



CALIBRATION REPORT

Page:1 of 4

Details of the Under Calibration:

Calibration Certificate No: SBS/CL/20-21/00434

Customer Name	DIA CARE DIAGNOSTICS	Customer Address:	#2/751, VEPPANAPALLI, KRISHNAGIRI DT, TAMILNADU
Location:	BIO CHEMISTRY	Serial No:	61004297
Description:	BIO CHEMISTRYANALYZER	Tag/Asset No:	NA
Make:	EMP	Date of Calibration:	25.01.2021
Model:	EMP-168	Date of Due:	24.01.2022

Traceability Details:

S.No	Standard Used	Make	Model	Serial No	Validity
1	Electrical Safety Analyzer	Fluke	ESA615	2244202	24.01.2022

Environmental Conditions and Standard Operating Procedure Details:

Temperature	24° C	Calibration Done at	ONSITE
Humidity (40-70% RH)	59%	Calibration Procedure No	CP-BM001-2019/ES

REMARKS:

The above mentioned instruments has been calibrated using standard manufacturer recommended protocols, using equipments having traceability to National/ International Standards. Partial reproduction of the certificates is not permitted.

SUNSHINE BIOMEDICAL SOLUTIONS

No:68, First floor , Poomagal Main Road, Ekkattuthangal, Chennai - 600 032, Tel: 044 - 2225 2087.

Electrical Safety Test Passed : Yes / No

Electrical safety test		
Parameters Used	Measured in Test Gadget	Limits
Voltage N-E	2.6 V	< 3 V
Voltage P-E	228V	< 230 V
Voltage P-E	227 V	< 230 V
Maximum Current Taken by the DUT	0.2	As per Manufacture specification
Earth Leakage Current NC	121 μ A	< 500 μ A for B, BF, CF
Earth Leakage Current SFC	237 μ A	< 1000 μ A for B, BF, CF
Enclosure Leakage Current NC	5.1 μ A	< 100 μ A for B, BF, CF
Enclosure Leakage Current SFC	5.4 μ A	< 500 μ A for B, BF, CF
Insulation Resistance M-P.E	Good	More than 100 Mohm
Insulation Resistance M-A.P	Good	More than 100 Mohm
Insulation Resistance A.P-P.E	Good	More than 100 Mohm

CALIBRATION RESULT:

Corrective maintenance required

Removed from use

Acceptable for use

Calibration Engineer Sign



25th January 2021

CALIBRATION REPORT

Page:3 of 4

This is to certify that, 168-EMP Semi Automated Analyzer bearing Serial No. #61004297

Installed at DIACARE DIAGNOSTICS, VEPPANAPALLI is performing satisfactorily.

168- EMP is calibrated last on 25th January 2021 by our Service Engineer, Mr. M. BALAJI.

Optical System Check	Dark Current	Dark Current Range	Remarks
340 nm	72	<200	Dark current values are within range
405 nm	78		
450 nm	82		
510 nm	81		
546 nm	83		
578 nm	81		
630 nm	85		
670 nm	89		

Optical System Check	Background	Back ground Range	Remarks
340 nm	52000	48000 to 62000	Back ground values are within range
405 nm	53500		
450 nm	54200		
510 nm	56500		
546 nm	55300		
578 nm	54100		
630 nm	51200		
670 nm	54100		



Software Communication	Status	Remarks
Operation Software Initialization Check	Normal	Nil
Communication between PCand Analyzer	Normal	Nil
Shutdown Check	Normal	Nil

Reagent Unit Check	Status	Remarks
Sample/Reagent Syringe Check	Normal	Nil
Reagent Unit	Normal	Nil
Reaction Unit	Normal	Nil
Dust Filters	Cleaned	Nil
Distilled Water filter	OK	Nil

Next Calibration Due on 24th January 2022

Calibrated by:

M.BALAJI

(Calibration Engineer)

Authorized Signatory:

C. SHANMUGARAJ

(Technical Manager)



EMP

Select Test

R.T.

01:26:16



Non-Template | Template

ABS	TBA	HDL	ACP	IgG
ALT	BUN	LDL	IP	IgM
AST	Crea	APOB	TTT	C3
ALb	UA	APOA	CHE	GST
TP	PHOS	TG	r-GT	HB
ALP	CO2	CHOL	FB	HBA1
TBil	K	LPa	NH3	Na+
DBil	Na	CK	T-CHO	K+
IBil	Ca	CK-MB	C4	Cl Cor
GGT	Mg	GLU	PK	T"Bili
GLB	Cl	AMY	a-HBD	D Bili
LDH	Zn	Fe	IgA	CORA

Selected:

New

Edit

Delete

OK

Cancel

EMP-168 Biochemical Analyzer

EMP

Select Test



R.T.



01:26:37



Non-Template

Template

ACP	IgG	c/TGL	CRP Turb
IP	IgM	CHL/CRL	HB Pat
TTT	C3	CRL/CREAT	RF
CHE	GST	ALB,Ens	EURO TGL
r-GT	HB	T.Pro	
FB	HBA1c	HDL/coral	
NH3	Na+	LDL/coral	
T-CHO	K+	CRL, GLU 2'	
C4	Cl Coral	Coral/ Urea	
PK	T"Bili C	TGL	
a-HBD	D Bili C	G.G.T	
IgA	CORAL UA	TGL DR:2	

Selected:

New

Edit

Delete

OK

Cancel

EMP-168 Biochemical Analyzer

test parameter

Test Name: T"Bili C
Test Method: End-point
Primary Wavelength: 546
Secondary Wavelength: None
Sample Vol(ul): 100
Reagent Vol(ul): 1050
Aspirate Vol(ul): 400
Delay Time(s): 5
Measuring Time(s): ---
Factor: 13.000
Unit: mg/dl
Temperature: R.T.
Reference Range: 0.00-1.00
Linear Range: 0.000-20.000

Calib. Parameter
Calib. method: Linear
Repeat Times: 1
No. of Standard: 0

test parameter

Test Name: CHL/CRL
Test Method: End-point
Primary Wavelength: 505
Secondary Wavelength: None
Sample Vol(ul): 10
Reagent Vol(ul): 1000
Aspirate Vol(ul): 400
Delay Time(s): 5
Measuring Time(s): ---
Factor: 348.257
Unit: mg/L
Temperature: 37°C
Reference Range: 0.00-200.0
Linear Range: 0.000-750.000

Calib. Parameter
Calib. method: Linear
Repeat Times: 1
No. of Standard: 1
Standard Conc. 1: 200.000mg/L

test parameter

Test Name: CRL, GLU 2`

Test Method: End-point

Primary Wavelength: 505

Secondary Wavelength: None

Sample Vol(ul): 10

Reagent Vol(ul): 1000

Aspirate Vol(ul): 400

Delay Time(s): 5

Measuring Time(s): ---

Factor: 241.361

Unit: mg/dl

Temperature: R.T.

Reference Range: 0.00-140.0

Linear Range: 0.000-1000.000

Calib. Parameter

Calib. method: Linear

Repeat Times: 1

No. of Standard: 1

Standard Conc. 1: 100.000mg/dl

test parameter

Test Name: c/TGL
Test Method: End-point
Primary Wavelength: 505
Secondary Wavelength: None
Sample Vol(ul): 10
Reagent Vol(ul): 1000
Aspirate Vol(ul): 400
Delay Time(s): 5
Measuring Time(s): ---
Factor: 574.626
Unit: mg/L
Temperature: 37°C
Reference Range: 0.00-150.0
Linear Range: 0.000-1000.000

Calib. Parameter
Calib. method: Linear
Repeat Times: 1
No. of Standard: 1
Standard Conc. 1: 200.000mg/L

test parameter

Test Name: T.Pro
Test Method: End-point
Primary Wavelength: 546
Secondary Wavelength: None
Sample Vol(ul): 20
Reagent Vol(ul): 1000
Aspirate Vol(ul): 400
Delay Time(s): 5
Measuring Time(s): ---
Factor: 14.148
Unit: g/dl
Temperature: 37°C
Reference Range: 6.00-8.50
Linear Range: 0.000-15.000

Calib. Parameter

Calib. method: Linear
Repeat Times: 1
No. of Standard: 1
Standard Conc. 1: 8.000g/dl

test parameter

Test Name: CRL/CREAT
Test Method: Fixed-time
Primary Wavelength: 505
Secondary Wavelength: None
Sample Vol(ul): 100
Reagent Vol(ul): 1000
Aspirate Vol(ul): 500
Delay Time(s): 30
Measuring Time(s): 60
Factor: 41.938
Unit: mg/L
Temperature: 37°C
Reference Range: 0.50-1.60
Linear Range: 0.000-20.000

Calib. Parameter
Calib. method: Linear
Repeat Times: 1
No. of Standard: 1
Standard Conc. 1: 2.000mg/L

test parameter

Test Name: Coral/ Urea
Test Method: End-point
Primary Wavelength: 546
Secondary Wavelength: None
Sample Vol(ul): 10
Reagent Vol(ul): 1300
Aspirate Vol(ul): 400
Delay Time(s): 5
Measuring Time(s): ---
Factor: 188.288
Unit: mg/dl
Temperature: 37°C
Reference Range: 15.0-45.0
Linear Range: 0.000-250.000

Calib. Parameter
Calib. method: Linear
Repeat Times: 1
No. of Standard: 1
Standard Conc. 1: 40.000mg/dl

test parameter

Test Name: ALP

Test Method: Kinetics

Primary Wavelength: 405

Secondary Wavelength: None

Sample Vol(ul): 25

Reagent Vol(ul): 1000

Aspirate Vol(ul): 500

Delay Time(s): 30

Measuring Time(s): 90

Factor: 2754.000

Unit: U/L

Temperature: 37°C

Reference Range: 0.00-280.0

Linear Range: 0.000-1000.000

CV: 15.000%

test parameter

Test Name: ALT
Test Method: Kinetics
Primary Wavelength: 340
Secondary Wavelength: None
Sample Vol(ul): 100
Reagent Vol(ul): 1000
Aspirate Vol(ul): 500
Delay Time(s): 60
Measuring Time(s): 180
Factor: 1746.000
Unit: U/L
Temperature: 37°C
Reference Range: 0.00-45.0
Linear Range: 0.000-300.000
CV: 15.000%

test parameter

Test Name: AST
Test Method: Kinetics
Primary Wavelength: 340
Secondary Wavelength: None
Sample Vol(ul): 100
Reagent Vol(ul): 1000
Aspirate Vol(ul): 500
Delay Time(s): 60
Measuring Time(s): 180
Factor: 1746.000
Unit: U/L
Temperature: 37°C
Reference Range: 0.00-40.0
Linear Range: 0.000-300.000
CV: 15.000%

test parameter

Test Name: CORAL UA
Test Method: End-point
Primary Wavelength: 546
Secondary Wavelength: None
Sample Vol(ul): 20
Reagent Vol(ul): 1000
Aspirate Vol(ul): 400
Delay Time(s): 5
Measuring Time(s): ---
Factor: 46.453
Unit: mg/L
Temperature: 37°C
Reference Range: 0.00-7.00
Linear Range: 0.000-20.000

Calib. Parameter

Calib. method: Linear
Repeat Times: 1
No. of Standard: 1
Standard Conc. 1: 8.000mg/L

test parameter

Test Name: ALB,Ens
Test Method: End-point
Primary Wavelength: 620
Secondary Wavelength: None
Sample Vol(ul): 10
Reagent Vol(ul): 1000
Aspirate Vol(ul): 400
Delay Time(s): 5
Measuring Time(s): ---
Factor: 6.032
Unit: g/dl
Temperature: R.T.
Reference Range: 3.70-5.30
Linear Range: 0.000-10.000

Calib. Parameter
Calib. method: Linear
Repeat Times: 1
No. of Standard: 1
Standard Conc. 1: 4.000g/dl

test parameter

Test Name: D Bili C
Test Method: End-point
Primary Wavelength: 546
Secondary Wavelength: None
Sample Vol(ul): 100
Reagent Vol(ul): 1050
Aspirate Vol(ul): 500
Delay Time(s): 5
Measuring Time(s): ---
Factor: 13.000
Unit: mg/dl
Temperature: R.T.
Reference Range: 0.00-0.50
Linear Range: 0.000-20.000

Calib. Parameter
Calib. method: Linear
Repeat Times: 1
No. of Standard: 0