

# Hemoclean bd

We Are Specialized In The Fields Of Hemodialysis Products





## **4008S**

#### The next generation

The next generation 4008S dialysis machine is designed for ease of use while providing the highest standards of patient safety and treatment hygiene.

Assured adequacy with the OCM® On-Line (Kt/V)

Dialysate ultrafiltration with DIASAFE®plus

Compatible with all types of HD disposables

Blood Pressure Monitoring using the BPM

Backed by Fresenius Medical Care service excellence

- DIASAFE<sub>®</sub> plus- ensures ultrapure dialysate
- Proved reliability
- Volumetrically controlled ultrafiltration and closed-system hydraulics
- UF and sodium profiling
- Battery backup







#### Technical Data (4008S version Next Generation V10, Article number M204001

General data

**Dimensions** 1370 x 480 x 480 mm (H x W x D) (depth of pedestal 630 mm)

Weight approx. 86kg

Water supply

Water intet pressure 1.5 - 6.0 bar Water inlet temperature 5°C - 30°C Max. drain height

Concentrate supply

Supply pressure 1 m suction height

Electrical data

Power supply 230 V ± 10%, 47 - 63 Hz Current consumption max. 9 A Power supply 110 V + 10%, 47 - 63 Hz

Current consumption max. 15 A

External connections "Alarm in": zero potential alarm inlet

"Alarm out": zero potential alarm outlet

Extracorporeal circuit

Arterial pressure monitoring

-300 mmHg to + 280 mmHg Display range

+10 mmHg Accuracy Resolution 20 mmHa

Venous pressure monitoring

Display range -60 mmHg to + 520 mmHg

Accuracy +10 mmHg Resolution 20 mmHg

Transmembrane pressure monitoring

Display range -60 mmHg to + 520 mmHg

Resolution 20 mmHa

Arterial blood pump

Blood flow range 15 to 600 mL/min in 8 mm bloodline systems

Accuracy

Air bubble detector by ultrasound transmission, additional

optical monitoring in venous clamp

Heparin pump

0 to 10 mL/h Delivery range Bolus function max. 5 mL per bolus

Syringe size 20 mL

Dialysis fluid circuit

Dialysis fluid flow range

0 - 300 - 500 - 800 mL/min Selectable

Dialysis fluid temperature

Selectable 35°C to 39°C

Dialysis fluid conductivity

Range 12.8 to 15.7 mS/cm (25°C)

Accuracy +0.1 mS/cm

Acid concentration dialysis fluid

Default mixing ratio 1 + 34 (others possible) 125 to 150 mmol/L Range

Bicarbenate concentration dialysis fluid

Default mixing ratio 1 + 27.6 (other possible) -8 to + 8 mmol/L bicarbonate Range

Bicarbonate dry

concectrate bibag® 5008

Ultrafiltration

UF rate 0 to 4.00 I/h Accuracy Allowed dialyser UF factor unlimited

UF goal, UF time, UF rate, UF volume Parameters displayed

Blood leak detector

Sensitivity < 0.5 mL blood/min (Hct = 25%)</p>

at max. flow 800 mL/min

DISAFE®plus - Dialysis fluid filter system ± 0.1% of dialysate flow Balancing accuracy

OCM® - Online Clearance Monitor

Accuracy Clearance K

Disinfection and cleaning programmes\*

Rinse

Network

Temperature/flow 37°C / 600 mL/min

Hot rinse (recirculation)

Temperature/flow 84°C / 450 mL/min

Integrated hot rinse

84°C / 450 mL/min Temperature/flow

Cleaning Sporotal® (recirculation)

Temperature/flow 37°C / 650 mL/min

Hot disinfection Diasteril® (recirculation)

84°C / 450 mL/min Temperature/flow

Disinfection Puristeril® 340 (recirculation)

Temperature/flow 37°C / 650 mL/min

\*Various programme combinations selectable.

**Technical Data - Options** 

Single-Needle With 2 blood pumps. Internal pressure/pressure

Article no. M408641 control with variable stroke volume

Blood Pressure Monitor (BPM) Article no. M409281 Display range

Systole: 30 - 280 mmHg Diastole: 10 - 240mmHg MAP: 20 - 255 mmHg Accuracy; 1 mmHg

Central Delivery System for acid conc. Article no. M417651

Supply pressure 0 to 100 mbar; 1 m suction height with Central

Delivery System: 0 - 500 mbar

RJ45/Ethernet for data exchange with therapy Data Management System/Finesse®





# Introducing the new 4008A

Life changing safety and handing standards

The new 4008A at a glance

# Suit your budget

Intuitive touch screen

DIASAFE®plus 🕕

Battery back up



Patient monitoring

Cleaning programs

Cost efficiency



#### Technical Data Heamodialysis Machine 4008A



	•
General Data	
Dimensions 4008A	Height: approx. 134 cm (approx. 149 cm with infusion hook) Width: approx. 50cm (approx.57cm with dialyser holder and approx. 63 cm with degreasing agent container) Depth: approx. 65 cm(approx. 71cm with DIASAFE plus, approx. 80cm with disinfectant container)
Weight	Empty weight including all options: approx. 61kg Safe working load: approx. 39 kg Maximum total weight: approx. 100 kg
Water supply	
Water inlet pressure Water inlet temperature Max. drain height	1.5 to 6.0 bar 5°C to 30°C 1 m
Electrical date	
Power supply	110 to 240 V AC, 50 to 60 Hz, 10 to 15 A
Current consumption	The consumption and energy date are comprised of examples of average values during typical operation: Blood pump rate: 300ml/min Dialysate flow; 500ml/min Ultrafiltration: 0.5 I/h Dialysate temperature: 36.5°C Mixing ratio: 1+44 Ambient conditions: Water inlet temperature 15°C, ambient temperature 22°C.  Mean energy consumption Dialysis: approx. 0.59 kWh per hour Rinsing: approx.0.26 kWh (program length of 16 minutes) Heat disinfection: approx. 0.62 kWh (program length of 41 minutes) Degreasing: approx.0.45 kWh (program length of 41 minutes)

#### Extracorporeal circuit

Extracorporcal circuit			
Arterial pressure monitoring			
Display range Accuracy Resolution	-300 to +280 mmHg ±10 mmHg 5 mmHg		
Venous pressure monito	pring		
Display range Accuracy Resolution	-60 to +520 mmHg ±10 mmHg 5 mmHg		
Arterial blood pump			
Blood flow range Accuracy Resolution	0,30 to 500 mL/min ±10% 10 mL/min		
Heparin pump			
	Delivery range: 0.5 to 10 mL/h Bolus function: 1.0 to 9.9 mL		

Syringe size: 20 mL



#### Dialysis fluid circuit

Dialysis fluid circuit				
Dialysis fluid flowrange				
Dialysate flow	300, 500 ml/min			
Dialysis fluid te mperatu	re			
Selectable	35.0°C to 39.0°C (adjustable in increments of 0.5°C) target temperature 35.0°C to 39.0°C adjustable in increments of 0.5°C Measurement accuracy: ±0.5°C Alarm limits: 33.5°C and 40.0°C			
Dialysis fluid conductivi	ty			
Range Accuracy Resolution	12.8 to 15.7 mS/cm ±0.1mS/cm 0.1mS/cm			
Dialysis fluid acid compo	pnent			
Mixing ratio Adjustment range	Adjustable, e.g. 1+44,1+34 125 to 150 mmol/L			
Dialysis fluid bicarbonate	e component			
Mixing ratio Adjustment range	1 + 27.6 (others possible) -8 to +8mmol/L			
Endotoxin retention filte	r			
Dialysis fluid filter system	DIASAFE® plus			
Balancing accuracy				
Pressure holding tests	$\pm$ 0.1% relative to the total dialysate volume Event controlled			
Ultrafiltration				
UF rate  Pump volume accuracy Parameters displayed	Selectable UF time: 0:01h to 9:59 h (in 1 min increments) Selectable UF goal: 10 ml to 9,990 ml (in 10 ml increments) ±1% UF goal, UF time, UF rate			
Blood leak detector				
Sensitivity	Response threshold less than or equal to 0.35 ml blood loss per minute into the dialysate for a haematocrit of 0.32			

#### Disinfection and cleaning programmes

	o, o
Rinse	
Temperature /flow	37°C/700 mL/min
Heat disinfection	
Temperature/flow	84°C/700 mL/min
Degreasing	
Temperature/flow	37°C/700 mL/min
<b>=</b> 1 1 1 1	

Technical changes reserved. Article Number: M202201

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## **5008S**

#### The Practical Approach to ONLINE HDF

 Offering ONLINE HDF as Standard for All Patients (Including ICU) with SLED



#### Advanced features include:

- Dialysis fluid circuit (Selectable):
   0- 1,000 mL/min (steps of 100 mL/min)
- Blood flow range (effective) 30 to 600mL/min

Advanced features include:

- Centralised operation and information via a large touch screen interface.
- Intuitive user guidance system.
- Ergonomic handling, e.g. one handed connection of bibag®.
- Seamless work-flow including multiple machine-assisted procedures.
- Easy, rapid and safe data management via PatientCard or network (Therapy Data Management System - TDMS).





#### Technical Data Haemodialysis Machine 5008 S

General data		EcoFlow	Stand-by flow of 100/150 mL/min (HD/HDF during preparation and reinfusion		
Dimensions 5008S	1,680 x 350 x 780 mm (H x W x D) at bed/dialysis chair level (width at base: 520 mm, depth with canister holder: 900mm)	Dialysis fluid temperature	34 - 39°C		
Weight	approx. 100 kg	Dialysis fluid conductivity Range	12.8 - 15.7 mS/cm		
Monitor/Screen	15" high-resolution TFTLCDwith touch screen user interface. Monitor rotatable around the 3 axes	Accuracy Sodium concentration dialysis f	Freely adjustable e.g. 1 + 44, 1 + 34 125 to 151 mmol/L, depending on the		
Card reader	Smart card (ICC) for Patient, User and ServiceCard	Mixing ratio Adjustment range			
Water supply Water inlet pressure Water inlet temperature Max. drain height Flush	1.5 - 6.0 bar 5 - 30°C; for "integrated hot rinse" 85 -95°C 1 m Rinse of water supply area (option)	Bicarbonate concentration dia Default mixing ratio Adjustment range	concentrate used ± 10% of the base value  alysis fluid 1 + 27.6 (others possible) 24.0 - 40.0 mmol/L (steps of 0.5 mmol/L)		
Concentrate supply		Bicarbonate dry concentrate	bibag <sup>®</sup>		
Supply pressure	0 to 100 mbar; 1 m suction height with Central Delivery System: 0.05 to 2.0bar 1 central acid concentrate (option)	Balancing accuracy Pressure holding test	$\pm0.1$ % related to the total dialysate volum Event controlled		
Central supply Electrical data Power supply Current consumption	trical data er supply 100 to 240 V AC ± 10%, 47 - 63 Hz ent consumption Approx. 6 A (at 230 V) at a water inlet temperature of 17°C, Dialysate temperature 37°C  Ultrafiltration UF rate Pump volum Parameters	Pump volume accuracy Parameters displayed	0 - 4,000 mL/h (in steps of 10 mL0 ± 1% UF goal, UF time, UF rate, UF volume		
External connections	Dialysate flow: 500 mL/min  Alarm output: potential free alarm outlet	Blood leak detector Sensitivity	≤ 0.5 mL blood/min (Hct = 25%) flow rate 100 mL/min - 1,000 mL/min		
	(alternating contact max, 24 V/24 W).  LAN (RJ 45) port for data exchange with Therapy Data Management System/Finesse®	Dialysis fluid filter system	DIASAFE®plus		
Extracorporeal circorporeal circorpor	uit	ONLINEplus Substitution rate Accuracy AutoSub	ONLINE Haemo(dia)filtration 25 - 600 mL/min ± 10% Substitution ideally matched to effective blood flow		
Display range Accuracy Resolution	- 300 mmHg to + 300 mmHg ± 7 mmHg 5 mmHg	OCM® Accuracy Clearance K	Online Clearance Monitoring ± 6%		
Venous pressure monitori Display range Accuracy Resolution	ing - 100 mmHg to + 500 mmHg ±7 mmHg 5 mmHg	BPM (Option) Display range	Systole: 30 mmhg - 280 mmHg Diastole: 10 mmHg - 240 mmHg MAP: 20 mmHg - 255 mmHg		
Transmembrane pressure monitoring Display range - 100 mmHg to + 400 mmHg Resolution 5 mmHg		Accuracy BTM (Option) Temperature measurement	± 3 mmHg  Accuracy + 0.2°C		
Arterial blood pump Blood flow range (effective) Accuracy	30 to 600 mL/min + 10%	Body temperature control Recirculation measurement	Allowed change rate ± 0.5°C/h Accuracy ± 2%		
Single-Needle system (Option)	2 blood pumps. Internal pressure/pressure control with variable stroke volume (max. 50 mL)	Disinfection and clean Rinse	ing programmes*		
Alr bubble detector	Ultrasound transmission measurement on blood line, additional capacitive level and optical monitoring	Temperature/flow	37 °C/600 - 800 mL/min (adjustable)		
——————————————————————————————————————	Delivery range: 0.5 to 10 mL/h	Hot rinse (recirculation) Temperature/flow	85 °C/600 - 800 mL/min (adjustable)		
	Bolus function: 1.0 up to 20.0 mL Syringe size: 30 mL	Cleaning Sporotal® 100 (recir Temperature/flow	culation) 37 °C/600 - 800 mL/min (adjustable)		
Dialysis fluid circuit	t.	Heat disinfection Diasteril®Cri Temperature/flow	trosteril® (recirculation) 85 °C/600 - 800 mL/min (adjustable)		
Dialysis fluid flow range Selectable AutoFlow (selectable)	0 - f1,000 mL/min (steps of 100 mL/min) Automatic adaptation of the dialysate flow to	Disinfection Puristeril® 340/pli Temperature/flow	us (recirculation) 37 °C/600 - 800 mL/min (adjustable)		

the effective blood flow (factors adjustable)



\*Various programme combinations selectable. Technical canges reserved.



## multi**Filtrate**PRO A Perfect Fit for Evety Team

#### Setting the standard in CRRT

The multiFiltrate PRO is a new generation CRRT device building on the substantial experence with the multiFiltrate and the successfully integrated Ci-Ca® regional anticoagulation. Patients receiving CRRT with regional citrate anticoagulation benefit from less bleeding, long filter running times and lower blood product requirements1,2,3.

The multiFiltrate PRO offers CI-Ca®therapy modes as well as all common standard CRRT options:

Ci-Ca® CWHD AV1000S

Ci-Ca® CWHD EMiC®2

Ci-Ca® postCWHDF

**CWHD** 

Post-CWHDF

Pre-CWHDF

Post-CWH

Pre-CWH

Pre-post CWH

#### References

- 1 KDIGO Clinical Practice Guideline for Acute Kidney Injury. Kidney Int Suppl 2012. 2:1-138
- 2 Kalb R et al., Regional citrate anticoagulation for high volume continuous venovenous hemodialysis in surgical patients with high bleeding risk. Ther Apher Dial 2013. 17:202-12
- 3 Morgera S et al., A safe citrate anticoagulation protocol with variable treatment efficacy and excellent control of the acid-base status. Crit Care Med 2009. 37:2018-24







#### Technical Data mltiFiltarePRO

Dimensions and weight	
Height	167 cm
Width	65 cm
Depth	69 cm
Weight	approx. 95 kg
Electrica I supply	
Voltage	100-240 V AC 50-60 Hz
Current consumption	max. 4.4 A (24.0 V AC max. 12 A (100 V AC
Lead acid battery	2 x 12 V/7.2 Ah maintenance-free
Emergency operation duration (Only bolood pump)	min. 15 mir
Electrica I supply	
Type of protection against electrical shock	Protection class
Level of protection against electrical shock	Type CF (200-230 V, 50 Hz (100-127 V, 50 Hz (100-127 V, 60 Hz Type bF (240 V, 50 Hz) (200-240 V, 60 Hz
Flow rates (depending upon trea	tment procedures)
Blood flow	
	10-500 mL/min, +10%
Substituate flow	
Substituate flow Dlalysate flow	10-80 mL/mir
	10-80 mL/mir 10-80 mL/mir
Dialysate flow Filtrate flow Net. ultrafiltration rate	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-990 mL/t
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss)	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-990 mL/r Increments 10 mL/r
Dialysate flow Filtrate flow Net. ultrafiltration rate	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-990 mL/t Increments 10 mL/t 10-600 mL/t
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss)	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-990 mL/r Increments 10 mL/r 10-600 mL/r
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss) Citrate flow (Ci) Citrate dose	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-990 mL/t Increments 10 mL/t 10-600 mL/t 2.0-6.0 mmol/L blood Increments: 0.1 mmol/L
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss) Citrate flow (Ci) Citrate dose (citrate/blood)	10-500 mL/min, +10% 10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-180 mL/mir 0-990 mL/r Increments 10 mL/r 10-600 mL/r 2.0-6.0 mmol/L blood Increments: 0.1 mmol/L 0; 1-100 mL/r 0-3.0 mmol/L filtrate Increments: 0.1 mmol/L
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss) Citrate flow (Ci) Citrate dose (citrate/blood) Calcium flow (Ca) Calcium dose	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-180 mL/r 10-990 mL/r Increments 10 mL/r 2.0-6.0 mmol/L blood Increments: 0.1 mmol/L 0; 1-100 mL/r 0-3.0 mmol/L filtrate
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss) Citrate flow (Ci) Citrate dose (citrate/blood) Calcium flow (Ca) Calcium dose (calcium/filtrate)	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-180 mL/r 10-990 mL/r Increments 10 mL/r 2.0-6.0 mmol/L blood Increments: 0.1 mmol/L 0; 1-100 mL/r 0-3.0 mmol/L filtrate
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss) Citrate flow (Ci) Citrate dose (citrate/blood) Calcium flow (Ca) Calcium dose (calcium/filtrate) Balance	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-990 mL/r Increments 10 mL/r 2.0-6.0 mmol/L blood Increments: 0.1 mmol/L 0; 1-100 mL/r 0-3.0 mmol/L filtrate Increments: 0.1 mmol/L
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss) Citrate flow (Ci) Citrate dose (citrate/blood) Calcium flow (Ca) Calcium dose (calcium/filtrate) Balance Number of scales	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-180 mL/ri 10-990 mL/r Increments 10 mL/r 10-600 mL/r 2.0-6.0 mmol/L blooc Increments: 0.1 mmol/L 0; 1-100 mL/r 0-3.0 mmol/L filtrate Increments: 0.1 mmol/L
Dialysate flow Filtrate flow Net. ultrafiltration rate (net. weight loss) Citrate flow (Ci) Citrate dose (citrate/blood) Calcium flow (Ca) Calcium dose (calcium/filtrate) Balance Number of scales Measurement principle	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-180 mL/ri 10-990 mL/r Increments 10 mL/ri 10-600 mL/ri 2.0-6.0 mmol/L blood Increments: 0.1 mmol/L 0; 1-100 mL/r 0-3.0 mmol/L filtrate Increments: 0.1 mmol/L
Dlalysate flow  Filtrate flow  Net. ultrafiltration rate (net. weight loss)  Citrate flow (Ci)  Citrate dose (citrate/blood)  Calcium flow (Ca)  Calcium dose (calcium/filtrate)  Balance  Number of scales  Measurement principle  Load capacity per scale	10-80 mL/mir 10-80 mL/mir 0-180 mL/mir 0-990 mL/r Increments 10 mL/r 10-600 mL/r 2.0-6.0 mmol/L blood Increments: 0.1 mmol/L 0; 1-100 mL/r 0-3.0 mmol/L filtrate Increments: 0.1 mmol/L

Total balance error

Adult: max. 500g

Heating Substituate temperature	Off/ 35 - 39 °C
Substituate temperature	· · · · · · · · · · · · · · · · · · ·
Dialysate temperature	Off/ 35 - 39 °C
Equipment function	
Screen	15", TFT LCD
Event storage	stores up to 3.500 events
Service menu	Settings via the screen
Access pressure	
Display range	-300 to +300 mmHg
Accuracy	<u>±</u> 10 mmHg
Display range	-100 to +500 mmHg
Accuracy	<u>+</u> 10 mmHg
Trans membrane pressure	
Display range	-300 to +520 mmHg
Accuracy	<u>+</u> 12 mmHg
Pre -filter pressure	
Measurement range	-50 to +750 mmHg
Accuracy	<u>+</u> 10 mmHg
Air detector	
Measurement procedure	Ultrasound transmission
Sensitivity	Air bubbles, blood foam
	or microbubbles
Optical detector	
Measurement procedure	Infrared transmission
Function	Detection of blood - no blood
Blood leack detector	
Measurement procedure	optioal
Sensitivity	≤ 0.5 mL/min blood loss
(blood with HCT 32 %)	
Syringe pump (antic oagulants)	
Continuous flow	0.5-25 mL/h
Resolution	0.1 mL/h
Accuracy for flow	<u>+</u> 5%
between 1 and 25 mL/h	
Bolus	0.1-5 mL/bolus
Bolus flow	30 mL/min
E xternal connection	
LAN-connector: RJ 45	Interface for dala exchange
	Electrically isolated by transformet
Alarm output	Potential-free alarm output









# **Low-FluxDialysers** Fresenius Polysulfone (HPS)

**INLINE** steam sterilisation

In vitro performance data/technical data

Ultrafiltration coeff. (mL/h x mmHg)	8	10	13	16	18	21
	0	10	13	10	10	Ζ1
Clearance Q <sub>B</sub> = 200 mL/min	470	470	100	400	100	_ *
Urea	170	179	186	188	190	*
Creatinine	149	162	173	175	177	=
Phosphate	123	139	148	155	159	-
Vitamin B <sub>12</sub>	75	84	92	102	106	=
Clearance Q <sub>B</sub> = 300 mL/min						
Urea	_ *	227	243	247	252	259
Creatinine	_	196	215	220	224	230
Phosphate	-	162	175	186	193	208
Vitamin B <sub>12</sub>	_	91	100	113	118	131
In vitro performance: Q $_{\rm D}=$ 500mL/min, Q $_{\rm F}=0~$ ml Ultrafiltration coefficients: human blood, hct 32%, p	nL/min, $T = 37$ °C (E N 1283, ISO 8637). * refer to recommended blood flow range protein content 6%. Use only on machines with controlled ultrafiltration!					
Effective surface (m <sup>2</sup> )	0.8	1.0	1.3	1.6	1.8	2.2
Blood flow range (mL/min)	50 -200	100 - 300	150 - 400	200 - 500	250 - 600	300 - 600
Wa <b>ll</b> thickness / lumen (μm)	40/200	40/200	40/200	40/200	40/200	40/200
Priming volume (ML)	51	63	78	96	113	132
Membrane material	Fresenius Ploysulfone					
Housing material	Polycarbonate					
Potting compound	Polyurethance					
S terilis ation method						

12

500 705 1

HD

12

500 707 1

12

500 706 1

• Higher clearances by a new design

12

500 704 1

Excellent blood compatibility

Form of treatment

Units per box

Art. -No.

• High endotoxin retention capacity



12

500 720 1

12

500 708 1





**Suit your budget**Maximum endotoxin retention







#### In vitro performance data/technical data

FX 8

	FX 5	FX 8	FX 10
Ultrafiltration coeff. (mL/h x mmHg)	8	12	14
Clearance Q $_{\rm B}$ = 200 mL/min			
Urea	189	191	193
Creatinine	165	178	181
Phosphate	141	160	170
Vitamin B <sub>12</sub>	88	107	121
Clearance Q $_{\rm B}$ = 300 mL/min			
Urea	228	254	261
Creatinine	200	225	231
Phosphate	164	194	210
Vitamin B <sub>12</sub>	94	120	138
In vitro performance: Q $_{\rm D}=$ 500mL/min, Q $_{\rm F}=$ 0 mL/min, T = Ultrafiltration coefficients: human blood, hct 32%, protein coefficients		ed ultrafiltration!	* refer to recommended blood flow range
Effective surface (m <sup>2</sup> )	1.0	1.6	1.8
Blood flow range (mL/min)	100 - 300	150 - 400	200 - 500
Wall thickness / lumen (μm)	35/185	35/185	35/185

Effectve surface (m <sup>2</sup> )	1.0	1.6	1.8	
Blood flow range (mL/min)	100 - 300	150 - 400	200 - 500	
Wall thickness / lumen (μm)	35/185	35/185	35/185	
Priming volume (ML)	54	74	95	
Membrane material	Helixone®			
Housing material	Polypropylene			
Potting compound	Polyurethane			
S terilis ation method	INLINE Steam			
Form of treatment	HD			
Units per box	20 20 20			
ArtNo.	500 435 1 500 473 1 500 47-			





## **FX-class High-Flux Dialysers**

#### **INLINE** Steam sterilised

- The Helixone membrane has a high endotoxin retention capacity, which minimizes the risk of imflammation.<sup>2</sup>
- Highest level of biocompatibility
- Maximum endotoxin retention
- High performance
- Cost saving potential

#### Performance data



FX classix High-Flux dialysers	Molecular weight (Dalton)	FX 50 <sub>classix</sub>	FX 60 <sub>classix</sub>	FX 80 <sub>classix</sub>	FX 100 <sub>classix</sub>
Clearance (Q <sub>B</sub> = 300mL/min)					
Cytochrome c	12,230	55	74	89	100
Inulin	5,200	72	95	113	122
Vitamin B <sub>12</sub>	1,355	137	162	185	201
Phosphate	132	204	225	244	253
Creatinine	113	224	243	259	264
Urea	60	253	266	279	280
Clearance (Q <sub>B</sub> = 400mL/min)					
Cytochrome c	12,230	-	76	92	105
Inulin	5,200	-	99	119	129
Vitamin B <sub>12</sub>	1,355	=	175	202	222
Phosphate	132	-	252	279	291
Creatinine	113	-	277	300	309
Urea	60	-	312	334	336
Ultrafiltration coeff. (mL/h x mmHg)					

Sieving coefficients		
Albumin	66,500	<0.001
Myoglobin	17,053	0.1
$\beta_2$ microglobulin	11,731	0.7
Inulin	5,200	1

In vitro performance:  $Q_D = 500$  mL/min,  $Q_F = 0$ mL/min, T = 37°C (En 1283, ISO 8637). Ultrafiltration coefficients: human blood, Hct 32% protein Content 6%

Membrane material		Helixor	ne®	
Sterilisation method		INLINE ste	eaam	
Housing material		Polypropy	ylene	
Potting compound		Polyureth	nane	
Units per box		24		
Effective surface (m²)	1.0	1.4	1.8	2.2
K₀A Urea	866	1,068	1,394	1,429
Priming volume (mL)	53	74	95	116

F00002385

F00002386

F00002387

F00002388



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## Cardioprotective Haemodialysis



# **FX CorDiax Series High-Flux Dialysers**

INLINE Steam sterilisation



- Superior Endotoxin Retention
- Enhanced Middle Molecule Removal

#### Performance Data

Sieving coefficients of FX CorDiax High-Flux Dialysers	Molecular weight						
and Haemodia filters	(Dalton)						
Albumin	66,500			<0.	001		
Myoglobin	17,053			0	.5		
ß <sub>2</sub> -microglobulin	11,731			0.	.9		
Inulin	5,200			,			
Membrane material				Helixo	one plus		
Sterilisation method				INLIN	E steam		
Housing material				Polypi	ropylene		
Potting compound				Polyu	irethane		
Units per box					24		
Fx CorDiax High-Flux Dialysers		FX <sub>corDiax</sub> 40	FX <sub>corDiax</sub> 50	FX <sub>corDiax</sub> 60	FX <sub>corDiax</sub> 80	FX <sub>corDiax</sub> 100	FX <sub>corDiax</sub> 120
Clearance (Q <sub>B</sub> = 300 mL/min)							
Cytochrome c	12,230	48 *	76	96	111	125	136
Inulin	5,200	56 *	88	116	127	144	149
Vitamin B <sub>12</sub>	1,355	96 *	144	175	190	207	213
Phosphate	132	142 *	215	237	248	258	262
Creatinine	113	155 *	229	252	261	272	274
Urea	60	175 *	255	271	280	283	284
Clearance (Q <sub>a</sub> = 400 mL/min)							
Cytochrome c	12,230	-	-	100	117	133	145
Inulin	5,200	-	-	122	135	154	160
Vitamin B <sub>12</sub>	1,355	-	-	191	209	229	237
Phosphate	132	-	-	270	286	299	305
Creatinine	113	-	-	290	303	321	325
Urea	60	-	-	319	336	341	343
*Clearance (Q <sub>8</sub> = 400 mL/min)							
Ultrafiltration coeff. (mL/h x mmHg)		21	33	47	64	74	87
In vitro performance:Q <sub>D</sub> = 500m/min, Q <sub>F</sub> = 0 mL/min, T=: Ultrafiltration coefficients: human blood (Hct 32%, protein		coefficients: hu	man plasma, Q <sub>B</sub> r	nax, QF= 0.2Q <sub>B</sub> m	ıax (EN1283).		
Effective surface (m²)		0.6	1.0	1.4	1.8	2.2	2.5
K₀A Urea		547	886	1,164	1,429	1,445	1,584
Priming volume (mL)		32	53	74	95	116	132
Article number		F00001588	F00001589	F00001590	F00001591	F00001592	F00002384







# **DIASAFE® plus Filter**Fresenius Polysulfone® Dialysis Fluid Filter

#### **Technical Data**

Membrane material	Fresenius Poltsulfone®
Effective Surface (m²)	2.2
Weight (g)	170
Housing material	Polypropylene
Potting material	Polyurethane
Sealings	Silicone
Connection to machine	DIAFIX™ Lock System
Filtration rate	5 mL/min mm HG (3.75 L/min bar; max. 2bar)
Operating time	Standard HD: max. 12 weeks ONLINE HF/HDF, ONLINE priming / rinsing: max. 12 weeks or 100 treatments
Disinfection	Puristeril <sup>®</sup> 340 or Puristeril <sup>®</sup> plus (peracetic acid) Diasteril <sup>®</sup> (hydroxyacetic acid) or Citrosteril <sup>®</sup> (citric acid) Sporotal <sup>®</sup> 100 (sodium hypochlorite) max. 11 times
Article number	F00005662







# **Citrosteril Solution** For Heat Disinfection of Haemodialysis Machines with Recirulation

- pH value 1.7 to 2.0
- dissolution of blood residues
- excellent removal of CaCO 3
- disinfection and decalcification in one process
- active ingredients composed of natural substances
- biodegradable
- odourless
- free from colouring additives

Citrosteril at 84°C has a broad spectrum of microbio - cidal activity and works bactericidal, virus inactivating (HBV, HCV, HIV) and fungicidal.

#### Specifications and order information:

#### 100g Citrosteril contains:

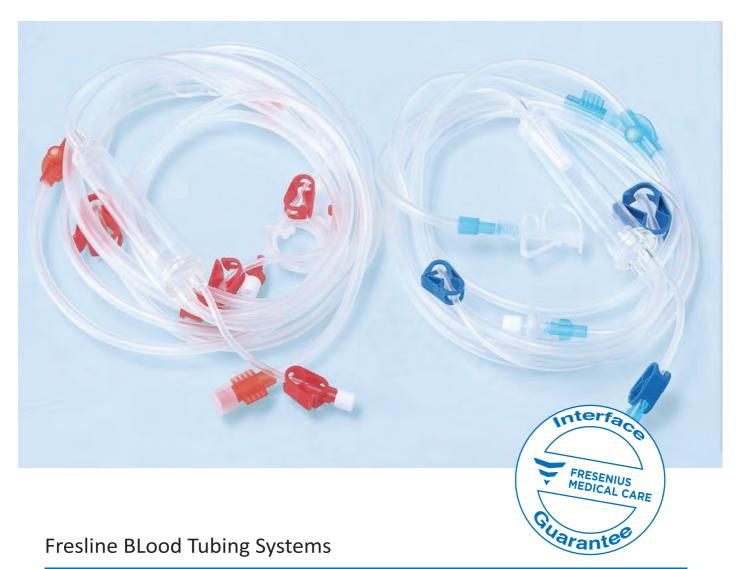
21g citric acid 1-hydrate; lactic acid, malic acid

Unit	Language combination	Art. No.
1 x 5L	multilingual	508 533 1
6 x 2L	multilingual	508 536 1





# **Blood Tubing Set for Dialysis**



Article #	Configuration	Filling Volume	Pump Inner Diameter	Unite per box
BLU001E	Arterial Line, Venous Line, 2 TPs, 2 RCs	156 mls	8.0 mm	24
BLU003E	Arterial Line, Venous Line, no TPs, 2 RCs	154 mls	6.3 mm	24
BLU004E	Arterial Line, Venous Line, Infusion Line, 2 TPs, 2 RCs, Drainage bag	164 mls	8.0 mm	24
BLU005E	Arterial Line, Venous Line, 2 TPs, 2 RCs	156 mls	8.0 mm	24
BLU009E	Arterial Line, Venous Line, Infusion Line, 2 TPs, 2 RCs, Drainage bag	164 mls	8.0 mm	24
BLU012E	Arterial Line, Venous Line, Infusion Line, 1 TPs, 2 RCs, (shorter arterial line)	153 mls	6.3 mm	24
BLU012E	Arterial Line, Venous Line, 1 TPs, 2 RCs	197 mls	6.3 mm	







Flexible Design Exceptional Performance

# Water Treatment Plant for Dialysis Machine

Fresenius Medical Care, Germany

Model: AquaBplus 500-3000 L/H

Single Stage and Double Stage (Depend on Customers Choice)

# **Choose AquaBplus:**

Streamlined installation. Full service. Every setup of the way.



# BCM-Body Composition Monitor

A building block of systematic Fluid Management







#### Technical information

Overhydration (OH) (pre-/postdialytic)	[L]
Leantissue index (LTI)	[kg/m ]
Fat TIssue Index (FTI)	[kg/m ]
Total Body Water (TBW) (Urea distribution volume V)	[L]
Extracellular Water (ECW)	[L]
Intracellular Water (ICW)	[L]
ECW/ICW	-
Lean tis sue mass	[kg] and [%]
Fat mass	[kg] and [%]
Adipose tissue mass	[kg]
Body ce <b>ll</b> mass	[kg]

BCM-Body Composition Monitor device, 10 PatientCards, 40 disposable electrodes (10 x 4 patient cable, AC adapter, test box	H02 201 1 ),
BCM-Body Composition Monitor electrodes	Art. No.
40 disposable electrodes (10x4)	M35 143 1
40 disposable electrodes for children (10x4)	M41 656 1
Fluid Management Tool	Art. No.
Single installation license	F4000547
Card Reader "UniCcard"	M20 198 1
PatientCards	Art. No.
10 pieces	M34 860 1
10 pieces Accessories	M34 860 1 Art. No.
·	Art. No.
Accessories	M34 860 1 Art. No. M40 179 1 629 743 1

Technical changes reserved!

Measurement time (including patient preparation)	approx. 2 min.
Data output	LC-Display; integrated SmartCard writer
Measuring frequency range	50 discrete frequencies in the range from 5-1000 kHz
Battery	Lithium-lon battery, five-hour capacity
AC adapter	100-240 V AC; 50-60 Hz
Operating conditions	0°C-35°C, 30- 70% humidity
DImensions	16.9 x 11.2 x 27.2 cm (W x Hx D), 2 kg (weight)
Medical device class (acc. to EU directive 93/42/EEC)	lla





















































Many moe



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