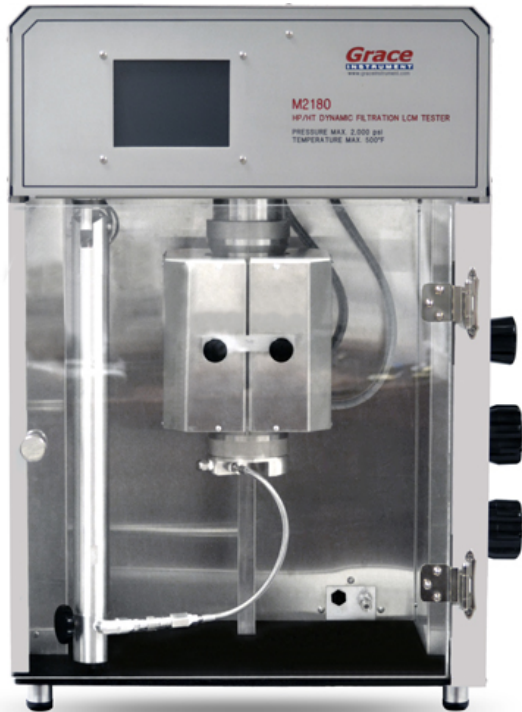


# Grace

## INSTRUMENT

Scientific Innovations. Industrial Solutions.



## M2180 HP/HT DYNAMIC FILTRATION LCM TESTER

- U.S. Patent Nos. 9,194,784 and 10,215,001
- Powerful, dynamic HP/HT filtration testing.
- Pressurized, temperature-controlled environment realistically simulates downhole wellbores.
- Filtrate medium available in a variety of porosities and permeabilities.
- Simulates different reservoir formation types.
- Robust back pressure control design minimizes downtime and repair costs.
- Particle plugging test feature—specialized filtrate medium with artificial fissure.
- **Free**, easy-to-use software included with each unit.
- Compact benchtop size easily moved from lab to lab.
- Custom pressure, temperature, and automation solutions available. (Contact *Grace Instrument* for details.)
- Complementary 1-year warranty. (Extended warranties also available.)
- Fully compliant with **API Recommended Practice 13B (RP 13B)**.



Side View



Touchscreen

## PRODUCT DESCRIPTION

### *Powerful, Dynamic HP/HT Filtration Testing*

The patented *Grace Instrument M2180 Dynamic Filtration LCM Tester* features a pressurized, temperature-controlled environment that realistically simulates downhole wellbores. Filtrate medium is available in a variety of porosities and permeabilities to simulate many different types of reservoir formations. When the simulation chamber is filled with drilling fluid under static condition or re-circulation condition, a shear bob simulates the drilling string centrally (or off-centrally) rotating inside of the filtrate medium, shearing fluid. As fluid is sheared, the filter cake deposit becomes visible inside the filtrate medium. The resulting buildup can then be analyzed. Robust back pressure control design minimizes downtime and repair costs.

### *Particle Plugging Test Feature*

Lost circulation is the uncontrolled flow of whole drilling fluid into a formation with no return to surface, especially within formations that are inherently fractured, cavernous, or have high permeability. Lost circulation can also occur when improper drilling operations damage the mud cake as drilling fluid invades and further damages the formation.

Looking for more? Many other sizes, configurations, finishes, and custom specifications are available! Contact Grace Instrument today for details:

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The *M2180* includes a specialized filtrate medium with an artificial fissure that can be used to perform particle plugging tests to determine the effectiveness of additives, help prevent lost circulation in the filtrate medium, and determine the effectiveness of bridging materials. The *M2180* simulates a rotating, off-centric drilling string damaging the filter cake, allowing researchers to measure the performance of bridging materials and devise solutions to minimize fluid loss.

#### *Advanced Software*

Advanced, easy-to-use software is included **free** with each unit. This software is intuitive and compatible with all versions of Windows. Installation is easy. The software is simply installed onto any desktop or laptop and connected to the unit. The unit can then be controlled automatically from the comfort of your own PC.

#### *Compact Benchtop Size*

This compact unit can be placed on a benchtop and easily moved from lab to lab, maximizing laboratory space.

#### *Grace Instrument Quality Promise*

The *Grace Instrument M2180 Dynamic Filtration LCM Tester* is a powerful testing tool, precisely and accurately simulating downhole wellbores. Custom pressure, temperature, and automation solutions are also available. Contact *Grace Instrument* to learn more. Our team is readily available to answer any questions you may have and guide you to find the ideal custom solution for all your testing needs.

A complementary 1-year warranty is included with each device. Extended warranties are also available.

This testing instrument is fully compliant with **API Recommended Practice 13B (RP 13B)**.

## SPECIFICATIONS

<b>U.S. Patent Numbers</b>	9,194,784 10,215,001
<b>Temperature Range</b>	Ambient to 500°F
<b>Maximum Working Pressure</b>	2,000 psi
<b>Maximum Differential Pressure</b>	500+ psi (Or Determined By Core Strength)
<b>Sample Volume</b>	350 ml
<b>Maximum Filtrate Volume</b>	45 ml
<b>Shear Bob Speed</b>	0 to 600 rpm
<b>Dimensions</b>	18" W x 21" D x 27.5" H
<b>Weight</b>	250 lbs.
<b>Voltage</b>	220-240V AC
<b>Wattage</b>	1,200 W
<b>Frequency</b>	50-60 Hz
<b>Compliance/Standards</b>	Fully Compliant with API Recommended Practice 13B (RP 13B)

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