

Fin de Certificado (End of Certificate)

NO VALIDO

Certificado No.: 57134
Fecha de Calibración: 2025-05-20

Equipo (Instrument): Cámara Climática
Marca (Brand): Salva

Tabla 1.0: Lecturas de los sensores durante desplazamiento en la zona de trabajo @ 73 %HR										
Tiempo (hh:mm:ss)	Lectura del Patrón °C @ 73 %HR									
	PC	P1	P2	P3	P4	P5	P6	P7	P8	P9
9:28:01 AM	75	80.6	77.3	79.2	82.2	74.7	71.9	79.1	76.5	73.0
9:29:01 AM	88	77.9	71.8	73.6	69.1	69.8	69.3	66.6	69.8	76.5
9:30:01 AM	83	64.0	66.6	71.4	66.0	70.1	67.8	67.2	72.1	71.2
9:31:01 AM	77	74.6	72.0	74.9	76.2	73.3	70.4	72.2	74.8	72.1
9:32:01 AM	74	71.2	68.0	66.3	64.0	66.6	68.0	62.7	68.9	74.8
9:33:01 AM	72	63.7	68.6	70.8	66.1	69.2	67.3	66.2	71.6	69.4
9:34:01 AM	69	75.7	80.7	79.2	77.7	72.8	70.7	73.7	75.2	71.7
9:35:01 AM	66	76.4	71.0	73.0	68.7	68.9	68.6	64.8	69.4	74.8
9:36:01 AM	79	64.7	67.3	73.5	66.8	69.8	67.7	68.8	72.1	70.3
9:37:01 AM	77	80.6	75.7	80.0	81.6	74.9	71.9	79.5	76.5	73.0
9:38:01 AM	72	80.6	74.0	75.8	71.7	71.4	70.3	68.6	70.3	77.0
9:39:01 AM	70	62.6	66.1	70.9	64.1	70.0	68.0	67.0	72.1	71.7
9:40:01 AM	89	73.5	71.8	75.8	75.1	73.2	70.3	72.8	74.8	72.1
9:41:01 AM	89	72.7	68.9	70.9	65.5	66.7	68.3	63.2	68.9	74.4
9:42:01 AM	89	63.1	65.5	70.4	65.3	69.3	67.5	66.4	71.7	69.9
9:43:01 AM	89	75.9	72.8	77.0	77.8	73.0	70.7	74.3	75.6	71.7
9:44:01 AM	89	79.3	72.6	74.8	71.5	70.1	69.7	67.5	70.3	75.7
9:45:01 AM	89	64.9	66.7	73.0	65.3	69.8	67.9	68.6	72.1	71.2
9:46:01 AM	83	79.9	75.9	79.6	80.9	75.1	72.5	79.7	76.5	73.0
9:47:01 AM	81	82.8	75.3	76.6	74.2	72.7	71.1	70.0	70.8	77.0
9:48:01 AM	78	62.5	66.3	71.3	63.4	70.0	68.4	66.9	72.1	72.6
9:49:01 AM	77	73.0	76.4	77.5	74.5	73.3	70.5	72.1	74.8	72.1
9:50:01 AM	74	73.9	62.7	67.6	67.5	67.2	69.2	64.3	69.4	74.8
9:51:01 AM	71	62.2	67.5	70.8	64.4	69.5	67.7	66.5	71.7	69.9
Promedio	79	72.3	70.9	73.9	70.8	70.9	69.4	69.5	72.4	72.9
Desviación	8	7.0	4.5	3.8	6.2	2.5	1.6	4.9	2.5	2.3
Max	89	82.8	80.7	80.0	82.2	75.1	72.5	79.7	76.5	77.0
Min	66	62.2	62.7	66.3	63.4	66.6	67.3	62.7	68.9	69.4
ΔT Est.	20.6									
ΔT Radial	11.2									
ΔT Axial	11.7									

Fin de Certificado (End of Certificate)

Certificado No.: 57134
Fecha de Calibración: 2025-05-20

Equipo (Instrument): Cámara Climática
Marca (Brand): Salva

Tabla 1.0: Lecturas de los sensores durante desplazamiento en la zona de trabajo @ 35 °C										
Tiempo (hh:mm:ss)	Lectura del Patrón °C @ 35 °C									
	PC	P1	P2	P3	P4	P5	P6	P7	P8	P9
12:10:01 PM	30	34.5	34.5	34.5	34.4	33.9	34.1	34.4	33.5	34.6
12:11:01 PM	30	34.5	34.6	34.6	34.5	33.9	34.1	34.4	33.6	34.6
12:12:01 PM	30	34.6	34.7	34.7	34.6	34.0	34.1	34.5	33.6	34.6
12:13:01 PM	30	34.6	34.8	34.8	34.6	33.9	34.2	34.5	33.6	34.6
12:14:01 PM	30	34.7	34.8	34.8	34.7	34.0	34.2	34.5	33.7	34.7
12:15:01 PM	30	34.8	34.9	34.9	34.8	34.0	34.3	34.5	33.7	34.7
12:16:01 PM	30	34.8	34.9	35.0	34.8	34.0	34.3	34.6	33.7	34.8
12:17:01 PM	30	34.9	35.1	35.2	34.9	34.1	34.4	34.7	33.8	34.8
12:18:01 PM	30	35.1	35.2	35.3	35.1	34.2	34.5	34.8	33.8	34.9
12:19:01 PM	30	35.1	35.3	35.3	35.1	34.2	34.6	34.8	33.9	35.0
12:20:01 PM	30	35.1	35.3	35.3	35.1	34.2	34.6	34.9	33.9	35.0
12:21:01 PM	30	35.1	35.3	35.2	35.1	34.2	34.6	34.8	33.9	35.0
12:22:01 PM	30	34.9	35.0	34.9	34.9	34.2	34.5	34.6	33.8	35.0
12:23:01 PM	30	34.7	34.8	34.8	34.7	34.2	34.3	34.6	33.9	34.9
12:24:01 PM	30	34.6	34.7	34.7	34.6	34.1	34.2	34.5	33.8	34.8
12:25:01 PM	29	34.5	34.6	34.6	34.5	34.1	34.1	34.4	33.8	34.8
12:26:01 PM	29	34.5	34.6	34.6	34.6	34.1	34.1	34.4	33.8	34.8
12:27:01 PM	29	34.6	34.7	34.8	34.7	34.2	34.1	34.5	33.8	34.8
12:28:01 PM	29	34.7	34.8	34.8	34.7	34.1	34.2	34.5	33.8	34.8
12:29:01 PM	29	34.7	34.8	34.8	34.7	34.1	34.2	34.5	33.9	34.8
12:30:01 PM	29	34.8	34.9	34.9	34.8	34.2	34.3	34.6	33.9	34.9
12:31:01 PM	28	34.8	34.9	34.9	34.8	34.2	34.3	34.5	33.9	34.9
12:32:01 PM	28	34.9	35.0	35.1	34.9	34.2	34.4	34.6	34.0	34.9
12:33:01 PM	28	35.1	35.2	35.3	35.1	34.3	34.5	34.8	34.0	35.0
Promedio	30	34.8	34.9	34.9	34.8	34.1	34.3	34.6	33.8	34.8
Desviación	0.7	0.2	0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.1
Max	30.0	35.1	35.3	35.3	35.1	34.3	34.6	34.9	34.0	35.0
Min	28.0	34.5	34.5	34.5	34.4	33.9	34.1	34.4	33.5	34.6
ΔT Est.	0.8									
ΔT Radial	1.2									
ΔT Axial	1.5									

Fin de Certificado (End of Certificate)

Certificado No.: 57134

Fecha de Calibración: 2025-05-20

Equipo (Instrument): Cámara Climática

Marca (Brand): Salva

Tabla 1.0: Lecturas de los sensores durante desplazamiento en la zona de trabajo @ 75 %HR										
Tiempo (hh:mm:ss)	Lectura del Patrón °C @ 75 %HR									
	PC	P1	P2	P3	P4	P5	P6	P7	P8	P9
12:10:01 PM	86	69.3	69.9	75.8	68.8	77.0	72.0	72.5	77.5	76.6
12:11:01 PM	87	81.7	78.4	82.0	81.8	80.9	75.9	80.2	81.9	77.5
12:12:01 PM	88	86.1	77.7	76.7	77.5	77.4	74.9	73.2	75.7	81.5
12:13:01 PM	88	67.1	69.8	74.0	67.4	76.4	72.2	71.2	77.0	76.6
12:14:01 PM	88	79.0	76.4	80.3	79.4	80.2	75.2	77.8	81.0	76.6
12:15:01 PM	89	84.9	77.3	78.5	77.3	78.1	74.7	73.1	75.7	80.6
12:16:01 PM	89	70.4	70.9	76.3	70.0	77.6	72.6	73.7	78.4	76.6
12:17:01 PM	89	82.9	78.3	82.1	82.7	81.8	76.5	81.8	82.3	78.0
12:18:01 PM	88	87.3	78.7	79.5	79.3	77.4	76.1	74.7	76.6	82.0
12:19:01 PM	87	68.3	69.7	74.1	67.8	76.8	72.8	71.4	77.5	77.1
12:20:01 PM	86	76.0	74.2	77.7	76.6	79.3	74.5	75.5	80.2	77.1
12:21:01 PM	84	79.5	73.7	75.4	72.8	73.5	73.6	69.9	74.8	79.4
12:22:01 PM	83	66.7	68.6	73.1	67.6	75.5	71.6	70.5	76.6	74.8
12:23:01 PM	81	78.3	75.4	81.2	79.1	79.7	74.6	77.1	80.2	76.2
12:24:01 PM	80	85.9	78.3	79.8	79.5	77.6	75.1	74.2	75.7	80.2
12:25:01 PM	77	68.5	69.4	75.3	67.2	75.9	71.8	71.9	76.6	76.2
12:26:01 PM	76	81.0	76.7	81.1	80.8	80.2	75.3	79.8	80.6	76.6
12:27:01 PM	74	87.8	79.4	79.8	80.5	77.1	75.8	74.8	75.7	81.1
12:28:01 PM	72	66.7	69.3	74.0	66.2	75.4	72.1	70.6	76.2	76.6
12:29:01 PM	70	77.7	75.6	79.8	78.5	79.6	74.9	77.1	80.2	76.2
12:30:01 PM	66	86.1	78.4	79.9	79.8	79.2	75.3	74.9	75.7	79.8
12:31:01 PM	65	69.4	70.2	75.8	68.2	76.9	72.2	72.9	77.1	77.1
12:32:01 PM	64	81.4	77.8	82.1	81.6	81.1	76.0	80.5	81.5	77.6
12:33:01 PM	63	88.6	80.5	81.2	82.0	78.4	76.8	75.7	76.6	81.6
Promedio	80	77.9	74.8	78.1	75.5	78.0	74.3	74.8	78.0	78.1
Desviación	9	7.7	4.0	2.9	5.9	2.0	1.7	3.4	2.3	2.1
Max	89	88.6	80.5	82.1	82.7	81.8	76.8	81.8	82.3	82.0
Min	63	66.7	68.6	73.1	66.2	73.5	71.6	69.9	74.8	74.8
ΔT Est.	21.9									
ΔT Radial	8.6									
ΔT Axial	12.0									

Fin de Certificado (End of Certificate)