



# Certificate of Calibration

Transducer Model: BDI ST350

*Pile Dynamics, Inc.*

**Serial Number: 0043**

**PDI Gage Factor: 148.2  $\mu\text{e}/\text{V}$**

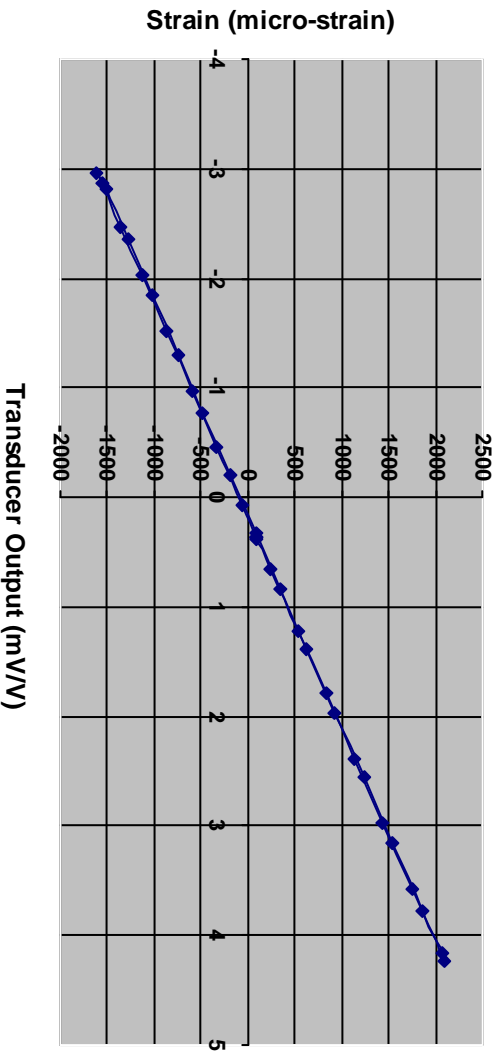
General Gage Factor: 514.7  $\mu\text{e}/\text{mV}/\text{V}_{\text{ext}}$

Initial Offset Voltage: 0.148  $\text{mV}/\text{V}_{\text{ext}}$

Table 1 – Representative Calibration Data

| Applied Strain ( $\mu\text{e}$ ) | Transducer Output ( $\text{mV}/\text{V}_{\text{ext}}$ ) | Applied Strain ( $\mu\text{e}$ ) | Transducer Output ( $\text{mV}/\text{V}_{\text{ext}}$ ) |
|----------------------------------|---|----------------------------------|---|
| 94                               | 0.380   | 346                              | 0.840   |
| -62                              | 0.070   | 632                              | 1.391   |
| -329                             | -0.451  | 928                              | 1.971   |
| -593                             | -0.962  | 1234                             | 2.559   |
| -872                             | -1.509  | 1545                             | 3.162   |
| -1135                            | -2.020  | 1862                             | 3.773   |
| -1361                            | -2.470  | 2105                             | 4.228   |
| -1559                            | -2.860  | 2064                             | 4.155   |
| -1612                            | -2.964  | 1752                             | 3.578   |
| -1519                            | -2.814  | 1440                             | 2.976   |
| -1282                            | -2.366  | 1134                             | 2.386   |
| -1018                            | -1.839  | 829                              | 1.794   |
| -747                             | -1.306  | 531                              | 1.223   |
| -476                             | -0.762  | 237                              | 0.648   |
| -191                             | -0.207  | 91                               | 0.371   |
| 83                               | 0.328   | 89                               | 0.369   |

## Calibration Curve



Mean Linear Correlation Coefficient (LCC): 9.999514E-1

LCC Standard Deviation: 1.578152E-6

Calibrated By: Vanna Tach

Signature: \_\_\_\_\_

Date/Time: 9/16/2016 7:12 AM

Temperature ( $^{\circ}\text{C}$ ): 23.2

# Specifications

## PDI Automated Strain Transducer Calibration System (PDI-ASTCS)

| ASTCS Calibration Information          |  |
|--|--|
| ASTCS Serial Number:                   | ASTCS-0005                                   |
| ASTCS Software Version:                | 2.310  |
| ASTCS Independent Verification Date:   | 11/5/2014 11:54 AM                           |
| Strain Transducer Gage Length:         | 3.0 inches (76.2 mm)                         |
| Applied Full Scale Displacement Range: | ±7.500000E-3 inches                          |
| Method for Applying Displacement:      | Precision Step Motor Coupled to Linear Stage |
| Excitation Voltage for Calibration:    | 2.5 VDC                                      |
| Displacement Measurements:             | Dual Precision AC LVDT's, Output Averaged    |
| Displacement Certification:            | NIST 274437-07                               |
| Linearity Verification Technique:      | Linear Correlation Coefficient > 0.9999      |
| Repeatability Verification Technique:  | Standard Deviation < 0.5 % (of mean)         |
| ASTCS System Check                     |  |
| Reference Strain Transducer:           | 4367T  |
| Reference General Gage Factor:         | 293.000 µε/mV/V                              |
| LVDT #1 Sensitivity (inches/volt):     | 7.916500E-3                                  |
| LVDT #2 Sensitivity (inches/volt):     | 8.042000E-3                                  |
| Date/Time of Last System Check:        | 9/16/2016 6:44 AM                            |
| PDI Strain Transducer Connections      |  |
| Black:                                 | + Excitation                                 |
| Green:                                 | - Excitation                                 |
| Red:                                   | + Signal                                     |
| White:                                 | - Signal                                     |
| Grey:/BARE                             | Shield                                       |

NIST Reference:

PDI certifies the above PDI-ASTCS instrument meets or exceeds published specifications and has been verified using standards and instruments whose accuracies are traceable to the National Institute of Standards and Technology (NIST), an accepted value of a natural physical constant or a ratio calibration technique. The calibration of this instrument was performed in accordance with the PDI Quality Assurance program. Measurements and information provided on this report are valid at the time of calibration only.