

1400D TEMPE CELLS

“The” item for Hydrology of Undisturbed Soil Samples 0-2 Bar, Lab or Field

The Tempe Cell Model 1400 has for years been a staple of accurate hydraulic properties of soils. Developed at the University of Arizona, Tempe, it's found numerous uses in all areas of soil water flow relationships. It's based on undisturbed soil cores obtained in the field, easily prepared from precision brass retaining rings in either 2.25 in (5.72 cm) outside diameter or the larger 3.50 in (8.85 cm) outside diameter rings. The rings for undisturbed soil samples come in 3cm (1.18 in) or 6cm (2.36 in) heights, other materials and longer lengths available for soil columns. Made from strong clear acrylic with O-ring seals on both top and bottom surfaces for all sealing. Comes complete with a selection of ceramics 0-2 Bars (0-200kPa) base plates with various flow rates. Cylinders and hold downs sold separately see Model 1403TL series. If you're doing saturated flows, water retention characteristics or the measurement of other hydraulic properties there's simply nothing better, or better proven, with years of reliable performance than the model 1400 series

SPECIFICATIONS: Customer must specify 1403TL Cylinder Series for Length and Type of Cylinders used.

2.25 in Dia. Tempe Cell, 2-1/4 in (5.72 cm) Diameter, Weight 1.25lbs (0.57 kgs)
 1400D2.25-B0.5M2 Tempe, 2-1/4"Dia, .5 bar, HF plate,
 1400D2.25-B01M1 Tempe, 2-1/4"Dia, 1 bar STD plate,
 1400D2.25-B01M3 Tempe, 2-1/4"Dia, 1 bar HF plate,
 1400D2.25-B02M1 Tempe, 2-1/4"Dia, 2 bar STD plate,

3.50 in Dia. Tempe Cell, 3.50 in (8.89 cm) Diameter, Weight 2.26 lbs (1.03 kgs)
 1400D3.50-B0.5M2 Tempe, 3-1/2"Dia, .5 bar, HF plate,
 1400D3.50-B01M1 Tempe, 3-1/2"Dia, 1 bar STD plate,
 1400D3.50-B01M3 Tempe, 3-1/2"Dia, 1 bar HF plate,
 1400D3.50-B02M1 Tempe, 3-1/2"Dia, 2 bar STD plate,
 (CYLINDER AND HOLD DOWNS NOT INCLUDED -SEE MODEL 1403DTL)



1403DTL CYLINDER SETS FOR 1400 TEMPE CELLS

Choose from, Brass, Clear PVC, Clear Acrylic, Clear Polycarbonate, and Stainless

Today everyone has different needs and requirements. From making hydraulic measurements and determining flow characteristics to modeling soil surfaces columns, it's important to have the right retaining materials. The Tempe Cell now sports a variety of cylinder materials as well as the usual brass retaining rings. Find the right material for your job. By adding a "U1" at the end of the number we'll include the all studs, wing nuts, washers to get you going. If you already have a Tempe the right size and want simply a different material just use the number as is. All materials are of premium quality and specified dimensions.

SPECIFICATIONS:

1403 CYLINDER SETS FOR 1400 SERIES - REMEMBER ADDING A "U1" TO THE NUMBER, ADDS STUDS, WING NUTS, HARDWARE.

CLEAR ACRYLIC "PA" CYLINDERS— Remember to add a U1 at the end of the number for hardware to be included.
 1403D2.25TPAL06, 2.25" dia. 6" long. 1403D2.25TPAL12, 2.25" dia. 12" long. 1403D2.25TPAL18, 2.25" dia. 18" long
 1403D3.50TPAL06, 3.50" dia. 6" long. 1403D3.50TPAL12, 3.50" dia. 12" long. 1403D3.50TPAL18, 3.50" dia. 18" long

CLEAR PVC "PV" CYLINDERS— Remember to add a U1 at the end of the number for hardware to be included.
 1403D2.25TPVL06, 2.25" dia. 6" long. 1403D2.25TPVL12, 2.25" dia. 12" long. 1403D2.25TPVL18, 2.25" dia. 18" long
 1403D3.50TPVL06, 3.50" dia. 6" long. 1403D3.50TPVL12, 3.50" dia. 12" long. 1403D3.50TPVL18, 3.50" dia. 18" long

CLEAR POLYCARBONATE "PC" CYLINDERS— Remember to add a U1 at the end of the number for hardware to be included.
 1403D2.25TPCL06, 2.25" dia. 6" long. 1403D2.25TPCL12, 2.25" dia. 12" long. 1403D2.25TPCL18, 2.25" dia. 18" long
 1403D3.50TPCL06, 3.50" dia. 6" long. 1403D3.50TPCL12, 3.50" dia. 12" long. 1403D3.50TPCL18, 3.50" dia. 18" long

STAINLESS STEEL "MS" CYLINDERS— Remember to add a U1 at the end of the number for hardware to be included.
 1403D2.25TMSL06, 2.25" dia. 6" long. 1403D2.25TMSL12, 2.25" dia. 12" long. 1403D2.25TMSL18, 2.25" dia. 18" long
 1403D3.50TMSL06, 3.50" dia. 6" long. 1403D3.50TMSL12, 3.50" dia. 12" long. 1403D3.50TMSL18, 3.50" dia. 18" long

For undisturbed cores used Model 200 206MSL03, 2.25" dia. 3 cm long, 206MSL06 2.25" dia. 6 cm long
 Model 212 212MSL03, 3.50" dia. 3 cm long, 212MSL06 3.50" dia. 6 cm long

BRASS "MB" CYLINDERS— Remember to add a U1 at the end of the number for hardware to be included.
 1403D2.25TMBL06, 2.25" dia. 6" long. 1403D2.25TMBL12, 2.25" dia. 12" long. 1403D2.25TMBL18, 2.25" dia. 18" long
 1403D3.50TMBL06, 3.50" dia. 6" long. 1403D3.50TMBL12, 3.50" dia. 12" long. 1403D3.50TMBL18, 3.50" dia. 18" long

For undisturbed cores use Model 200 - 206MBL03, 2.25" dia. 3 cm long, 206MBL06 2.25" dia. 6 cm long
 Model 212 - 212MBL03, 3.50 in dia. 3 cm long, 212MBL06 3.50 in dia. 6 cm long



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1428K REMOTE TEMPE KIT

The complete mobile setup for vacuum /pressure extraction and soil hydrology studies



There are times when you'd like to have a portable soils lab to get reasonable moisture retention curves for the 1 Bar range or do some flow studies in a remote location without compressors or electricity. Why not consider the model 1428 K series for doing those tests right on the spot. It's all packed away in a waterproof case for easy transport and includes everything you'll need. 1428K1 Remote Tempe Kit, for vacuum extractions - Includes 5ea. 1400D2.25-B1M5 Tempe Cells with 5 ea. 206L06TB Brass Cylinders 6cm long - all assembled and ready to go. In addition there's 2005G2 Vacuum Hand Pump with gauge, Pressure - Vacuum Reservoir with 5 port inlet (not shown), 5ea. 50 ml vacuum flask (not shown), 1ea. battery operated scale 500 gm -.01g precision (not shown), Specialized Tempe Stand (for 5 Tempe's) and all associated clamps, tubing, tees to get it all up and running. 1428K2 Remote Tempe Kit, for pressure or vacuum extractions replaces the 2005G2 Vacuum Pump with our portable 2008 Electric Pressure/Vacuum pump housed in its own separate carrying case (not shown see product 2008) and 5 ea. 1405B02M1 Tempe porous plates, 2.25 dia., 2 Bar. for pressure extraction to 2 Bars.

SPECIFICATIONS:

1428K1 REMOTE TEMPE KIT, Vacuum Extraction Kit, Includes, 5ea. 1400D2.25, Vacuum Flasks, Hand Vacuum Pump, Vacuum/Pressure Reservoir, Special Tempe Stand, associated hoses connectors. In carrying case.

1428K2 REMOTE TEMPE KIT, Pressure/ Vacuum Extraction Kit, 5ea. 1400D2.25, Vacuum Flasks, 2008 Pres./Vacuum Pump, Vacuum Flasks, Vacuum /Pressure Reservoir, Special Tempe Stand, 5ea 1405B02M1 2 Bar Plates, associated hoses connectors. In carrying case.

ACCESSORY ITEMS

0200 SOIL CORE SAMPLER, using 6cm long brass or stainless steel cylinders
6952V12-110 12VDC to 110 VAC charger for the 2008 Pressure /Vacuum pump.

1425 TEMPE CELL STAND

The simple and utilitarian stand for 1400 Tempe Cells



The Model 1425 is a good choice for mounting Tempe's under test. The Model 1425 will hold 5 individual 1400D2.25 Tempe Cells or 4 ea. of the larger 1400 D3.50 sizes. Both are made from light weight aluminum and epoxy coated for rugged water rich environments that they'll be exposed to. Common drain channel is provided in the structure and top slit allows the base plate to easily drain into the channel drain.

SPECIFICATIONS:

1425 TEMPE CELL STAND, Holds 5ea.- 1400D2.25, or 4ea. 1400D3.50
Length 18.5" L X 5" W X 6" H (46.9cm L X 12.7cm W X 15.2cm H)
Weight 2.0 lbs. (0.9 kgs). (Tempe Cells Sold Separately)



1440DL SERIES FLOW CELLS

A massive collection of flow cell possibilities for your column-soil profile testing

The Model 1440DL Series of Flow Cells are columns, designed for measuring the hydraulic properties of porous materials, and the movement of chemicals in soil. Typical uses are for modeling water-retention curves, saturated and unsaturated hydraulic conductivities, contaminant and gas transport parameters, and for break-through curves. Designed for saturation to 600 mb suctions each unit is constructed from sturdy clear acrylic for "see through" experimentation and held together with hardy stainless steel hardware for years of use. All units come assembled, including support screens and filter membranes for quick contact / high flow capabilities with interior soils.

Easy assembly, interchangeable parts, with a variety of porous end sections, supplied in a wide selection of diameters and lengths you can create almost any hydraulic profile. We can also provide tensiometer data logging ports as required with the accessory 1710P Series Tensiometer Transducer Assemblies and Model 1442 Laboratory Stands will support 2 Cells of the same size.

SPECIFICATIONS:

1440DL Series Flow Cells, in a Variety of Diameters and Lengths -combine Diameters and Lengths when ordering. (see example below)
 OD Sizes D1.50 = 1.5"(3.81cm) dia., D2.00=2.0"(5.08cm) dia.
 D2.50=2.5"(6.35cm) dia., D3.00= 3.0" (7.62cm) dia., D3.50=3.5"(8.89cm) dia.
 D4.00=4.0" (10.16) Dia, D5.25=5.25"(13.34cm) dia.
 Standard Lengths L06= 6.0" (15.24 cm) length, L12=12.0" (30.48 cm) length, L24=24" (60.96 cm) Length

EXAMPLE TO ORDER - a 3" (7.62cm) diameter Flow Cell x 12" long would be ordered as follows = Model 1440D3.00L12

We can also provide specialized services for fabrication of monitoring ports on flow cylinders and other specialized needs.



1441DL FLOW CELL SYSTEMS

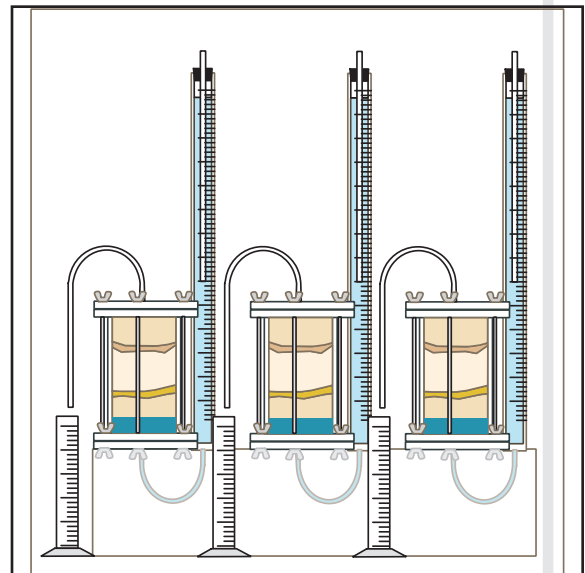
Need more than a cell? Get a complete system of 1, 3 or 6 cells ready to go

If your lab already has the needed equipment to work with flow cells you're in luck. If not consider the purchase of a flow cell system. Every thing you need will be provided. Flow cells, Marriott Bubbler, Stand, clamps containers etc., simply add soil and start a K-Sat measurement. Marriott Bubbler constructed of clear acrylic for easy calibrations, your selection of 1440DL series Flow cells, heavy duty lab stand (holds up to 3 bubblers), connection tubing, and accessory containers.

SPECIFICATIONS:

1441 DL Flow Cell Systems, are based on 1440 series Flow Cells -combined Diameters and Lengths when ordering. (see example below)
 Flow Cell Diameters D1.50 = 1.5"(3.81cm) dia. , D2.00=2.0"(5.08cm) dia., D2.50=2.5"(6.35cm) dia., D3.00= 3.0" (7.62cm) dia., D3.50=3.5"(8.89cm) dia.
 D4.00=4.0" (10.16) Dia, D5.25=5.25"(13.34cm) dia.
 Flow Cell Lengths L06= 6.0" (15.24 cm) length, L12=12.0" (30.48 cm) length, L24=24" (60.96 cm) Length
 Standard Packages (PKG) PKG01= 1ea Flow Cell, System, PKG03=3 ea. Flow Cells, System, PKG06= 6 ea. Flow Cells, System

EXAMPLE TO ORDER choose the Flow Cell you'd like to use, for instance a 3" (7.62cm) diameter Flow Cell x 12" long, and you want a 3 cell system you'd order Model 1441D3.00L12PKG03
 Please contact us if you need to mix flow cells in multiple system packages (PKG03, PKG06)



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1448 COLUMN TRANSPORT SYSTEM



An easy and reliable way to measure chemicals-salt transport in soils

Our 1440DL Series Test Cell is used to study the movement of water and contaminants, tracers, nutrients, colloids, etc. through soil. The Test Cells have multiple testing functions. Primarily they are used as Flow Cells designed to measure the hydraulic properties (both saturated and un-saturated hydraulic conductivity) of porous matter; contaminant and gas transport parameters, and for break-through curves. In their least function, they can be used to determine moisture retention relationships on disturbed columns. You get precision control of application parameters using programmable 10 port specialty syringe pump in determining the solution provided. 3ml syringes provided with the system with other sizes available separately in 6 and 10 ml volumes. The system requires 1440DL Series of Flow Cells (sold separately) to hold soil samples under study. The large evacuated Column Transport Chamber allows for fraction collection of up to 3 flow cells mounted on the acrylic cover. Comes Complete.

SPECIFICATIONS:

1448 COLUMN TRANSPORT SYSTEM, for 3ea. 1440DL Flow Cells, complete with syringe pump,. Will require additional 1440DL Flow Cells sold separately.

Shipping Information:

5 Boxes 10 Cubic Feet, 92 lbs

Column Accessory

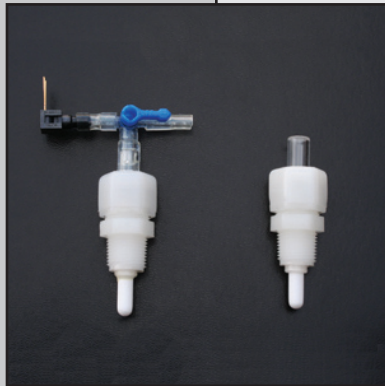
8050VP COLUMN TENSIO METER / TRANSDUCER

Measure soil suction values within your soil column, monitor gradient and flux -27/7/365

If you have access to a logger or other data collecting device then why not install or have Soilmoisture create access ports in your 1400 Tempe or 1440 Flow. Create a 3/8in NPT female thread in your cylinder to accept the 8050V Tensiometer / Transducer. The easily installed nylon bulkhead fitting with 3 way valve and small 1/4 in (.635 cm) diameter porous cup x .5 in (1.27 cm) long fit easily into the column wall for intimate contact with the soil profile. Valve provides filling and evacuation of the tensiometer cup attached to transducer. This is a temperature compensated, output calibrated, transducer with +/- 15 psi (103 kPa), 100 mV FS span, with a 6.6mV/psi sensitivity. Supply voltage required 10 -15 Vdc.

SPECIFICATIONS:

8050V12P15 COLUMN TENSIO METER / TRANSDUCER, 0-100 mV FS span, +/- 15PSI, temp comp, output cal. with valve and bulkhead fitting.



1442DT ACRYLIC FLOW CELL STAND

The elegant and easy way to mount 1440 flow cells for your experiments

The elegant flow cell stand is simple and provides an elevated and stable platform to carry out any number of experiments. The one piece, 1/2" (1.27in) thick acrylic stand comes in 3 and 6 cell capacities. Tell us the flow cells you'll be using on the stand and we'll custom make one just for your setup. A beautiful addition to your work.

SPECIFICATIONS:

1442DT ACRYLIC FLOW CELL STAND

Tell us the 1440 Flow Cells you'll be using, specify the diameter and either a T3 = 3 Cell capacity or T6 = 6 Cell capacity

ORDERING EXAMPLE 1442D2.25T3 provides a stand for 1-3 Cells being 2.25" in diameter.

