

MANUFACTURER

Certificate No.

24PTP_0104240230

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Certificate of Calibration

EQUIPMENT : DEFIBRILLATORS, EXTERNAL, MANUAL

PHILIPS

ID CODE : PTP00991

MODEL : HeartStart XL (M4735A)

SERIAL No. : US00466991

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 : 22 APRIL 2024

ISSUE DATE : 1 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 DATEDefibrillatorFlukeImpulse 7000DP207933523MD7757 Jun 2024

Analyzer

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 : DEFIBRILLATORS, EXTERNAL, MANUAL

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MANUFACTURER : PHILIPS

MODEL : HeartStart XL (M4735A)

SERIAL No. : US00466991

DATE OF CALIBRATION : 22 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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Output Energy				
UUC* Setting	Standard Reading	Error	% Error	Uncertainty
(Joule)	(Joule)	(Joule)	(%)	(Joule)
10	10.10	0.10	1.00	± 0.1400
100	97.80	-2.20	-2.20	± 0.2800
200	195.60	-4.40	-2.20	± 0.5500

Output Energy (Energy after 50 Sec (Manual Mode) ≥85%)						
UUC* Setting	Standard Reading	Error	% Error	Uncertainty		
(Joule)	(Joule)	(Joule)	(%)	(Joule)		
100	97.00	-3.00	-3.00	± 0.2800		

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	± 0.0170		
120	120.00	0.00	0.00	± 0.0150		

Gain						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mm/mV)	(mm/mV)	(mm/mV)	(%)	(mm/mV)		
5	5.00	0.00	0.00	± 0.1155		
10	10.00	0.00	0.00	± 0.2309		



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Gain (Continues)						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mm/mV)	(mm/mV)	(mm/mV)	(%)	(mm/mV)		
20	20.00	0.00	0.00	± 0.4619		

Amplitude						
Standard Setting	UUC* Reading	Error	% Error	Uncertainty		
(mV)	(mV)	(mV)	(%)	(mV)		
1	1.00	0.00	0.00	± 0.0231		
2	2.00	0.00	0.00	± 0.0462		

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	

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%

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