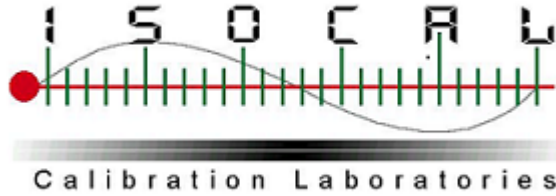


20200420133043KK



CAL-8 006



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

<i>Laboratory Standards and Equipment Used</i>	<i>Serial Number</i>	<i>Certificate Number</i>
OHAUS	OHAUS	201103170800

2 Procedure used:

3 Calibration Conditions:

Temperature: $44 \pm 1^{\circ}\text{C}$

Humidity : $33 \pm 10\% \text{ RH}$

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%