

MICS CANNULAE

Expanding performance standards



High performance cannulae for direct and femoral cannulation in minimally invasive cardiac surgery

Global solutions for **MICS** from a global leader in Cardiac Surgery

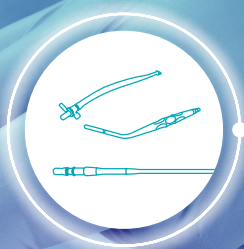
LivaNova's approach to **Minimally Invasive Cardiac Surgery (MICS)** extends far beyond minimizing skin incisions: it is aimed at minimizing the overall invasiveness of the cardiac surgery procedure, through comprehensive, dedicated products such as aortic and mitral replacement and repair prostheses, cannulae, perfusion and blood management systems.

PERCEVAL's design was made for Minimally Invasive Cardiac Surgery. It's an innovative, sutureless and collapsible aortic bioprosthesis that allows for shorter procedures and reduced physiologic impact during surgery.

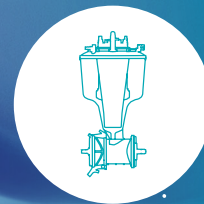
SUTURELESS AVR



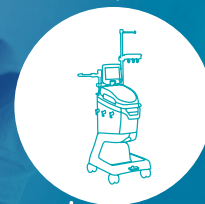
CANNULAE



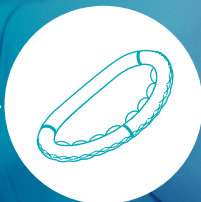
OXYGENATION



BLOOD MANAGEMENT



MITRAL REPAIR

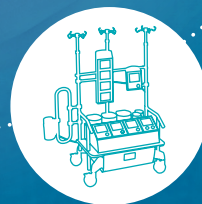


MEMO 3D ReChord truly reflects the native annulus dynamic. The innovative chordal guiding system promotes standardized chord replacement, offering reproducible results while accelerating procedure times.*

PERFUSION DATA
MANAGEMENT SYSTEMS



HEART LUNG MACHINE



LivaNova HEARTLINK SYSTEM is the first automatically integrated perfusion management system designed for improved patient outcomes, increased clinical efficacy and goal-directed perfusion.

High performance MICS CANNULAE

High performance cannulae specifically developed to meet diverse minimal invasive and femoral approaches where ease of insertion, clear surgical view and good hemodynamics are paramount for improving patient outcomes.

- **LivaNova Cannulae** facilitate **femoral** and **direct cannulation in MICS** while providing optimal blood flow



MICS Cannulation in Valve Procedures

Cannulation procedure techniques with dedicated LivaNova Cannulae

ARTERIAL AND VENOUS FEMORAL CANNULATION

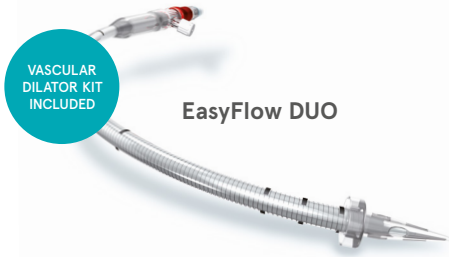


Arterial Femoral Cannulation

Arterial Cannula inserted in the femoral artery

VASCULAR DILATOR KIT INCLUDED

EasyFlow DUO



ARTERIAL DIRECT AND VENOUS FEMORAL CANNULATION



Arterial Direct Cannulation

Arterial Cannula inserted in the aorta

EasyFlow



ARTERIAL AND VENOUS DIRECT CANNULATION



Arterial Direct Cannulation

Arterial Cannula inserted in the aorta

EasyFlow

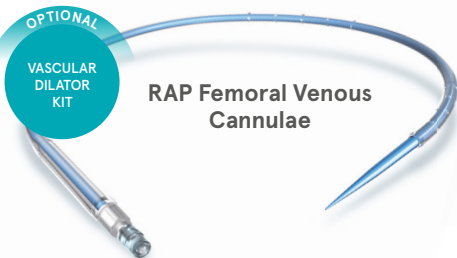


Venous Femoral Cannulation

Venous cannula inserted in the femoral vein

OPTIONAL VASCULAR DILATOR KIT

RAP Femoral Venous Cannulae

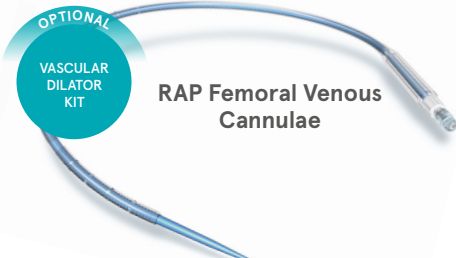


Venous Femoral Cannulation

Venous cannula inserted in the femoral vein

OPTIONAL VASCULAR DILATOR KIT

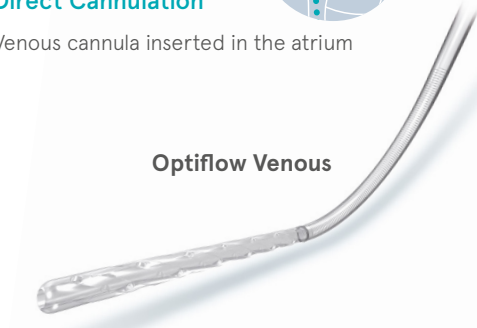
RAP Femoral Venous Cannulae



Venous Direct Cannulation

Venous cannula inserted in the atrium

Optiflow Venous



OPTIONAL

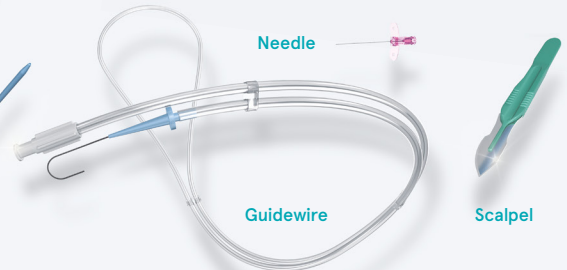
VASCULAR DILATOR KIT

VASCULAR DILATOR KIT

The dedicated Vascular Dilator Kit includes an 18 Gauge needle, a 0.035 x 180 cm guidewire, a blade scalpel as well as 8, 12, 16, 20 and 24 Fr dilators.



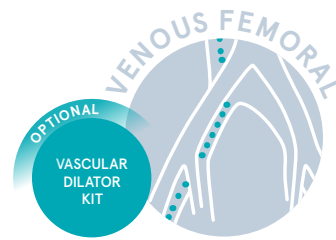
Dilators



Needle

Guidewire

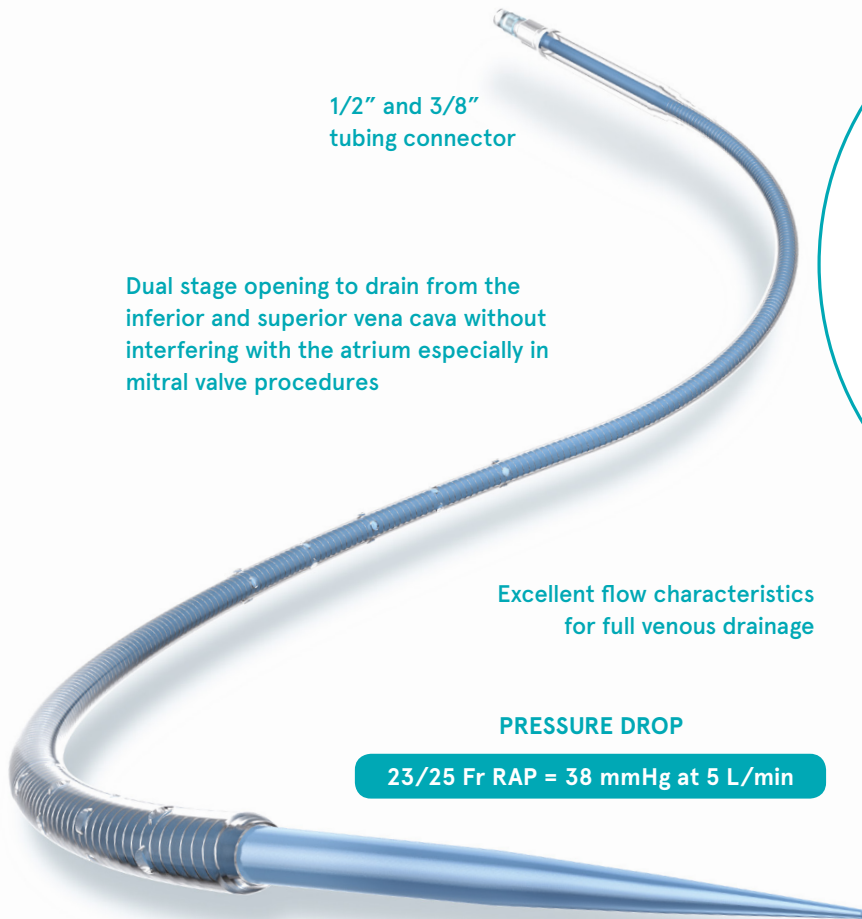
Scalpel



RAP Cannula

Dual stage venous femoral cannulae designed to drain from superior and inferior vena cava, available in two sizes 22/22 Fr and 23/25 Fr with full flow drainage capability. A high quality soft introducer features a smooth transition to the cannula to improve insertion and reduce vascular damage.

Available for percutaneous insertion through Seldinger technique.



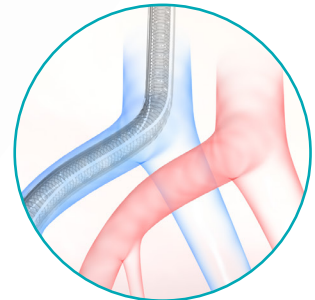
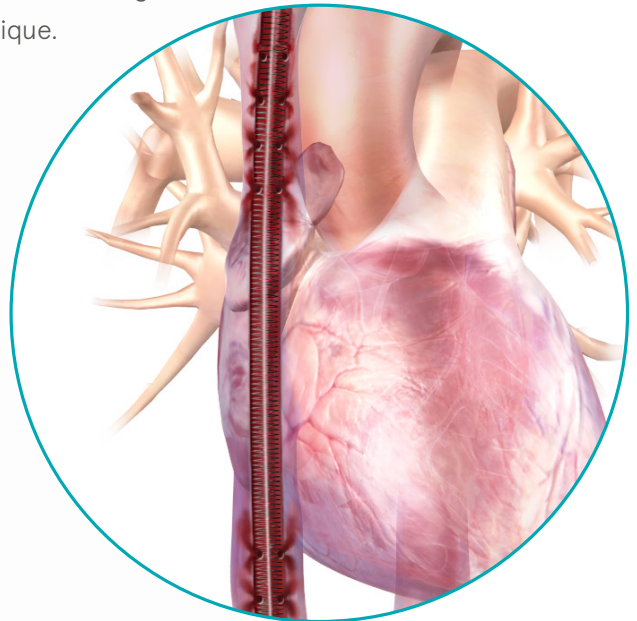
1/2" and 3/8"
tubing connector

Dual stage opening to drain from the inferior and superior vena cava without interfering with the atrium especially in mitral valve procedures

Excellent flow characteristics
for full venous drainage

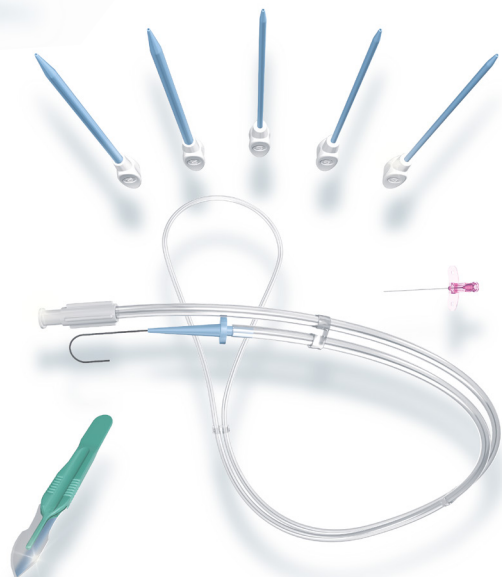
PRESSURE DROP

23/25 Fr RAP = 38 mmHg at 5 L/min



OPTIONAL VASCULAR DILATOR KIT

The dedicated Seldinger Insertion kit includes an 18 Gauge needle, a 0.035 x 100 cm guidewire, a blade scalpel as well as dilators of 8, 12, 16, 20 and 24 Fr.





Optiflow Venous Cannula

The Optiflow Venous cannula features a special swirled tip design with multiple side holes that facilitate active and physiological venous drainage regardless of the position of the heart.

This cannula is more compact than a standard cannula which makes it easier to insert and remove while improving the surgical view also in minimally invasive procedures.

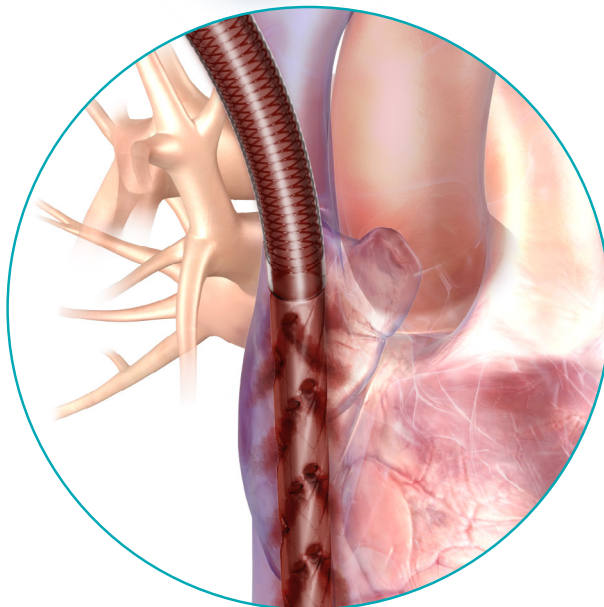
*"The innovative small-sized, 29-Fr Optiflow cannula provides high-flow drainage across the entire cannula inserted into the right atrium without the need for double cannulation and with no increase in central venous pressure."**

Di-ethylhexyl phtalate
plasticizer free tubing with
wire-reinforcement

Compact size for
improved view in
narrow spaces

Distal central
opening

Unique 13 cm swirled and grooved tip
with multiple side holes

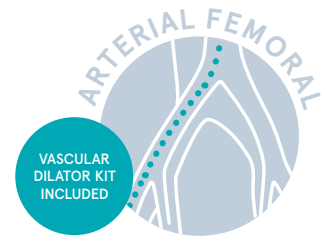


PRESSURE DROP

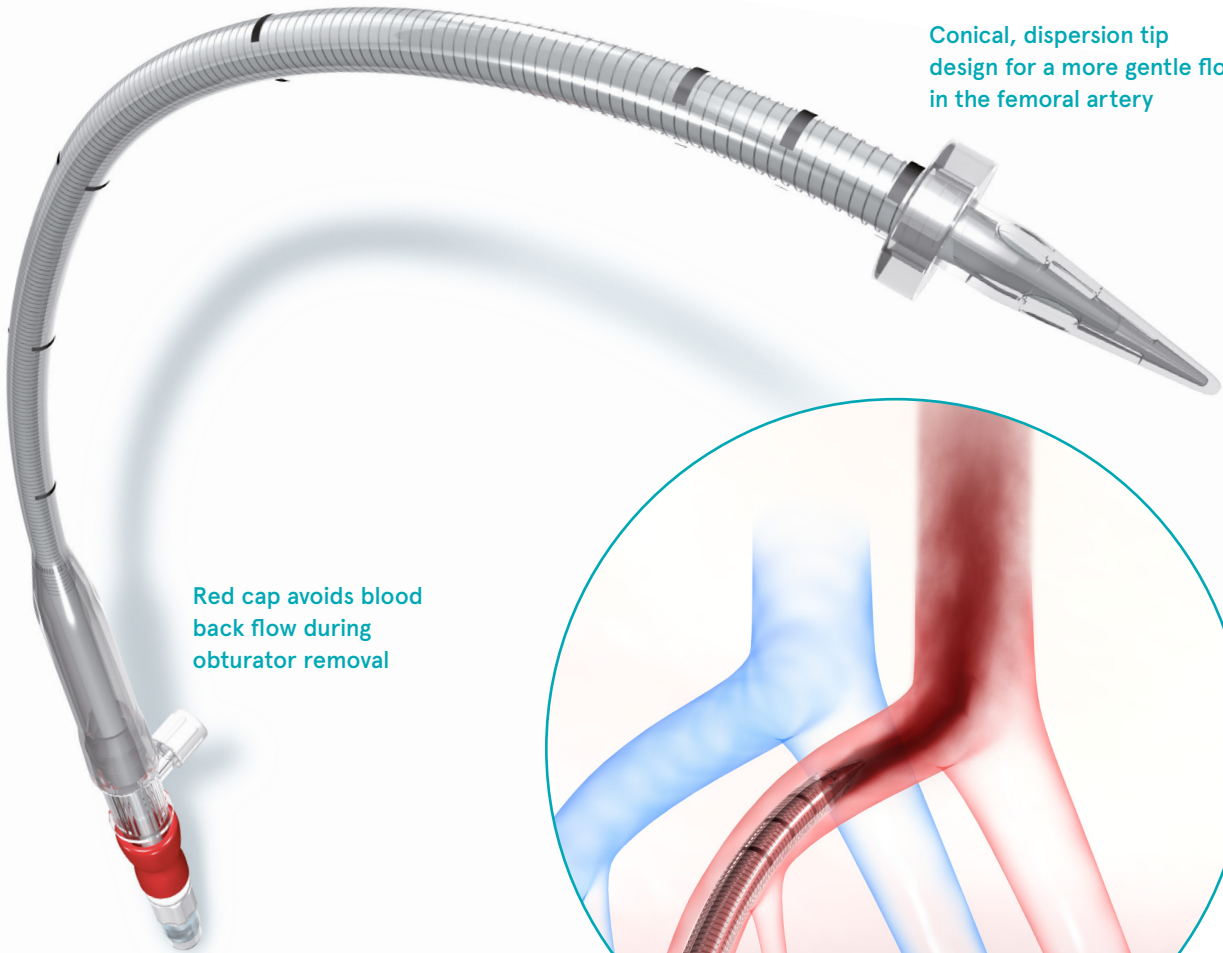
29 Fr Optiflow = 48 mmHg at 5L/min

* Superior vena cava cannulation in aortic valve surgery: an alternative strategy for a hemisternotomy approach. S. Pfeiffer, T. Fischlein et al. Interactive Cardiovascular and Thoracic Surgery – February 2015

EasyFlow DUO Cannula



The EasyFlow DUO is a femoral arterial cannula featuring a dispersion tip for a more gentle flow in the femoral artery. The obturator allows bloodless insertion in the arterial vessel. EasyFlow DUO is provided with a dedicated Vascular Dilator kit for percutaneous cannula insertion.



VASCULAR DILATOR KIT



PRESSURE DROP

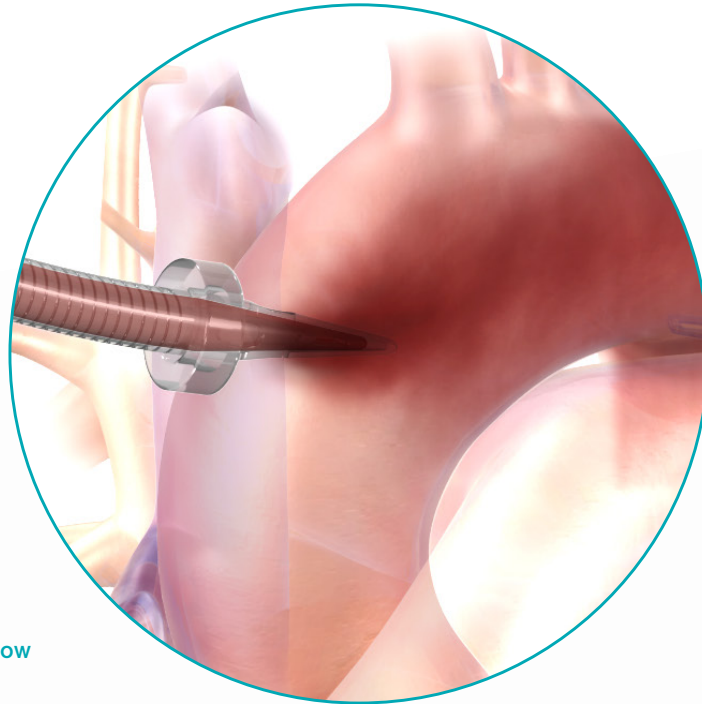
19 Fr EasyFlow DUO = 240 mmHg at 5L/min

23 Fr EasyFlow DUO = 125 mmHg at 5L/min



EasyFlow Cannula

The EasyFlow Cannula is designed for safe, reproducible direct aortic cannulation and features a multiple outlet port tip for diffused flow dynamics and a malleable stylet to aid introduction via lateral thoracotomy.



Red cap avoids blood back flow during obturator removal

Conical, dispersion tip design for a more gentle flow in the femoral artery

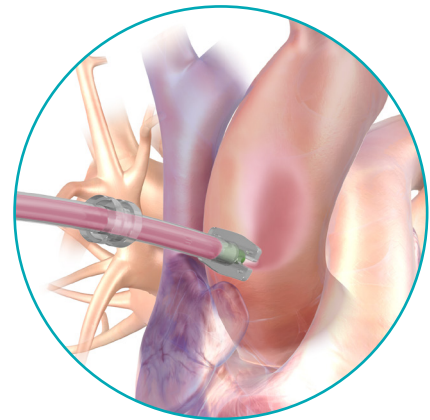
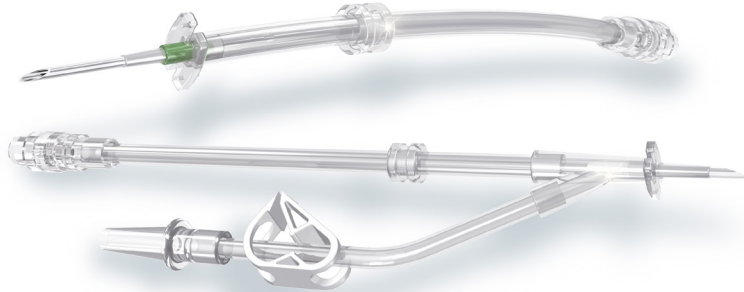


Progressive cannula stiffness, while pushing the introducer, facilitates remote insertion

Aortic Root Cardioplegia

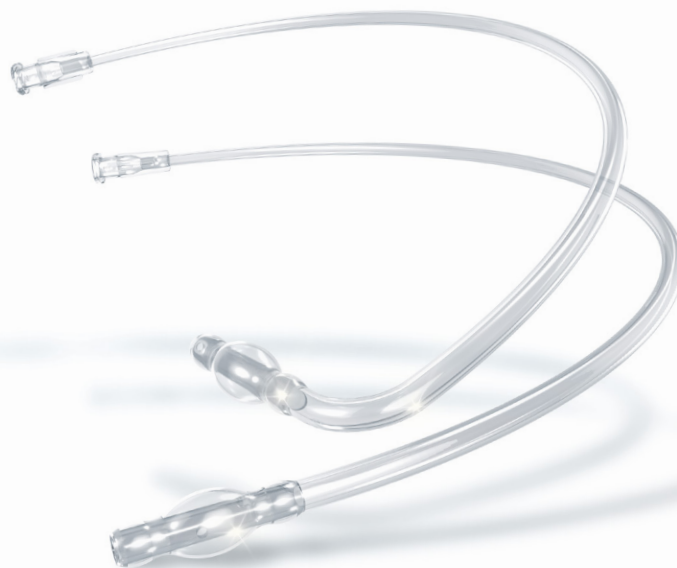
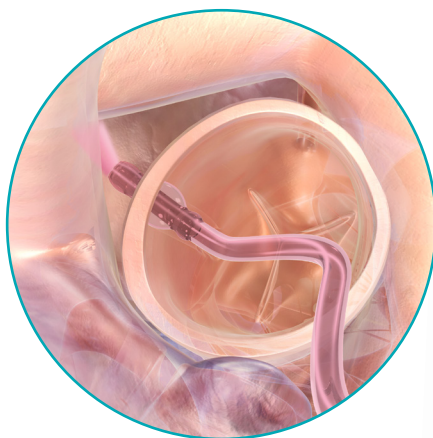
Aortic Root Cannulae are available with and without vent line to ensure cardioplegia delivery while venting the heart. Available with different tip sizes and stainless steel introducer needles.

Tubings come in standard length or longer (35 cm) for right anterior thoracotomy.



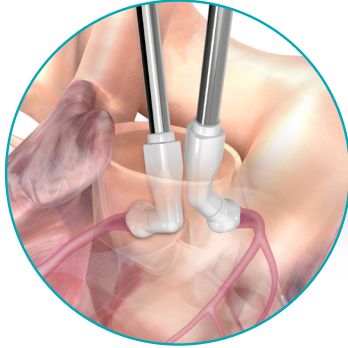
Coronary Ostia Perfusion Cannulae with Balloon Tip

Coronary Ostia Perfusion Cannulae with balloon tip, plastic tubing and female lure lock connector. The flexible, plastic tubing terminates with a self-inflating PVC balloon designed to occlude the coronary ostia and prevent any back flow of cardioplegia solution.



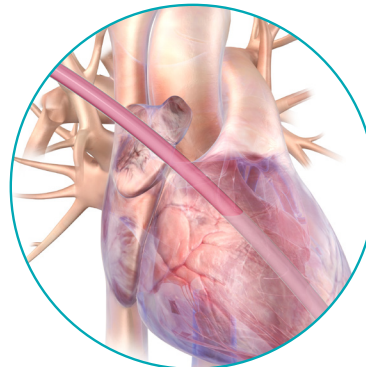
Coronary Ostia Perfusion Cannulae with 3D Tip

Coronary Ostia Perfusion Cannulae with 3D tip and stainless steel shaft. The unique 3D tip allows easy insertion without damaging the ostia. It is available with 45° and 90° tip to easily reach the right and left ostia and ensures homogeneous perfusion of the cardioplegia solution in the coronary path. Also available with female luer lock connector.



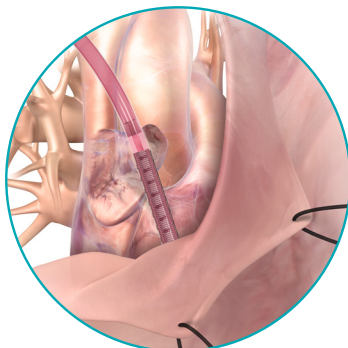
Vents

Vents for direct or indirect venting of the left ventricle are available in either PVC or silicone in a variety of configurations including straight or malleable tubings with removable guide wire or malleable stylet with a two-position latching mechanism.



ATRASump

ATRASump is a new generation, flexible tubing sump with a unique, atraumatic weighted-tip specifically designed to provide enhanced patient safety. The special, flexible metal spring tip is encapsulated within a flexible, fluted plastic covering that avoids the risk of tissue entanglement and damage. The flutes provide smooth flow of fluids and the embedded perforations uninterrupted drainage.



LivaNova

Health innovation that matters

Discover more at cannulae.livanova.com

www.livanova.com



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Please always refer to the Instructions For Use (IFU) manual provided with each product for detailed information, warnings, precautions and possible adverse side effects.

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