20200420133043KK

CAL-8 006

E-mail: Consolte@mweb.co.zw, 17038 Boshoff Road, Graniteside, Harare, Zimbabwe

A SADCAS Accredited Calibration Laboratory

CALIBRATION CERTIFICATE

Date of Calibration	: April 11, 2020
Date of Next Calibration	: None
Calibrated For	: scale
Calibration of	: balance
Manufacturer	: and
Serial Number	: bal
Range	: 0.0 - 200.0
Resolution	: 0.0001
Calibrated At	: isocal
Immersion Depth	: depth

Calibrated by		**Sign**
Approved By	**Lab Manager**	**Sign**

1 Standards used:

Laboratory Standards and Equipment Used	*Serial Number*	*Certificate Number*
OHAUS	*OHAUS*	*201103170800*

2 Procedure used:

3 Calibration Conditions:

Temperature: 44 ± 1°C

Humidity : 33 ± 10% RH

4 Units used : grams

5 Results:

Settling time found to be	**20.17**
Weight used for corner load test	**55.0**
Max corner loading error	**3.0**
Cold start drift found to be	**195.0**
Repeatability at 1/2 load found	**0.3535533905932738**
Repeatability at full load found	**0.014142135623738184**

Nominal Mass	Actual Mass	Linearity Up	Difference
20.0	22.0	21.0	1.0
223.0	220.0	220.0	0.0

The uncertainty of the balance was estimated to be 225.1677 grams(95% confidence level)

Customer	**scale**		
Location	**isocal**	**Certificate Number**	**20200420133043KK**
Manufacturer	**and**	**Date**	**April 11, 2020**
Model	**mod**	**Calibrated by**	
Serial Number	**bal**	**Valindation**	**YES**
Range	**0.0 - 200.0**	**Clean**	**YES**
Resolution	**0.0001**	**Level**	**YES**
Units	**grams**	**Warmed Up**	**YES**
Tare Check	**YES**	**Exercised**	**YES**

1) Standards Used

Nominal	Actual	Uncertainty
100.0	100.0	0.005

2) Cold Start:

Test Weight(g)	200.0
Test #	Result
1	5.0
2	5.0
3	5.0
Cold Drift	195.0

3) Settling Time:

Reading	Settling Time
1	20.4
2	18.1
3	22.0

4) Linearity(before calibration):

Nominal Mass	Actual Mass	Linearity Up	Difference
20.0	22.0	21.0	1.0
223.0	220.0	220.0	0.0

5) Linearity(after calibration adjustments):

Nominal Value	100.0	100.0	100.0	100.0	100.0
Actual Value	100.0	100.0	100.0	100.0	100.0
Linearity Up	10.0	12.0	123.0	33.0	23.0
Linearity Down	23.0	33.0	33.0	22.0	33.0
Linearity Up	55.0	11.0	33.0	44.0	44.0
Average Reading	29.3333	18.6667	63.0	33.0	33.3333
Difference	23.1589	12.4231	51.9615	11.0	10.504
Standard Deviation	70.6667	81.3333	37.0	67.0	66.6667

6) Repeatability:

	1/2 Load	Full Load
Nominal Mass	**100.0**	**100.0**
Actual Mass	**100.0**	**100.0**
Reading #1	**100.0**	**200.0**
Reading #2	**100.5**	**200.02**
Average Reading	**100.25**	**200.01**
Standard Deviation	**0.3536**	**0.0141**

7) Off Center Error

Test Weight		**55.0**
Position	**Reading**	**Weight Difference**
A	**55.0**	**0.0**
B	**54.0**	**1.0**
C	**52.0**	**3.0**
D	**56.0**	**1.0**
E	**55.0**	**0.0**
Minimum Reading		**52.0**
Maximum Reading		**56.0**
Average Reading		**54.4**
Minimum Corner Error		**52.0**
Standard Deviation of Readings		**1.5165750888103102**

The uncertainty of the measurement was estimated to be + 225.1677grams.(95% confidence level)

6 Traceability:

The standard set of mass pieces is traceable to CSIR National Metrology Laboratory South Africa through calibration certificate number ISOOHA01 MV/M-3640

7 Remarks:

The reported uncertainties of measurement were calculated and expressed in accordance with the BIPM, ISO, IEC, IUPAP, OIML document entitled: "A guide to the expression of Uncertainty in Measurement"(International Organization for Standardization, Geneva Switzerland, 1993)

The reported uncertainties of measurement are based on standard uncertainty multiplied by a coverage factor of k=2, which unless specifically stated otherwise provides a level of confidence of approximately 95%