

# GRADUS

Fully integrated pure and ultrapure intelligent water system. Superior quality of ultrapure and pure water is achieved directly from a tap water source.

Available in 2 configurations – deionization or EDI.

## Pre-Clean filter

High efficiency removal of colloids, particles, free chlorine and minerals for improved system performance.

## EDI module or DI module

Removes remaining ions for consistently superior quality pure water. EDI system requires no maintenance, ensuring low and predictable costs.

## Advanced reverse osmosis (RO)

Removes 97-99% contaminants including ions, particles, bacteria and organic molecules, reduces feed water consumption for 60%.

## Prior to water production

automatic rinsing of the RO membrane and the EDI module ensures that only the highest quality pure water enters the tank.



Attached G1 ultrapure water dispenser – delivers consistently ion free and low TOC ultrapure Grade 1 water.

Attached G2 pure water dispenser – delivers guaranteed quality Grade 2 pure water.

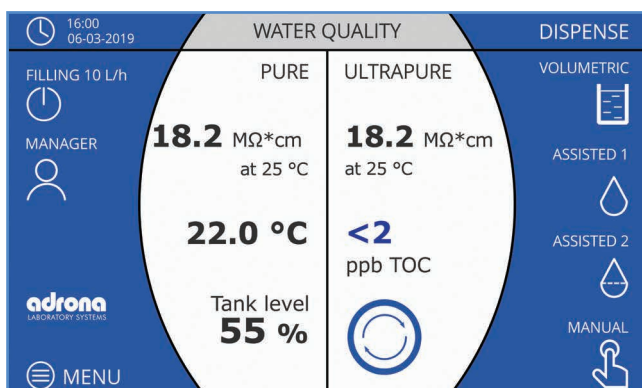
Within the tank, pure water quality is preserved by two built in features:

- Vent filter – provides protection against airborne contaminants
- Automatic Sanitization Module – with an integrated UVC regularly irradiates stored water and tank walls, preventing bacterial growth and biofilm formation.

Automatic recirculation of stored water through bactericidal UV lamp preserves water quality in the tank and ensures that high quality Grade 2 water is always on hand ready to use.

Polishing QC/QH Cartridge – removes ions and organic contaminants down to trace level.

Oxidation UV lamp – emitting 185 nm, photo-oxidises organic contaminants.



## Intuitive touchscreen display

- New electronics and software.
- 7" colour touchscreen.
- USB and Ethernet interface.
- Data storage on USB-C stick.
- Dispense report preparation.
- Monitoring the operation of the system.
- Touchscreen is suitable for use with gloves.
- Alerts and alarms are displayed on the main screen with a complete description of actions required.

## Specifications

	Trace (EDI)	LT (EDI)	Bio (EDI)
Grade 1 water resistivity at 25 °C	18.2 MΩ x cm	18.2 MΩ x cm	18.2 MΩ x cm
Grade 1 water conductivity at 25 °C	0.055 μS/ cm	0.055 μS/ cm	0.055 μS/ cm
Grade 2 water conductivity at 25 °C	≤0.1 μS/cm	≤0.1 μS/cm	≤0.1 μS/cm
TOC	< 10 ppb	<3 ppb*	<3 ppb*
RNase	-	-	< 0.01 ng/mL
DNase	-	-	< 4 pg/μL
Bacteria	<0.01 CFU/mL	<0.01 CFU/mL	<0.01 CFU/mL
Endotoxins	<0.15 EU/mL	<0.15 EU/mL	<0.001 EU/mL
Particles >0.22 μm	<1/ per mL	<1/ per mL	<0.05/ per mL
Nominal flow to storage tank		3/5/10/15 L/h**	
Volumetric dispense		0.01 L to 100 L***	
Adjustable dispense rate		From 2 L/min to drop-by-drop	
Dimensions (WxDxH), cm		50(33)x45x63	

\* In appropriate operating conditions <2 ppb, otherwise normally <3 ppb.

\*\* Depends on the configuration.

\*\*\*Depends on the tank volume.

## Consumables

Part number	Description	Replacement criteria	Comments
10411	Pre-filter Q w/ quick connectors	If the filters are clogged or every 6 months	
10311	Deionization Q w/ quick connectors	Grade 2 water conductivity is > 0.5 μm/cm constantly or every 12 months	Not applicable for EDI configuration
10033	Polishing QC w/ quick connectors	Grade 1 water conductivity is > 0.1 μm/cm constantly or every 12 months	Depends on water consumption amount
10037	Polishing QH w/ quick connectors	Grade 1 water conductivity is > 0.1 μm/cm constantly or every 12 months	Depends on water consumption amount
10017	Sterilization UV bulb	On average - every 2 years	"Bio" configuration
10018	Photooxidation UV bulb	On average - every 2 years	"LT" and "Bio" configuration
10013	Replacement 0.22 μm dispense filter	Every 6–12 months	"Trace" and "LT" configuration
10120	Replacement ultrafilter	Every 3–6 months	"Bio" configuration

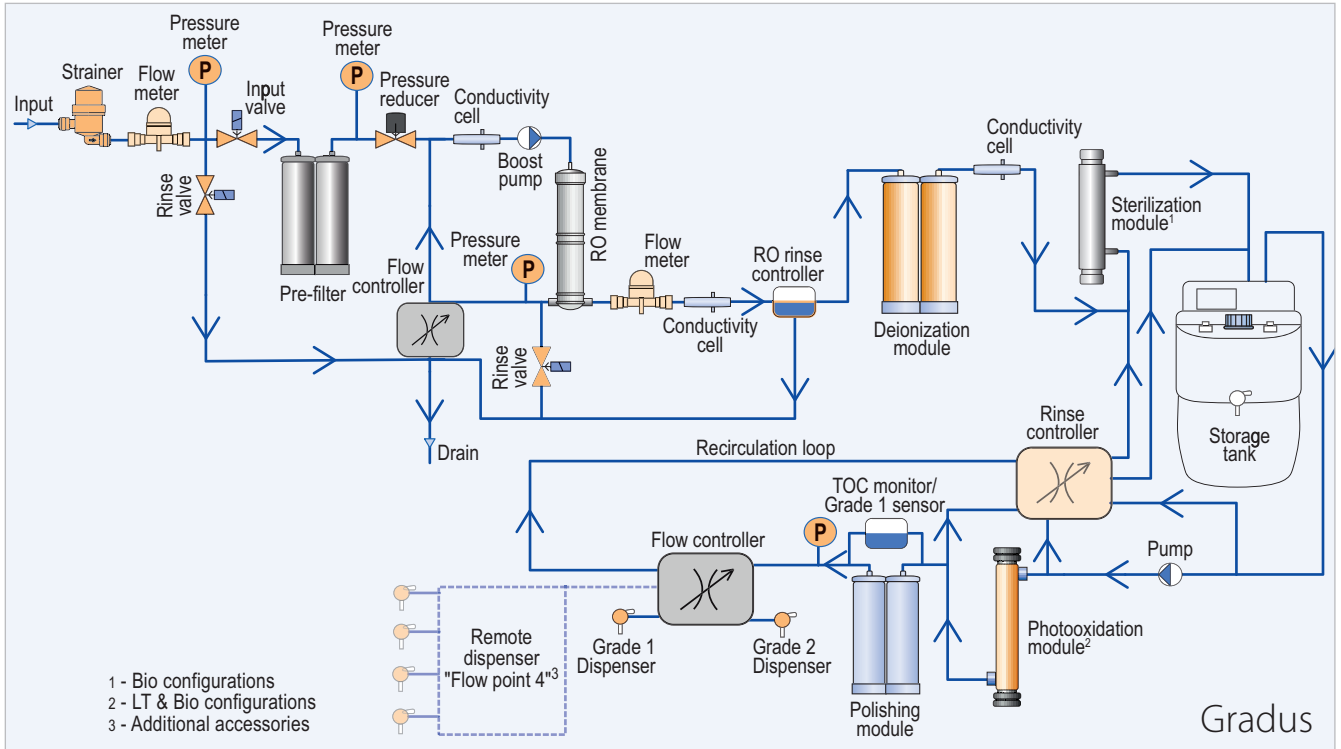
### Adjustable dispense flow regulation

- Water delivered up to 2 liters per minute keeps interruptions to minimum.
- Volumetric dispense allows fast reissue of set volumes.
- Volumetric control is available from 0.01 to 100 L.
- Drop-by-drop function.

### Convenient

- Installation process gives quick access to laboratory water.
- Simple and trouble-free replacement of consumables.
- Built-in calibration of conductivity sensors.

## Flow diagram



## Flow diagram

