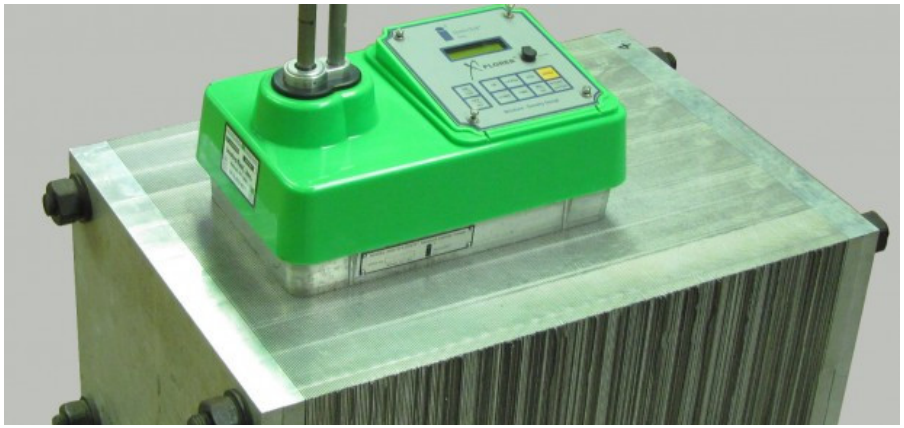

Nuclear Density Gauges

Safety, Calibration, Transportation and Maintenance

InstroTek® Inc.

Overview

- Radiation Safety
- Standards
- Gauge Transportation
- Upkeep & Maintenance
- Gauge Calibration
- Record Keeping
- Xplorer 2®
- **NoNUKE**

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Radiation Safety Certifications

- Radiation safety gauge operator training recommended for each nuclear gauge operator.
- CFR 49 Subpart H covered to provide understanding of correct labels, documents, and markings needed for nuclear gauge transportation.
- Radiation Fundamentals
- Radiation Health Aspects
- Transportation Shipping Regulations
- Nuclear Gauge Operator Training
- Radiation Safety Officer Training
- ALARA
- www.nuketrain.com

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National Standards

AASHTO T310 - In Place Density and Moisture Content of Soil and Soil Aggregate by Nuclear Methods (shallow depth)

ASTM C1040 - Standard Test Methods for In-Place Density of Unhardened and Hardened Concrete, Including Roller Compacted Concrete, By Nuclear Methods

ASTM D2950 - Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods

ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

ASTM D7759 - Standard Guide for Nuclear Surface Moisture and Density Gauge Calibration

ASTM D7013 - Standard Guide for Calibration Facility Setup for Nuclear Surface Gauges

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Nuclear Gauge Transportation

- Ensure that your gauge is properly labeled and secured in a type A shipping case.
- Gauge must be secured in vehicle by two independent controls
- Gauge must be accompanied by company radioactive materials license, current leak test, and emergency response form.
- *Recommendation* NUX truck boxes are available for ease of use in nuclear gauge transportation

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Block and Brace Transportation

- Easy to install gauge bracing safety system
- Reduce gauge case handle replacement with secure system to eliminate gauge sliding in transit
- Fits all makes and models of gauges
- Requires additional two independent control systems
- Low cost option for gauge transit security

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Upkeep & Maintenance

- Keep your density gauges dry!
- The number one issue seen in our service and maintenance facilities is moisture and corrosion damage.
- Make sure to always dry out your shipping/storage case before gauge transportation and storage.
- Keep density gauge base clean of debris and wear after each use on the jobsite if needed.
- Small preventative steps can prolong the life and improve the performance of your density gauges.
- Utilize professional gauge service facilities for yearly service and maintenance.

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Nuclear Gauge Calibration

- ASTM D7759-Standard Guide for Nuclear Surface Moisture and Density Gauge Calibration
- Application and Calibration of gauges are separated into 2 standards
  - Application –D6938
  - Calibration –D7759
  - Yearly calibration and service of your gauges is vital for accurate and repeatable results in the field.

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Record Keeping

- Checking in and out of your nuclear density gauges.
- Up to date leak tests on file at all times
- Calibration reports up to date- 6 month and yearly (license dependent)
- Nuclear license up to date for current gauges based on manufacturer specifications.

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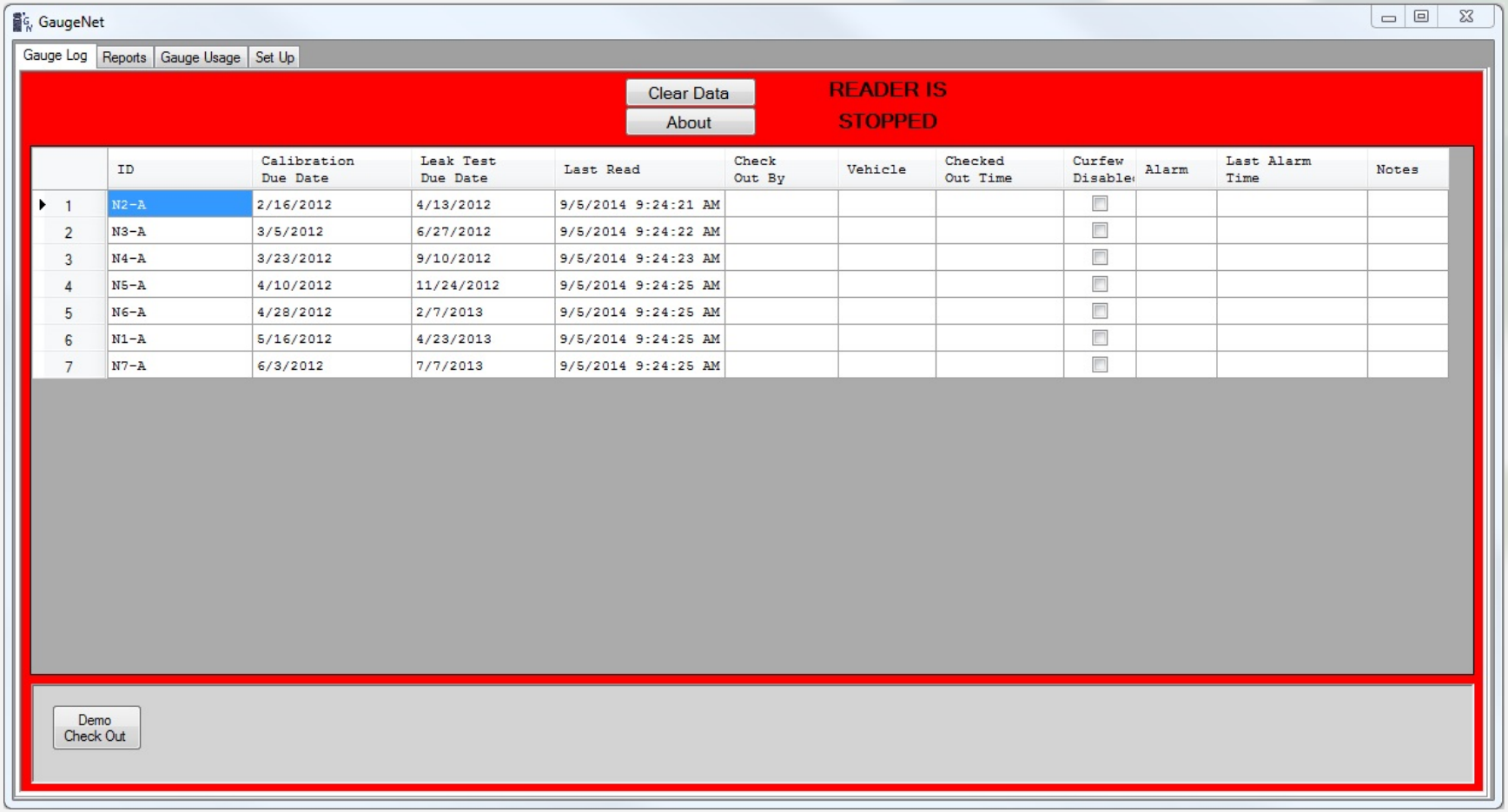
Record Keeping



	ID	Calibration Due Date	Leak Test Due Date	Last Read	Check Out By	Vehicle	Checked Out Time	Curfew Disable	Alarm	Last Alarm Time	Notes
1	N2-A	2/16/2012	4/13/2012	9/5/2014 9:24:21 AM							
2	N3-A	3/5/2012	6/27/2012	9/5/2014 9:24:22 AM							
3	N4-A	3/23/2012	9/10/2012	9/5/2014 9:24:23 AM							
4	N5-A	4/10/2012	11/24/2012	9/5/2014 9:24:25 AM							
5	N6-A	4/28/2012	2/7/2013	9/5/2014 9:24:25 AM							
6	N1-A	5/16/2012	4/23/2013	9/5/2014 9:24:25 AM							
7	N7-A	6/3/2012	7/7/2013	9/5/2014 9:24:25 AM							

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Xplorer 2®

- Large backlit LCD and keypad makes reading test results easy at night or in direct sunlight.
- Displays GPS geographic coordinates and altitude information
- Bluetooth® enabled for easy data transfer to any Android® smartphone or tablet
- Reporting software built into the new X2 Mobile Application can send all test results via email with just a few clicks
- USB Port for quick download of all test data

InstroTek® Inc.

SmartPanel 2

- Extra-large backlit LCD screen and Illuminated keypad for night-time work
- Plug and play installation for older legacy 3440 gauges
- Multiple project storage capability
- 9V alkaline battery backup
- USB port for fast and easy download of stored data
- Mobile app captures and reports test results
- Email test data from any WiFi enabled smartphone or tablet
- Charging port for tracking devices used to track nuclear gauges

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NoNUKE

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NoNUKE Advantages

- Light weight & durable
- Cheaper than thin-lift nuclear density gauges
- No licensing required
- Fast and accurate readings
- Good correlation with nuclear gauge results
- Easy transportation

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Gauge Specifications

- **Quick count button**

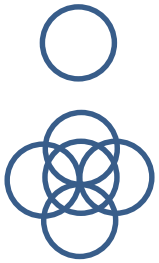
Output
- **Density**
- **% Compaction**
- **Surface Temperature**
- **Project ID**

- **Unit weight:** 20 lbs
- **ASTM:** D7113
- **AASHTO:** T343
- **GPS**
- **USB/Bluetooth** (Remote Update)
- **2 GB internal storage**
- **Power:** 6 AA Rechargeable NiMetal Hydride
- **Battery life:** 20-40 Hours
- **LCD Display:** 4x20 Large character LCD with backlight

Measurement Modes:

Single Mode

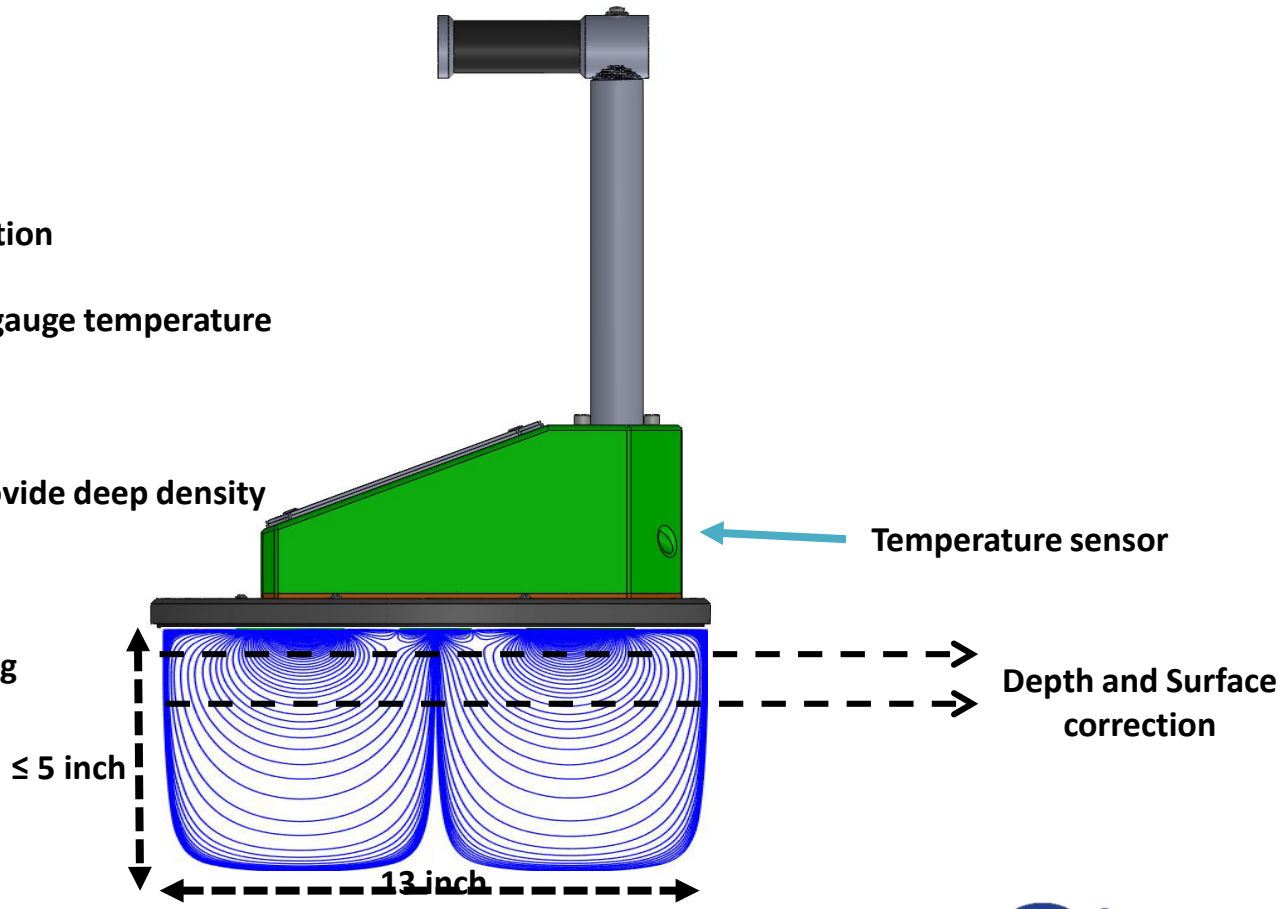
Averaging Mode



Gauge Specifications

Electrical Capacitance Tomography:

- **Surface Roughness Correction**
- **Surface temperature and gauge temperature correction**
- **Multi level readings to provide deep density measurements**
- **Moisture presence warning**
- **Contact issue warning**



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Questions?

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