



HLS Set Advanced

Extracorporeal respiratory
and/or cardiocirculatory support

Cardiohelp System and HLS Set Advanced – the leading ECMO system

Extracorporeal membrane oxygenation (ECMO) provides cardiopulmonary support and reduces strain on vital organs. The Cardiohelp System with its state-of-the-art extracorporeal circuit – the HLS Set Advanced – is the leading ECMO system and has proven its effectiveness in thousands of patients.



The HLS Set Advanced includes a high performance oxygenator with integrated centrifugal pump, pressure and temperature sensors (HLS Module Advanced). Integrated non-invasive sensors help to increase the safety during the application and avoid the need for external measuring lines.

As a compact and lightweight system, the Cardiohelp System allows for versatile use, including transport of patients inside and outside the hospital.

Monitoring of critical blood parameters in combination with Cardiohelp

- Venous oxygen saturation (S_vO_2)
- Hematocrit (Hct)
- Hemoglobin (Hb)
- Venous temperature (T_{ven})
- Venous line pressure
- Arterial line pressure
- Internal pressure (measured between centrifugal pump and gas module)
- Arterial temperature
- Flow-Bubble Sensor (FBS) for bubble detection
- A venous bubble sensor is optionally available

HLS Set Advanced – Technical data

	HLS Set Advanced 5.0	HLS Set Advanced 7.0
Blood flow rates	0.5 – 5 l/min	0.5 – 7 l/min
Tube size (inside diameter x wall thickness)	3/8" x 3/32" (9.53 mm x 2.38 mm)	3/8" x 3/32" (9.53 mm x 2.38 mm)
Centrifugal pump speed	0 – 5,000 rpm	0 – 5,000 rpm
Oxygenation membrane surface area	1.3 m ²	1.8 m ²
Heat exchanger surface area	0.3 m ²	0.4 m ²
Gas exchange fibres	Polymethylpentene (PMP)	Polymethylpentene (PMP)
Priming volume HLS Set Advanced with 2 x 2.3 m tubing length	570 ml	600 ml
Priming volume HLS Module Advanced	240 ml	273 ml

Available in different versions

HLS Set Advanced 5.0 accommodates a blood flow of up to 5 l/min, HLS Set Advanced 7.0 accommodates a blood flow of up to 7 l/min. Both HLS Set Advanced sets have a biocompatible Bioline Coating, which ensures a homo-

genous surface and minimizes the blood damaging effects of foreign surfaces.

Version	REF	Coating	
HLS Set Advanced 5.0	BE-HLS 5050	Bioline Coating	0.5–5 l/min
HLS Set Advanced 7.0	BE-HLS 7050	Bioline Coating	0.5–7 l/min

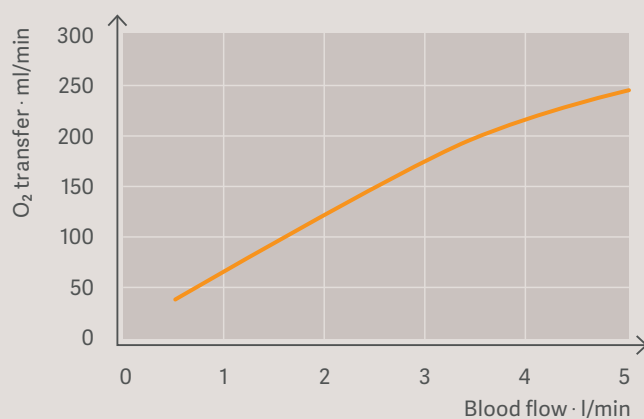
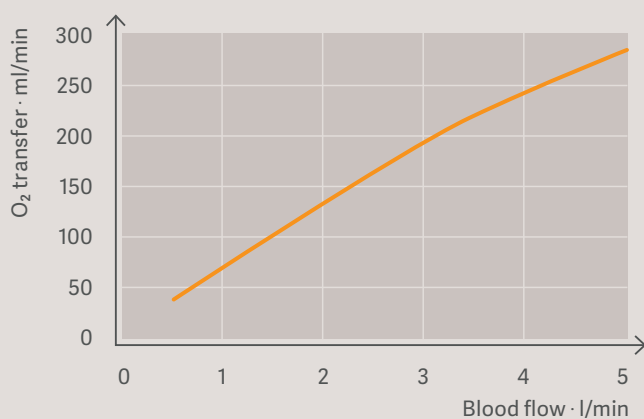


Performance data

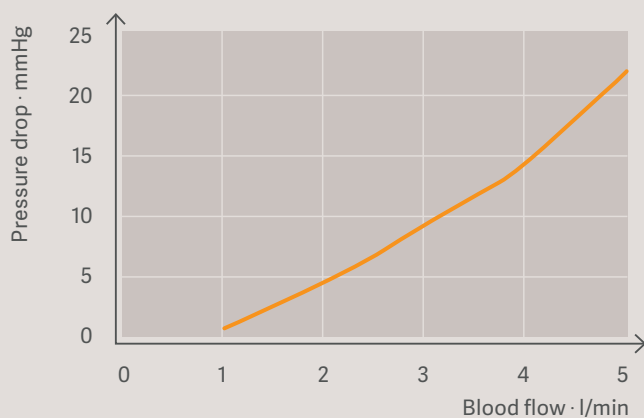
HLS Set Advanced 5.0

O₂ transfer

37 °C | Gas-blood flow ratio 1:1

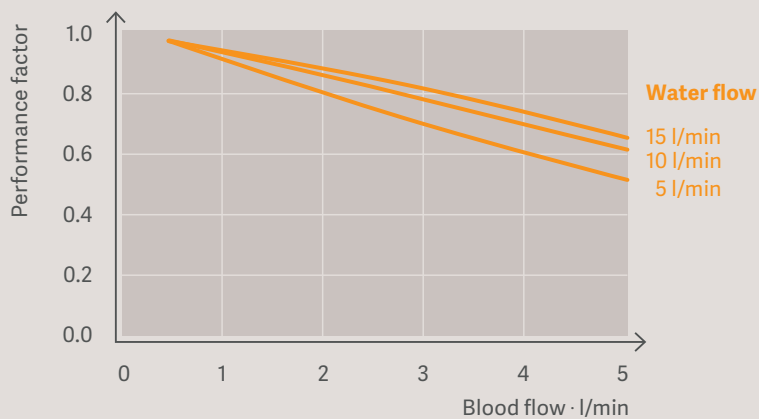


Pressure drop oxygenator



Heat exchanger performance

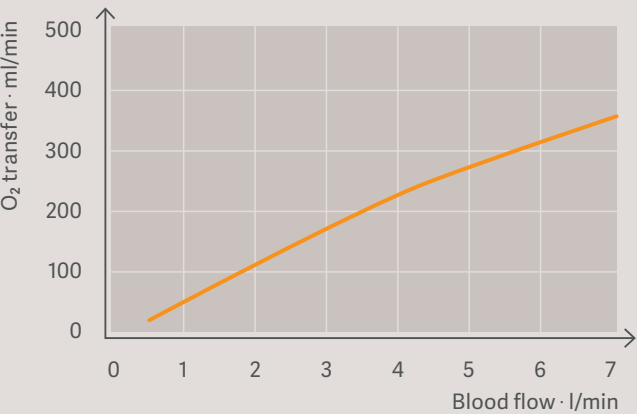
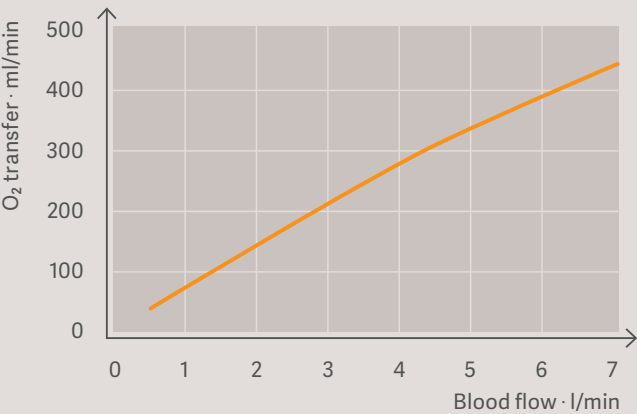
37 °C | ISO 7199 Standard



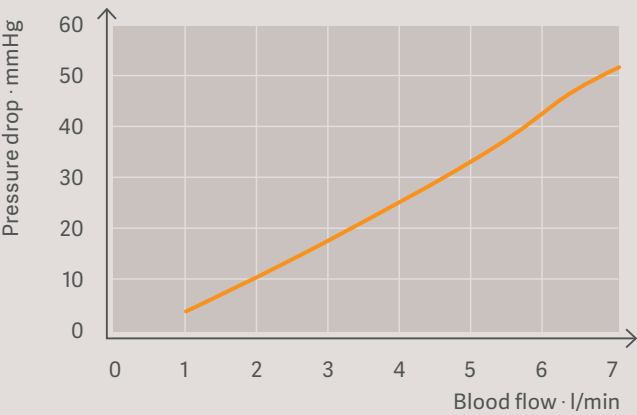
HLS Set Advanced 7.0

O₂ transfer

37 °C | Gas-blood flow ratio 1:1

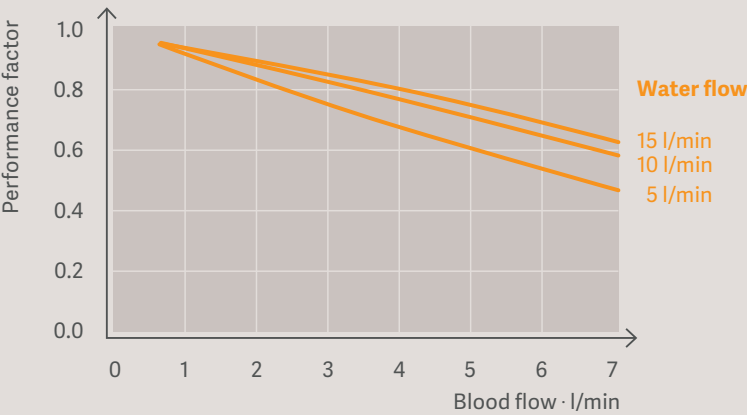


Pressure drop oxygenator



Heat exchanger performance

37 °C | ISO 7199 Standard



Benefits at a glance

- Integrated non-invasive sensor technology helps to avoid the need for external measuring lines
- Integrated pressure monitoring for increased safety during application
- Quick and easy set-up and priming for routine and rapid deployment in emergency situations
- An integrated heat exchanger helps to precisely manage temperature
- Provided as a standard set, supporting routine handling in any situation and consistent training of users
- The Cardiohelp System and HLS Set Advanced are approved for safe intra- and inter-hospital patient transport
- Dedicated softline-coated set to treat patients who are sensitive to heparin-induced thrombocytopenia





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