

Spett.le
Azienda USL di Pescara
UOC Ingegneria Clinica - HTA
via Paolini, 47
65124 Pescara

c.a. Ing. D. Rinaldi
Ing. V. Lo Mele

OGGETTO: **2024-15011412 Preventivo per la certificazione delle temperature per il Termociclatore Biorad T100, inv. E007358 c/o UOC MEDICINA TRASFUSIONALE del PO di Pescara, a seguito della richiesta di reparto 2024/00116 del 15/01/2024.**

Con riferimento a quanto in oggetto, poiché la certificazione delle temperature non è contemplato nell'Art. 1 del CSA regolante l'oggetto "il valore e la durata del servizio", siamo a formularvi la nostra migliore offerta per le seguenti attività:

Quantità	Descrizione	Prezzo Unitario	Prezzo Offerto
1	Certificazione temperature Temociclatore T100	1.000,00€	1.000,00€
PREZZO TOT		1.000,00 €+ IVA	

Distinti saluti
La Direzione Tecnica

Associazione Temporanea d'Impresa
Siemens Healthcare srl
Hospital Consulting spa
Marifarma FM srl
c/o Azienda USL di Pescara
Via Paolini, 47
65100 Pescara
tel. 085.4252963 fax 085.4252964

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SIEMENS

Healthineers



MARIFARMA FM
Health Facility Management



15/01/2024

Direttore U.O.C. Immunoematologia, Medicina Trasfusionale e Lab. di Ematologia: Dott.ssa Patrizia Accorsi

Scheda richiesta e interventi di manutenzione

Richiesta di intervento

Richiesta n°: 004/2024

Data: 15/01/2024

Ora: 11.36

Funzione emittente:

Richiedente Persico Alessia

Email:

Telefono:

Centro di costo:

Laboratorio/servizio: Presidio di Pescara, Lab. di Biol. Molec. Emat. (CT L ME)

Dati macchina

Macchina: Termociclatore

Tipo apparecchiatura:

N. inventario:

Serie/matricola: 621BR52696

Costruttore/marca: Biorad

Modello: T100 Thermal Cycler

Titolo di possesso: Service

Identificativo: E007358

Contratto di manutenzione:

Tipo problema: Guasto

Descrizione/Problema: si richiede la certificazione delle temperature

Stato apparecchiatura: Non bloccante

Inizio problema: 15/01/2024 00.00.00

Fermo macchina: 11,65 ore, di cui 1 giorni lavorativi

Fine problema (attuazione intervento):

Priorità:

Recapiti:

Responsabile	Email
Baldoni Stefano	stefano.baldoni@asl.pe.it

Descrizione/Problema

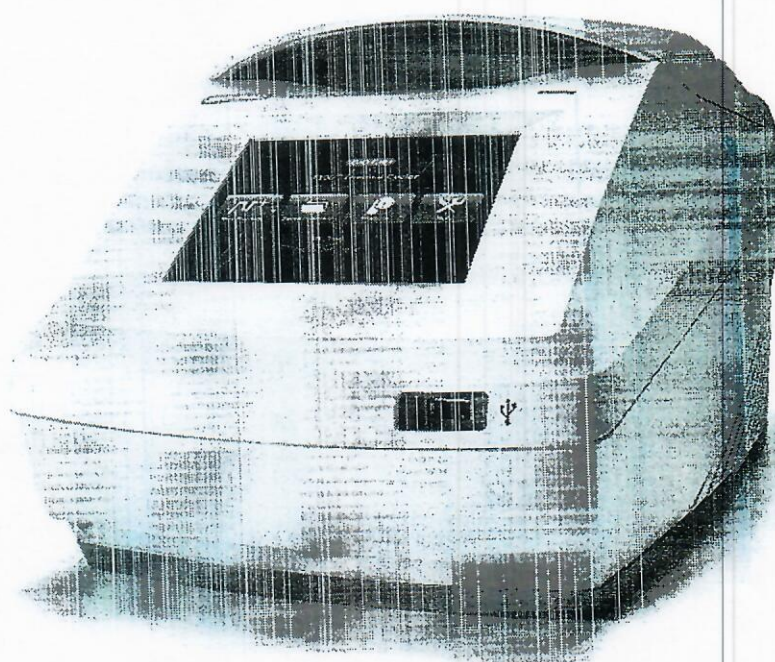
Interventi di manutenzione

Intervento	Operatore	Ore	Costo	Tipo intervento	Descrizione	Note	Ricambi	Costo ricambi
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2024/00116

Stefano Baldoni

BIO-RAD



T100™ Thermal Cycler

Thermal Performance and Validation Report

Version 1.4.197.623

T100 Thermal Cycler

Thermal Validation Result

Institute/Client

Department

Address

City, State Zip

Az. Osp. Pescara S. Spirito

Lab. Biologia Molecolare

Via Fonte Romana,8

65124 Pescara

Contact Name

Phone

Dr. Baldoni

085/4252377

Instrument

Base Serial number

Bio-Rad Laboratories T100

621BR52696

Engineer

Test Date

Start Time

End Time

Dino Forgia

1/22/2024

11:10 AM

11:24 AM

Thermal validation Hardware

Serial Number

Sensor Type

Sensor 1 Serial Number

Sensor 2 Serial Number

Sensor 3 Serial Number

Sensor 4 Serial Number

Sensor 5 Serial Number

Sensor 6 Serial Number

Sensor 7 Serial Number

Sensor 8 Serial Number

Sensor 9 Serial Number

Sensor 10 Serial Number

Sensor 11 Serial Number

Sensor 12 Serial Number

Sensor 13 Serial Number

Sensor 14 Serial Number

Sensor 15 Serial Number

Bio-Rad Spread Station

BR000440

Bio-Rad 96well 15 probe

2307241187844878

2307241134845196

2307241383011011

2307241865659456

2307241373810699

2307241160821800

2307241310012185

2307241328415667

2307241180217313

2307241151661850

2307211854528089

2307241319230825

2307241142448661

2307241300841447

2307241355443674

Sensor 1

Sensor 2

Sensor 3

Sensor 4

Thermal Validation Test Result**Pass**

Thermal validation performed by:



Sensor 1

Sensor 2

Sensor 3

Sensor 4

Sensor 5

Sensor 6

Sensor 7

Sensor 8

Sensor 9

Sensor 10

Sensor 11

Sensor 12

Sensor 13

Sensor 14

Sensor 15

1/22/2024

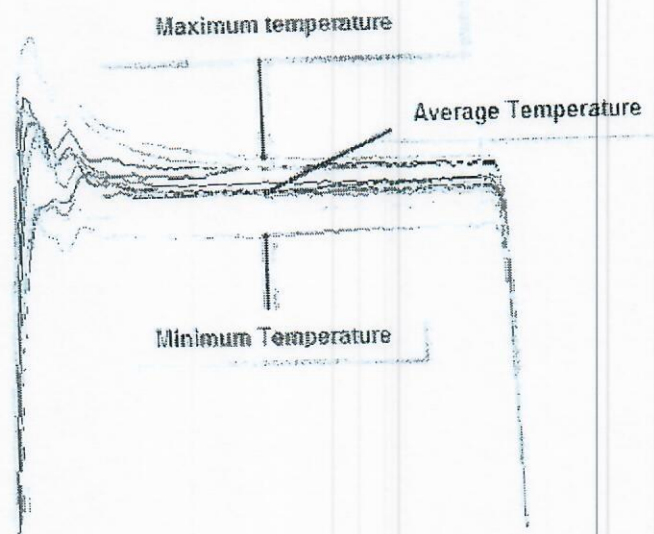
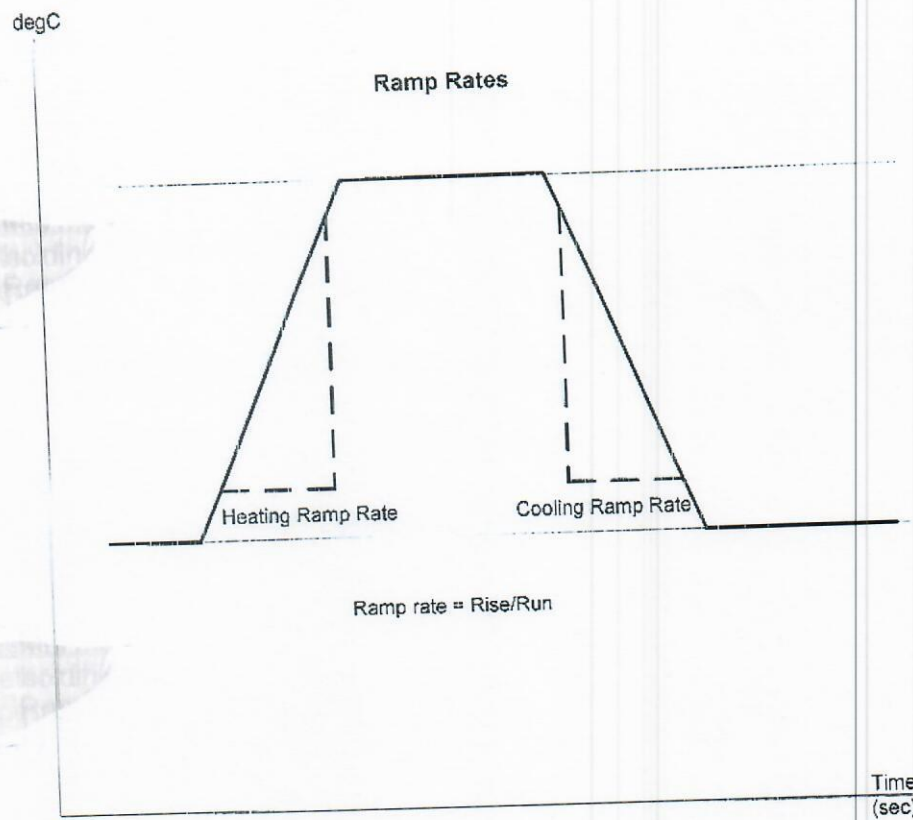
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Introduction:

The purpose of this report is to present data generated by the thermal performance testing of the specified Bio-Rad thermal cycler. Conclusions of pass/fail are determined by comparing the test data against listed Bio-Rad instrument specifications. The testing equipment is NIST traceable.

Definitions:

- Measurement time: All temperature measurements are made 10 seconds after the block first reaches the target holding temperature.
- Minimum temperature: Lowest temperature reading at the given time point while holding at target temperature.
- Maximum temperature: Highest temperature reading at the given time point while holding at target temperature.
- Average temperature: Average of all temperature readings at the given time point while holding at target temperature.
- Thermal uniformity: Maximum temperature – minimum temperature
- Thermal accuracy: The difference between the average temperature and the target temperature.
- Ramp rate: Slope of graph (rise/run) during heating or cooling step.
- Settling time: The time it takes for the block to reach specified thermal uniformity after first reaching the target temperature.
- Overshoot: Single probe reading that is past target (higher when heating / lower when cooling)
- Target temperature: The temperature that the block is programmed to reach.



Thermal Probe Test Positions

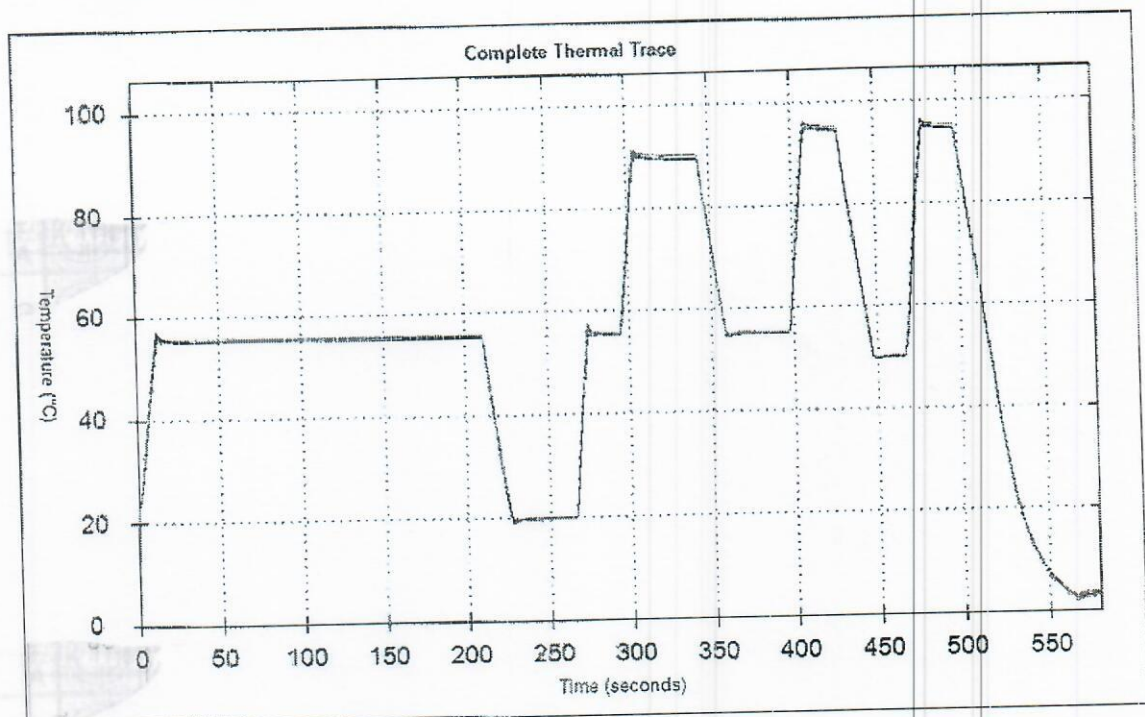
	1	2	3	4	5	6	7	8	9	10	11	12
A	1			4			7			10		13
B												
C												
D	2						8					14
E				5						11		
F												
G												
H	3			6			9			12		15

Bio-Rad Specification

Requirement	Bio-Rad Specification
Thermal Accuracy	$\pm 0.5^{\circ}\text{C}$ of programmed target at 55°C
Thermal Block Uniformity	$\pm 0.5^{\circ}\text{C}$ well-to-well within 30 sec of arrival at 55°C

Thermal Validation Test Results
(30 seconds after arrival at target temperature)

Target Temperature	Minimum Temperature	Maximum Temperature	Average Temperature	Uniformity (Pass ≤ 1.0)	Accuracy (Pass ± 0.5)
55°C	55.00	55.37	55.2	0.4	0.2



Thermal Validation Temperature Protocol

Block mode

- Step 1: 55°C, 300 sec
- Step 2: 20°C, 60 sec
- Step 3: 55°C, 30 sec
- Step 4: 90°C, 60 sec
- Step 5: 55°C, 60 sec
- Step 6: 95°C, 30 sec
- Step 7: 50°C, 30 sec
- Step 8: 95°C, 30 sec
- Step 9: 4°C, 120 sec

Step 7: 50°C
Step 8: 95°C
Step 9: 4°C

Results @ 55°C

30 seconds

Mean	55.2
Min	55.00
Max	55.37
Uniformity	0.4
Chan 1	55.10
Chan 2	55.11
Chan 3	55.17
Chan 4	55.15
Chan 5	55.00
Chan 6	55.22
Chan 7	55.29
Chan 8	55.04
Chan 9	55.28
Chan 10	55.37
Chan 11	55.32
Chan 12	55.27
Chan 13	55.34
Chan 14	55.37
Chan 15	55.22

