Meshindia
Analytics Private Limited

PUREDROP -WATER PURIFICATION SYSTEMS

2025

The PUREDROP Series Offers A Versatile Range Of Ultrapure Water Systems Tailored For Laboratory Applications.

www.meshindiaanalytics.com

Introduction

The PUREDROP Series offers a versatile range of ultrapure water systems tailored for laboratory applications. Each model is designed to meet specific user needs, from small-volume HPLC use to multi-grade water production for regulated industries.

The industry's most complete water purification solution for highly regulated applications.

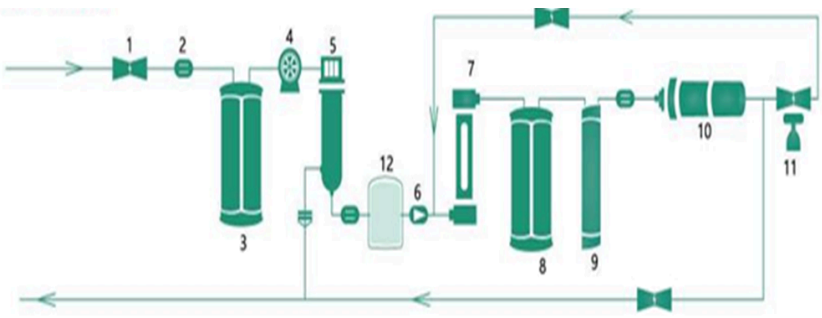
When your application requires the ultimate in water purity, PUREDROP provides the perfect solution. Consistently delivering water purity of 18.2 MΩ·cm and underpinned by advanced technologies, the PUREDROP enables you to focus on attaining accurate results while ensuring an uninterrupted workflow.

Typical Scientific Applications

- ICP-MS (Inductively Coupled Plasma Mass Spectrometry)
- Molecular biology techniques
- Ultra-trace analysis
- Electrochemistry
- Electrophoresis
- GFAAS (Graphite Furnace Atomic Absorption Spectrophotometry)
- HPLC
- IC (Ion Chromatography)
- ICP-AES (Inductively Coupled Plasma Atomic Emission Spectrometry)
- Mammalian and bacterial cell culture
- Molecular biology
- Plant tissue culture
- Qualitative analysis

Features of Mini

- ·Many Laboratories require ultrapure water everyday- for HPLC or for other instrumental analysis- but only as small volumes at a time, up to a total of a few liters at the most.
- ·However, this is no reason to do without professional, freshly prepared ultrapure water and buy expensive HPLC water. After all with the repeated taking of small volumes from an HPLC water container, the quality of the water and the TOC-value no longer fulfill the specifications. The ultrapure water is no longer ultrapure!
- ·Always fresh. Always available in the volume required. Always with the required quality. And always for only a few cents per liter!
- ·Compact and efficient for labs requiring small volumes.
- ·Fresh ultrapure water on demand, ideal for HPLC.
- · Internal 6L tank — no external tank needed.
- ·Cost-effective alternative to bottled HPLC water.



1. Solenoid Valve	2. Conductivity Sensor
3. Pre-treatment Module	4. Boost Pump
5. RO Module	6. Ball Valve
7. Dual Wave UV Cartridge	8. Purification Module
9. Ultra-Purification Module	10. Micro-Filtration Cartridge
11. Point-of-use Filter	12. Internal Water Reservoir - 6L

PUREDROP Mini - Technical Specifications

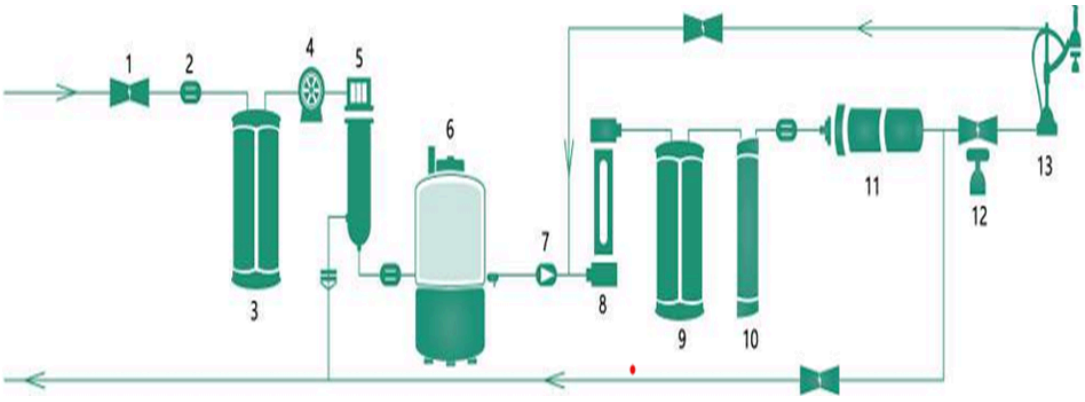
Model	PUREDROP Mini
Feed Water Requirement	
Source	Tap water
Conductivity*	<2000 µs/cm
Hardness**	<450 ppm as $CaCO_3$
Pressure	0.05–0.5 MPa (7–72 psi)
Temperature	5–40°C
Purification Water (Class III)	
Ionic Rejection	>95%
Bacteria Rejection	>99%
Conductivity	1–20 µs/cm (RO2–5 µs/cm)
Productivity Rate	30 L/h
Ultra-purification Water (Class I)	
Resistivity at 25°C	18.2 MΩ.cm
Conductivity at 25°C	0.055 µs/cm
TOC Level***	1–5 ppb
Endotoxin (Pyrogens)	N/A
Particulate (>0.02 µm)	<1 pc/ml
Bacteria***	<0.1 cfu/ml
Rnase/Dnase**	N/A
Ultra-purification Water (Class I)	
Manual dispense flow rate	1.2–1.5 L/min
Automatic dispense volume	100–60000 ml
Electrical Requirements	
Electrical Voltage	220V ±10%
Electrical Frequency	50Hz
Net Weight - Main units	32 kg
Net Weight - Water tank	N/A
External Dimensions (Main units)	315 × 525 × 570 mm
External Dimensions (Water tank)	N/A

- If feed water quality is poor (Conductivity >1000 µs/cm), strengthened pretreatment module and RO-2 type is highly recommended
- When hardness of feed water is high (>450 ppm as $CaCO_3$), 0.5T water softener is recommended
- Dual wave UV module need to be adopted. Also dependent on feed water, recommended feed TOC <30 ppb

Features of PUREDROP-N

- The industry's most complete water purification solution for highly regulated applications.
- When your application requires the ultimate in water purity, PUREDROP N Series provides the perfect solution. Consistently delivering water purity of 18.2MΩ.cm and underpinned by the advanced technologies, the PUREDROP N enables you to focus on attaining accurate results while ensuring an uninterrupted work flow.
- Designed for highly regulated environments.
- Dual-wave UV ensure <5ppb TOC.
- Remote dispensing to reduce contamination.

1 Solenoid Valve	2 Conductivity Sensor
3 Pre-treatment Module	4 Boost Pump
5 RO Module	6 Water Tank
7 Ball Valve	8 Dual Wave UV Cartridge
9 Purification Module	10 Ultra-Purification Module
11 Ultra-Filtration Cartridge	12 Point-Of-Use Filter
13 Remote Water Dispenser	



PUREDROP - N Specifications

Specification	Details
Model	**PUREDROP N 15UV**
Feed Water Requirement	
Source	Tap water
Conductivity*	<2000us/cm
Hardness**	<450ppm as CaCO3
Pressure	0.05~0.5MPa (7~72psi)
Temperature	5~40°C
Purification Water (Class III)	
Ionic Rejection	>95%
Bacteria Rejection	>99%
Conductivity	1~20us/cm (RO-2 5us/cm)
Productivity Rate	15L/h
Ultra-purification Water (Class I)	
Resistivity At 25°C	18.2MΩ.cm
Conductivity At 25°C	0.055us/cm
TOC Level***	1~5ppb
Endotoxin (Pyrogens)****	<0.001 EU/ml
Particulate (≥0.02um)	<1pc/ml
Bacteria***	<0.1cfu/ml
Rnase / Dnase**	N/A
Manual dispense flow rate	1.5~2.0L/min
Automatic dispense volume	100~60000ml
Electrical Requirements	
Electrical Voltage	110V/220V ±10%
Electrical Frequency	50Hz/60Hz
Net Weight	
Main units	24kg
Water tank (30L)	7kg
External Dimensions (W×D×H)	
Main units	315×525×570mm
Water tank (30L)	380×380×595mm

- If feed water quality is poor (Conductivity > 1000 μs/cm), strengthened pretreatment module and RO-2 type is highly recommended
- When hardness of feed water is high (> 450 ppm as $CaCO_3$), 0.5 T water softener is recommended
- Dual wave UV module needs to be adopted. Also dependent on feed water, recommended feed TOC < 30 ppb
- Ultra-filtration module needs to be adopted. Feed water needs to be satisfied as above

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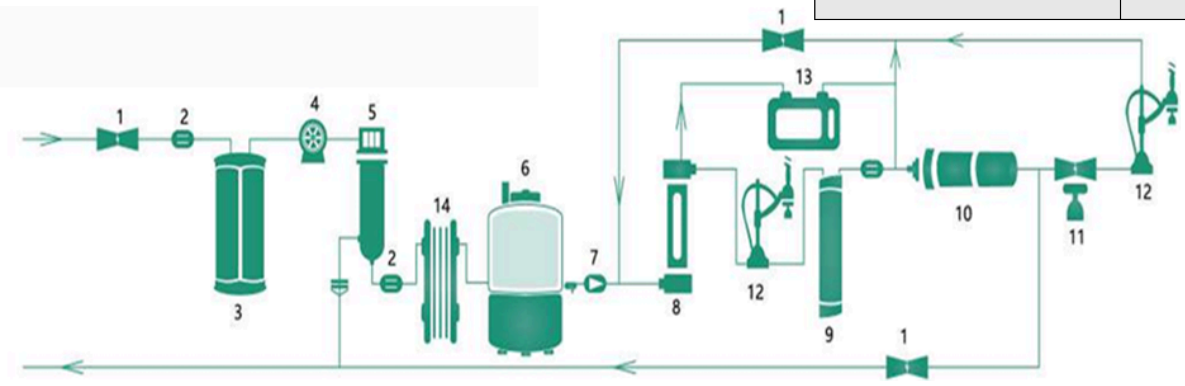
PUREDROP + - NE/NET

Features of PUREDROP + - NE/NET

- The industry's most complete water purification solution for highly regulated applications.
- When your application requires the ultimate in water purity, PUREDROP-NE Series provides the perfect solution. Consistently delivering water purity of 18.2MΩ.cm and underpinned by the advanced technologies, the PUREDROP-NE enables you to focus on attaining accurate results while ensuring an uninterrupted work flow.
- Delivers Class I, II, and III water in one system.
- Class II high-purity stage for intermediate-grade use.
- Enhanced organic compound removal.
- Ideal for research centers with diverse purity needs.
- Dual-wave UV and TOC monitoring ensure <5ppb TOC.
- Includes EDI and ultrafiltration modules for maximum purity.

1 Solenoid Valve	2 Conductivity Sensor
3 Pre-treatment Module	4 Boost Pump
5 RO Module	6 Water Tank
7 Ball Valve	8 Dual Wave UV Cartridge
9 Ultra - Purification Module	10 Ultra-Filtration Cartridge
11 Point-Of-Use Filter	12 Remote Water Dispenser
13 TOC monitor cell*	14 EDI Module



PUREDROP + - NE/NET Specifications

Feed Water Requirement

Parameter	Specification
Source	Tap water
Conductivity*	<2000 µs/cm
Hardness**	<450 ppm as $CaCO_3$
Pressure	0.05–0.5 MPa (7–72 psi)
Temperature	5–40 °C

Purification Water (Class III)

Parameter	Specification
Ionic Rejection	≥95%
Bacteria Rejection	≥99%
Conductivity	1–20 µs/cm
Productivity Rate	30 L/h

High Quality Purification Water (Class II)

Parameter	Specification
Resistivity at 25 °C	10 MΩ·cm
TOC	<30 ppb
Dissolved Organic	<0.1 ppm
Productivity Rate	15 L/h

Ultra-purification Water (Class I)

Parameter	Specification
Resistivity at 25 °C	18.2 MΩ·cm
Conductivity at 25 °C	0.055 µs/cm
TOC Level***	1–5 ppb
Endotoxin (Pyrogens)****	<0.001 EU/ml
Particulate (≥0.02 µm)	<1 pc/ml
Bacteria**	<0.1 cfu/ml
Rnase / Dnase**	Free

Dispense Information

Parameter	Specification
Manual Dispense Flow Rate	1.5–2.0 L/min
Automatic Dispense Volume	100–60000 ml

Electrical Requirements

Parameter	Specification
Electrical Voltage	110 V / 220 V ± 10%
Electrical Frequency	50 Hz / 60 Hz

Packing Information

Parameter	Specification
Net Weight - Main units	35 kg
Net Weight - Water tank (30 L)	7 kg
External Dimensions (W×D×H) - Main units	315×525×570 mm
External Dimensions (W×D×H) - Water tank (30 L)	380×380×595 mm

- If feed water quality is poor (Conductivity > 1000 µs/cm), strengthened pretreatment module and RO-2 type is highly recommended
- When hardness of feed water is high (> 450 ppm as $CaCO_3$), 0.5 T water softener is recommended
- Dual wave UV module needs to be adopted. Also dependent on feed water, recommended feed TOC < 30 ppb
- Ultra-filtration module needs to be adopted. Feed water must meet the above requirements

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PUREDROP - Water Purification Systems

Smart Comparison Table

Feature	Puredrop Mini	Puredrop N	Puredrop NE/NET
Water Grades	Class III, I	Class III, I	Class III, II, I
Ultrapure Water Quality	18.2 MΩ·cm, TOC 1–5 ppb	18.2 MΩ·cm, TOC 1–5 ppb	18.2 MΩ·cm, TOC 1–5 ppb
High Purity (Class II) Stage	✗	✗	✓ 10 MΩ·cm, TOC <30 ppb
Output Flow Rate (Manual)	1.2–1.5 L/min	1.5–2.0 L/min	1.5–2.0 L/min
Productivity Rate (Class III)	30 L/h	30 L/h	30 L/h
Productivity Rate (Class II)	N/A	N/A	15 L/h
TOC Monitoring	✗	✗	✓
EDI Module	✗	✗	✓
Endotoxin Removal	✗	✓	✓
Particulate Removal (≥0.02µm)	✓	✓	✓
Bacteria Removal	<0.1 cfu/ml	<0.1 cfu/ml	<0.1 cfu/ml
Resistivity @25°C	18.2 MΩ·cm	18.2 MΩ·cm	18.2 MΩ·cm
Conductivity @25°C	0.055 µS/cm	0.055 µS/cm	0.055 µS/cm
Manual Dispense Volume	1.2–1.5 L/min	1.5–2.0 L/min	1.5–2.0 L/min
Automatic Dispense Volume	100–60000 ml	100–60000 ml	100–60000 ml
Operating Pressure	0.05–0.5 MPa (7–72 psi)	0.05–0.5 MPa (7–72 psi)	0.05–0.5 MPa (7–72 psi)
Operating Temperature	5–40°C	5–40°C	5–40°C
Tank Capacity	Internal 6L	External 30L	External 30L
Best For	HPLC Labs, Small Sample Labs	Pharma, Molecular Biology Labs	Multidisciplinary Research Labs

PUREDROP - Water Purification Systems

Advanced Purity Technologies - EDI & TOC Monitoring EDI Module

EDI Module (Electrode ionization)

Working Principle :

- Combines ion exchange resins with ion-selective membranes and a direct electric current.
- The resin removes ions from water; the electric field moves these ions through membranes into a waste stream.
- This continuously regenerates the resin without chemical regeneration, making the process eco-friendly and consistent.

Benefits:

- Continuous ultrapure water production (up to 18.2 MΩ·cm) without downtime for regeneration.
- Eliminates chemical handling (no acids/alkalis for resin regeneration).
- Long service life and reduced operating costs.
- Stable performance for high-demand labs or industrial use.

TOC Monitoring Facility

Working Principle :

- Water passes through a UV oxidation chamber (usually 185 nm wavelength).
- The UV light oxidizes organics into CO_2, which dissolves into the water as carbonic acid.
- A conductivity sensor measures the increase in conductivity, which is directly proportional to TOC content.

Benefits:

- Real-time quality control for organics in purified water.
- Detects early contamination from bacterial by-products, leaching from components, or feed water issues.
- Critical for GLP/GMP compliance and meeting USP <643> / EP 2.2.44 standards.
- Enhances analytical accuracy for sensitive assays.

Meshindia Analytics Private Limited

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