

# TECHNICAL DATA SHEET

## U-PUR™



### GENERAL INFORMATION

#### U-PUR

<b>PURPOSE</b>	<ul style="list-style-type: none"> <li>The U-PUR is a metal-free reactor combining multiple UPW Polishing steps for TOC and H<sub>2</sub>O<sub>2</sub> traces removal.</li> <li>Designed and manufactured to meet the most challenging applications such as Semiconductors, Medical, Pharmaceutical, and all other industrial applications that require high quality Ultrapure Water.</li> </ul>
<b>INSTALLATION</b>	<ul style="list-style-type: none"> <li>The U-PUR is always skid mounted and shall be installed indoor on level ground.</li> <li>The installation and operation of the U-PUR must follow specific requirements.</li> <li>See operation manual or contact Ovivo for further information.</li> </ul>
<b>OPERATION</b>	<p>Operation and maintenance work has to be mainly executed by trained service technicians.</p> <ul style="list-style-type: none"> <li>Resins: lifetime depends on applications, running time, increasing Silica and/or Boron, etc.</li> <li>UV lamps: 12'000 hours*</li> <li>UV reactors: 4 to 5 years*</li> </ul> <p><i>*This period is an expected. The effective lifetime may vary depending on the operation conditions.</i></p>

### MATERIALS

A U-PUR is metal-free on wetted parts.

<b>VESSEL</b>	Outside Inside	Stainless Steel 316L Halar® coating (ECTFE)
<b>UV REACTOR</b>		Quartz (SiO <sub>2</sub> )
<b>GASKETS</b>		e-PTFE
<b>O-RING</b>		FKM
<b>SKID PIPING</b>		PVDF HP



# CHARACTERISTICS

U-PUR		08	40
TREATMENT CAPACITY	m <sup>3</sup> /h gpm	3 ... 10 13 ... 44	15 ... 50 65 ... 220
OPTIMIZED CAPACITY	m <sup>3</sup> /h gpm	8 35	40 176
SERVICE PRESSURE (MAX.)	bar psi	6 87	
DESIGN TEMPERATURE	°C °F	0 – 40 32 – 104	
OPERATING TEMPERATURE	°C °F	4 – 35 39 – 95	
NITROGEN PURGING	Nm <sup>3</sup> /h	8.7	42
NUMBER OF UV LAMPS (185+254 nm)		3	15
UV POWER	kW	1	5
POWER SUPPLY	V	230 as standard (120 on request)	
VESSEL DIAMETER	mm inch	450 17.7	1'000 39.4
TOTAL HEIGHT (MAX.)	mm inch	2'500 98.4	3'300 130
WEIGHT*	kg lbs	1'200 2'645	4'200 9'260
OPERATING WEIGHT	kg lbs	1'600 3'527	4'930 10'869

\*Water and resins weights are not included

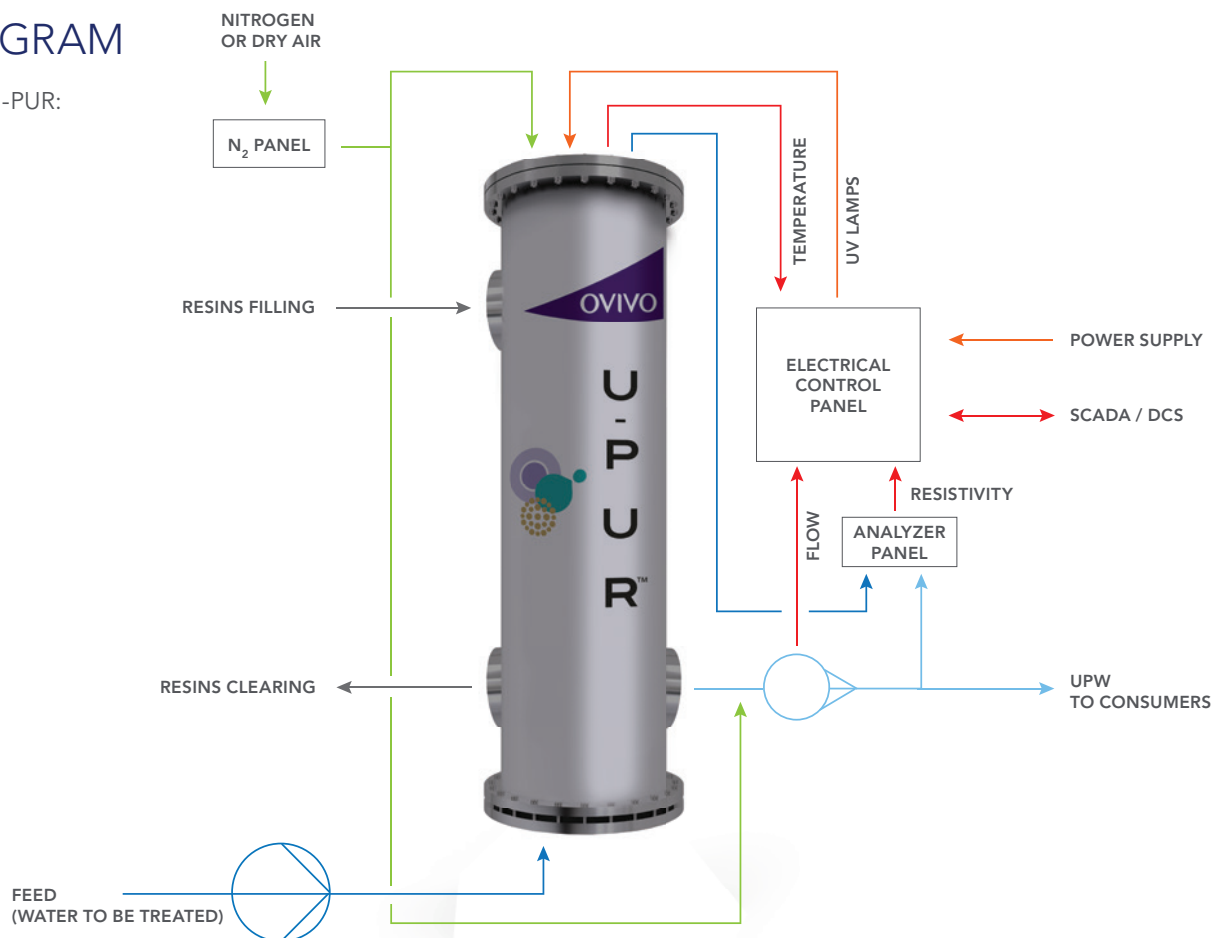
# UPW QUALITY

UPW		
H <sub>2</sub> O	%	99.999
RESISTIVITY	MΩ.cm	≥ 18.1
TOC	ppb	< 1
H <sub>2</sub> O <sub>2</sub> *	ppb	< 1
METAL	ppb	< 0.1
IONS	ppb	< 0.1
SILICA	ppb	< 0.1
GERMS	cfu/1'000ml	< 1

\*Only with the use of catalyst CatOX resin (U-PUR 3-in-1)

# FLOW DIAGRAM

Typical setup for U-PUR:



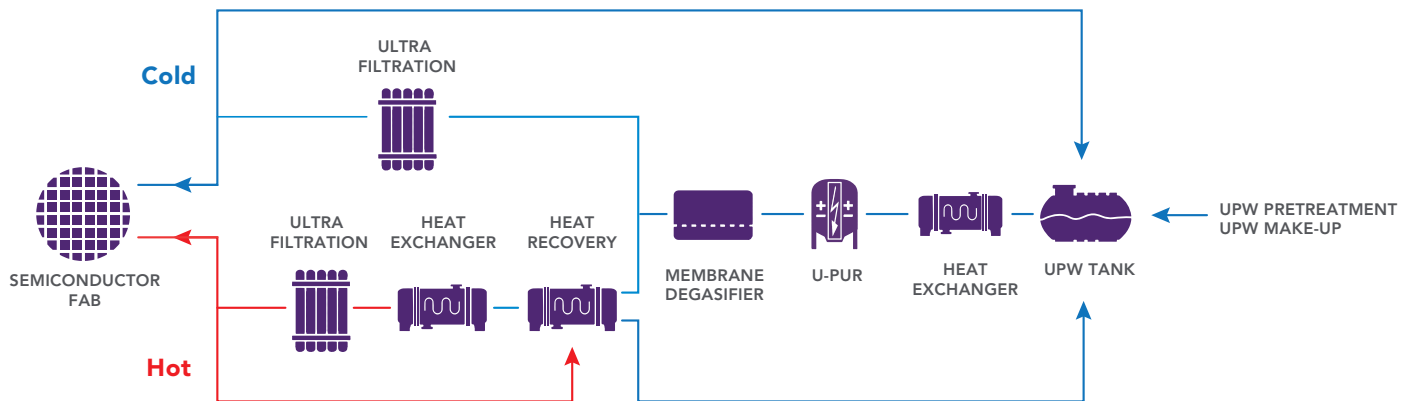
## CONNECTIONS

U-PUR		08	40
INLET & OUTLET CONNECTIONS	DN inch	50 2	100 4
RESIN FILLING PORTS - INLET	DN inch	65 2 ½	50 2
RESIN FILLING PORTS - OUTLET	DN inch	65 2 ½	100 4
DRAIN	DN inch	50 2	80 3
NITROGEN PURGE	DN inch	8 ¼	40 1 ½

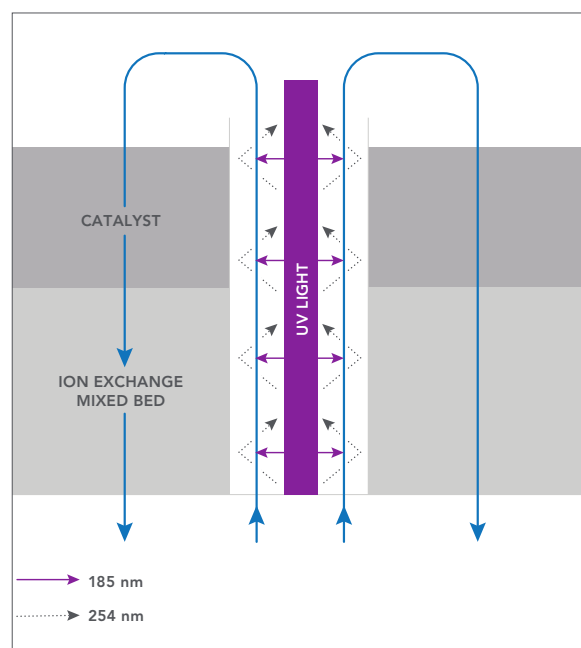
## RESINS

ION EXCHANGE RESINS			U-PUR 08	U-PUR 40
MIXED BED OvivUP™ - M020	Volume	l gal	100 26.4	500 132
	Layer	mm inch	689 27.1	715 28.1
CATALYST CatOX	Volume	l gal	60 15.9	300 79.2
	Layer	mm inch	413 16.3	429 16.9

## APPLICATION



## OPERATING PRINCIPLE



# QUALITY

## EU DECLARATION OF CONFORMITY

- Designed, developed and manufactured in accordance with the EU standards for health, safety and environmental protection and is in conformity with the Machinery Directive - 2006/42/EC.

## PRESSURE EQUIPMENT DIRECTIVE

- Designed, developed and manufactured in accordance with the Pressure Equipment Directive - 2014/68/EU, Article 4, paragraph 3 (Sound Engineering Practice).

## LOW VOLTAGE DIRECTIVE

- Designed, developed and manufactured in accordance with the Low Voltage Directive - 2014/35/EU.

## EMC DIRECTIVE

- The electrical cabinet is designed, developed and manufactured in accordance with the EMC Directive - 2014/30/EU.

## ASME VIII. DIV.1

- The U-PUR vessel (as standard version) is designed and manufactured in accordance with ASME VIII. DIV. 1.
- An ASME U-stamp on the pressure vessel is available in option.

## OTHERS (ON REQUEST)

- UL certification
- SEMI F47 compliance

# OTHER INFORMATION

<b>DISPOSAL</b>	<ul style="list-style-type: none"><li>• Disposal must be in accordance with the appropriate local regulations.</li><li>• See additional information in the operation manual.</li></ul>
<b>SAFETY ADVICE</b>	<ul style="list-style-type: none"><li>• Risk of electric hazards, pressure hazards and UV radiation.</li><li>• Improper operation or usage of the plant for none intended purpose may endanger the health of the operator, damage equipment and/or prevent efficient operation of the plant.</li><li>• Unauthorized modification of the U-PUR will void warranty. We recommend using only original spare parts for system maintenance.</li></ul>
<b>GLOBAL KNOWLEDGE CENTRE</b>	Ovivo Switzerland AG Benkenstrasse 262 4108 Witterswil Switzerland

