

# DATA ACQUISITION NEXT SOFTWARE

The software interface displays the following data and graphs:

### Unconsolidated Undrained Test - Results - Section 1

Humboldt Scientific, Inc.  
3313 Atlanta Ave  
Raleigh, NC 27604  
919.833.2000  
919.833.2020

#### Mohr Circles

ASTM D2950

Shear Stress (psi) vs. Normal Stress (psi) graph showing Mohr circles for Specimen 1 (green) and Specimen 2 (blue). Tangent line slope is 0.337. Friction Angle (φ) = 20.152°.

### Unconsolidated Undrained Test - Results - Section 2

ASTM D2950

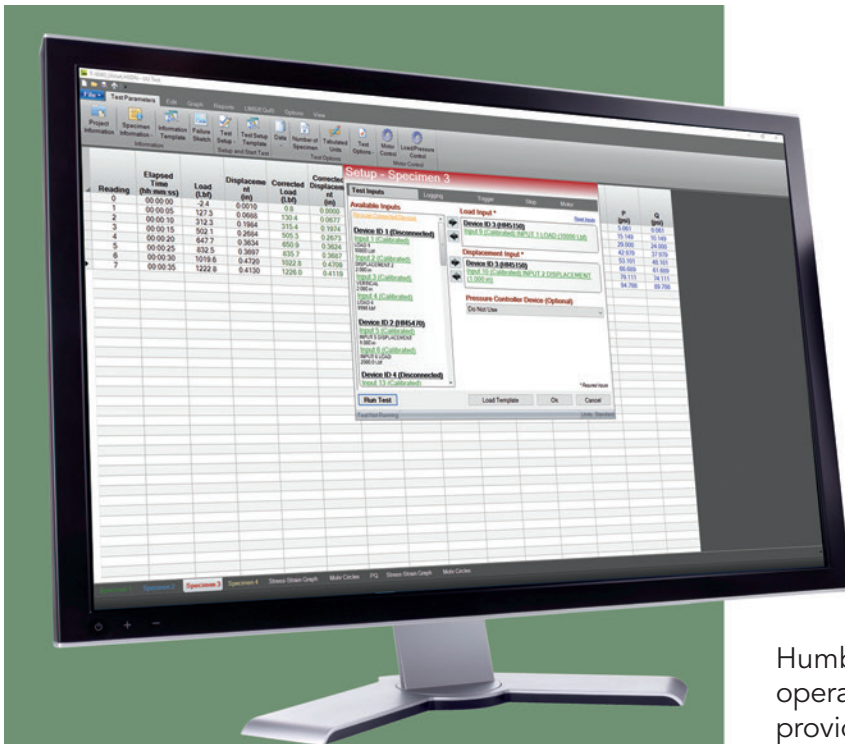
Before Test	1	2	Specimen Number
Membrane Thickness (in)	0.0120	0.0120	1
Initial Cell Pressure (psi)	3.000	5.000	2
Height (in)	6.0338	5.9333	3
Diameter (in)	2.6637	2.8440	4
Water Content (%)	29.44	26.70	5
Wet Density (Lb/cu ft)	88.23	89.45	6
Dry Density (pcf)	86.61	86.90	7
Degree of Saturation (%)	0.925	0.898	8
Void Ratio	2.107	2.086	9
Height To Diameter Ratio			10
Comp. Strength at Failure (psi)	21,299	23,429	11
σ <sub>1</sub> at Failure (psi)	24,399	28,429	12
σ <sub>3</sub> at Failure (psi)	3,000	5,000	13
Rate of Strain (in/min)	0.02	0	14
Axial Strain at Failure (%)	15.073	13.485	15
Final Water Content (%)			16

### Test Data Table (Section 1)

Reading	Elapsed Time (hh:mm:ss)	Load (Lb)	Displacement (in)	Corrected Load (Lb)	Corrected Displacement (in)	Corrected Area (in <sup>2</sup> )
0	00:00:00	-2.4	0.0010	0.8	0.0000	6.3533
1	00:00:05	127.3	0.0688	130.4	0.0677	6.426
2	00:00:10	312.3	0.1984	315.4	0.1974	6.571
3	00:00:15	502.1	0.2684	505.3	0.2673	6.652
4	00:00:20	647.7	0.3634	650.9	0.3624	6.766
5	00:00:25	832.5	0.3697	835.7	0.3687	6.773
6	00:00:30	1019.6	0.4720	1022.8	0.4709	6.900

### Test Data Table (Section 2)

Reading	Elapsed Time (hh:mm:ss)	Load (Lb)	Displacement (in)	Corrected Load (Lb)	Corrected Displacement (in)	Corrected Area (in <sup>2</sup> )	Axial Strain (%)	Stress (psi)	Corrected Compressor Stress (psi)	σ <sub>1</sub> (psi)	σ <sub>3</sub> (psi)	σ <sub>1</sub> - σ <sub>3</sub> (psi)	p (psi)	Q (psi)
0	00:00:00	-2.4	0.0010	0.8	0.0000	6.3533	0.00	0.121	0.121	5.121	1.02	5.061	0.001	
1	00:00:05	127.3	0.0688	130.4	0.0677	6.426	1.14	20.533	20.299	25.299	5.000	15.149	10.149	24.000
2	00:00:10	312.3	0.1984	315.4	0.1974	6.571	3.33	48.602	48.000	53.000	5.000	16.19	42.979	37.979
3	00:00:15	502.1	0.2684	505.3	0.2673	6.652	4.51	75.541	75.957	80.957	5.000	16.19	42.979	37.979
4	00:00:20	647.7	0.3634	650.9	0.3624	6.766	6.11	102.400	96.207	101.202	5.000	20.24	53.191	48.101
5	00:00:25	832.5	0.3697	835.7	0.3687	6.773	6.21	131.551	120.377	120.377	5.000	25.65	66.689	61.689
6	00:00:30	1019.6	0.4720	1022.8	0.4709	6.900	7.94	181.000	145.222	153.222	5.000	30.64	79.111	74.111



# Control and Data Acquisition Software

## Humboldt's, NEXT software provides:

- Machine control, and data acquisition via networked computer
- Provides the ability to use Next Software's, advanced test-specific modules
- Real-time graphical chart and numerical display of tests via computer display
- Effective sampling rate of 50 readings per second
- Stores unlimited tests with up to 3000 points per test.
- Up to 255 individual tests can be run simultaneously from a single PC
- Advanced, test-specific modules are available, which provide all the calculations and graphs required per testing standards
- Provides advanced graphing capabilities
- Provides full-unit customization
- Reports can also be exported to Excel or a CSV file, if desired, and, we can provide custom integration/export solutions for LIMS, EQulS, gINT, etc.

Humboldt's NEXT software is used to control the operation of Humboldt's testing machines, as well as provide data acquisition and reporting of test data. The software provides a computer-based platform with the ability to configure testing machines and the testing process; calibrate transducers, load cells and digital indicators; specify testing parameters and limits, operate the machine during the testing and provide detailed reports of the data collected in tabular or graphical formats.

From controlling a single operation to a complete geotechnical lab, Humboldt's NEXT data acquisition software, in conjunction with compatible Humboldt testing equipment, provides a complete solution for the acquisition, recording and presentation of test data. The NEXT software is included with many of Humboldt's load frames, consolidation and direct shear machines; providing robust machine control, calibration, data acquisition and report generation for those using a computer to control load frame operations.

With Humboldt's NEXT software, operators have the ability to view and control testing operations from a PC in the lab, in the next room or at a different location, as well as the ability to control and monitor multiple tests at the same time.

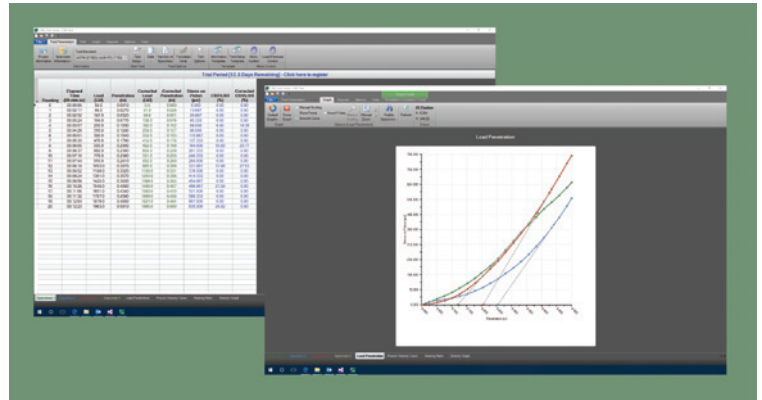
So, whether you are controlling a single testing operation or controlling a complete geotechnical lab, Humboldt's NEXT software, in conjunction with Humboldt's testing machines, provides a complete solution for the calibration, acquisition, recording and presentation of testing data in data tabulation and graphic chart formats.

# NEXT Test-Specific Software Modules

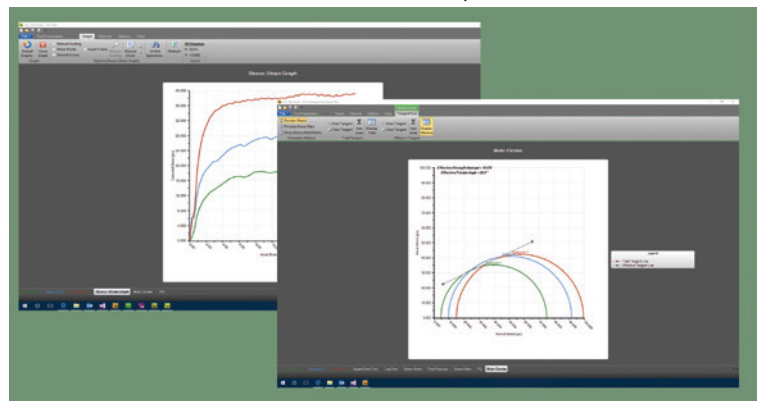
Humboldt NEXT software can be enhanced with the purchase of test-specific modules. These modules provide you with the following capabilities beyond the standard software included with your ELITE Series load frames.

- test-specific setup that guides you through the process, which includes selecting data collection parameters that best fit the specific test
- input specific project information for each test, such as project name, client information, etc
- all test-specific initial, intermediate, and final parameters required by ASTM and BS standards are dynamically calculated for you, based on your input of specimen information, such as size, weight, etc
- tabulated test data, graphs and all test-specific calculations are provided in real time, allowing you to monitor tests in process
- generate test-specific reports that include all graphs and data presented in a project
- simultaneously run multiple tests on one computer, involving any of the available HMTS modules and any compatible Humboldt equipment up to 255 device connections, which is up to 1020 inputs
- create and store test-specific test setup templates for rapid setup of future tests
- produce test-specific graphs, which allow you to draw construction lines to calculate angles and other test-specific parameters
- automatically recover from a PC shutdown without loss of data
- all unit parameters can be adjusted individually
- easily change between different test standards
- access free, downloadable software upgrades for purchased modules
- additional modules are available, please enquire

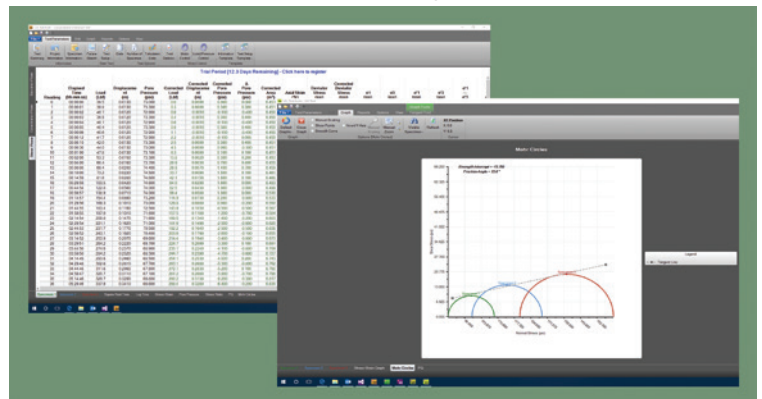
CBR/LBR Module, HM-5001SW



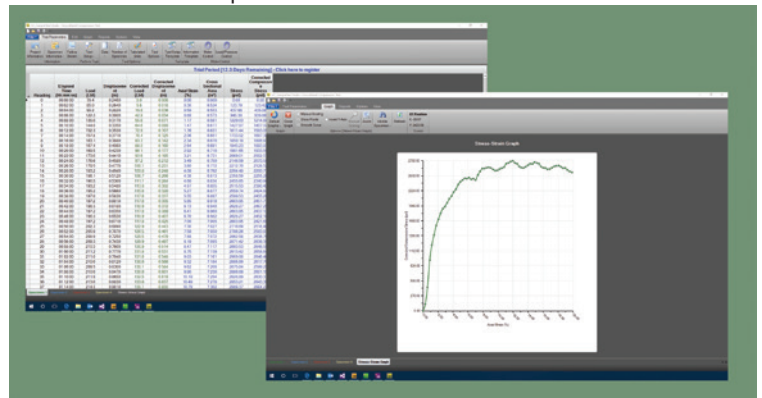
Unconsolidated Undrained Module, HM-5002SW



Consolidated Undrained Module, HM-5003SW



Unconfined Compression Module, HM-5004SW



CBR/LBR Module	HM-5001SW
Unconsolidated Undrained Module	HM-5002SW
Consolidated Undrained Module	HM-5003SW
Unconfined Module	HM-5004SW
Consolidated Drained Module	HM-5006SW
Marshall Module	HM-5005SW
Consolidation Module	HM-5100SW
Direct Shear Module	HM-5700SW

[www.humboldtmg.com](http://www.humboldtmg.com)  
1.800.544.7220

