

thermo scientific



Thermo Scientific Barnstead Smart2Pure Type 1 and Type 2 Water

ThermoFisher
SCIENTIFIC

Barnstead Smart2Pure Pro water purification system

The Barnstead Smart2Pure Pro is a compact system that converts water into ASTM Type 1 and Type 2 water at a rate of 16 lph in reverse osmosis, with built-in warning and shut-off features to prevent lab accidents.



Applications Include:

Modular Biology and Microbiology

- Cell and tissue culture
- PCR, DNA sequencing
- Electrophoresis

Analytical Chemistry

- HPLC
- GC, GC-MS, ICP-MS, AA
- TOC Measurements, IC

Routine Laboratory Work

- Preparing and diluting buffers and reagents
- Rinsing lab glassware
- Supplying autoclaves and other small lab equipment

Powerful performance

- Suitable for even the most demanding and sensitive applications, the Thermo Scientific™ Barnstead™ Smart2Pure™ Pro Water Purification System exceeds current international standards ASTM D11931 Type 1, ISO 3696 Grade 1, and CLSI-CLRW, delivering ultrapure 18.2 MΩ.cm water with consistent quality
- Offers production rate of up to 16 lph in RO.

Simplified user interface

- Easy system operation
- Enhanced system monitoring through integrated sensors and timers for:
 - RO product purity
 - Leak detection and automated shut-off to prevent accidents
 - Consumable monitoring dispensing is easy and features variable speed to control flow
- The display can be tilted for optimal reading
- Includes UV bulb and ultrafilter to deliver ultrapure water quality

Lasting economy

- Independent cartridges to maximize life
- Water purification progresses through independent cartridges with Aquastop quick-connect for fast replacement
- Module 1** – Reverse osmosis cartridge to remove up to 99% of tap water impurities
- Module 2** – Polishing cartridge contains high-quality ultrapure resin for consistent purity and long cartridge life

Placement options

- Position on laboratory bench
- Mount it on the wall

Easy ordering! One part number includes complete system

- Pretreatment to protect reverse osmosis membrane
- Smart2Pure Pro system to produce Type 1 and Type 2 water complete with all consumables and wall bracket
- Optional remote dispenser for flexible dispensing of Type 1 and Type 2 water up to 3m from system
- 30 or 60 L Storage tank to store and deliver Type 2 water

Compact dual quality system

Features

- Standby mode offers flexibility for use. The system continually recirculates water to maintain purity
- Built-in alert system helps ensure optimal performance with prompts for leak detection and to replace consumables
- System shuts off if a leak is detected
- Inline ultrafilter with large surface area to remove endotoxins and nucleases
- System parameters are code-protected to prevent accidental changes to set points

Feed Water Requirements*

Source	Potable tap water pretreated with Barnstead Pretreatment System - Cat. No. 50157886
Silt density index (SDI)	<3
Turbidity	<1 NTU
Conductivity (reference temperature +25°C)	1500 µS/cm (670 Ω·cm)
Hardness	Hardness stabilized
Chlorine	Max. 0.1 ppm
pH range	4-11
Temperature	+2°C - +35°C
Pressure	2 - 6 bar / 29 - 87 PSI (at a pressure >6 bar / 87 PSI a pressure reducer must be installed upstream of the system.)

* Please see user manual for complete list of feed water requirements.



Smart2Pure Pro

Barnstead Smart2Pure Pro offers reservoir options, either 30 or 60 liters

- Sterile venting filter/reservoir overflow protects against contamination by microorganisms
- CO₂ adsorber prevents TOC value increases from drawn-in CO₂
- Recirculation pump protects the high purity water from bacterial growth during standstills and maintains the low conductivity value
- Large opening for easy and effective cleaning by hand
- Conical bottom outlet allows for complete draining and efficient cleaning and disinfection
- Polyethylene reservoir is opaque to light
- Wall-mount optional for simple space-savings

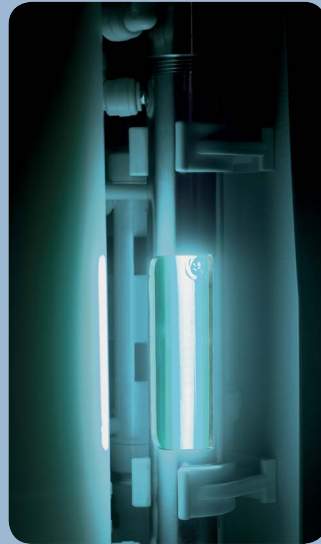
Quick Look Comparison

Type 1 Water	Smart2Pure Pro UV/UF system
Applications	Inorganic and organic trace analysis, HPCL, ICP-MS, IC, TOC analysis, Molecular biology, PCR, DNA, monoclonal antibodies, cell culture media
Resistivity at 25°C, MΩ·cm	18.2
Conductivity, µS/cm	0.055
TOC value, ppb	1-5
RNase, ng/ml	<0.003
DNase, pg/µl	<0.4
Bacterial content, CFU/mL	<0.01
Particles, µm/mL	<1
Endotoxines, EU/mL	<0.001
Flow rate, L/min	Up to 1
Type 2 Water	
Pure water production at 15°C, L/h	16
Resistivity at 25°C, MΩ·cm	10-1
Conductivity, µS/cm	0.1-1.0

Barnstead Smart2Pure Pro water purification system



Economical Design
The RO cartridge is separate from the DI cartridge, ensuring you only replace each cartridge as needed



UV-Oxidation 185/254 nm
UV-oxidation for reducing the content of microorganisms and their metabolites



Flexible
Gain increased flexibility by adding a hand dispenser with 3 meter cord



Smart2Pure Pro Water System

Product Specifications – Storage Reservoirs		
Volume	Material	Dimensions H x D in (mm)
30 L	Polyethylene, ultrapure water resistant, opaque to light	23.5 x 15 (598 x 380)
60 L		35.9 x 15 (912 x 380)

Barnstead Smart2Pure Pro water purification system

Product Specifications - Smart2Pure Pro				
Flow rate	Electrical requirements	Power consumption	Feed water connector	Dimensions W x D x H in (mm)
up to 1 L/min	90-240 V, 50/60 Hz	0.06 kW	3/4" NPT	12 x 15.7 x 21.5 (305 x 400 x 545)

Barnstead Smart2Pure Pro ordering information

Description	Cat. No.
Smart2Pure Pro UV/UF 16 LPH with 30 L Re-circulation Tank, Pre-Treatment and Wall Mount Complete system includes Barnstead Pretreatment system with cartridges, RO/pretreatment cartridge, an ultrapure polisher cartridge, sterile 0.1 µm filter, UV lamp, UF filter, 30 L tank, CO2 vent filter, sterile overflow and system wall bracket. Tank wall mount sold separately.	50157873
Smart2Pure Pro UV/UF 16 LPH with 60 L Re-circulation Tank, Pre-Treatment and Wall Mount Complete system includes Barnstead Pretreatment system with cartridges, RO/pretreatment cartridge, an ultrapure polisher cartridge, sterile 0.1 µm filter, UV lamp, UF filter, 60 L tank, CO2 vent filter, sterile overflow and system wall bracket. Tank wall mount sold separately.	50157872
Smart2Pure Pro UV/UF 16 LPH with 30 L Re-circulation Tank Complete system includes RO/pretreatment cartridge, an ultrapure polisher cartridge, sterile 0.1 µm filter, UV lamp, UF filter, 30 L tank, CO2 vent filter and sterile overflow.	50157882
Smart2Pure Pro UV/UF 16 LPH with 60 L Re-circulation Tank Complete system includes RO/pretreatment cartridge, an ultrapure polisher cartridge, sterile 0.1 µm filter, UV lamp, UF filter, 60 L tank, CO2 vent filter and sterile overflow.	50157877
Barnstead Pretreatment Comes with pressure reducing valve, 1 micron prefilter, hardness stabilizing cartridge and carbon cartridge	50157886
Optional Wall Mounting Bracket for POU Systems	50157885
Optional Hand Dispenser	50138221
Optional Wall Mount for 30 L Tank	06.5015
Optional Wall Mount for 60 L Tank	06.5016

Accessory/Consumables	Description	Cat. No. ** Included with new unit
Barnstead Pretreatment System	1 micron prefilter	D502113
	Hardness stabilizer	D502114
	Carbon cartridge	**50157375
System Consumables	Smart2Pure Pro RO membrane	**50157608
	Smart2Pure Ultrapure Cartridge	**09.1020
	Sterile 0.1 um filter for system	**50157375
	0.2 micron Final Filter for remote hand dispenser	09.1003
	Ultrafilter	**50133980
	UV Lamp for Type 1 System	**09.1002
Reservoir Consumables	CO ₂ Vent filter	06.5002



Quick Look Comparison		
	Smart2Pure UV system	Smart2Pure UV/UF system
Type 1 Water		
Applications	Inorganic and organic trace analysis, HPLC, ICP-MS, IC, TOC analysis	Molecular biology, PCR, DNA, monoclonal antibodies, cell culture media
Resistivity at 25 °C, MΩ.cm	18.2	18.2
Conductivity, μS/cm	0.055	0.055
TOC value, ppb	1-5	1-5
RNase, ng/ml	n/a	<0.003
DNase, pg/μl	n/a	<0.4
Bacterial content, CFU/mL	<0.01	<0.01
Particles, μm/mL	<1	<1
Endotoxines, EU/mL	n/a	<0.001
Flow rate, L/min	Up to 1	Up to 1
Type 2 Water		
Pure water production at 15 °C, L/h	12	12
Resistivity at 25 °C, MΩ.cm	15-10	15-10
Conductivity, μS/cm	0.067-0.1	0.067-0.1

Feed Water Requirements*	
Source	Tap water
pH range	4-11
Temperature, C°	2-35
Conductivity (μS/cm), maximum	1200
Pressure, psi (bar)	1.4-87 (1-6)

* Please see user manual for complete list of feed water requirements.



Space-Saving Design

Simply stand the BarnsteadSmart2Pure system on the benchtop or mount it directly to the wall, as shown by the Thermo Scientific MicroPure, for more bench space

Barnstead Smart2Pure water purification system



Economical Design

The RO membrane pretreatment cartridge is separate from the DI cartridge, ensuring you only replace each cartridge as needed



UV-Oxidation 185/254 nm

Optional UV-oxidation for reducing the content of microorganisms and their metabolites



Flexible

Gain increased flexibility by adding a hand dispenser with 3 meter cord

Product Specifications – Storage Reservoirs

Volume	Material	Dimensions H x D in (mm)
30 L	Polyethylene, ultrapure water resistant, opaque to light	23.5 x 15 (598 x 380)
60 L		35.9 x 15 (912 x 380)



Flexible Storage

Store high purity water safely and conveniently in either a 30 or 60 L reservoir (only for Smart2Pure 12)

Storage Reservoir Options for Smart2Pure 12 System Only

	30 L	60 L
Tank		
Choose a tank to meet your capacity needs	50155497	50155501
Required Accessories		
Sterile overflow for reservoir	06.5001	06.5001
CO ₂ adsorber + sterile filter, 0.2 µm	06.5002	06.5002
Optional Accessories		
Wall mounting bracket	06.5015	06.5016

Barnstead Smart2Pure water purification system

Product Specifications - Smart2Pure 3, 6, 12 L/hr					
Flow rate	Operating pressure min/max	Electrical requirements	Power consumption	Feed water connector	Dimensions W x D x H in (mm)
up to 1 L/min	29-87 psi 2-6 bar	90-240 V, 50/60 Hz	0.06 kW	3/4" NPT	12 x 15.7 x 21.5 (305 x 400 x 545)

System Options for Smart2Pure	Permeate flow at 15 °C	Smart2Pure UV	Smart2Pure UV/UF
Smart2Pure System 3 and 6 L/hr* All systems include an RO/pretreatment cartridge, ultrapure polisher cartridge, sterile 0.2 µm filter, UV lamp and/or UF filter where applicable. The 3 and 6 lph models also include an internal 6 L tank with vent filter.	3 L/hr	50129872	50129688
	6 L/hr	50129885	50129887
Required Accessories			
Double cartridge pretreatment system A 5 µm filter with activated carbon cartridge and a hardness stabilizer cartridge ship complete with two 10 inch filter housings to control chlorine, organic impurities and hardness.		09.4000	09.4000
Optional Accessories			
Wall mounting bracket		09.2212	09.2212
Qualification documents (IQOQ)		IQQDOCE50133911	IQQDOCE50133911
Hand Dispenser Kit Hand dispenser with 3 meter cord that connects to tank. Ships with a 0.2 micron final filter.		50138221	50138221

System Options for Smart2Pure 12	Smart2Pure 12 UV	Smart2Pure 12 UV/UF
Smart2Pure System 12 L/hr* Systems include an RO/pretreatment cartridge, an ultrapure polisher cartridge, sterile 0.2 µm filter, UV lamp and/or UF filter where applicable	50129890	50129845
Required Accessories		
Smart2Pure Reservoir Choose a reservoir that fits your needs	See "Storage Reservoir Options"	
Double cartridge pretreatment system A 5 µm filter with activated carbon cartridge and a hardness stabilizer cartridge ship complete with two 10 inch filter housings to control chlorine, organic impurities and hardness.	09.4000	09.4000
Optional Accessories		
Wall mounting bracket for the system	09.2212	09.2212
Qualification documents (IQOQ)	IQQDOCE50133912	IQQDOCE50133912
Pressure Regulator Recommended where incoming feed pressure is above the specified range	50155462	50155462
Hand Dispenser Kit Hand dispenser with 3 meter cord that connects to tank. Ships with a 0.2 micron final filter.	50138221	50138221

Replacement Consumables - Smart2Pure 3, 6, 12 L/hr

RO membrane with integrated pretreatment	3 L/hr	09.2003	09.2003
	6 L/hr	09.2006	09.2006
	12 L/hr	09.2012	09.2012
Ultrapure polisher cartridge		09.1020	09.1020
Sterile 0.2 µm filter for system		09.1003	09.1003
Ultrafilter		n/a	50133981
System UV-lamp		09.1002	09.1002
Cleaning solution		CMX25	CMX25
Activated carbon cartridge with 5 µm prefilter		06.5201	06.5201
Hardness stabilizing cartridge		06.5452	06.5452
Sterile vent filter for tank	3 L and 6 L/hr	22.0091	22.0091

*  

Find out more at thermofisher.com/purewater

General Laboratory Use Only. Not for use in diagnostic procedures. © 2013-2019 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific and its subsidiaries unless otherwise specified. CLSI-CLRW is a trademark of the Clinical and Laboratory Standards Institute. Teflon is a trademark of E.I. du Pont de Nemours and Company. Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details. **BRWPBKSMART2PURE 0419**

ThermoFisher
SCIENTIFIC