

Certificate No.

24PTP_0104240179

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Certificate of Calibration

EQUIPMENT : MODULE, ECG/SPO2/NIBP

ID CODE : PTP02511

MANUFACTURER : PHILIPS

MODEL : M3001A

SERIAL No. : DE632F7991

LOCATION : I.C.U

SUBMITTED BY : PHYATHAI PHAHOLYOTHIN HOSPITAL

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

Tel: 02-271-7000 Fax: -

CALIBRATED DATE : 19 APRIL 2024

ISSUE DATE : 2 MAY 2024

Supatcha 50%

Performed by : _____ Approved by :

SUPATCHA BUAPUEAN

PHUWASIN YIWKIM

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CONDITION OF THIS RESULT OF TEST

1. REFERENCE STANDARD INSTRUMENT:

MASTERMANUFACTURERMODELSERIAL NO.CERTIFICATE NO.DUE DATEVitalsign SimulatorFlukeProSim8254103123MD7777 Jun 2024

2. THIS CERTIFICATION IS TRACEABLE TO:

- 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

EQUIPMENT : MODULE, ECG/SPO2/NIBP

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DATE OF CALIBRATION : 19 APRIL 2024

ENVIRONMENT : TEMPERATURE 24 °C

RELATIVE HUMIDITY 55 %

PROCEDURE USED:

This instrument was calibration by comparison with standard

MEASURMENT RESULT:

/	Without Adjustment		Before Adjustment		After Adjustment
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Systolic(NIBP)						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)		
60	62.25	2.25	3.75	± 1.0767		
120	120.25	0.25	0.21	± 1.3651		
200	199.25	-0.75	-0.38	± 1.8028		

Diastolic(NIBP)						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)		
30	33.25	3.25	10.83	± 0.9425		
80	84.25	4.25	5.31	± 1.1821		
150	151.25	1.25	0.83	± 1.5276		

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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%Spo2						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(%SPO ₂)	(%SPO ₂)	(%SPO ₂)	(%)	(%SPO ₂)		
90	90.50	0.50	0.56	± 0.9709		
96	96.00	0.00	0.00	± 0.1109		
100	100.00	0.00	0.00	± 0.1155		

Temperature						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(°C)	(°C)	(°C)	(%)	(°C)		
35	35.00	0.00	0.00	± 0.0051		
37	37.00	0.00	0.00	± 0.0051		
39	39.00	0.00	0.00	± 0.0055		

Systolic(IBP)						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)		
10	10.00	0.00	0.00	± 0.1155		
24	24.00	0.00	0.00	± 0.2771		
120	120.00	0.00	0.00	± 1.3857		

Diastolic(IBP)						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)		
2	2.00	0.00	0.00	± 0.0231		
10	10.00	0.00	0.00	± 0.1155		
80	80.00	0.00	0.00	± 0.9238		

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%