FRESENIUS MEDICAL CARE

Water Technology

Datasheet AquaB LITE™

Single-stage dialysis water reverse osmosis system

Compliance with ISO Standards

The **AquaB LITE** dialysis water RO system streamlines processes and complies with ISO dialysis water quality standards

ISO 23500-1	**Part 1: addresses** guidance for the preparation and quality management of fluids for hemodialysis and related therapies.
ISO 23500-2	**Part 2: covers** water treatment equipment for hemodialysis applications and related therapies.
ISO 23500-3	**Part 3: specifies** minimum requirements for water for hemodialysis and related therapies.

AquaB LITE: Offers all necessary dialysis water reverse osmosis system functions

Key features & functionality

- Capable of distributing product water up to 600 meters via three dialysis water distribution loops
- LCD display
- Small footprint
- Consumption-controlled water-saving technology
- Initial self-testing of all safety-relevant sensors
- Dead space-free design
- Monitoring of performance data / cleaning records quality documentation as well as trend monitoring and detailed error messages
- Guided automatic chemical disinfection
- Password protected user levels
- Programmable operating timers
- Settable interval rinse timer programs
- Integrated leakage monitoring
- RingBase Basic
- Visual LED indicator with acoustical signal
- Zero rinse technology*

Options

- Additional acoustic alarm with adjustable volume
- External leakage sensors (AquaDETECTOR)
- Network connection

* Capable of performing a system rinse with no fresh feed water

Specifications

Points of Use	**Up to 60 Points of Use** @ 800 mL/min consumption flow of the hemodialysis system	
	Dialysis water outlet capacity at +15 degrees C	
AquaB LITE 500	500 L/h	
AquaB LITE 1000	1000 L/h	
AquaB LITE 1500	2000 L/h	
AquaB LITE 2000	1500 L/h	
AquaB LITE 2500	2500 L/h	
AquaB LITE 3000	3000 L/h	
	Minimum capacity in liters/hour at a product water outlet pressure of 2 bar	
Dimensions in mm (h × w × d)	1500 mm × 550 mm × 951 mm	
Footprint in m²	0.52 m²	
Weight in kg (Filled)	**AquaB LITE 500:** 160 kg **AquaB LITE 1000:** 200 kg **AquaB LITE 1500:** 240 kg	**AquaB LITE 2000:** 280 kg **AquaB LITE 2500:** 320 kg **AquaB LITE 3000:** 360 kg
Operating output pressure	max. 6 bar	
Membrane concentrate pressure	max. 19.9 bar	
Inlet water connection	1 ¼" external thread, stainless steel	
Distribution loop connection	Direct PE-Xa connector 25 × 3.5 (feed and return) up to 3 dialysis water distribution loops	
Noise level	Noise level in SUPPLY mode: 62 - 73 dB (A); (distance of 1 m) (depending on system capacity and features)	

Electrical supply

Electrical supply / three-phase current	208 V	60 Hz; 3 / N / PE	Hard wired 20 A

FRESENIUS MEDICAL CARE

Power consumption max.	**2.5–5.2 kVA depending on system capacity**	
Radiated heat / loss	**AquaB LITE 500 - 1000:**	0.50 kW
	AquaB LITE 1500 - 3000:	0.65 kW
Overcurrent protection	20 A @ 208 V Fuses/Breakers according to UL 248-8 Class J Residual current circuit breaker RCD 30 mA recommended	
Type of protection against electric shock	Protection class I	
Applied parts classification	Type B	
Degree of water protection	Drip-proof (IPX1)	
Leakage currents	According to IEC/EN 60601-1 (ANSI/AAMI ES 60601-1 for 208 V, 60 Hz)	
Overvoltage category	II	
Pollution severity	II	
Material group	IIIb	
Operating mode	Continuous operation	

Product water quality

The product water quality and efficiency depend on the inlet water quality.

Bacteria (CFU) & endotoxins (EU)	> 99% for bacteria and endotoxins
Total dissolved solids	> 96% for dissolved salts; average
Efficiency / yield	Up to 75% adjustable water conversion factor

Water supply

Feed water pressure	Dynamic 2 - 6 bar
Minimum inlet flow	**AquaB LITE 500:** 1000 L/h
	AquaB LITE 1000: 2000 L/h
	AquaB LITE 1500: 3000 L/h
	AquaB LITE 2000: 4000 L/h
	AquaB LITE 2500: 5000 L/h
	AquaB LITE 3000: 6000 L/h
	Information about the required inlet water volume @ 50% effective yield and 15 degree C.
Drain water connection	DN 70 (HT-pipe)

FRESENIUS MEDICAL CARE

Operating conditions

Water hardness	< 1.0 °dH
Iron	< 0.1 mg/L
Manganese	< 0.05 mg/L
Silicate	< 25 mg/L
Total chlorine	< 0.1 mg/L
Conductivity	< 2500 µS/cm
pH	6 - 8
Silt density index	< 3
Feed water temperature	+ 5°C min. / max. 35°C
Atmospheric pressure	700 - 1150 hPa
Ambient temperature range	+5°C to +35°C
Relative humidity	5 to 80% @ 20°C (non-condensing)
Installation altitude	Up to 3000 m above sea level

External connection options

Ethernet (TCP / IP)	Electrically isolated interface for data exchange. Port: RJ45 The system can be connected to the in-house network
Service / diagnostics	For in-house computer diagnosis. Port: RJ45
Volt-free contacts	24 V / 12 W for the connection of external status information Alarm, Warning, Supply, Standby
External failure	Electrically isolated input as “collective alarm” from ext. equipment
External locking input	Inlet for external locking of the water supply by an external unit; e.g. water pre-treatment
External leakage	Connection of an external leakage alert system; e.g. AquaDETECTOR

Transport and storage conditions

Storage temperature range	+5°C to +40°C (protect from frost)
Storage time	Storage time of preserved system: maximum 12 months

FRESENIUS MEDICAL CARE

Atmospheric pressure	500 - 1150 hPa
Relative humidity	5 - 80% @ 20°C (non-condensing)

Materials

Biocompatibility of materials in contact with dialysis water	Materials used meet ISO 10993-1 Biological evaluation of medical devices
Membrane	Spiral wound membrane - Polyamide composite

Product codes

AquaB LITE 500 single stage	24-050L-1
AquaB LITE 1000 single stage	24-100L-1
AquaB LITE 1500 single stage	24-150L-1
AquaB LITE 2000 single stage	24-200L-1
AquaB LITE 2500 single stage	24-250L-1
AquaB LITE 3000 single stage	24-300L-1

Indications for Use:
AquaB LITE
The AquaB LITE is a modular reverse osmosis unit intended for use with hemodialysis systems to remove organic and inorganic substances and microbial contaminants from the water used for treating hemodialysis patients or related therapies. This device is intended to be a component in a complete water purification system and is not a complete water treatment system. The reverse osmosis unit must be preceded by pre-treatment devices, and may need to be followed by post-treatment devices as well, to meet current AAMI/ANSI/ISO and Federal (U.S.) standards.

The Visual LED Indicator is used to remotely monitor the operating status of a connected device (e.g., the reverse osmosis water treatment system).

The AquaDETECTOR leakage monitoring system provides full leakage monitoring of a dialysis center, typically during non-treatment hours. The central control unit can be programed to switch off dialysis water supply systems, dialysis concentrate preparation systems, dialysis concentrate supply systems, booster pump assemblies, and pre-filtration devices when a leak is detected.

Caution: Federal law restricts this device to sale by or on the order of a physician.