

Certificate No.

24PTP_0104240195

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Certificate of Calibration

EQUIPMENT : MODULE, ECG/SPO2/NIBP

ID CODE : PTP02718

MANUFACTURER : PHILIPS

MODEL : M3001A

SERIAL No. : DE9070C8LW

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

Performed by:

Approved by :

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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MANUFACTURER : PHILIPS

MODEL : M3001A

SERIAL No. : DE9070C8LW

DATE OF CALIBRATION : 18 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(NIBP) | | | | | | |
|------------------|--------------|--------|---------|-------------|--|--|
| Standard Setting | UUC* Reading | Error | % Error | Uncertainty | | |
| (mmHg) | (mmHg) | (mmHg) | (%) | (mmHg) | | |
| 60 | 62.00 | 2.00 | 3.33 | ± 0.9238 | | |
| 120 | 120.00 | 0.00 | 0.00 | ± 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 | 33.00 | 3.00 | 10.00 | ± 0.7506 | | |
| 80 | 82.00 | 2.00 | 2.50 | ± 1.0393 | | |
| 150 | 150.00 | 0.00 | 0.00 | ± 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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EQUIPMENT : MODULE, ECG/SPO2/NIBP

ID CODE : PTP02718

SERIAL No. : DE9070C8LW

| %Spo2 | | | | | | |
|----------------------|----------------------|----------------------|---------|----------------------|--|--|
| Standard Setting | UUC* Reading | Error | % Error | Uncertainty | | |
| (%SPO ₂) | (%SPO ₂) | (%SPO ₂) | (%) | (%SPO ₂) | | |
| 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%