



National  
Metrology Centre

## CALIBRATION REPORT

**Report No.** : LL000069

Page 1 of 4

**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-3500XY  
Serial Number : 11A20571  
Range : Single Axis - 0.000° to ± 20.000°  
Dual Axis - 0.000° to ± 10.000°

Sales Order No. : 2028006872  
Calibration Date : 02 March 2012

### 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

### **National Metrology Centre**

1 Science Park Drive Singapore 118221  
Tel: (65) 6279 1900 Fax: (65) 6279 1992  
Website: www.nmc.a-star.edu.sg

Note : This Report is issued subject to the "Terms and Conditions for Services" available at [www.nmc.a-star.edu.sg](http://www.nmc.a-star.edu.sg) and on request from National Metrology Centre. This Report is not a Certificate of Quality. It only applies to the sample of the specific product/equipment given at the time of its testing/calibration.

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

This certificate is consistent with the capabilities that are included in Appendix C of the MRA drawn up by the CIPM. Under the MRA, all participating institutes recognise the validity of each other's calibration and measurement certificates for the quantities, ranges and measurement uncertainties specified in Appendix C (for details see <http://www.bipm.org>).

**Method of Calibration**

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) 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 all the checked angles.

**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	0.000	0.000	0.001	0.000
	0.010	0.009	0.011	0.011
	0.020	0.019	0.021	0.021
	0.030	0.029	0.031	0.031
	0.040	0.039	0.041	0.041
	0.050	0.049	0.051	0.051
	1.000	0.999	1.001	1.001
	2.006	2.003	2.009	2.007
	3.009	3.006	3.012	3.008
	5.020	5.017	5.023	5.022
	9.933	9.930	9.936	9.935
	14.478	14.475	14.481	14.481
	19.877	19.874	19.880	19.880
Description	Set Standard (°)	Lower Limit (°)	Upper Limit (°)	Level Reading (°)
(-) Slope	0.000	0.000	0.001	0.000
	0.010	0.009	0.011	0.011
	0.020	0.019	0.021	0.021
	0.030	0.029	0.031	0.031
	0.040	0.039	0.041	0.041
	0.050	0.049	0.051	0.051
	1.000	0.999	1.001	1.001
	2.006	2.003	2.009	2.007
	3.009	3.006	3.012	3.009
	5.020	5.017	5.023	5.021
	9.933	9.930	9.936	9.935
	14.478	14.475	14.481	14.480
	19.877	19.874	19.880	19.880

  
 Calibration Officer

**Results of Calibration****DUAL AXIS**

Description	Set Standard (°)	Lower Limit (°)	Upper Limit (°)	Level Reading (°)
X- AXIS (+) Slope	0.000	0.000	0.001	0.000
	0.010	0.009	0.011	0.010
	0.020	0.019	0.021	0.020
	0.030	0.029	0.031	0.030
	0.040	0.039	0.041	0.040
	0.050	0.049	0.051	0.050
	1.000	0.999	1.001	1.000
	2.006	2.003	2.009	2.007
	3.009	3.006	3.012	3.010
	5.020	5.017	5.023	5.022
	9.933	9.930	9.936	9.935

Description	Set Standard (°)	Lower Limit (°)	Upper Limit (°)	Level Reading (°)
X_AXIS (-) Slope	0.000	0.000	0.001	0.000
	0.010	0.009	0.011	0.010
	0.020	0.019	0.021	0.020
	0.030	0.029	0.031	0.030
	0.040	0.039	0.041	0.040
	0.050	0.049	0.051	0.050
	1.000	0.999	1.001	1.000
	2.006	2.003	2.009	2.007
	3.009	3.006	3.012	3.010
	5.020	5.017	5.023	5.022
	9.933	9.930	9.936	9.935



Calibration Officer

**Results of Calibration****DUAL AXIS**

Description	Set Standard (°)	Lower Limit (°)	Upper Limit (°)	Level Reading (°)
Y- AXIS (+) Slope	0.000	0.000	0.001	0.000
	0.010	0.009	0.011	0.011
	0.020	0.019	0.021	0.020
	0.030	0.029	0.031	0.030
	0.040	0.039	0.041	0.040
	0.050	0.049	0.051	0.050
	1.000	0.999	1.001	1.001
	2.006	2.003	2.009	2.007
	3.009	3.006	3.012	3.010
	5.020	5.017	5.023	5.021
	9.933	9.930	9.936	9.935

Description	Set Standard (°)	Lower Limit (°)	Upper Limit (°)	Level Reading (°)
Y_AXIS (-) Slope	0.000	0.000	0.001	0.000
	0.010	0.009	0.011	0.011
	0.020	0.019	0.021	0.020
	0.030	0.029	0.031	0.030
	0.040	0.039	0.041	0.040
	0.050	0.049	0.051	0.050
	1.000	0.999	1.001	1.001
	2.006	2.003	2.009	2.007
	3.009	3.006	3.012	3.010
	5.020	5.017	5.023	5.021
	9.933	9.930	9.936	9.936

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°	0.001 °	2.08
Above 1° to 20°	0.001 °	2

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



Calibration Officer