



UP 20



Version: A1.1

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Introduction

Thank you for your decision to order Drop Analytics water system.

This document has included important information about lab water system installation, operation and maintenance. We strongly recommend that this document should be read carefully before any operation with lab water system

In case you got any question or issue during installation or operation, please contact +86-021-31075991 for technical support

System overview

With tap water inlet, using the innovative automatic control system and LCD display, embedding new purification cartridges with patented structure, stable and reliable single RO system with higher ion rejection rate, and DI ion-exchange cartridges with larger capacity, equipping with built-in 1.8-liter pressure water tank.

System output: 20, 40, 60 liters/h. It can simultaneously produce ultrapure water (18.2MΩ.cm) and single RO water. The quality of pure water fully meets or exceeds the requirements of water quality standard specified by ASTM D1193-06, GB/T 11446.1-2013, GB/T 33087-2016, GB/T 6682-2008, CP, EP, USP, JP, CAP, CLSI, etc.

We don't provide any promise for special applications. Customer should identify if water quality meet their requirement of application and take all responsibility of using.

Safety Information

Please always confirm that UP 20 lab water system is operating under instruction listed in this document, especially pressure and power feed requirement.

Do NOT open system top cover even after power off, unless under instruction of Drop Analytics engineer, or operated by Drop Analytics certified engineer. Plugs must be taken from socket to cut off power feed fully. Installation and maintenance should be carried by Drop Analytics certified engineers only.

Warning Do NOT open system top cover even after power off

Safety notes

Please note following circumstance during installation and operation

Please also follow all local HSE regulations

Item	Label	Definition
Safety level	Warning	Critical situation may cause system failure or serious injury
	Reminder	System failure may happen in some condition
	Note	Other important information may affect system performance
Power feed	Warning	Only attached power module can be used to connect UP 20 lab water system, and it must be provided from a properly grounded power socket with earth to neutral voltage not exceeding 2V AC, 50/60Hz. Please always turn off power and disconnect power module before replace any internal component
Pressure	Warning	There is high pressure in some tube of UP 20 lab water system. Always turn off water & power feed, release pressure before disconnecting any tube.
Sanitization chemical	Warning	
UV lamp	Warning	UV radiation is harmful to skin and eyes. Do NOT turn on UV lamp out of housing. Always turn off UV lamp power feed before replacement or maintenance. Contact local EHS or doctor if you feel discomfort after look at UV light with naked eyes.
Shipping or moving	Warning	System weight will significantly increase after all cartridges and tank are filled with water. Remove cartridges, drain tank, and disconnect all cable/tubing before shipping or moving
Cable connector	Reminder	Plug and play is not supported for all cable. Disconnect power feed before connect/disconnect.
Change consumable	Note	Venting is required after consumable is replaced.

Note

- Designed for indoor use only. Drain should be available within 1.5meter of installation
- Please contact Drop Analytics engineer in case additional accessories need to be added.
- Tap water pressure range should be 1.0-6.0 bard. Pressure regulator is required if feed water pressure is over 6bar
- Feed water temperature and environment temperature should not exceed 5-40°C.
- Please turn off feed valve and cut off power feed if system will be idle long time.
- Do not remove any component without authorization.
- Always check power requirement label on power adaptor before use
- Please turn off feed valve and power off unit, contact Drop Analytics immediately in case any system alarm
- Only Drop Analytics consumable and spare parts can be used.Warranty will be void if non-Drop Analytics spare parts or consumable is used
- Drop Analytics will reserve all rights to update system spec or function without prior notice
- Drop Analytics will not take any responsibility for any operation not listed in this document

Product Information

Spec

Name	Standard	Low TOC	Eliminating endotoxin	Synthesizing
Model	UP 20	UP 20	UP 20	UP 20
Production rate ¹	20 series: 20 L/hour, 40 series: 40 L/hour, 60 series: 60 L/hour			
Dispensing rate ²	Up to 2 liters/minute	Up to 2 liters/minute	Up to 2 liters/minute	Up to 2 liters/minute
Ultrapure water quality ³				
Resistivity (25°C) ⁴	18.2 MΩ.cm	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	0.055 μs/cm
TOC ⁵	5 ppb ⁶	2 ppb ⁷	5 ppb ⁶	2 ppb ⁷
Particles ⁸	<1 /ml (>0.2μm)	<1 /ml (>0.2μm)	<1 /ml (>0.2μm)	<1 /ml (>0.2μm)
Bacteria ⁹	0.01 CFU/ml	<0.01 CFU/ml	<0.01 CFU/ml	<0.01 CFU/ml
endotoxin ¹⁰	N/A	N/A	<0.001 EU/ml	<0.001 EU/ml
RNases ¹⁰	N/A	N/A	1 pg/ml	1 pg/ml
DNases ¹⁰	N/A	N/A	5 pg/ml	5 pg/ml
Protease ¹⁰	N/A	N/A	0.15 μg/ml	0.15 μg/ml
RO ^{1st} water quality ³				
Ion rejection rate	98%-99% (with new RO module)	98%-99% (with new RO module)	98%-99% (with new RO module)	98%-99% (with new RO module)
Organic rejection rate	>99%(MW>300 Dalton)	>99%(MW>300 Dalton)	>99%(MW>300 Dalton)	>99%(MW>300 Dalton)
Particles and bacteria rejection rate	>99%	>99%	>99%	>99%
Feed water requirements				
Water source type	Tap water	Tap water	Tap water	Tap water
Pressure	1-6 bar	1-6 bar	1-6 bar	1-6 bar
Temperature	5-40 °C	5-40 °C	5-40 °C	5-40 °C
Conductivity	<2000 μs/cm	<2000 μs/cm	<2000 μs/cm	<2000 μs/cm
Total hardness (In CaCO ₃)	<300 ppm	<300 ppm	<300 ppm	<300 ppm
TOC	<2000 ppb	<2000 ppb	<2000 ppb	<2000 ppb
Free chlorine	<3 ppm	<3 ppm	<3 ppm	<3 ppm
PH	4-10	4-10	4-10	4-10
Dissolved CO ₂	<40 ppm	<40 ppm	<40 ppm	<40 ppm

Power supply	100-240V,50/60Hz	100-240V,50/60Hz	100-240V,50/60Hz	100-240V,50/60Hz
Total Power	20 series: 48W, 40 series: 72W, 60 series: 120W			
Dimension (L×W×H)	Main host: 273×555×568mm	Main host: 273×555×568mm	Main host: 273×555×568mm	Main host: 273×555×568mm
weight	About 21KG	About 21KG	About 21KG	About 21KG
Standard configuration	Main host 1 set All cartridges 1 set Built-in 1.8-liter water tank 1 set	Main host 1 set All cartridges 1 set Built-in 1.8-liter water tank 1 set	Main host 1 set All cartridges 1 set Built-in 1.8-liter water tank 1 set	Main host 1 set All cartridges 1 set Built-in 1.8-liter water tank 1 set

1. Affected by inlet water quality, pressure, temperature and status of RO membrane
2. Affected by the tank status and terminal filter
3. The following values are typical and may vary depending on the nature and concentration of feed water contaminants
4. According to USP requirements, the resistivity can be displayed as a non-temperature-compensated value
5. Affected by the type of organics
6. Inlet TOC<1000ppb, follow professional operating procedures and correct sampling conditions
7. Inlet TOC<50ppb, follow professional operating procedures and correct sampling conditions
8. Equip with terminal microfilter and follow professional operating procedures and correct sampling conditions
9. Equip with terminal microfilter and follow professional operating procedures and correct sampling conditions
10. Equip with terminal ultrafilter and follow professional operating procedures and correct sampling conditions

Note:

RO permeate speed will have approximate 3% increase if feed water temperature is increased for 1 °C, and v.v. Feed water pressure/conductivity/recovery rate is same for this compare

RO membrane testing condition:

25°C, 1atm;

Conductivity:<400us/cm

Feed water temp:25°C

Feed water pressure:60psi

15% Recovery rate

Environment requirement

Working condition for UP 20 lab water system

Altitude	< 3000 MSL
Operating temperature	4 – 40°C
Shelf temperature	4 – 40°C
Location	Indoor use only
Pollution level	2
Humidity	Max 80% @ 31°C

System configuration

Unit	Product Name	P/N	Quantity	Apply for model
Pretreatment	Pretreatment cartridge C	HPC103	1	UP 20
RO module	RO 1 st stage cartridge S2	HPC302	1	UP 20
	RO 1 st stage cartridge S4	HPC304	1	UP 20
	RO 1 st stage cartridge S6	HPC306	1	UP 20
Polishing module	UP cartridge, general	HPC601	2	UP 20
	UP cartridge, low TOC	HPC602	2	UP 20
	Dual wavelength UV lamp	HPC703	1	UP 20
	UF cartridge	HPC709	1	UP 20
	TF final filter	HPC801	1	UP 20

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