

Ultra-pure water systems



Series Ultra Clear Direct with 30 l tank

The Ultra Clear Direct is an ultra-pure water system which is available with many options and can be connected directly to a potable water source. This dispense rate is up to 1.5 LPM on demand from the storage tank which is included with the system. The production of make up water is 10 LPH by reverse osmosis.

The Ultra Clear Direct series provides 18.2 MΩ-cm water for all the analytical applications and many others requirements. The systems exceed all the well known water quality standards like: ASTM type 1, NCCLS type 1 and ISO 3696 type 1.

This new compact series incorporates all the necessary features to produce lab quality water such as integrated dual wavelength UV-oxidizer for a TOC level < 3 ppb and/or ultra filtration for an endotoxins level of < 0.01 EU/ml. A sterile filter 0.1 μm is integrated within the recirculation loop. Even TOC-Monitoring is available.

The graphic display shows the conductivity in μS/cm or the Resistivity in MegOhm-cm as well as the temperature. All operating data can be recorded by the integrated RS 485 interface.

Cartridge changes are very convenient due to quick connectors. System operation is very quiet (< 40 dB(A)) and our new 24-hour program (Day and Night) with interval function provides a longer lifetime for the pumps and UV-lamp. Until now this wide range has never been available in one complete system. This ultra-pure water system is a cost saving alternative compared to the combinations of reverse osmosis or/and deionizer and ultra-pure water system. Once again we have succeeded in accomplishing the operation costs for all systems as low as possible. A detailed comparison clearly shows the differences. Another highlight is the additional tap for permeate as well as the separate connection e.g. for automatic washers. Furthermore the system impresses with its small dimensions and it can be wall-mounted easily.



Typical Applications

- **Ultra Clear:**
Common Analysis, AAS, ICP-ES, GC, Standard Puffer
- **Ultra Clear UV / UV TM:**
HPLC, IC, GC, GC/MS, TOC-Analysis, ICP und ICP/MS
- **Ultra Clear plus:**
Cell and tissue culture, monoclonal antibody production
- **Ultra Clear UV plus / UV plus TM:**
PCR, 2-D-electrophoresis, DNA Sequence, In-vitro-Fertilisation

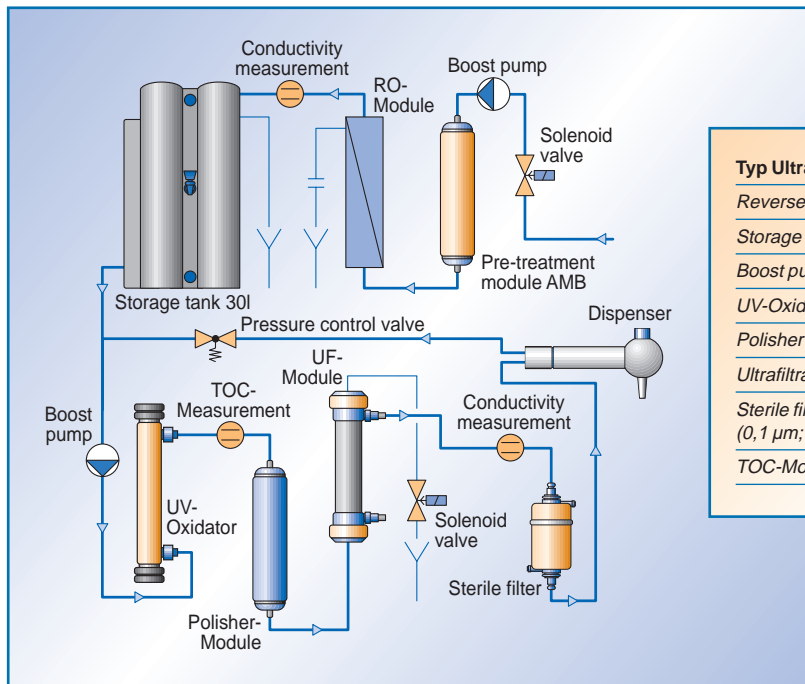
Technical Data Ultra Clear Direct/30 l

Typ* Ultra Clear Direct...		Direct	UV	UV TM	plus	UV plus	UV plus TM
Performance specifications							
Output	l/min	1,5	1,5	1,5	1,2	1,2	1,2
Conductivity at 25° C	μS/cm	0,055	0,055	0,055	0,055	0,055	0,055
Resistivity at 25° C	MΩ-cm	18,2	18,2	18,2	18,2	18,2	18,2
TOC	ppb	< 15	< 3	< 3	< 15	< 3	< 3
Bacteria	cfu/ml	< 1	< 1	< 1	< 1	< 1	< 1
Endotoxins	EU/ml	–	–	–	< 0,001	< 0,001	< 0,001
Particle > 0,1 μm	per/ml	< 1	< 1	< 1	< 1	< 1	< 1
Product rate into the tank	l/h	10	10	10	10	10	10
Feed water specification							
Feed water pressure	bar	0–5	0–5	0–5	0–5	0–5	0–5
Feed conductivity	μS/cm	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000
Colloid index	SDI	< 3	< 3	< 3	< 3	< 3	< 3
Free chlorine	mg/l	< 0,5	< 0,5	< 0,5	< 0,5	< 0,5	< 0,5
Maximum Fe	mg/l	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1
Power supply	V/Hz	90–240/50–60	90–240/50–60	90–240/50–60	90–240/50–60	90–240/50–60	90–240/50–60
Dimensions : H/W/D	mm	535/560/320	535/560/320	535/560/320	535/560/320	535/560/320	535/560/320
Shipping weight	kg	41	42	43	42	44	44
Part-No.		2001-D	2002-D	2002-TM-D	2003-D	2004-D	2004-TM-D

Series Ultra Clear Direct



Flowsheet Ultra Clear Direct UV plus TM



Typ Ultra Clear Direct	Direct	UV	UV TM	plus	UV plus	UV plus TM
Reverse osmosis	√	√	√	√	√	√
Storage tank 30l	√	√	√	√	√	√
Boost pump	√	√	√	√	√	√
UV-Oxidator	-	√	√	-	√	√
Polisher Module	√	√	√	√	√	√
Ultrafiltration	-	-	-	√	√	√
Sterile filter (0,1 µm; 1000 cm ²)	√	√	√	√	√	√
TOC-Monitoring	-	-	√	-	-	√

Options

Item	Part.-No.
Vent filter VF 1 to eliminate airborne contamination. Complete Installation Kit	3510
CO₂ Trap CT 1 to eliminate the CO ₂ in the incoming air	3501
UV-Submersible Lamp UV-SL 1 to minimize the bacterial growth. The UV system is combined with a timer to avoid high temperature. The power supply must be stated	2545
Bracket ET30 , including screws and plugs	3317

Consumables

Item	Change frequency	Part.-No.
Pre-Treatment Module VMD	6 – 12 monthly	2057
Polisher-Module MFIID	6 – 12 monthly	2051
Sterile Filter 0,1 µm, 1000 cm²	6 monthly	2052
UV- Replacement Lamp UC , only for systems without TM	6 – 12 monthly	2053
UV- Replacement Lamp UC , only for systems with TM	6 – 12 monthly	2061
RO-Membrane	2 – 3 Years	03303
CO₂ trap CT1 , Replacement Cartridge	Yearly	3502
Vent Filter VF 1 , Replacement Cartridge	Yearly	80823
UV-Submersible Lamp UV-SL 1	Yearly	2527-1



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