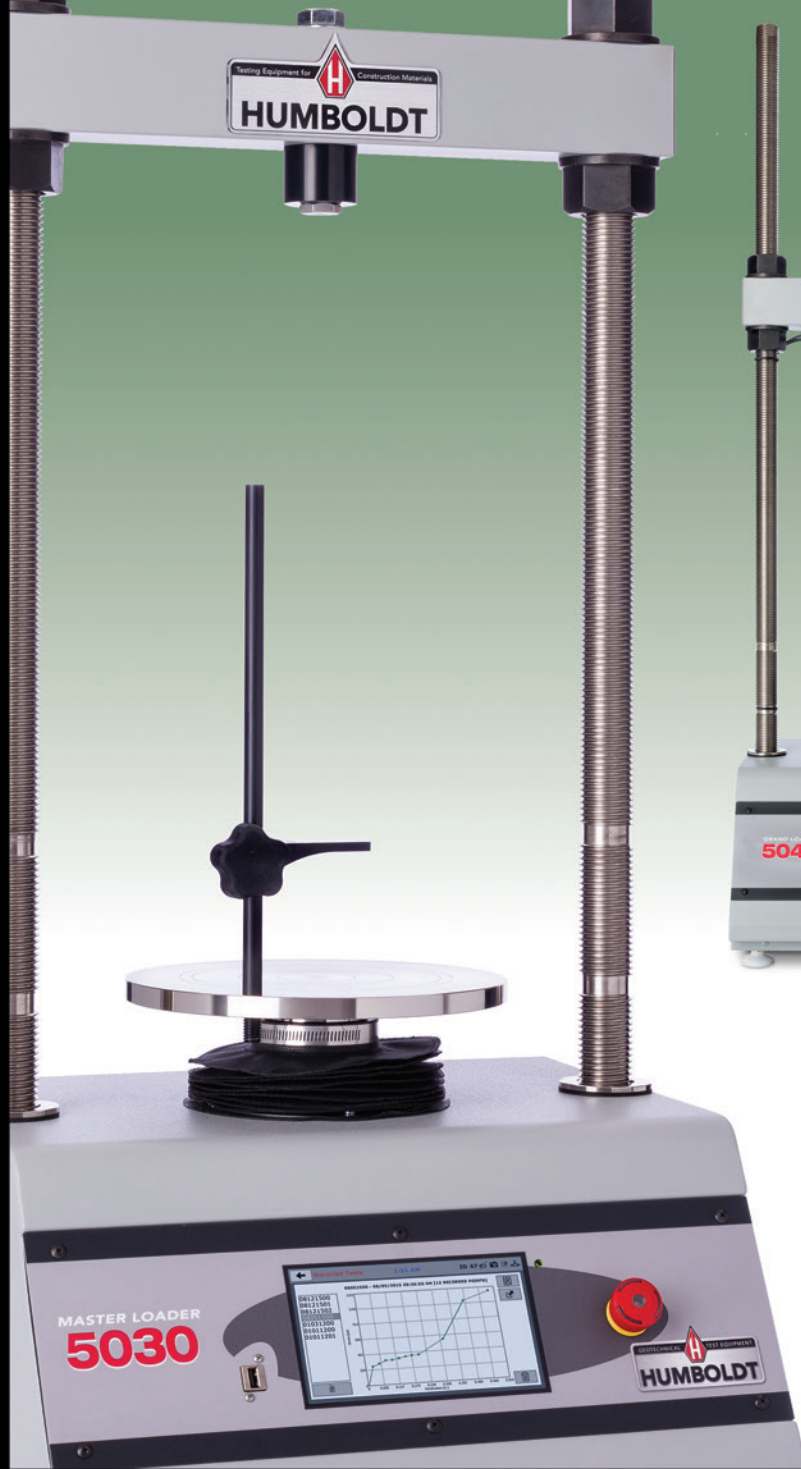


ELITE SERIES LOAD FRAMES



ELITE SERIES LOAD FRAMES

Humboldt's Elite Series Load Frames provide the materials testing lab with a choice of three, highly-versatile and precision-built loading systems covering a range of testing applications. The HM-5030 is the workhorse of the group, capable of handling any testing need up to 50kN or 11,000 lbf. The HM-5020 is a machine designed specifically for triaxial testing and other testing requirements up to 15kN or 3,000 lbf. and, the HM-5040, is a heavy-duty machine capable of handling testing requirements up to 100kN or 22,000 lbf.

These machines provide four (4) integral and independent data acquisition channels, which can be utilized in stand-alone configurations or accessed through a LAN-networked computer using Humboldt's Next Software.

Elite series load frames are built with durable, high-quality components and feature the use of a stepper motor, precision gears and gear box to ensure smooth and reliable operation, as well as precise results.

In stand-alone mode, these load frames provide a 7" (178mm) touch-screen controller. These new waterproof, touch screens provide colorful, at-a-glance monitoring of testing functions without the use of a computer. Operators can see all the data in several formats at the machine while the test is running. Data can then be viewed simultaneously or downloaded later to a computer in the lab, in the next room or at a different location, while also providing report generation capabilities from within Humboldt's NEXT software or our enhanced test-specific modules.



HM-5030 MASTER LOADER

Designed for applications requiring multi-purpose loading systems, such as road construction projects in either mobile or fixed labs, educational institutions and consulting firms, the HM-5030 Master Loader is ideal for just about any application from road construction to high-volume commercial and educational laboratories.

While the HM-5030 has been specifically designed for soil testing labs conducting multiple testing operations including: UU, CU and CD triaxial, UC, CBR and LBR, it is also perfect for running Marshall, Hveem, TSR and SCB asphalt tests as well. Its heavy-duty design and precise stepper-motor control provide a stable platform for years of reliable service allowing the HM-5030 to perform any tests required up to its load capacity of 11000 lbf (50kN).

Like all elite series load frames, the HM-5030 is built around Humboldt's integral, 4-channel data logger with touch-screen control, which allows the load frame to be used as a standalone device capable of full test control and data logging. It can also be controlled by a networked computer at any location with access to the network.

Load capacity	11000 lbf (50kN)
Speed range	0 - 2.5000 in/min. 0 - 63.5000 mm/min.
Data channels	4
Platen Size / Travel	10" (254mm) / 4" (100mm)
Data storage	1000 tests and up to 3000 readings per test
Clearance, vertical	40" (1000mm)
Clearance, horizontal	15" (380mm)
Voltage	110/220V 50/60Hz - 5.0amps
Net weight	240 lbs (110kg)



HM-5020 TRIAXIAL LOADER

A small-footprint, triaxial-specific load frame that provides the versatility, precision and durability found throughout Humboldt's elite series load frames.

The HM-5020 Triaxial Loader has been specifically designed to handle triaxial testing applications, including: UU, CU and CD triaxial and UC. From educational institutions and consulting firms to high-volume commercial labs and construction projects, the Triaxial Loader can handle any application with ease. Its heavy-duty design and precise stepper-motor control provide a stable platform for years of reliable service allowing the HM-5020 to perform any tests required up to its load capacity of 3000 lbf (15kN).

Like all elite series load frames, the HM-5020 is built around Humboldt's integral, 4-channel data logger with touch-screen control, which allows the load frame to be used as a standalone device capable of full test control and data logging. It can also be controlled by a networked computer at any location with access to the network.

Load capacity	3000 lbf (15kN)
Speed range:	0 - 2.5000 in/min. 0 - 63.5000 mm/min.
Data channels	4
Platen Size / Travel	10" (254mm) / 4" (100mm)
Data storage	1000 tests and up to 3000 readings per test
Clearance, vertical	27" (686mm)
Clearance, horizontal	11" (286mm)
Voltage	110/220V 50/60Hz - 5.0amps
Net weight	120lbs (54kg)



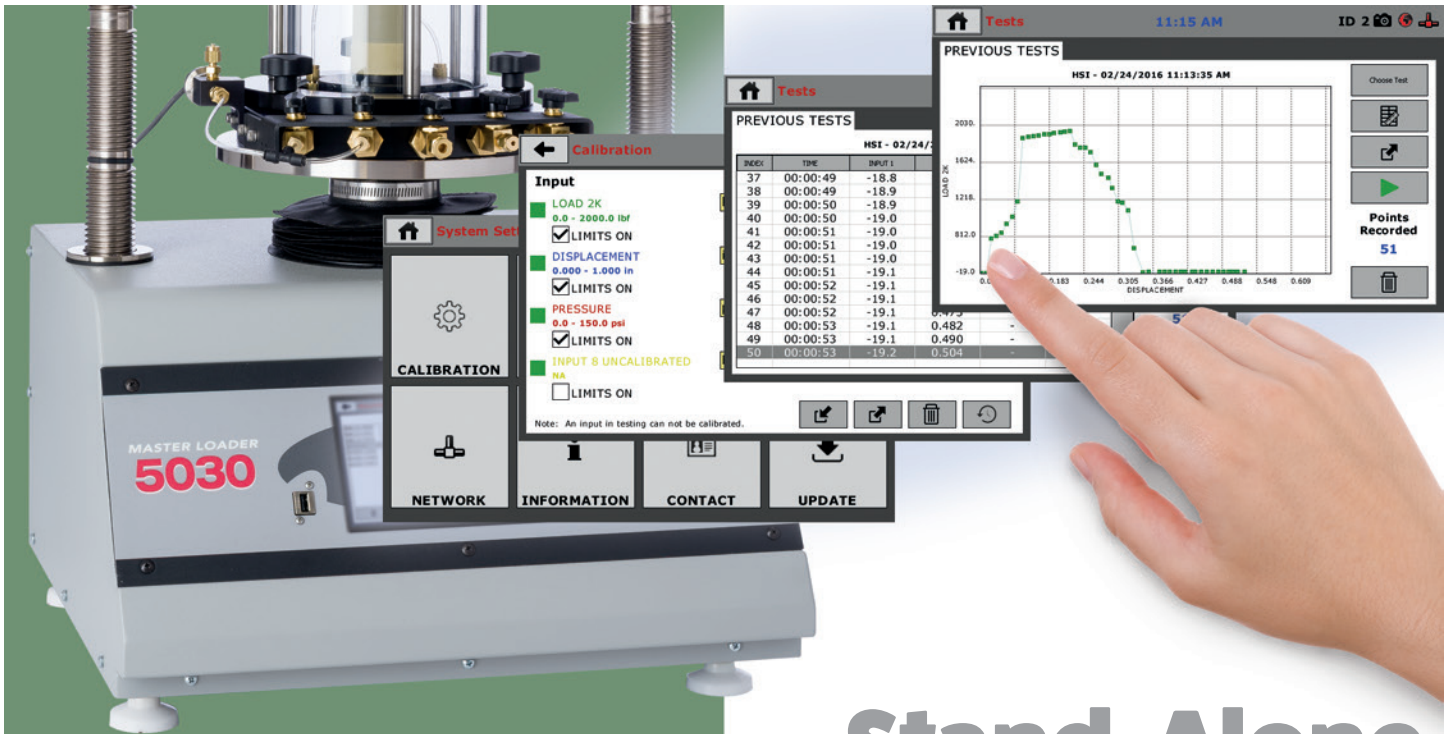
HM-5040 GRAND LOADER

The HM-5040 Grand Loader is ideal for just about any application from road construction to high-volume commercial and educational laboratories, which require higher pressure loading capacities up to 22000 lbf (100kN), such as those involving larger sized samples and samples comprised of rock and rock/soil mixtures. Its wider stance and large vertical and horizontal clearances allows it to accommodate much large sample cells.

Its heavy-duty design and precise stepper-motor control provide a stable platform for years of reliable service allowing the HM-5040 to perform any tests required up to its load capacity of 22000 lbf (100kN).

Like all elite series load frames, the HM-5040 is built around Humboldt's integral, 4-channel data logger with touch-screen control, which allows the load frame to be used as a standalone device capable of full test control and data logging. It can also be controlled by a networked computer at any location with access to the network.

Load capacity	22000 lbf (100kN)
Speed range:	0 - 2.5000 in/min. 0 - 63.5000 mm/min.
Data channels	4
Platen Size / Travel	10" (254mm) / 4" (100mm)
Data storage	1000 tests and up to 3000 readings per test
Clearance, vertical	44" (1100mm)
Clearance, horizontal	21" (540mm)
Voltage	110/220V 50/60Hz - 5.0amps
Net weight	338 lbs (155kg)



Touch-Screen Controller provides:

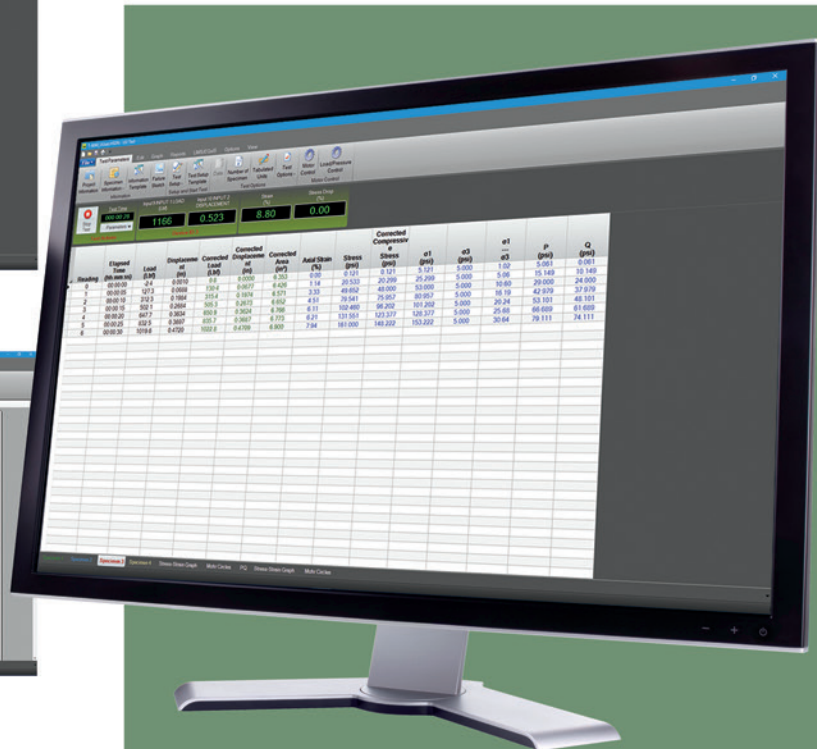
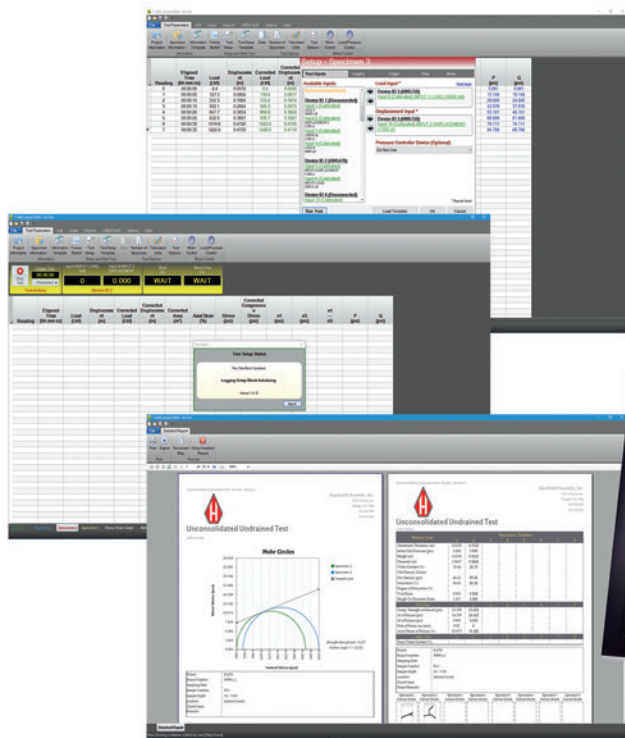
- 4-channel data acquisition
- Hi-res, 7," waterproof, touch-screen provides total control and real-time graphical display of tests
- Machine /Test control and data acquisition via touch-screen
- Control up to 4 different tests at the same time
- Calibration of channels to load cells, transducers and other suitable instruments
- Real-time graphical chart and numerical display of tests via touch-screen display
- Effective sampling rate of 50 readings per second
- Stores up to 1000 tests with 3000 points per test
- 2 USB ports. One in front for data transfer and the rear port is for powering a wireless access point.

Stand-Alone Control

Humboldt's touch-screen controller provides you with full, graphical monitoring of all testing functions in a stand-alone application, while maintaining full computer control when desired.

Now you can have full, finger-tip control and monitoring of all testing functions with Humboldt's touch-screen controller, found on these load frames. These seven-inch, waterproof screens provide at-a-glance monitoring of testing functions, in a real-time graphical display, without the use of a computer, building upon Humboldt's dedication to modular, stand-alone data acquisition.

Now, in a stand-alone application, you will be able to run tests and display results while viewing tabulation, basic x-y graphs and instrument readings in real-time during the test, using user-defined, basic data acquisition. Test data is stored in the device and can be downloaded to a USB drive via the machine's FRONT USB port or the data can be transferred to a computer via the LAN port. A second USB port located on the back of the machine can also be used to power a wireless access point, which can provide a wireless hook-up with a computer, if no LAN is available.



Computer Control

Humboldt's Next software is included with all Elite Series Load Frames. This software provides robust machine control, calibration, data acquisition and report generation for those using a computer to control load frame operations.

In addition, 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, while also providing report generating capabilities using Humboldt's standard software or our enhanced test-specific modules.

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

Humboldt's, NEXT software provides:

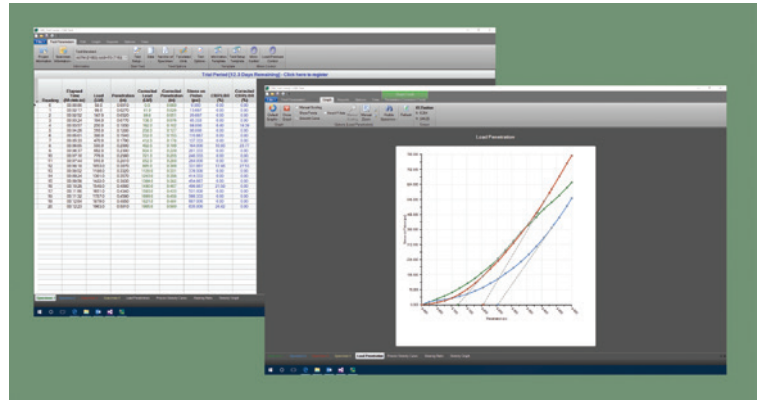
- Machine control, and data acquisition via networked computer
- Provides the ability to use Next Software's, advanced test-specific modules
- Real-time graphical chart and numerical display of tests via computer display
- Effective sampling rate of 50 readings per second
- Stores unlimited tests with 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, EQUS, gINT, etc.

NEXT Test-Specific Software Modules

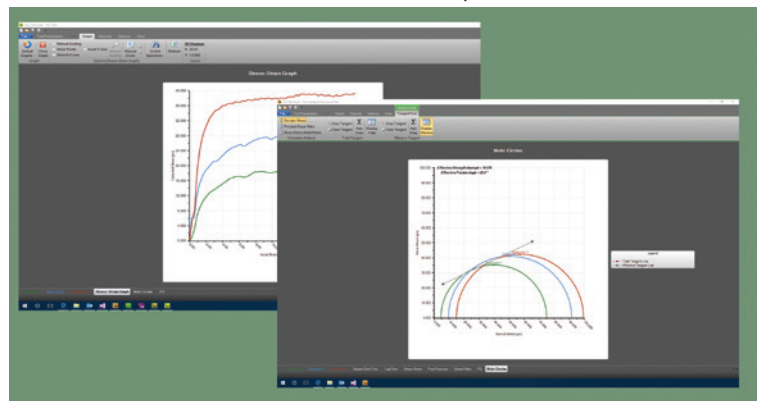
Humboldt NEXT software can be enhanced with the purchase of test-specific modules. These modules provide you with the following capabilities beyond the standard software included with your ELITE Series load frames.

- 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

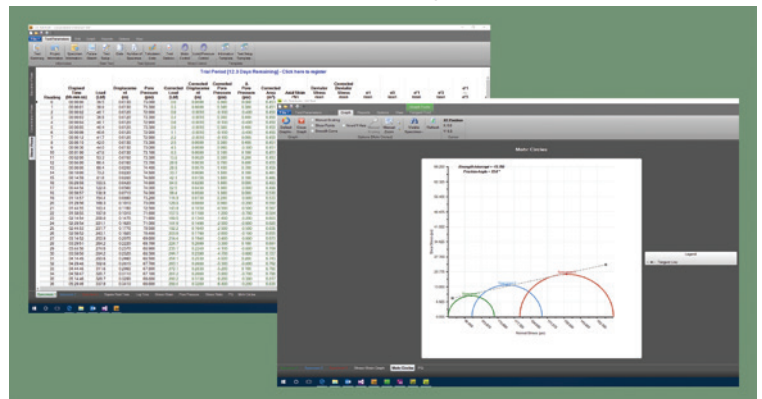
CBR/LBR Module, HM-5001SW



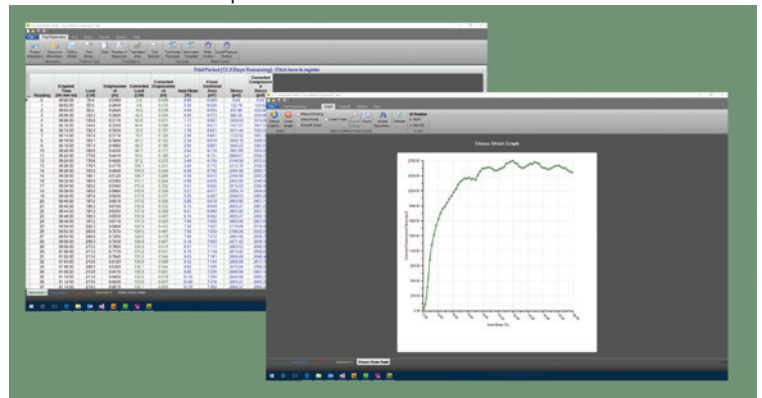
Unconsolidated Undrained Module, HM-5002SW



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

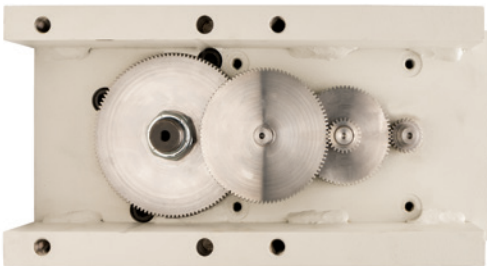
Controller Specifications

Specifications for the touch-screen controller, instrumentation and data acquisition used with Humboldt Elite series load frames

Display	7" (178mm) VGA (480 x 800) Resistive-touch screen
Real-time test data	Graphic and tabulation
Processor	Dual 32-bit ARM
RAM	64MB
Memory, non-volatile	4GB
Analog to digital converter	24 bit
Data acquisition	4 Channels
Logging speed	up to 50 readings per second
Multi-test storage	1000
Points per test	3000
USB port (front)	use to export data and import/export calibration data, also use to provide external power for optional WIFI adapter
USB port (back)	provides external power at the back of the machine
Ethernet connection	for network connectivity
Emergency stop	Large button
24-bit differential analog to digital converter (21 bits @1000 samples/sec.	4
Ambient temperature sensor	1
Limit switches	4
Firmware Update	Ethernet or flash drive

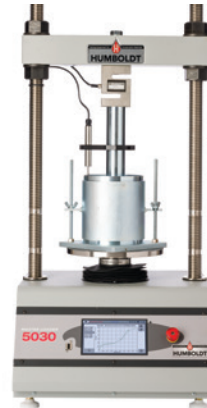
Applicable Standards

ASTM D1559, D5581, D6927, D6931, D1883, D2166, D2850, D4767, D7181
AASHTO T245, T245, TP105
BS 598, BS 1377: part 4, BS 1377: part 7, BS 1377: part 8



Humboldt stepper motor, precision gears and gear box used on all Elite Series Load Frames ensure smooth operation and precise results.

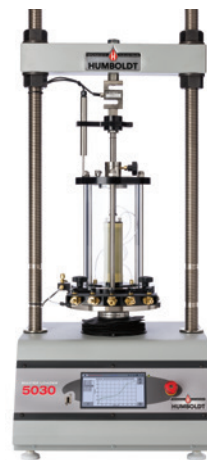
Typical Test Setups with HM-5030



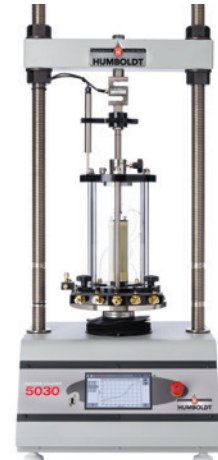
CBR/LBR



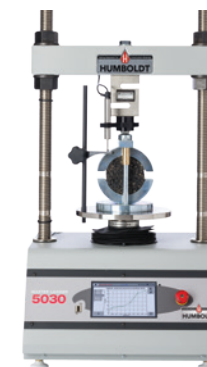
Unconfined
Compression



Consolidated
Drained and
Undrained



Unconsolidated
Undrained



Marshall



Semi-Circular Bending

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