

Certificate No. 24PTP\_0104240201

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### **Certificate of Calibration**

EQUIPMENT : MODULE, ECG/SPO2/NIBP

ID CODE : PTP00320

MANUFACTURER : PHILIPS

MODEL : M3001A

SERIAL No. : DE717M0430

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

Performed by: \_\_\_\_\_ Approved by:

2024

USANEE CHALONGPHOKSILCHAI 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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MODEL : M3001A

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DATE OF CALIBRATION : 19 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
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Systolic(NIBP)						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)		
60	62.00	2.00	3.33	± 0.9238		
120	119.00	-1.00	-0.83	± 1.2702		
200	198.00	-2.00	-1.00	± 1.7321		

Diastolic(NIBP)						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mmHg)	(mmHg)	(mmHg)	(%)	(mmHg)		
30	36.00	6.00	20.00	± 0.7506		
80	86.00	6.00	7.50	± 1.0393		
150	155.00	5.00	3.33	± 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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SERIAL No. : DE717M0430

%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	119.00	-1.00	-0.83	± 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%