

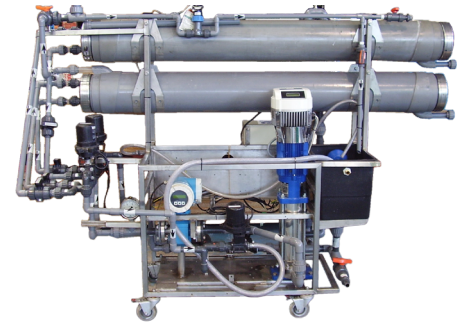
C10

A pilot plant designed for process development, membranes scale up testing, quality assurance and small-scale/production range within ultrafiltration or nanofiltration phase.

The C10 unit is designed to produce potable water from a natural raw water source on a continuous basis with the following operation/ options:

- Can be set up to commence and end process runs as required by the feed tank fitted with a float valve and safety switch.
- Operate using the minimal amount of instrumentation & control.
- Flows are set manually using diaphragm flow control valves and adjusting flows on the flowmeters.
- Designed to run for extended periods unattended and operate in a semi-automatic mode.
- Complete a foam ball clean when needed

A simple self-contained unit with a hold-up volume (circa 100 Liters), Lowara CRN1-23 recycle pump with hydrovar frequency inverter, 2 membrane modules, pressure & temperature indicators, flowmeters and a control panel. All mounted on a welded 304 stainless-steel framework.



Application Range

Nanofiltration (NF)	Ultrafiltration (UF)
up to 18 L/min (9 L/min/module)	up to 18 L/min (9 L/min/module)

Electrical Power Supply	Connections
240 Volts	Inlet to feed tank stop cock: 1" hose connection
3-phase extension cable included	Permeate outlet: 3/4" OD hose tail
16 Amp (single phase supply)	Retentate outlet: 1/2" hose connection

Size & Weight

Dimension			Unit & Package	Unit Only
Length	Height	Width		
250 cm	175 cm	100 cm	288 kg	200 kg

Framework

Welded stainless-steel frame fabricated from a high-grade 304 SS for corrosion resistance, high rigidity and temperature resistance.

Module

2 x 6 ft (1.8 m) C10 Module

Comprised of 72 perforated plastic support tube, each tube is connected to the next by a turnaround located inside the end caps. This gives approximately 125 meters of membrane length per module.

Specification per module

- Membrane area: 5 m²
- Hold-up volume: Tube-side 15.9 L, Shroud-side 25.6 L
- Membrane tube ID: 12.7 mm
- Total membrane area modules: 10 m²

Plant mechanical operating limit

- Max operating pressure: up to 10 bar
- Max operating temperature: up to 30°C
- pH Range: membrane specific

Pump, Motor & Inverter

Recycle Pump: Lowara CRN1-23 recycle pump with hydrovar frequency inverter. 9 - 27 L/min flow range, 1 KW motor, 10 bar max pressure

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Flowmeter

- Feed Flowmeter: Endress + Hauser (PROline Promag 50) 400 – 1500 L/hr
- Recycle Flow Indicator: Perflow flowmeter 400 – 1500 L/hr
- Reject Flow Indicator: GF Signet 8550-1. 40 – 400 L/hr
- Permeate Flow Indicator: GF Signet 8550-1. Target 170 L/hr

Strainer

- 300-micron strainer is fitted to protect the recycle pump.

Pressure Relief Valve

- A mechanical pressure relief valve set at 10.5 bar is fitted.

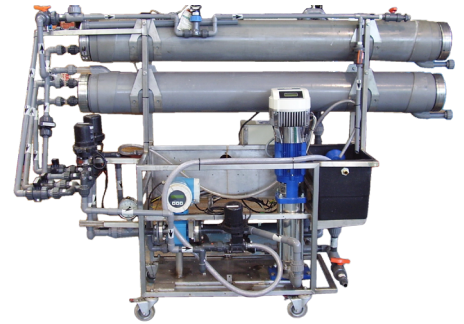
Pressure & Temperature Sensor

- Modules inlet pressure is monitor and display via a pressure gauge: 0 -16 bar.
- Modules inlet temperature is monitor and display via a temperature gauge: - 10 – 40°C.

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Feed Tank

- 50 Liter feed tank incorporated on the unit.

Control Valves

- Feed Flow Control Valve: Manual for both foam ball cleaning and process; set at 5 – 15 L/min or 18 L/min respectively.
- Non Return Valve: Fitted to pump outlet. Spring loaded @ 0.25 bar lift
- Feed Process Valve: Automated open/closed valve
- Recycle Flow Control Valve: Manual
- Recycle Non Return Valve: Spring loaded with 1 bar lift
- Reject Flow Control Valve: Manual
- Reject Bypass Valve: Automated open/closed valve
- Foam Ball Divert Valve X2: Automated L-port valve

Safety

- The unit is designed to the principles of Supply of Machinery (Safety) Regulations 1992 and are safe if operated in accordance with the procedures in the operating manual.

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