



CALIBRATION REPORT

Report No. : DM011422

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Customer : JSB Tech Pte Ltd
20 Science Park Road
Teletech Park, Unit 02-03A
Singapore 117674


Subject Details

Subject : A Digital Level
Manufacturer : JSB Tech Pte Ltd
Model : Digi Pas DWL-3000XY
Serial Number : 11A20410
Range : Single Axis - 0.00° to ± 90.00°
Dual Axis - 0.00° to ± 15.00°

Sales Order No. : 2028005989
Calibration Date : 19 October 2011

Ambient Conditions

Temperature : (20 ± 1) °C
Relative Humidity : (50 ± 10) % relative humidity


Rahman Ibrahim
Calibration Officer


Chao Zhixia (Dr)
Approving Officer
Optical Metrology

For further enquiries, please contact the calibration officer at Tel: +65 6279 1944, Fax: +65 6279 1994 or Email: rahman_ibrahim@nmc.a-star.edu.sg

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Science and Engineering Institutes (Co.Reg.No. 200720829Z)

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Method of Test

This digital level has been calibrated at the National Metrology Centre under the stated ambient conditions following calibration procedure LS/NR/001.

The calibration was carried out using a precision small angle generator (serial no.: 137/1918 - LE6003), a sine bar (serial no.: CO-1276018), a precision cylindrical square (serial no.: CO-1276011) and a gauge block set (serial no.: 765024) traceable to national reference standards maintained at the National Metrology Centre.

The absolute level setting was carried out for the digital level before each measurement for calibration at angles of 3° and above.

Results of Calibration

The results of calibration are shown on page 2 to 4 of this report.

SINGLE AXIS

Description	Set Standard(°)	Lower Limit(°)	Upper Limit(°)	Level Reading(°)
(+) Slope	0.01	0.00	0.02	0.01
	0.02	0.01	0.03	0.02
	0.03	0.02	0.04	0.03
	0.04	0.03	0.05	0.04
	0.05	0.04	0.06	0.05
	1.00	0.99	1.01	1.00
	3.01	3.00	3.02	3.02
	5.02	5.01	5.03	5.03
	14.48	14.45	14.51	14.47
	30.00	29.97	30.03	30.00
	48.59	48.56	48.62	48.60
	60.75	60.72	60.78	60.76
	90.00	89.97	90.03	90.01
Description	Set Standard(°)	Lower Limit(°)	Upper Limit(°)	Level Reading(°)
(-) Slope	0.01	0.00	0.02	0.01
	0.02	0.01	0.03	0.02
	0.03	0.02	0.04	0.03
	0.04	0.03	0.05	0.04
	0.05	0.04	0.06	0.05
	1.00	0.99	1.01	1.00
	3.01	3.00	3.02	3.02
	5.02	5.01	5.03	5.03
	14.48	14.45	14.51	14.47
	30.00	29.97	30.03	29.99
	48.59	48.56	48.62	48.58
	60.75	60.72	60.78	60.74
	90.00	89.97	90.03	89.99


Calibration Officer

Results of Calibration**DUAL AXIS**

Description	Set Standard(°)	Lower Limit(°)	Upper Limit(°)	Level Reading(°)
X- AXIS (+) Slope	0.01	0.00	0.02	0.01
	0.02	0.01	0.03	0.02
	0.03	0.02	0.04	0.03
	0.04	0.03	0.05	0.04
	0.05	0.04	0.06	0.05
	1.00	0.99	1.01	1.00
	3.01	3.00	3.02	3.01
	5.02	5.01	5.03	5.03
	10.08	10.07	10.09	10.09
	14.48	14.45	14.51	14.50
Description	Set Standard(°)	Lower Limit(°)	Upper Limit(°)	Level Reading(°)
X-AXIS (-) Slope	0.01	0.00	0.02	0.01
	0.02	0.01	0.03	0.02
	0.03	0.02	0.04	0.03
	0.04	0.03	0.05	0.04
	0.05	0.04	0.06	0.05
	1.00	0.99	1.01	1.00
	3.01	3.00	3.02	3.01
	5.02	5.01	5.03	5.03
	10.08	10.07	10.09	10.09
	14.48	14.45	14.51	14.50


 Calibration Officer

Results of Calibration**DUAL AXIS**

Description	Set Standard(°)	Lower Limit(°)	Upper Limit(°)	Level Reading(°)
Y- AXIS (+) Slope	0.01	0.00	0.02	0.01
	0.02	0.01	0.03	0.02
	0.03	0.02	0.04	0.03
	0.04	0.03	0.05	0.04
	0.05	0.04	0.06	0.05
	1.00	0.99	1.01	1.00
	3.01	3.00	3.02	3.01
	5.02	5.01	5.03	5.02
	10.08	10.07	10.09	10.09
	14.48	14.45	14.51	14.49
Description	Set Standard(°)	Lower Limit(°)	Upper Limit(°)	Level Reading(°)
Y-AXIS (-) Slope	0.01	0.00	0.02	0.01
	0.02	0.01	0.03	0.02
	0.03	0.02	0.04	0.03
	0.04	0.03	0.05	0.04
	0.05	0.04	0.06	0.05
	1.00	0.99	1.01	0.99
	3.01	3.00	3.02	3.01
	5.02	5.01	5.03	5.02
	10.08	10.07	10.09	10.09
	14.48	14.45	14.51	14.49

The expanded measurement uncertainties for the digital level readings estimated at a level of confidence of approximately 95% are as follows:

Checked angle	Expanded measurement uncertainty	Coverage factor, k
Up to and including 1°	0.02 °	2.64
Above 1° to 90°	0.02 °	2.28

The user should determine the suitability of this digital level for its intended use.


Calibration Officer