

thermo scientific



Thermo Scientific Barnstead GenPure Ultrapure Water

ThermoFisher
SCIENTIFIC

Type 1

Ultrapure water purification systems

What sets Barnstead water purification systems apart?

Our Barnstead water purification portfolio includes a complete line of Type 1 systems to meet all your ultrapure water needs. Why so many options? For you to have a tailored system specifically for your needs. No need to pay for technologies that you won't use!



Innovation

UV and feed water monitoring for maximum efficiency.

EDI systems with reservoir recirculation maintains purity even between use.



Convenience

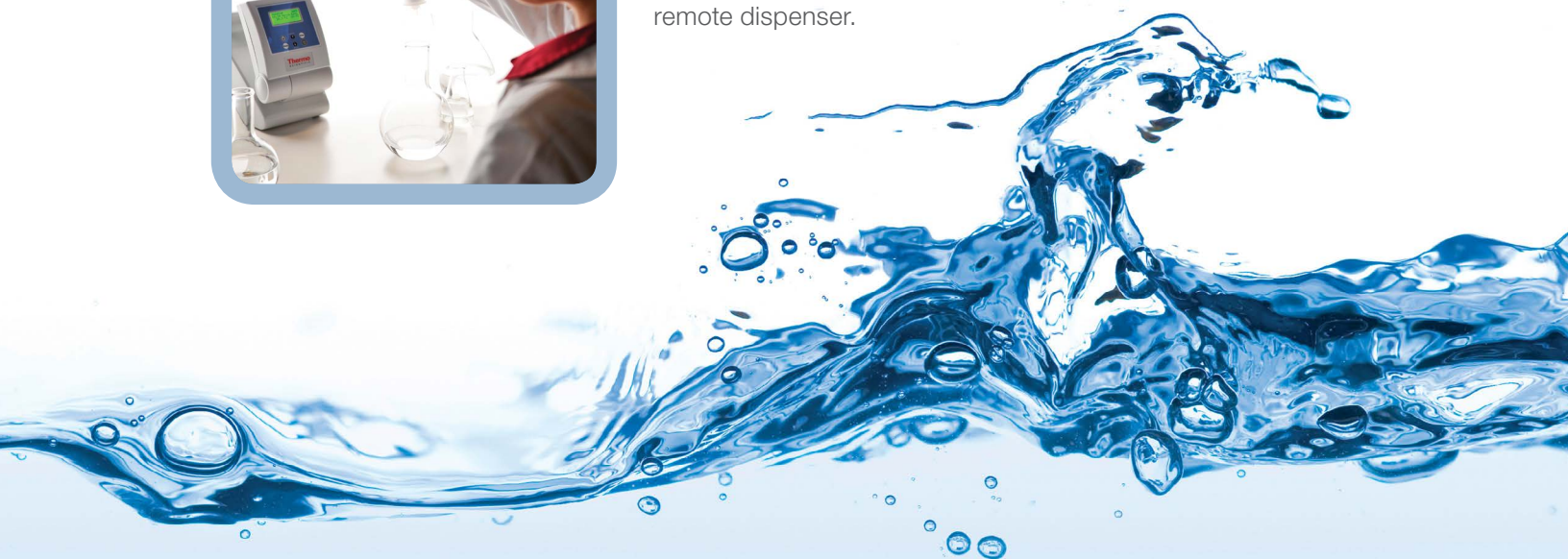
Quick-change cartridge design simplifies self maintenance.

All required parts and accessories ship under one part number.



Flexibility

Full system control at the Barnstead GenPure xCAD Plus remote dispenser.



Type 1

Barnstead ultrapure water purification system selector guide

Feed water



Tap water feed required

Pretreated water feed required



Select the water system that best fits your requirements



Benefits



			GenPure xCAD Plus	GenPure Pro	GenPure	MicroPure	E-Pure	LabTower EDI	Smart2Pure
			Full control at the GenPure xCAD Plus remote dispenser	Flexible dispensing	Economical Type 1 water	Smaller capacity for optimal value	Simple design, great value	Produces Type 1 and 2 with EDI technology	Compact unit producing Type 1 and 2
Applications	Ultra-low organic levels, <5 ppb HPLC, TOC, GC/MS, ICP, ICP-MS	UV oxidation is necessary for the removal of organics in the feed water, reduces organic levels to >5 ppb, and protects against microorganisms	✓	✓	✓	✓	—	✓	✓
	Cell culture, monoclonal antibody production, electrophoresis	Ultrafiltration removes pyrogens from the feed water	✓	✓	✓	✓	—	—	✓
	Nuclease and pyrogen-free applications such as PCR, 2-D electrophoresis, cell culture, blotting	UV/UF is the most common combination of technologies – used to reduce organics and remove pyrogens and nucleases	✓	✓	✓	✓	—	—	✓
Technology	UV monitoring	Photosensor continually checks the intensity of the UV lamp. A decrease could result in an incorrect TOC measurement result.	✓	✓	✓	—	—	—	—
	Feed water monitoring	Feed water monitoring alerts you to fluctuations in feed water quality	✓	✓	✓	✓	—	—	—
	Total Organic Carbon (TOC) monitor	Real-time monitor of the amount of organic materials in the product water shown on the display	✓	✓	✓	—	—	—	—
Features	Volumetric Dispensing	Dispense at the push of a button. Control from 0.01-65 liters with an accuracy of <0.5 %	✓	✓	—	—	—	—	—
	GenPure xCAD Plus remote dispenser	Allows for full control of the system at the GenPure xCAD Plus remote dispenser	✓	—	—	—	—	—	—
	Under-the-bench mounting	Ideal when bench space is tight. System sits under the bench and out of sight.	✓	—	—	—	—	—	—
	RS-232 data printing at pre-programmed intervals	Satisfies GLP guidelines, data available in print	✓	✓	✓	—	—	✓	✓
Capacity	Optimal amount of water to use daily to sustain reasonable cartridge life	Expands with your laboratory and application needs	200 L/day	200 L/day	200 L/day	15 L/day	100 L/day*	200 L/day	70 L/day

Barnstead GenPure xCAD Plus water purification system

The Barnstead GenPure xCAD Plus system delivers ultrapure 18.2 MΩ.cm water with consistent quality for the most demanding and sensitive applications. The xCAD remote dispenser provides flexibility and control.

All Barnstead GenPure systems exceed international standards ASTM Barnstead Type I, ISO 3696 Grade 1, ASTM D1193 and CLSI-CLRW.

Simultaneously dispense from up to three dispensers

- Each system ships with a single xCAD Plus remote dispenser
- For increased flexibility, add one or two more Barnstead GenPure xCAD Plus dispensers
- Dispense from all three simultaneously



Applications Include:

Molecular Biology and Microbiology

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

Analytical Chemistry

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

Integrated feed water monitoring

- Additional measuring cell monitors feed water conductivity. If the quality of the feed water drops below the set value, a fault message will immediately be displayed.

Online TOC measurement with UV intensity monitoring

- Real-time TOC monitoring for continual measurement of organic substances present in the water
- Continuous monitoring of UV intensity removes the risk of false TOC values due to diminished UV intensity
- Fault message alerts user when the UV lamp intensity is no longer sufficient for accurate TOC measurements

UV Photo-oxidation 185/254 nm

- High performance UV assembly reliably reduces the content of microorganisms and their metabolites
- UV oxidation also reduces organic compounds in the water to ultra-low levels

Leak detection

- Internal leaks can be detected and an error displayed

Ready-to-use

- Wall bracket, UV lamp, ultrapure cartridge, ultrafilter (select models), sterile filter, all included in one part number

Measurement of conductivity/resistivity

- Conductivity cells are carefully calibrated prior to each measurement via built-in reference resistance with cell constants at 0.01 cm⁻¹
- Temperature measurements are made by a platinum chip sensor with ±0.1 °C accuracy

Quick-connect cartridge replacement

- Aquastop quick-connect capability enables cartridge replacement within seconds even mid-operation

Exact dosing

- Electronic dosing for fully automatic volume control of 0.01-65 L with <2 % accuracy

Full control extreme flexibility

GLP-compliant documentation

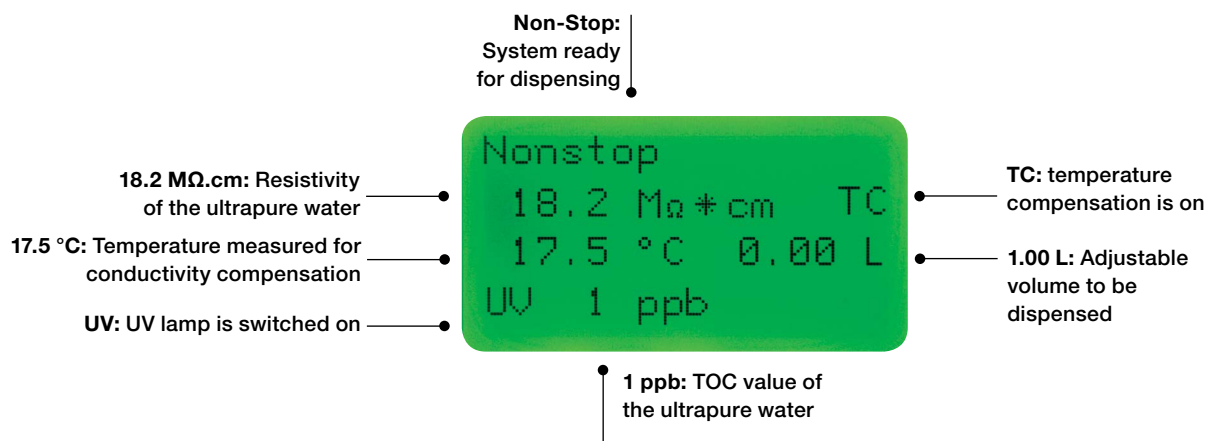
- Real-time clock and code-protected operating system prevents unauthorized changes to system settings
- RS-232 interface with adjustable send-interval for safe data transfer of all measured data, faults, date and time to a PC computer or log printer
- Digital microprocessor control automatically monitors and stores faults from the last four weeks
- USP-compliant conductivity measurement with temperature compensation can be switched on or off

Quick Look Comparison

	GenPure xCAD Plus UV system	GenPure xCAD Plus UV/UF system	GenPure xCAD Plus UV - TOC system	GenPure xCAD Plus UV/UF - TOC system
Applications	Inorganic and organic trace analysis, HPLC, ICP-MS, IC, TOC analysis	Molecular biology, PCR, DNA, monoclonal antibodies, cell culture media	Chemical analysis (trace analysis, HPLC, IC, ICP-MS, TOC measurements)	Biosciences (cell and tissue culture media, PCR, DNA, monoclonal antibodies)
Resistance at 25 °C, MΩ.cm	18.2	18.2	18.2	18.2
Conductivity, μS/cm	0.055	0.055	0.055	0.055
TOC, ppb	1-5	1-5	1-5	1-5
RNase, ng/ml	n/a	<0.003	n/a	<0.003
DNase, pg/μl	n/a	<0.4	n/a	<0.4
Bacteria, CFU/mL	<0.01	<0.01	<0.01	<0.01
Particles, 0.22 μm/mL	<1	<1	<1	<1
Endotoxins, EU/mL	n/a	<0.001	n/a	<0.001
TOC monitor	n/a	n/a	standard	standard
Flow rate, L/min	up to 2	up to 2	up to 2	up to 2

Visible ultrapure water quality

Important measured values of conductivity/resistivity and TOC are easy to see during dispensing.



Barnstead GenPure xCAD Plus water purification system



Our Barnstead GenPure xCAD Plus remote dispenser shown left.
The GenPure system is under the bench
(not pictured) freeing up valuable bench space.



For increased flexibility, add up to two more xCAD Plus remote dispensers.

Barnstead GenPure xCAD Plus remote dispenser – full system control in a compact design

- xCAD is short for “Extended Control and Dispenser.” The system provides more flexibility for ultrapure water dispensing with an action radius of 32 inches (80 cm).
- Ergonomic dispensing arm provides precise volume dosing at the press of a button.
- Turned, height adjusted or extended towards your vessel, you’ll appreciate the flexibility of this dispenser.
- One-of-a-kind design provides access to all system controls at your fingertips.
- Specify bench-top or wall-mount xCAD Plus dispenser for the installation option of your choice. The small footprint of the bench-top xCAD Plus allows for more bench space while the wall-mount version completely frees up horizontal workspace.
- Adjustable controller makes handling more practical and provides a clear view of critical settings.
- In addition to flexible xCAD Plus installation options, GenPure systems can also be installed under the bench or wall-mounted with included mounting brackets up to 2.5 m (8 ft) away from xCAD Plus dispenser.



Complete water purification system control via the Barnstead GenPure xCAD Plus remote dispenser

xCAD Dimensions	
	Dimensions W x D x H in (mm)
Benchtop xCAD	10.2 x 21 x 28.5 (260 x 530 x 725)
Wall mount xCAD	10.2 x 21 x 25.8 (260 x 530 x 655)

Feed Water Requirements*	
Source	Potable tap water, pretreated by reverse osmosis, ion exchange or distillation
Feed water conductivity, $\mu\text{S/cm}$	<2
TOC, ppb	max 50
Bacteria count, CFU/mL	<100
Turbidity, NTU	<1.0
Temperature, °C	2-35
Pressure, psi (bar)	1.4-87 (0.1-6)

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

Product Specifications					
Flow rate	Operating pressure min/max	Electrical requirements	Power consumption	Feed water connector	Dimensions W x D x H in (mm)
up to 2 L/min	29-87 psi (2-6 bar)	90-240 V, 50/60 Hz	0.1 kW	$\frac{3}{4}$ " NPT	14.6 x 13 x 24 (372 x 330 x 615)

System Options		GenPure xCAD Plus UV	GenPure xCAD Plus UV/UF	GenPure xCAD Plus UV - TOC	GenPure xCAD Plus UV/UF - TOC
GenPure System* All systems include a wall bracket, ultrapure polisher cartridge, sterile 0.2 μm filter, UV lamp and/or ultrafilter where applicable	with xCAD Plus bench version	50136152	50136151	50136153	50136146
	with xCAD Plus wall version	50136170	50136169	50136171	50136172

Optional Accessories					
xCAD Plus Remote Dispenser Additional remote dispenser for increased flexibility. Up to 2 additional dispensers can be added to a single system.	bench version	50136494	50136494	50136494	50136494
	wall version	50136505	50136505	50136505	50136505
Disinfection cartridge Reusable cartridge needed to clean the water purification system. Use with CMX25 cleaning solution.		09.2201	09.2201	09.2201	09.2201
Pressure Regulator Recommended where incoming feed pressure is above the specified range		50155462	50155462	50155462	50155462
Printer Utilizes RS-232 interface for safe documentation of all measured values and faults with date and time in compliance with GLP guidelines		STARA-106	STARA-106	STARA-106	STARA-106

Replacement Consumables					
Ultrapure polisher cartridge		09.2005	09.2005	09.2005	09.2005
Sterile filter, 0.2 μm		09.1003	09.1003	09.1003	09.1003
Ultrafilter		n/a	50133980	n/a	50133980
UV lamp		09.2002	09.2002	09.2002	09.2002
Cleaning solution		CMX25	CMX25	CMX25	CMX25



Barnstead GenPure Pro water purification system

The Barnstead GenPure Pro system delivers ultrapure 18.2 M Ω .cm water with consistent quality. Suitable for the most demanding laboratory applications, this ultrapure water system will deliver water from a small footprint. The GenPure Pro system can be used on a laboratory bench or on a wall. The new flexible dispenser offers maximum freedom while dispensing ultrapure water up to 24 inches (60 cm) away from the unit.

All Barnstead GenPure systems exceed international standards ASTM Barnstead Type I, ISO 3696 Grade 1, ASTM D 1193 and CLSI.

Dispensing for a variety of tasks

- New flexible dispenser offers a radius of 24 inches (60 cm) from the system for filling larger vessels or glassware washing



Applications Include:

Molecular Biology and Microbiology

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

Analytical Chemistry

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

Leak detection

- Internal leaks can be detected and an error displayed

Integrated feed water monitoring

- An additional measuring cell monitors feed water conductivity. Any exceeding of the limiting value is immediately displayed to maximize cartridge life.

Online TOC measurement with UV intensity monitoring

- Real-time TOC monitoring for continual measurement of organic substances present in the water
- Continuous monitoring of UV intensity removes the risk of false TOC values due to diminished UV intensity
- Fault message alerts user when the UV lamp intensity is no longer sufficient for accurate TOC measurements

UV Photo-oxidation 185/254 nm

- High performance UV assembly reliably reduces the content of microorganisms and their metabolites
- UV oxidation also reduces organic compounds in the water to ultra-low levels

Ready-to-use

- Wall bracket, UV lamp, ultrapure cartridge, ultrafilter (select models), sterile filter, all included in one part number
- Leak detection standard and will alert user to leaks

Measurement of conductivity/resistivity

- Conductivity cells are carefully calibrated prior to each measurement via built-in reference resistance with cell constants at 0.01 cm⁻¹
- Temperature measurements are made by a platinum chip sensor with ± 0.1 °C accuracy

Quick-connect cartridge replacement

- Aquastop quick-connect capability enables cartridge replacement within seconds even mid-operation

Exact dosing

- High precision POM draw-off valve for dispensing with sterile filter



Push button simplicity for easy dispensing

Flexible dispensing precise purity monitoring

GLP-compliant documentation

- Real-time clock and code-protected operating system prevents unauthorized changes to system settings
- RS-232 interface with adjustable send interval for safe data transfer of all measured data, faults, date and time to a PC computer or log printer
- Digital microprocessor control automatically monitors and stores faults from the last four weeks

- USP-compliant conductivity measurement with temperature compensation can be switched on or off

Tilting Control Panels for Easy Viewing

- Ergonomically designed controller tilts for ease-of-use and better visibility
- Illuminated four-line alpha-numeric display

Quick Look Comparison				
	GenPure Pro UV system	GenPure Pro UV/UF system	GenPure Pro UV - TOC system	GenPure Pro UV/UF - TOC system
Applications	Inorganic and organic trace analysis, HPLC, ICP-MS, IC, TOC analysis	Molecular biology, PCR, DNA, monoclonal antibodies, cell culture media	Chemical analysis (trace analysis, HPLC, IC, ICP-MS, TOC measurements)	Biosciences (cell and tissue culture media, PCR, DNA, monoclonal antibodies)
Resistance at 25 °C, MΩ.cm	18.2	18.2	18.2	18.2
Conductivity, μS/cm	0.055	0.055	0.055	0.055
TOC, ppb	1-5	1-5	1-5	1-5
RNase, ng/ml	n/a	<0.003	n/a	<0.003
DNase, pg/μl	n/a	<0.4	n/a	<0.4
Bacteria, CFU/mL	<0.01	<0.01	<0.01	<0.01
Particles, 0.22 μm/mL	<1	<1	<1	<1
Endotoxins, EU/mL	n/a	<0.001	n/a	<0.001
TOC monitor	n/a	n/a	standard	standard
Flow rate, L/min	up to 2	up to 2	up to 2	up to 2

Barnstead GenPure Pro water purification system



Convenient dispensing for a variety of applications possible with flexible dispenser radius



Quick-connect cartridge replacement



Intuitive display shows important system parameters



Exact dosing from Barnstead GenPure Pro water purification system with one touch dispensing

Feed Water Requirements*

Source	Potable tap water, pretreated by reverse osmosis, ion exchange or distillation
Feed water conductivity, $\mu\text{S}/\text{cm}$	<2
TOC, ppb	max 50
Bacteria count, CFU/mL	<100
Turbidity, NTU	<1.0
Temperature, $^{\circ}\text{C}$	2-35
Pressure, psi (bar)	1.4-87 (0.1-6)

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

Product Specifications

Flow rate	Operating pressure min/max	Electrical requirements	Power consumption	Feed water connector	Dimensions W x D x H in (mm)
up to 2 L/min	29-87 psi (2-6 bar)	90-240 V, 50/60 Hz	0.1 kW	3/4" NPT	18.6 x 13 x 24.2 (472 x 330 x 615)

System Options	GenPure Pro UV	GenPure Pro UV/UF	GenPure Pro UV - TOC	GenPure Pro UV/UF - TOC
GenPure Pro System* All systems include a wall bracket, ultrapure polisher cartridge, sterile 0.2 μm filter and UV lamp and/or ultrafilter where applicable	50131952	50131950	50131948	50131922
Optional Accessories				
Disinfection cartridge Reusable cartridge needed to clean the water purification system. Use with CMX25 cleaning solution.	09.2201	09.2201	09.2201	09.2201
Pressure Regulator Recommended where incoming feed pressure is above the specified range	50155462	50155462	50155462	50155462
Printer Utilizes RS-232 interface for safe documentation of all measured values and faults with date and time in compliance with GLP guidelines	STARA-106	STARA-106	STARA-106	STARA-106
Replacement Consumables				
Ultrapure polisher cartridge	09.2005	09.2005	09.2005	09.2005
Sterile filter, 0.2 μm	09.1003	09.1003	09.1003	09.1003
Ultrafilter	n/a	50133980	n/a	50133980
UV lamp	09.2002	09.2002	09.2002	09.2002
Cleaning solution	CMX25	CMX25	CMX25	CMX25

*  

Barnstead GenPure water purification system

The Barnstead GenPure system delivers ultrapure 18.2 M Ω .cm water with consistent quality for the most demanding and sensitive applications.

All Barnstead GenPure systems exceed international standard ASTM Barnstead Type I, ISO 3696 Grade 1, ASTM D1193 and CLSI-CLRW.

Integrated feed water monitoring

- An additional measuring cell monitors feed water conductivity. Any exceeding of the limiting value is immediately displayed maximizing cartridge life



Applications Include:

Molecular Biology and Microbiology

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

Analytical Chemistry

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

UV Photo-oxidation 185/254 nm

- High performance UV assembly reliably reduces the content of microorganisms and their metabolites
- UV oxidation also reduces organic compounds in the water to ultra-low levels

Ready-to-use

- Wall bracket, UV lamp, ultrapure cartridge, ultrafilter, sterile filter, all included with one part number

Measurement of conductivity/resistivity

- Conductivity cells are carefully calibrated prior to each measurement via built-in reference resistance with cell constants at 0.01 cm⁻¹
- Temperature measurements are made by a platinum chip sensor with ± 0.1 °C accuracy

Quick-connect cartridge replacement

- Aquastop quick-connect capability enables cartridge replacement within seconds even mid-operation

GLP-compliant documentation

- Real-time clock and code-protected operating system prevents unauthorized changes to system settings
- RS-232 interface with adjustable send-interval for safe data transfer of all measured data, faults, date and time to a PC computer or log printer
- Digital microprocessor control automatically monitors and stores faults from the last four weeks
- USP-compliant conductivity measurement with temperature compensation can be switched on or off

Tilting control panels for easy viewing

- Ergonomically designed controller tilts for optimal key pressing and easy readability
- Illuminated four-line alpha-numeric display

Basic configuration with options to meet your needs

Quick Look Comparison	
	GenPure UV/UF system
Applications	Molecular biology, PCR, DNA, monoclonal antibodies, cell culture media
Resistance at 25 °C, MΩ.cm	18.2
Conductivity, μS/cm	0.055
TOC, ppb	1-5
RNase, ng/ml	<0.003
DNase, pg/μl	<0.4
Bacteria, CFU/mL	<0.01
Particles, 0.22 μm/mL	<1
Endotoxins, EU/mL	<0.001
TOC monitor	n/a
Flow rate, L/min	Up to 2



Barnstead GenPure water purification system



Barnstead GenPure systems feature tilting control panels for optimal viewing



Easy cartridge replacement

Feed Water Requirements*

Source	Potable tap water, pretreated by reverse osmosis, ion exchange or distillation
Feed water conductivity, $\mu\text{S}/\text{cm}$	<2
TOC, ppb	max 50
Bacteria count, CFU/mL	<100
Turbidity, NTU	<1.0
Temperature, $^{\circ}\text{C}$	2-35
Pressure, psi (bar)	1.4-87 (0.1-6)

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

Product Specifications

Flow rate	Operating pressure min/max	Electrical requirements	Power consumption	Feed water connector	Dimensions W x D x H in (mm)
up to 2 L/min	29-87 psi (2-6 bar)	90-240 V, 50/60 Hz	0.1 kW	$\frac{3}{4}$ " NPT	14.6 x 13 x 24.2 (372 x 330 x 615)

System Options

	GenPure UV/UF
GenPure system* All systems include a wall bracket, ultrapure polisher cartridge, sterile 0.2 μm filter, UV lamp and/or ultrafilter where applicable	50131217
Optional Accessories	
Disinfection cartridge Reusable cartridge needed to clean the water purification system. Use with CMX25 cleaning solution.	09.2201
Pressure Regulator Recommended where incoming feed pressure is above the specified range	50155462
Printer Utilizes RS-232 interface for safe documentation of all measured values and faults with date and time in compliance with GLP-guidelines.	STARA-106
Replacement Consumables	
Ultrapure polisher cartridge	09.2005
Sterile filter, 0.2 μm	09.1003
Ultrafilter	50133980
UV lamp	09.2002
Cleaning solution	CMX25

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Find out more at thermofisher.com/purewater

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