

Certificate of Calibration

Reference No R124144038
Date of Issue 13 Sep 2024
Customer PRO LAB ENGINEERING SERVICES SDN BHD
ID: 039228 No.21-G
Jalan Bidara 8 Saujana Utama 3
47000 Sungai Buloh
Selangor

Cert. No. PSYP- 24070462

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Instrument Point Load Tester
Model NL 1012X/006-P001
Serial No N/A
Control No CA1200M
Equipment ID N/A
Capacity/Range 45kN (Compress Mode)

Date of Receipt 09 Sep 2024
Date of Calibration 11 Sep 2024
Recalibration Date 11 Sep 2025

(Specified by Customer) The User should be aware there are many factors may cause this instrument to drift out of calibration limits prior to the stated recalibration date.

Condition of Instrument
Before Calibration Good Physical Condition
After Calibration Calibrated as Requested by Customer

Location of Calibration In-situ
Calibration Environment (27.4 ± 0.2) °C, (58 ± 2) %rh
Calibration Method LCP 01804

Reference Standard Used

| Reference Instrument | Equipment ID | Control No | Certificate No | Traceable to | Due Date |
|--------------------------|--------------|------------|----------------|--------------|-------------|
| Load Cell With Indicator | PH-SF-CL11 | C5000S | PSYP-24025404 | NMIM,NIST | 22 Apr 2025 |

Calibrated By

Noor Izwadi Bin Ishak

Approved Signatory

Senthil Kumar a/l Balaraman

The reported expanded measurement uncertainty is stated as the standard measurement uncertainty multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95%

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TRESICAL (MALAYSIA) SDN. BHD.

Certificate of Calibration

Control No. CA1200M

Cert .No PSYP-24070462

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Instrument Calibrated

| | | |
|-------------------------|----------|----|
| Resolution | 0.001 | kN |
| Readability | 0.001 | |
| Mode | Compress | |
| Calibration Temperature | 27 | °C |

| | | |
|---------------|-----|--------|
| Specification | | |
| ± | N/A | of rdg |

| ACCURACY TEST | | | | | |
|---------------------------|-----------------------------|---------------------|-----------------|---------------|----------------------------|
| UUT READ | TRUE FORCE BEFORE ADJUST | % RELATIVE ERROR OF | | | TRUE FORCE AFTER ADJUST |
| | | ACCURACY | REPRODUCIBILITY | INTERPOLATION | |
| 0.000 | 0.000 | | | | - |
| 4.997 | 4.908 | 1.827 | 0.081 | 0.217 | - |
| 9.996 | 9.836 | 1.627 | 0.102 | -0.113 | - |
| 14.958 | 14.675 | 1.926 | 0.245 | 0.121 | - |
| 20.002 | 19.624 | 1.925 | 0.025 | 0.077 | - |
| 24.911 | 24.462 | 1.836 | 0.020 | -0.046 | - |
| 29.972 | 29.424 | 1.864 | 0.027 | -0.050 | - |
| 35.047 | 34.405 | 1.868 | 0.020 | -0.076 | - |
| 40.027 | 39.214 | 2.074 | 0.018 | 0.098 | - |
| 45.018 | 44.143 | 1.981 | 0.029 | -0.020 | - |
| Measurement Uncertainty ± | | 0.047 | kN | | k = 2 |

| | | | | | | |
|----------------|---|-----|-------------|-----|-------------|-----|
| Best Fit Curve | Reference Force = a + b(UUT) + c(UUT²) where a,b,c are constant; UUT is instrument reading. | | | | | |
| | Constant | a = | 1.07067E-02 | b = | 9.82282E-01 | c = |

Info 1: UUT - Unit Under Test which is Force Proving Device.

Info 2: Relative Error of Reproducibility - The maximum reproducibility error as a percentage of the average value of deflection for that force.

Info 3: Relative Error of Interpolation - The residual error as a percentage of the mean indicator reading for a given force.

Info 4: Relative Error of zero - The maximum residual indicated output after the application and removal of a series of force.

Info 5: Refer to 'UUT After Adjust' if adjusted. Otherwise refer 'UUT Before Adjust' if not adjusted. '-' mean not adjust.

ACCEPTABLE TO USE

Izatul Azira

Lab Manager/Approved Signatory
PRO LAB ENGINEERING SERVICES SDN BHD

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TRESCAL (MALAYSIA) SDN. BHD.

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