

Certificate No. 2

24PTP\_0104240157

Page 1 of 3

### **Certificate of Calibration**

EQUIPMENT : MODULE, ECG/SPO2/NIBP

ID CODE : PTP00472

MANUFACTURER : PHILIPS

MODEL : M3001A

SERIAL No. : DE5630FGR8

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 : 18 APRIL 2024

ISSUE DATE : 2 MAY 2024

Supatcha INDE

Performed by : Approved by : 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



*Certificate No.* 24PTP\_0104240157

Page 2 of 3

## **Calibration Report**

EQUIPMENT : MODULE, ECG/SPO2/NIBP

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MODEL : M3001A

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DATE OF CALIBRATION : 18 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	61.50	1.50	2.50	± 1.1275		
120	120.50	0.50	0.42	± 1.3953		
200	197.50	-2.50	-1.25	± 1.8258		

Diastolic(NIBP)						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)		
30	35.50	5.50	18.33	± 1.0085		
80	80.75	0.75	0.94	± 1.5544		
150	155.50	5.50	3.67	± 1.5546		

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		

FI-BME-NHS-CP-029/1 Rev.03 Page 2/3 Issued Date 20/07/2023



*Certificate No.* 24PTP\_0104240157

Page 3 of 3

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ID CODE : PTP00472

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%Spo2						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(%SPO <sub>2</sub> )	(%SPO <sub>2</sub> )	(%SPO <sub>2</sub> )	(%)	(%SPO <sub>2</sub> )		
90	90.00	0.00	0.00	± 0.1039		
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%