

Certificate No. 24

24PTP_0104240368

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Certificate of Calibration

EQUIPMENT : MONITORING SYSTEMS, PHYSIOLOGIC, STRESS

EXERCISE, CARDIAC

ID CODE : PTP03896

MANUFACTURER : QUINTON

MODEL : Q-STRESS

SERIAL No. : 121110000831

LOCATION : Heart Center

SUBMITTED BY : PHYATHAI PHAHOLYOTHIN HOSPITAL

670/1 Phaholyothin Road, Samsen Nai, Phaya Thai, Bangkok 10400

Tel: 02-271-7000 Fax: -

CALIBRATED DATE : 25 APRIL 2024

ISSUE DATE : 3 MAY 2024

Kanittha.

Approved by

KANITTHA SRIPRAPAD PHUWASIN YIWKIM

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CONDITION OF THIS RESULT OF TEST

Performed by:

1. REFERENCE STANDARD INSTRUMENT:

MASTER MANUFACTURER MODEL SERIAL NO. CERTIFICATE NO. DUE DATE 7 Jun 2024 Vitalsign Simulator Fluke ProSim8 2541031 23MD777 7 Jun 2024 PLT200 1837601 23E1911 Digital Tachometer Monarch

2. THIS CERTIFICATION IS TRACEABLE TO:

- Technology Promotion Association (Thai-Japan)
- Technology Promotion Association (Thai-Japan)

3. THIS RESULT OF TEST WAS FOUND ACCURATE AS SHOW ON DATE AND PLACE OF TEST ONLY



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Calibration Report

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DATE OF CALIBRATION : 25 APRIL 2024

ENVIRONMENT : TEMPERATURE 25 °C

RELATIVE HUMIDITY 55 %

PROCEDURE USED:

This instrument was calibration by comparison with standard

MEASURMENT RESULT:

/	Without Adjustment	Before Adjustment	After Adjustment

Systolic					
Standard Setting	UUC* Reading	Error	% Error	Uncertainty	
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)	
60	65.00	5.00	8.33	± 0.9238	
120	124.00	4.00	3.33	± 1.2702	
200	203.75	3.75	1.88	± 1.8028	

Diastolic						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)		
30	35.00	5.00	16.67	± 0.7506		
80	86.25	6.25	7.81	± 1.1821		
150	156.00	6.00	4.00	± 1.4434		

Heart Rate						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(BPM)	(BPM)	(BPM)	(%)	(BPM)		
60	60.00	0.00	0.00	± 0.0150		
80	80.00	0.00	0.00	± 0.0460		
120	120.00	0.00	0.00	± 0.0460		



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Gain						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mm/mV)	(mm/mV)	(mm/mV)	(%)	(mm/mV)		
5	5.00	0.00	0.00	± 0.0577		
10	10.00	0.00	0.00	± 0.0577		
20	20.00	0.00	0.00	± 0.0577		

Amplitude						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mV)	(mV)	(mV)	(%)	(mV)		
1	1.00	0.00	0.00	± 0.0042		
2	2.00	0.00	0.00	± 0.0042		

Paper Speed						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mm/sec)	(mm/sec)	(mm/sec)	(%)	(mm/sec)		
25	25.00	0.00	0.00	± 0.2887		
50	50.00	0.00	0.00	± 0.5774		

Speed					
UUC* Setting	Standard Reading	Error	% Error	Uncertainty	
(MPH)	(MPH)	(MPH)	(%)	(MPH)	
5	5.09	0.09	1.80	± 0.0006	
10	10.38	0.38	3.80	± 0.0012	

UUC*: Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%