



pressure chambers

standard leaf & stem water potential pressure chambers

overview

- The gold standard for measuring plant water potential
- Cited in over 1000 scientific publications over decades of research
- Measure leaf or stem water potential
- Ideal for plant physiologists, growers and irrigation management

The PMS (Plant Measurement System) Instrument range of pressure chambers have been used by scientific researchers and industry for over 40 years. The pressure chambers are the gold standard for measuring leaf or stem water potential in any plant.



irrigation management

The leaf and stem water potential chambers are ideal for irrigation management and scheduling. The chambers can determine the hydration level of crops and provide information on irrigation scheduling.

The leaf and stem water potential chambers are widely used, but not limited to, the following crops:

- Grapevines
- Almonds
- Citrus
- Walnuts
- Avocados
- and staples such as rice, wheat and corn



plant physiology and scientific research

The leaf and stem water potential chambers have been cited in many hundreds to thousands of peer-reviewed scientific papers. The chambers have been used by scientists and researchers for over 40 years in applications including:

- Ecohydrology
- Plant water relations
- Plant response to extreme events such as heatwaves
- Climate change
- Genetic variability and adaptation
- and much more.

model 600

- Measurement range: 0 to 40 bar
- Ideal for agriculture and horticultural crops and irrigation management
- Ideal for *Arabidopsis* and other model scientific specimens

The Model 600 or 600D Pressure Chamber Instrument is an old favourite, manufactured by PMS Instruments for over 40 years.

Instrument comes fitted with our most popular sealing gasket size – 1/4 inch Compression Gland Gasket and Insert. This gasket will seal a sample that is 1/4 inch in diameter down to a completely closed position. If you need other sealing

options such as bladed grass or other semi-round sizes check our other options.



Model 600D, 40 bar, Digital Dead-Out,
External Gas Cylinder

This is an excellent choice for routine water measurements for crop plants and light research in plants with little to moderate water stress. For extensive research projects you might consider a Model 1000 or Model 1505D due to the large range of operating pressure. The instrument requires a nitrogen source. You can use it in a lab or green house with a large cylinder or buy our light weight Portable Tank to allow for field work.

specifications

- Maximum operating pressure: 40 bar
- Chamber construction: Hard Anodized Solid Stock Aluminum
- Read-out: Bourdon tube, Gauge bar, PSI scale
- Size (L x W x H): 33 x 28 x 24 cm
- Weight: 6kg

- Accuracy: 1/2 of 1%

Instrument comes complete with: 1/4 Inch Compression Gland Sealing System, 5 Extra 1/4 Compression Gland Gaskets, 6 foot Filling Hose, 1 – Solid Lab Stopper for instrument testing, O-Ring lubricant and Lithium Grease, 11/32 inch wrench and 3/32 inch Allen Key for Control Valve Adjustment and a colour, Operating Instructions Manual.

recommended accessories

- Portable Tank,
- Extra Compression Gland Gaskets,
- Volume Reducer- depending on plant type,
- Lighted Hand Lens or
- Instrument Mounted Eye Lens.

model 670

- Ideal for measuring the water potential of large leaves and small shoots



Model 670 Pressure Chamber Instrument is unique in our instrument line in due to the large chamber.

The chamber is 100mm in diameter and 180mm deep. We only recommend this instrument if you are working with a large leaf since it takes a large amount of nitrogen to fill the chamber and makes working with smaller samples time consuming.

If you are looking at making routine water measurements for scheduling deficit irrigation or explaining plant water relations and do not need this large chamber we recommend the Model 600.

The PMS 670 comes standard with a Compression Gland Sealing System fitted with a 1/2 Inch Compression Gland Gasket and Insert. This gasket will seal samples from 1/2 inch diameter down to 3/8 inch diameter.

If you need other sealing options such as bladed grass or other semi-round sizes check our other options. A Volume Reducer is **not** available for this instrument.

For extensive research projects you might consider a Model 1000 or Model 1505D due to the large range of operating pressure. The instrument requires a nitrogen source. You can use it in a lab or green house with a large cylinder or buy our light weight Portable Tank to allow for field work.



specifications

- Maximum operating pressure: 40 bar
- Chamber construction: Hard Anodized Solid Stock Aluminum
- Read-out: Bourdon tube, Gauge bar, PSI scale
- Size (L x W x H): 33 x 28 x 24 cm
- Weight: 6kg
- Accuracy: 1/2 of 1%

Instrument comes complete with: 1/4 Inch Compression Gland Sealing System, 5 Extra 1/4 Compression Gland Gaskets, 6 foot Filling Hose, 1 – Solid Lab Stopper for instrument testing, O-Ring lubricant and Lithium Grease, 11/32 inch wrench and 3/32 inch Allen Key for Control Valve Adjustment and a colour, Operating Instructions Manual.

recommended accessories

- Portable Tank,
- Extra Compression Gland Gaskets,
- Volume Reducer- depending on plant type,
- Lighted Hand Lens or
- Instrument Mounted Eye Lens.

model 1000

- Measurement range: 0 to 70 bar
- Ideal for field measurements of trees and shrubs water or drought stress
- Applications include ecohydrology and plant physiology



The Model 1000 Pressure Chamber

Instrument is an old favourite, manufactured by PMS Instruments for over 40 years.

Instrument comes fitted with our most popular sealing gasket size – 1/4 inch Compression Gland Gasket and Insert. This gasket will seal a sample that is 1/4 inch in diameter down to a completely closed position. If you need other sealing options such as bladed grass or other semi-round sizes check our other options.

This is an excellent choice for research due to the large range of operating pressure. It is good for work on high stress level plants, pressure volume curves but can also be used for routine water measurements for crop plants.

The instrument requires a nitrogen source. You can use it in a lab or green house with a large cylinder or buy our light weight Portable Tank to allow for field work.

specifications

- Maximum operating pressure: 70 bar
- Chamber construction: solid stock stainless steel
- Read-out: Bourdon tube, Gauge bar, PSI scale



- Size (L x W x H): 33 x 28 x 24 cm
- Weight: 9kg
- Accuracy: 1/2 of 1%

Instrument comes complete with: 1/4 Inch Compression Gland Sealing System, 5 Extra 1/4 Compression Gland Gaskets, 6 foot Filling Hose, 1 – Solid Lab Stopper for instrument testing, O-Ring lubricant and Lithium Grease, 11/32 inch wrench and 3/32 inch Allen Key for Control Valve Adjustment and a colour, Operating Instructions Manual.

recommended accessories

- Portable Tank,
- Extra Compression Gland Gaskets,
- Volume Reducer- depending on plant type,
- Lighted Hand Lens or
- Instrument Mounted Eye Lens.

model 1505

- Measurement range: 0 to 100 bar
- Ideal for field measurements of trees and shrubs in arid zone or drier ecosystems
- Scientific research on water or drought stress
- Applications include ecohydrology and plant physiology



Model 1505D Pressure Chambers are a new release with changes that most users will appreciate.

It is a 100 bar digital instrument fully enclosed in a sealed case with an external tank (1505D).

The Control Valve and internal piping have been upgraded to now allow direct connection to Nitrogen Cylinders with 207 Bar/3000 PSI pressure. The instrument is fitted with a 100 Bar Digital Gauge that offers features such as backlighting and multiple pressure scales such as (Bar, Mpa and PSI).

Instrument comes fitted with our most popular sealing gasket size – 1/4 inch Compression Gland Gasket and Insert. This gasket will seal a sample that is 1/4 inch in diameter down to a completely closed position. If you need other sealing options such as bladed grass or other semi-round sizes check our other options.

This is an excellent choice for research due to the large range of operating pressure. It is good for work on high stress level plants, pressure volume curves but can also be used for routine water measurements for crop plants.

specifications

- Maximum operating pressure: 100 bar

- Chamber construction: Solid Stock Stainless Steel
- Read-out: Bourdon tube, Gauge bar, PSI scale
- Size (L x W x H): 1505D: 33 x 28 x 24 cm; 1515D: 56 x 38 x 26 cm
- Weight: 1505D: 8kg; 1515D: 16kg
- Accuracy: 1/2 of 1%

recommended accessories

Instrument comes complete with: 1/4 Inch Compression Gland Sealing System, 5 Extra 1/4 Compression Gland Gaskets, 6 foot Filling Hose, 1 – Solid Lab Stopper for instrument testing, O-Ring lubricant and Lithium Grease, 11/32 inch wrench and 3/32 inch Allen Key for Control Valve Adjustment and a colour, Operating Instructions Manual.

- Portable Tank,
- Extra Compression Gland Gaskets,
- Volume Reducer- depending on plant type,
- Lighted Hand Lens or
- Instrument Mounted Eye Lens.

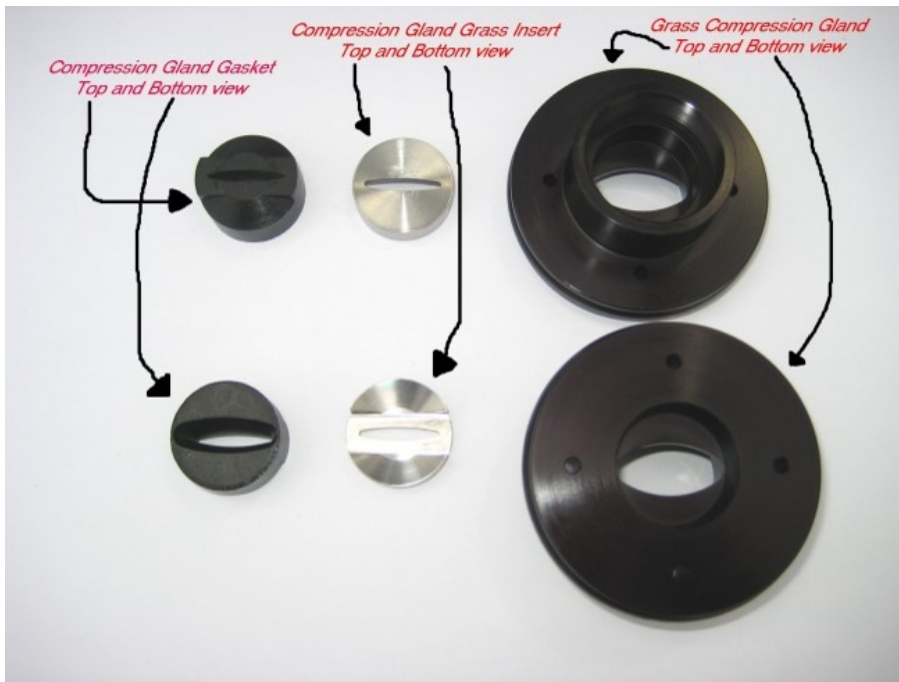
grass model

- A pressure chamber designed for grasses
- Ideal for crops such as rice and wheat
- Scientific research or irrigation management

The Grass Compression Gland is specifically designed for the measurement of grass, leaf blade water potential. It can be used on a range of grass like, or monocot, blades from wheat to corn to lillies and more.

If your instrument is fitted with the Compression Gland already you will need the three items shown in the image below. They are shown with both top and bottom views. If your instrument does not have a Compression Gland, you will need to have your lid modified to receive the Compression Gland. Contact us directly for more information.

The Grass Gasket is 1.0 inch in diameter. The sealing “slit” is 3/4” long and 1/8” wide at the widest place. It is an elliptical opening.



measuring the water potential of wheat or corn

how to install the grass compression gland

how to use the grass compression gland

cavitation chamber

- A specialised model to measure xylem cavitation, stem and leaf water potential



The Model 1505D-EXP Pressure Chamber Instrument is a combination instrument. It is a Model 1505D fitted with an external port out to a Cavitation Chamber. The instrument can be used as a Pressure Chamber or as a Cavitation Chamber by simply switching a valve. This unique design allows the user to have both instruments in one unit at a cheaper cost than buying the two instruments separate.

We have upgraded the Control Valve and internal piping to now allow direct connection to Nitrogen Cylinders with 207 Bar/3000 PSI pressure. The instrument is fitted with a 100 Bar Digital Gauge that offers features such as backlighting and multiple pressure scales such as (Bar, Mpa and PSI).

Instrument comes fitted with our most popular sealing gasket size – 1/4 inch Compression Gland Gasket and Insert. This gasket will seal a sample that is 1/4 inch in diameter down to a completely closed position. If you need other sealing options such as bladed grass or other semi-round sizes check our other options.

This is a specialty instrument that will benefit the user who is doing both Cavitation work and Pressure Chamber work.

The instrument requires a nitrogen source. You can use it in a lab or green house

with a large cylinder or buy our light weight Portable Tank to allow for field work.

specifications

- Maximum operating pressure: 100 bar
- Chamber construction: Solid Stock Stainless Steel
- Cavitation chamber construction: Solid Stock Stainless Steel
- Read-out: Bourdon tube, Gauge bar, PSI scale
- Size (L x W x H): 1505D: 33 x 28 x 24 cm
- Weight: 1505D: 8kg
- Accuracy: 1/2 of 1%

recommended accessories

Instrument comes complete with: 1/4 Inch Compression Gland Sealing System, 5 Extra 1/4 Compression Gland Gaskets, 6 foot Filling Hose, 1 – Solid Lab Stopper for instrument testing, O-Ring lubricant and Lithium Grease, 11/32 inch wrench and 3/32 inch Allen Key for Control Valve Adjustment and a colour, Operating Instructions Manual.

- Portable Tank,
- Extra Compression Gland Gaskets,
- Volume Reducer- depending on plant type,
- Lighted Hand Lens or
- Instrument Mounted Eye Lens.