



# HUMBOLDT

## HM-3000 Digital MasterLoader

The HM-3000 Digital MasterLoader is the most versatile load frame available. Stand-alone or computer-driven, the HM-3000 can handle it all—automating your lab and increasing your productivity.

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-3000 is ideal for just about any application from road construction to high-volume commercial and educational laboratories. The HM-3000 MasterLoader provides fully-automatic test performance allowing unattended operation while controlling motor start/stop, speed selection and test data acquisition. Its modular design allows the machine to be custom configured to handle any test necessary. You can buy the machine to handle any specific test needs and add on to its capabilities at a later time. This way you only pay for what you need, but you are never faced with an obsolete system.

The HM-3000 will function as a stand-alone device or can be interfaced with a computer using Humboldt's HMTS software. It also provides an analog output port if you need to utilize an XYt chart recorder. The HM-3000 is specifically designed for soil testing labs conducting multiple testing operations including: UU, CU and CD triaxials, UC, CBR and LBR, however it is also perfect for running Marshall and Hveem asphalt tests as well. With its built-in four-channel data logger, the HM-3000 can acquire data from load, strain, pore pressure and volume transducers. The data acquisition can be automated by setting trigger conditions to start and stop logging. Tests can be initiated or terminated automatically increasing lab productivity.

### Features include:

- Four channels with real-time data acquisition
- Backlit LCD display
- RS232 interface for computer or printer.
- Nonvolatile test data and instrument calibration storage
- Battery-backed real-time clock
- Auto conversion of instrument calibration between English or Imperial units and SI or metric units
- Test setup and selection via keypad
- Automatic triggering of test logging data
- View logged test data via the LCD display
- Logging rate as fast as 0.1 second/reading
- Humboldt HMTS, Basic, User-Defined Level software included for data acquisition



Covers: CBR, UU, CU, CD, UC, Marshall and Hveem Tests  
 ASTM: D1883, D2850, D2166, D4767, and D1559  
 AASHTO: T193, T296, T297, T208, T245, and T246  
 BS 1377: Part 4: 1990, BS 1377: Part 7: 1990,  
 BS 1377: Part 8: 1990, BS 598: Part 107

# HM-3000 Digital MasterLoader

## Typical CU Triaxial, 1-Cell Setup using HM-3000.3F

Part #	Qty	Description
HM-3000.3F	1	Digital MasterLoader 110/220V
HM-3003SW	1	CU Triaxial Reporting Software
HM-4150	1	FlexPanel I (3-Burette Panel)
HM-4199B	1	Triaxial Cell, Brass Fittings
HM-4199.XX	1	Top Cap & Base
HM-2300.020	1	S-Type Load Cell, 2,000lbf (50 kN)
HM-2310.20	1	Strain Transducer 2" (50mm)
HM-4170	1	Pore Pressure Transducer 200 PSI
HM-4178BRT	1	Displacement Transducer Bracket
HM-200387	1	Ball Seat Adapter

## Typical Unconfined Compression Setup using HM-3000.3F

Part #	Qty	Description
HM-3000.3F	1	Digital MasterLoader 110/220V
HM-3004SW	1	UC Triaxial Reporting Software
HM-2300.020	1	S-Type Load Cell, 2,000lbf (50 kN)
HM-2310.20	1	Strain Transducer 2" (50mm)
HM-4178BRT	1	Displacement Transducer Bracket
HM-2002	1	Unconfined Upper Platen



### Triaxial Setup using the HM-3000.3F Load Frame

Pictured is the HM-3000.3F Load frame with a typical Triaxial setup. See the charts to the left for items to order for the setup shown.

## Typical UU Triaxial, 1-Cell Setup using HM-3000.3F

Part #	Qty	Description
HM-3000.3F	1	Digital MasterLoader 110/220V
HM-3002SW	1	UU Triaxial Reporting Software
HM-4140	1	FlexPanel I (3-Burette Panel)
HM-4199B	1	Triaxial Cell, Brass Fittings
HM-4199.XX	1	Top Cap & Base
HM-2300.020	1	S-Type Load Cell, 2,000lbf (50 kN)
HM-2310.20	1	Strain Transducer 2" (50mm)
HM-4179.XX	2	Acrylic Base Disk
HM-4178BRT	1	Displacement Transducer Bracket
HM-200387	1	Ball Seat Adapter

## Typical Marshall Setup using HM-3000.3F

Part #	Qty	Description
HM-3000.3F	1	Digital MasterLoader 110/220V
HM-2300.100	1	S-Type Load Cell, 10,000 (50kN)
HM-2310.10	1	Strain Transducer 1" (25mm)
HM-4178BRT	1	Displacement Transducer Bracket
HM-3005SW	1	Marshall Reporting Software

## Typical CBR Setup using HM-3000.3F

Part #	Qty	Description
HM-3000.3F	1	Digital MasterLoader 110/220V
HM-2300.100	1	S-Type Load Cell, 10,000lbf (50kN)
HM-2310.10	1	Strain Transducer 1" (25mm)
H-4178	1	Penetration Piston with Stud
HM-4178BRT	1	Displacement Transducer Bracket
HM-3001SW	1	CBR/LBR Reporting Software

**Part Numbers** ending in .XX require a size code to be entered referring to the sample size to be tested. **For Triaxial** samples, sizes are: .14 = 1.4"; .15 = 1.5"; .20 = 2.0"; .25 = 2.5"; .28 = 28"; .30 = 3.0"; .40 = 4.0"; .35 = 35mm; .38 = 38mm; .50 = 50mm; .70 = 70mm, and .100 = 100mm.

### Specifications

Dimensions (l x w x h)	17 x 19 x 59 inch (430 x 480 x 1500mm)
Platen Travel	4 inches (100mm) Max.
Net Weight	240 lbs. (110Kg)
Shipping Weight	285 lbs. (130Kg)
Speed Range	0 - 3.0000 inch/min (0 - 75.0000 mm/min)
Load Capacity	11000 lbf (50 kN)
Vertical Clearance	40 inch (1000mm) Max.
Horizontal Clearance	15 inch (380mm)
Voltage	110/220 VAC 50/60HZ
Current	8.5 Amps
Analog to Digital Converter	16 Bit
Data Storage	4000 Readings
Data Collection Rate	100 ms
Computer Port	RS232