

# INSPIRE<sup>®</sup> Min.I.

Redefining minimally invasive approach  
to perfusion



Expand your choices with INSPIRE<sup>®</sup> Min.I.



versatile system configurations



air system management



low hemodilution features



high biocompatibility

# MINIMALLY INVASIVE PERFUSION

**INSPIRE® Min.I.**

is an innovative Minimally Invasive perfusion system bringing safety to the system level.

**INSPIRE® Min.I.**

allows a low hemodilution cardiopulmonary bypass (CPB).

**INSPIRE® Min.I.**

allows clinicians the choice of a high number of customized solutions.

**INSPIRE® Min.I.**

is available in both 6 LPM and 8 LPM sizes with or without integrated arterial filter.

**INSPIRE® Min.I., the safe system approach to minimally invasive perfusion with no compromise on performance.**



## Air system management

Imagine... A new, innovative, completely closed system that includes a venous bubble trap, centrifugal pump, oxygenator module with integrated arterial filter. And venous and arterial automatic systems to evacuate and guard against air emboli. INSPIRE Min.I. features APC and ERC venous and arterial air management devices, bringing safety of minimally invasive perfusion to a system level. From disposable to hardware INSPIRE Min.I. is a system, not just an integration of products.

### INSPIRE VBT 8 NEW VENOUS BUBBLE TRAP

- Low priming volume
- Rated up to 8 LPM blood flow
- Excellent air removal performances in synergy with APC
- PH.I.S.I.O. (PC) coated
- Flexible holder to allow maximum degree of freedom to personalize HLM set-up



### AIR PURGE CONTROL (APC)

- Guards against venous air embolization
- Works synergistically with INSPIRE VBT 8 new venous bubble trap and a bubble sensor on the venous line
- Purged volume is saved and sent to the Mini CPB bag or to the cardiotomy reservoir



### ELECTRIC REMOTE CLAMP (ERC)

- Guards against arterial line air embolization exiting venous bubble trap
- Can be manually operated from the SCP Centrifugal Pump Control Console
- Prevents retrograde flow and closes when arterial flow drops to 0 LPM





## Low hemodilution features

Reduced priming volume of the INSPIRE Mini.I. system components meets the requirements for a low hemodilution Cardiopulmonary Bypass procedure. Low hemodilution is one of the musts of minimally invasive CPB and is systematically related to decreased banked blood usage and decreased organ failure and lower morbidity.

LivaNova's INSPIRE oxygenator modules, INSPIRE VBT 8, Revolution centrifugal pump, and INSPIRE Dual reservoir all share the basic principles of hemodilution reduction.

### 6 LPM



**INSPIRE 6 M**  
184 ml priming vol.



**INSPIRE 6F M**  
284 ml priming vol.

### 8 LPM



**INSPIRE 8 M**  
219 ml priming vol.



**INSPIRE 8F M**  
351 ml priming vol.



**INSPIRE VBT 8**  
128 ml priming vol.



**REVOLUTION**  
57 ml priming vol.



**INSPIRE HVR DUAL**  
150 ml Min Op. level  
45 ml venous collector priming vol.  
31 ml venous filter hold-up vol.



## Versatile system configurations

### WIDE RANGE OF PTS SOLUTIONS

LivaNova's wide offering of PTS components allows to configure the most appropriate Perfusion Tubing System according to your individual needs. From stand-alone tubing systems and stand-alone devices to fully preconnected Min.I. systems.



### S5 CONFIGURATION OF CHOICE

INSPIRE Min.I. system of choice works at its best when fitting S5 set-up and S5 accessories.

LivaNova's S5 Heart-Lung Machine can be configured to better suit mast mounted INSPIRE Min.I. system set-ups with short A/V lines-low priming configuration.

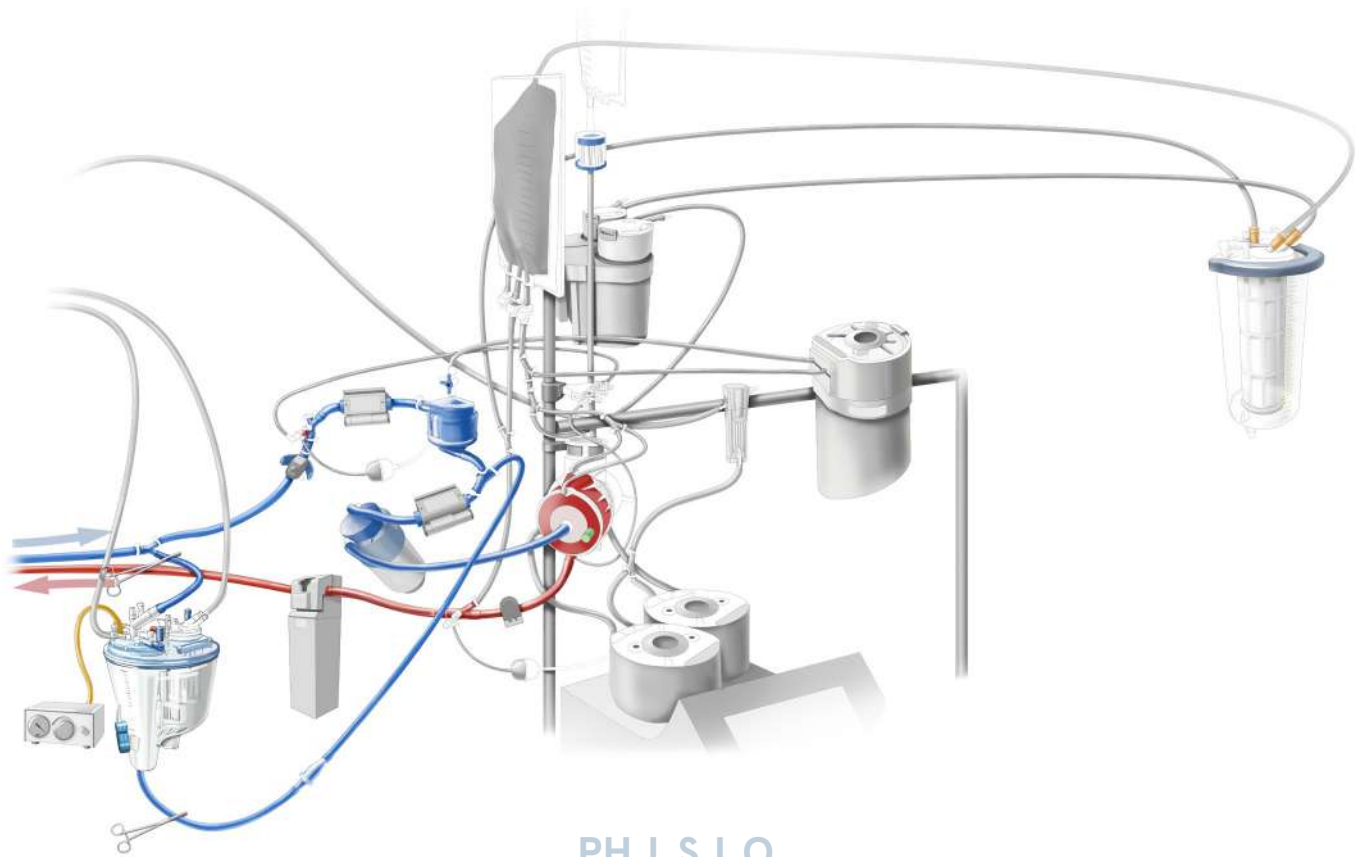




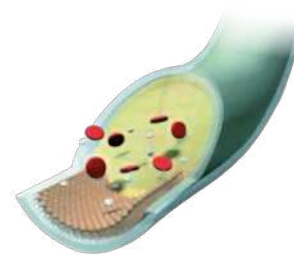
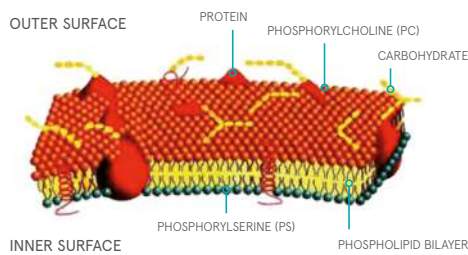
# High biocompatibility

## HYBRID SYSTEM OPTIONS WITH INSPIRE HVR DUAL

Hybrid systems represent the latest evolution in minimally invasive cardiopulmonary perfusion. The integration of a hard shell reservoir in the venous line facilitates blood management and helps to overcome any intra-operative issue requiring the conversion to a traditional open system.



PH.I.S.I.O.



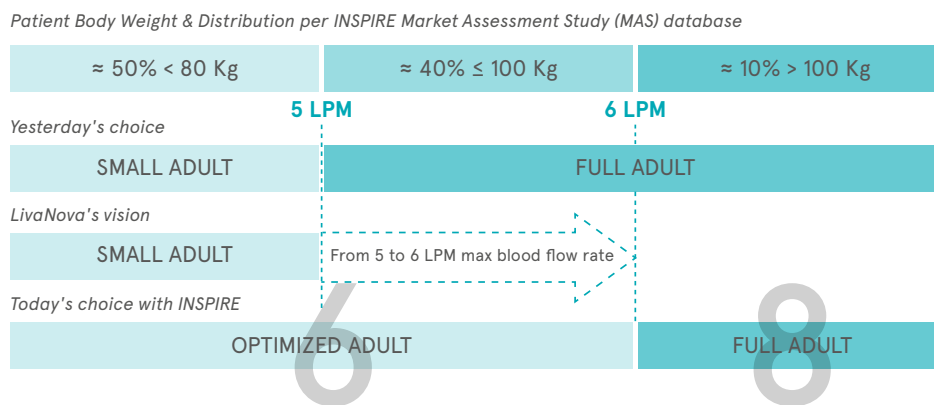
PH.I.S.I.O. PC coating

The INSPIRE HVR DUAL Reservoir provides clinicians with an ideal solution to build an innovative Hybrid system, allowing also for activated suction blood separation in the same reservoir that handles venous blood.

One of the goals of minimally invasive CPB is the minimization of foreign surface area in contact with blood and the minimization of consequent inflammatory response. INSPIRE Min.I. has reduced surface area in contact with blood and features PH.I.S.I.O. PC coating with proven effectiveness in reducing platelet activation and white blood cell adhesion to foreign surfaces.

Activated suction blood sequestration, combined with PH.I.S.I.O. PC coating, offers maximum biocompatible benefits. The combination of the INSPIRE HVR DUAL Reservoir system, PH.I.S.I.O. PC coating and XTRA autotransfusion system, offers clinicians a comprehensive solution to enhanced biocompatibility.

# Adult patient population and oxygenator of choice



## INSPIRE® 6 LPM

Our INSPIRE 6 LPM oxygenator systems are the only optimized adult oxygenator systems with a low blood contact surface area which can minimize hemodilution and effectively control GME, while offering full performance up to 6 LPM maximum blood flow. This oxygenator module covers the requirements of a wide patient population.

## INSPIRE® 8 LPM

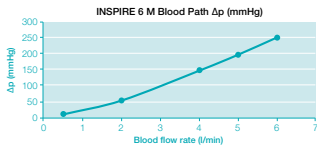
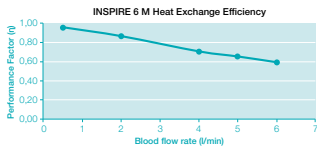
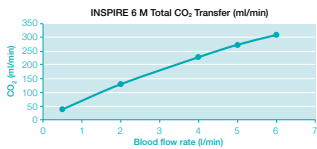
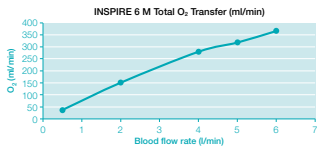
The INSPIRE 8 LPM oxygenator systems provide superior performance up to 8 LPM, allowing clinicians to safely and comfortably treat all adult patients, while reducing hemodilution and effectively controlling gaseous micro-emboli (GME). INSPIRE 8 LPM oxygenator systems offer the ideal solution for powerful perfusion and have been designed to help clinicians standardize perfusion practice at the highest performance levels.

# Performance charts

**INSPIRE® Min.I.  
with INSPIRE 6 M**



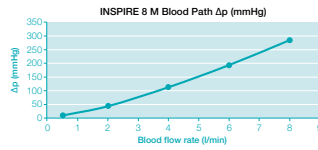
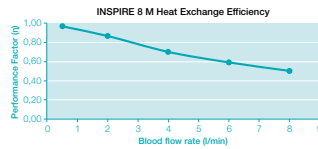
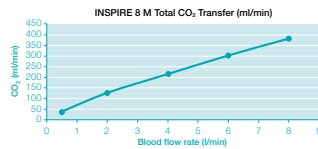
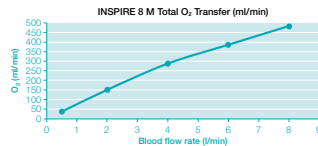
**TEST CONDITIONS**  
Bovine blood - Hb 12±0.2 gr/dl - B.E. 0±2mEq/l  
- Venous pCO<sub>2</sub> 45±5 mmHg - O<sub>2</sub> Venous Sat. 65±5%  
- Blood Temp. 37±1 °C - Q<sub>a</sub>/Q<sub>v</sub>=1 - FIO<sub>2</sub> 100% - Q<sub>w</sub>=10±0.5 l/min



**INSPIRE® Min.I.  
with INSPIRE 8 M**



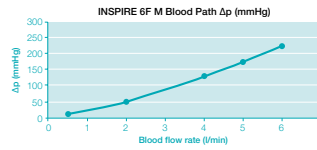
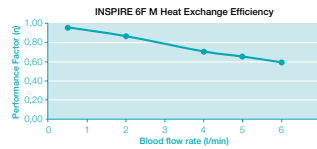
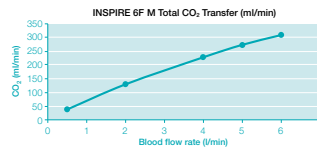
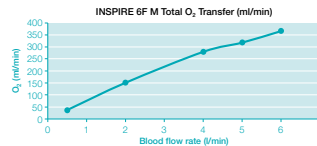
**TEST CONDITIONS**  
Bovine blood - Hb 12±0.2 gr/dl - B.E. 0±2mEq/l  
- Venous pCO<sub>2</sub> 45±5 mmHg - O<sub>2</sub> Venous Sat. 65±5%  
- Blood Temp. 37±1 °C - Q<sub>a</sub>/Q<sub>v</sub>=1 - FIO<sub>2</sub> 100% - Q<sub>w</sub>=10±0.5 l/min



**INSPIRE® Min.I.  
with INSPIRE 6F M**



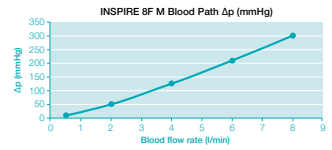
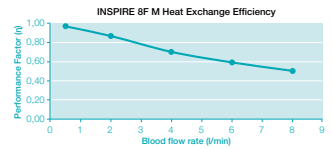
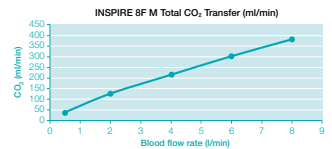
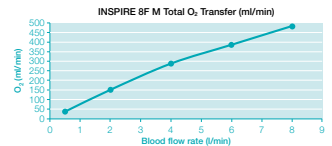
**TEST CONDITIONS**  
Bovine blood - Hb 12±0.2 gr/dl - B.E. 0±2mEq/l  
- Venous pCO<sub>2</sub> 45±5 mmHg - O<sub>2</sub> Venous Sat. 65±5%  
- Blood Temp. 37±1 °C - Q<sub>a</sub>/Q<sub>v</sub>=1 - FIO<sub>2</sub> 100% - Q<sub>w</sub>=10±0.5 l/min



**INSPIRE® Min.I.  
with INSPIRE 8F M**



**TEST CONDITIONS**  
Bovine blood - Hb 12±0.2 gr/dl - B.E. 0±2mEq/l  
- Venous pCO<sub>2</sub> 45±5 mmHg - O<sub>2</sub> Venous Sat. 65±5%  
- Blood Temp. 37±1 °C - Q<sub>a</sub>/Q<sub>v</sub>=1 - FIO<sub>2</sub> 100% - Q<sub>w</sub>=10±0.5 l/min



# Technical specifications

	INSPIRE® Min.I. with INSPIRE 6 M	INSPIRE® Min.I. with INSPIRE 8 M	INSPIRE® Min.I. with INSPIRE 6F M	INSPIRE® Min.I. with INSPIRE 8F M
<b>VENOUS BUBBLE TRAP</b>				
Max. blood flow rate	8 l/min	8 l/min	8 l/min	8 l/min
Priming volume	128 ml	128 ml	128 ml	128 ml
Screen filter micron size	120 µm	120 µm	120 µm	120 µm
Screen filter surface area	50 cm <sup>2</sup>	50 cm <sup>2</sup>	50 cm <sup>2</sup>	50 cm <sup>2</sup>
<b>OXYGENATOR MODULE</b>				
Maximum Blood Flow Rate	6 l/min	8 l/min	6 l/min	8 l/min
Static Priming Volume (oxy module + heat exchanger average value)	184 ml	219 ml	284 ml	351 ml
Membrane surface area (approx. value)	1,4 m <sup>2</sup>	1,75 m <sup>2</sup>	1,4 m <sup>2</sup>	1,75 m <sup>2</sup>
Heat Exchanger material	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Heat Exchanger surface area (approx. value)	0,4 m <sup>2</sup>	0,4 m <sup>2</sup>	0,4 m <sup>2</sup>	0,4 m <sup>2</sup>
Arterial Filter material type			Polyester net	Polyester net
Arterial Filter micron size			38 µm	38 µm
Arterial Filter surface area			68 cm <sup>2</sup>	97 cm <sup>2</sup>

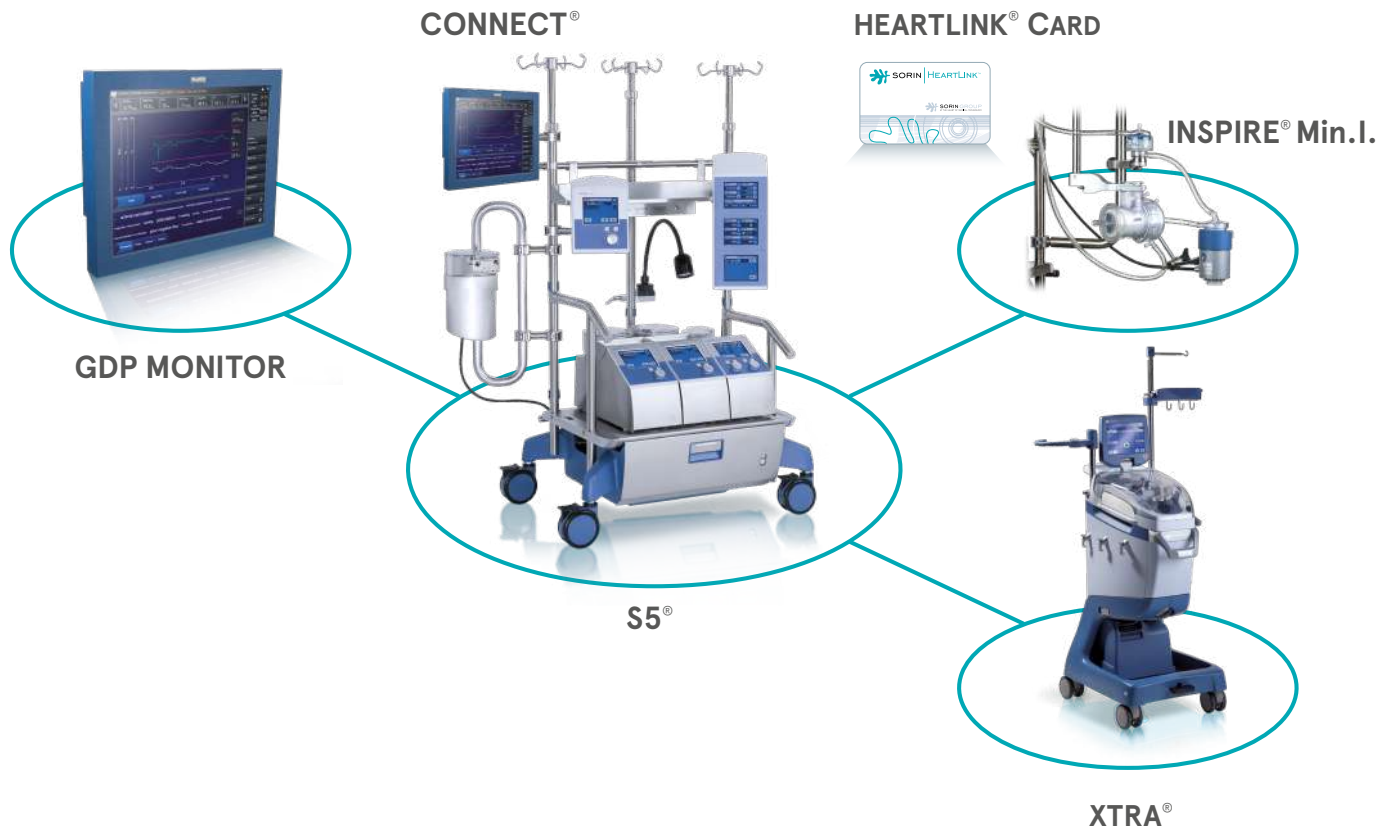
# Order guide

ITEM #	DEVICE	DESCRIPTION	UNITS PER CASE	IMAGE
050589	INSPIRE VBT 8	INSPIRE VBT 8 VENOUS BUBBLE TRAP	6	
050590	INSPIRE VBT 8 HOLDER	INSPIRE VBT 8 HOLDER FOR VENOUS BUBBLE TRAP	1	
050124	SYNERGY BAG HOLDER	MINI BYPASS BAG RESERVOIR HOLDER	1	
050700	INSPIRE 6 M	INSPIRE 6 LPM PHISIO OXY MODULE	2	
050701	INSPIRE 8 M	INSPIRE 8 LPM PHISIO OXY MODULE	2	
050702	INSPIRE 6F M	INSPIRE 6 LPM PHISIO OXY MODULE WITH INTEGRATED ARTERIAL FILTER	2	
050703	INSPIRE 8F M	INSPIRE 8 LPM PHISIO OXY MODULE WITH INTEGRATED ARTERIAL FILTER	2	
050705	INSPIRE HVR DUAL	INSPIRE PHISIO DUAL HARD SHELL VENOUS RESERVOIR	2	
050640	INSPIRE BKT	BRACKET FOR INSPIRE OXY MODULES AND INTEGRATED OXYGENATOR SYSTEMS	1	
48-42-10*	INSPIRE BKT FAST	BRACKET FOR INSPIRE OXY MODULES AND INTEGRATED OXYGENATOR SYSTEMS WITH FAST CLAMP	1	
050641	INSPIRE BKTH	BRACKET FOR INSPIRE HVR AND DUAL HVR RESERVOIRS	1	
042229000	TEMPERATURE PROBES	TEMPERATURE PROBES	2	

\*To be ordered as an accessory of LivaNova S5 and C5 HLMs.

# HEARTLINK® SYSTEM

The first integrated **Perfusion Management System** designed for helping clinicians to improve patient outcomes, increased clinical efficacy and apply Goal-Directed Perfusion therapy.



# LivaNova

Health innovation that matters

[www.livanova.com](http://www.livanova.com)



LivaNova's Green Leaf program

The Sorin Group Italia Quality System complies with:  
EN ISO 13485:2012



0123 According to Annex II (Full Quality System) of MDD 93/42/EEC as amended by directive 2007/47/EEC

Manufactured by:

**Sorin Group Italia Srl**

A wholly-owned subsidiary of LivaNova PLC

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Refer to the information for Use provided with each product for detailed information, warnings, precautions and possible adverse side effects.

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