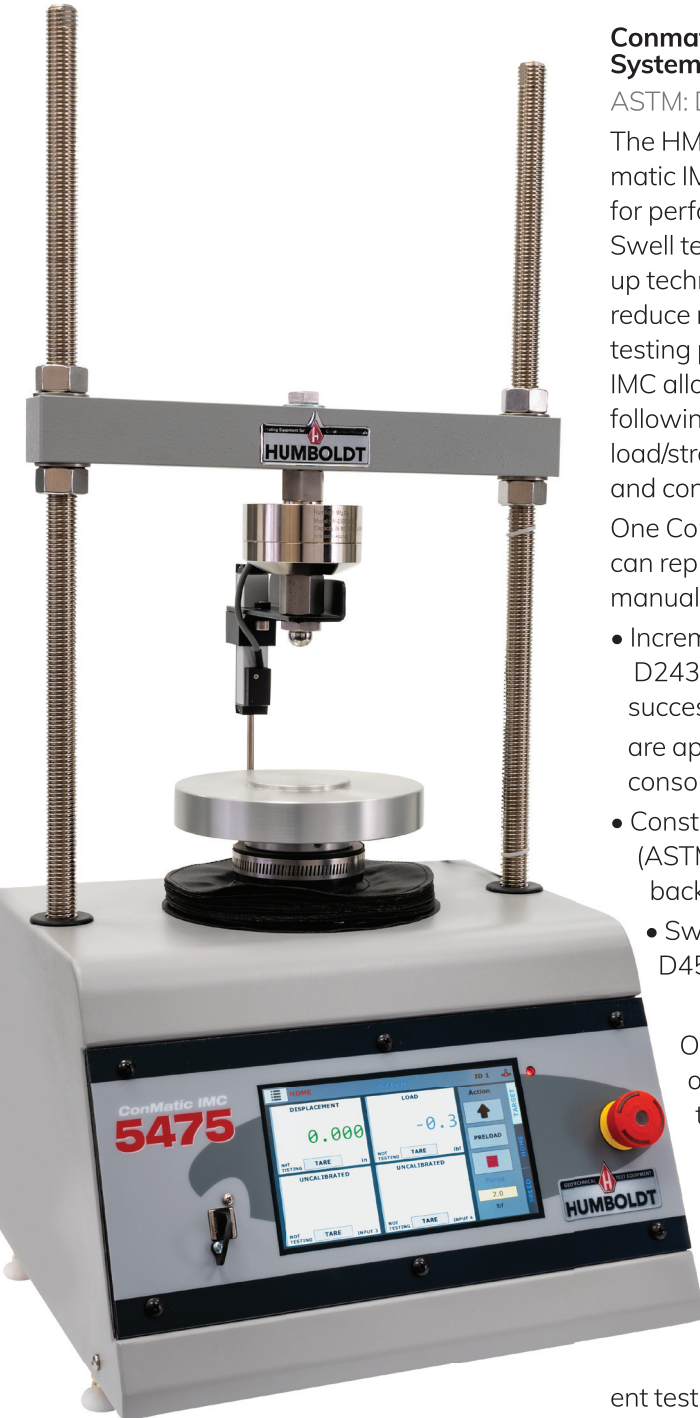




# Conmatic IMC Consolidation System HM-5475.3F & HM-5480.3F



## Conmatic IMC Soil Consolidation System

ASTM: D2435 | D4186 | D4546

The HM-5475.3F & HM-5480.3F Conmatic IMC is an automatic controller for performing incremental, CRS, and Swell tests. Automatic testing will free up technicians for other tasks and reduce man power requirements of the testing procedures by more than half. IMC allows consolidation tests in the following modes of operation; constant load/stress, constant rate of loading, and constant rate of strain.

One Conmatic IMC automated system can replace the production of several manual machines:

- Incremental according to (ASTM D2435) Method B, where successive load increments are applied through 100% primary consolidation.
- Constant rate of strain (ASTM D4186) with controlled back pressure.
- Swell or collapse of soil (ASTM D4546) Method A & B.

Once a sample has been placed onto the test platform and the test conditions set, the Conmatic IMC performs all consolidation tests, including moving to the next stress level, without operator assistance.

The system automatically moves through the different test parameters specified by the user with incremental consolidation tests typically being completed in 24 to 48 hours. Tests can be done with our NEXT PC software or without it if a PC is not available. The Humboldt NEXT software with the HM-5100SW Consolidation module uses sample

deformation readings taken from the displacement transducer and load readings from the load cell to maintain a constant applied stress to the sample throughout the test. Testing data is recorded and displayed in real-time on the screen while test data is stored and calculations are performed automatically. Humboldt's NEXT software with the HM-5100SW Consolidation module provides:

- Live test data tabulation and live graphing capabilities (real-time).
- Complete test reporting including all calculations and graphs required for testing.
- Review and exporting of tests using Microsoft Excel (CSV) format.
- Smart Test Function: automatically picks up where it left off if the test was not finished due to unexpected events.

### Controller Specifications:

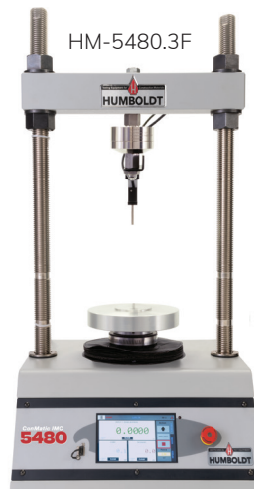
|   |   |
|---|---|
| Display (Resistive Touch)                       | 7" (178mm) VGA (480 x 800)                        |
| Real-time test data                             | Graphic and tabulation                            |
| Processor                                       | Dual 32-bit ARM                                   |
| 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)                                | export data, import/export calibration data, WiFi |
| USB port (back)                                 | provides external power for wireless access point |
| Ethernet connection                             | for network connectivity                          |
| 24-bit differential analog to digital converter | 4   |
| Ambient temperature sensor                      | 1   |
| Firmware Update                                 | Flash drive                                       |

### NOTES

Includes Humboldt NEXT Software HM-5100SW Consolidation-specific Module



| The HM-5475.3F ConMatic IMC Includes:                                      |              |
|--|--------------|
| Pancake load cell 2,250 lbs (10kN)   | HM-2300.20CP |
| Displacement Transducer 1.0 inch (25mm)                                    | HM-2305.10   |
| Displacement Transducer 1.0 inch (25mm NEXT consolidation software module) | HM-5100SW    |



| The HM-5480.3F ConMatic IMC Includes:                                      |               |
|--|---------------|
| Pancake load cell 10,000 lbs (50kN)  | HM-2300.100CP |
| Displacement Transducer 1.0 inch (25mm)                                    | HM-2305.10    |
| Displacement Transducer 1.0 inch (25mm NEXT consolidation software module) | HM-5100SW     |

The unique design of the Conmatic IMC system enables the user to connect multiple Conmatic IMC units to a single computer when connected via a LAN-network.

### Computer Control

NEXT software and the enhanced Consolidation module, HM-5100SW, is included with the Conmatic IMC automated machine. This software provides robust machine control, calibration, data acquisition and report generation for those using a computer to control testing operations. In addition, operators have the ability to view and control testing operations from the controlling PC, while also providing report generating capabilities using the test-specific software module.

Whether you are controlling a single, or multiple machines, the HM-5475 and the HM-5480 Conmatic IMC, in conjunction with the NEXT testing software, provides a complete solution for the acquisition, recording and presentation of testing data in data tabulation and graphic chart formats with the following:

- Machine control, and data acquisition via networked computer.
- Provides the ability to use Humboldt's Next Software's, advanced test-specific modules.
- Real-time graph chart and numerical display of tests via computer display.
- Effective sampling rate up to 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.
- Provides advanced graphing capabilities.
- Provides full-unit customization.
- Reports can be exported to Excel or a CSV file, if desired, and Humboldt can provide custom integration/export solutions for LIMS, EQulS, gINT, as well.
- Stand-Alone reports are available in Excel (CSV) format.

| HM-5475.3F Specifications:       |   |
|----------------------------------|---|
| Sample size                      | up to 4" (100mm)                        |
| HM-5475.3F Maximum load          | 3300lbf (10kN)                          |
| Clearance, vertical              | 12" (300mm)                             |
| Clearance, horizontal            | 11" (2257mm)                            |
| Maximum piston travel            | 3.0" (75mm)                             |
| Dimensions (L x W x H)           | 13.5" x 13.5" x 30" (343 x 343 x 762mm) |
| ConMatic IMC System Requirements |   |
| AC Supply                        | 110/220 VAC 50/60 Hz 5 Amp              |

| HM-5480.3F Specifications:       |                                    |
|----------------------------------|------------------------------------|
| Sample size                      | up to 4" (100mm)                   |
| Maximum load                     | 11000lbf(50Kn)                     |
| Clearance, vertical              | 12" (300mm)                        |
| HM-5480.3F Clearance, horizontal | 15" (380mm)                        |
| Maximum piston travel            | 4.0" (100mm)                       |
| Dimensions (L x W x H)           | 19" x 18" x 35" (483 x 457x 889mm) |
| ConMatic IMC System Requirements |                                    |
| AC Supply                        | 110/220 VAC 50/60 Hz 5 Amp         |

### Typical Consolidation Setup:

| Part #                                | Description                               |
|---------------------------------------|---|
| Required Components, Order Separately |   |
| HM-1220.XX*                           | Fixed ring consolidation cell             |
| HM-1250.XX*                           | CRS consolidation cell                    |
| HM-4145                               | Pressure Controller (manual) for CRS Cell |



Humboldt Mfg. Co.  
[www.humboldtmgf.com](http://www.humboldtmgf.com)  
 875 Tollgate Road  
 Elgin, Illinois 60123 U.S.A.

Toll Free: 1.800.544.7220  
 Voice: 1.708.468.6300  
 Fax: 1.708.456.0137