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Certificate No.

23-091314

Sample Code

23-33641-003

# CERTIFICATE OF CALIBRATION

Customer

: National Healthcare Systems Co., Ltd.

**Biomedical Engineering** 

2301/2 New Petchburi Road, Soi 47, Bangkapi, Huaykwang, Bangkok 10310

Location of Calibration

: Asia Medical and Agricultural Laboratory and Research Center Public Company Limited

(Calibration Laboratory)

Equipment

: ELECTRONIC BALANCE

Manufacturer

: VIBRA

Model

: AJ-620E

Serial No.

: 211004088

ID No.

: WINJ002

Date of Receipt

: 09 August 2023

Date of Calibration

: 11 August 2023

Calibrated by

Mr. Somwang Sangdee

Scientist

Approved by

(Mr. Somchai Neampunt)

Signed for Director

Issue date

15 August 2023

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).







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# REPORT OF CALIBRATION

quipment :	ELECT	ELECTRONIC BALANCE VIBRA				
anufacturer :	VIBRA					
odel:	AJ-620	AJ-620E				
pacity:	Max 62	20 a				
solution :		0.001 g				
rial No. :	211004	211004088				
No.:	MINJO	WINJOO2				
sult of Calibrat	ion					
est weight and	repeatability of reading					
specifications a	a measure of the ability of a balance or the same measurement condition. T and the ambient (vibration, fluctuation and in the standard deviation.	he measuremen	t of the repea	tability must i	nclude both t	
specifications a	er the same measurement condition. T nd the ambient (vibration, fluctuating	he measuremen	t of the repea	tability must i	nclude both t	
Specifications a palance is also in	er the same measurement condition. T nd the ambient (vibration, fluctuating ncluded in the standard deviation.	he measuremen g air current/ter	t of the repea	tability must i midity,etc.) O	nclude both t perator hand tment	
Specifications a calance is also in  Juit: g	r the same measurement condition. To the ambient (vibration, fluctuating noluded in the standard deviation.  Range: 620	he measuremen g air current/ter ☑ Before ad	t of the repea	tability must i midity,etc.) C	nclude both to perator hand the	
Specifications a palance is also in	r the same measurement condition. To the ambient (vibration, fluctuating noticed in the standard deviation.  Range: 620  Nominal value	he measuremen g air current/ter ☑ Before ad	t of the repea mperature/hui justment 600	tability must i midity,etc.) O After adjus	nclude both t perator hand tment	
Specifications a calance is also in  Juit: g	nd the ambient (vibration, fluctuation) nd the ambient (vibration, fluctuation) ncluded in the standard deviation.  Range: 620  Nominal value  Standard weight	he measuremeng air current/ter  Before add  300  300.000110	t of the repea mperature/hui justment 600 600.000249	After adjust 300	tment 600 600.000249	
Specifications a calance is also in  Juit: g	Range: 620  Nominal value  Standard weight  Average reading of indicator  Standard deviation	he measurement g air current/ter 300 300.000110 300.003 0.0005	t of the repea mperature/hui justment 600 600.000249 600.000	After adjust 300 300.000110 300.005	tment 600 600.000249 600.000	
Same load under specifications a palance is also in Unit : g No adjustment	Range: 620  Nominal value  Standard weight  Average reading of indicator  Standard deviation  Range: -	he measurement g air current/ter  Before ad 300 300.000110 300.003	t of the repea mperature/hui justment 600 600.000249 600.000	After adjus 300 300.000110 300.0002	tment 600 600.000249 600.000	
Same load under specifications a palance is also in Unit : g No adjustment	Range: 620  Nominal value  Standard deviation  Standard deviation  Range: -  Nominal value	he measurement g air current/ter 300 300.000110 300.003 0.0005	t of the repea mperature/hui justment 600 600.000249 600.000	After adjust 300 300.000110 300.005	tment 600 600.000249 600.000	
Same load under specifications a palance is also in Unit: g  No adjustment Adjustment	Range: 620  Nominal value  Standard deviation  Standard deviation  Range: -  Nominal value  Standard weight  Average reading of indicator  Standard weight  Assumption  Range: -  Nominal value  Standard weight	he measurement g air current/ter 300 300.000110 300.003 0.0005	t of the repea mperature/hui justment 600 600.000249 600.000	After adjust 300 300.000110 300.005	tment 600 600.000249 600.000	
Same load under specifications a palance is also in Unit: g  No adjustment Adjustment  Init: -	Range: 620  Nominal value  Standard deviation  Standard deviation  Range: -  Nominal value	he measurement g air current/ter 300 300.000110 300.003 0.0005	t of the repea mperature/hui justment 600 600.000249 600.000	After adjust 300 300.000110 300.005	tment 600 600.000249 600.000	







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## REPORT OF CALIBRATION

### Result of Calibration

### 2. Sensitivity or value of a scale division

Change in the output variable of a measuring instrument divided by the associated change in the input variable.

Unit: g

Range:

620

Range:

Test Point	Sensitivity, S	Test Point	Sensitivity, S
0	0.000		oonolavity, o
300	1.000	A <u>D</u>	-
600	1.000	:=	-

### 3. Departure of indication from nominal value, Linearity

Unit: g

Nominal	Standard	Average Reading	Correction	Expanded	Coverage
Value	Value	of Indicator	Value	Uncertainty	Factor (k)
Unload	0.000000	0.000	0.000	0.00094	2.01
60	60.000059	60.000	0.000	0.00095	2.01
120	120.000097	120.002	-0.002	0.00095	2.01
180	180.000156	180.003	-0.003	0.00097	2.01
240	240.000154	240.003	-0.003	0.0010	2.01
300	300.000110	300.002	-0.002	0.0011	2.01
360	360.000169	360.001	-0.001	0.0011	2.00
420	420.000172	420.000	0.000	0.0011	2.00
480	480.000231	480.000	0.000	0.0012	2.00
540	540.000293	540.000	0.000	0.0013	2.00
600	600.000249	600.000	0.000	0.0013	2.00

Lunas.

The result expanded uncertainty of measurement U is stated as the standard uncertainty of measurement multiplied by the coverage factor k, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.







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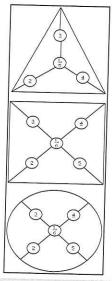
## REPORT OF CALIBRATION

### Result of Calibration:

### 4. Eccentric or off-centre loading

Deviation of the measurement value through off - center (eccentric) loading. The corner load increases with the weight of the load and its removal from the center of the pan support.

Circle	
○ Triangular	Test weight: 200
○ Rectangular	Unit: g
620	
Reading of indicate	or Reading of indicator
200.002	
200.006	
200.003	
199.998	-
200.002	•
200.002	-
ence 0.004	-
	○ Triangular ○ Rectangular 620 Reading of indicate 200.002 200.006 200.003 199.998 200.002 200.002



Ambient conditions

Relative Humidity (%Rh)

Temperature (°C)

Air pressure (hPa)

#### Condition of Calibration

- 1. Calibration Method: WI-CL-004 base on UKAS LAB 14: 2019
- 2. This result of calibration was found accurate as shown on date and place of calibration only.
- 3. Condition of Calibration item: Normal
- 4. This certification is traceable to the International System of Unit maintained at : -
- Through the reference standard laboratory of Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (Instrument number 1).
- 5. Reference standard instrument :

Ins	trument	Class	ID No.	Certificate No.	
1)	STANDARD WEIGHT 1 mg to 1 kg	50		ser uncate No.	Due Date
:50		E2	LB-WE-78	22-089927	16 September 2023

- End of Report -



Min

19.8

44.0

1007.1

Max

19.9

48.2

1007.7