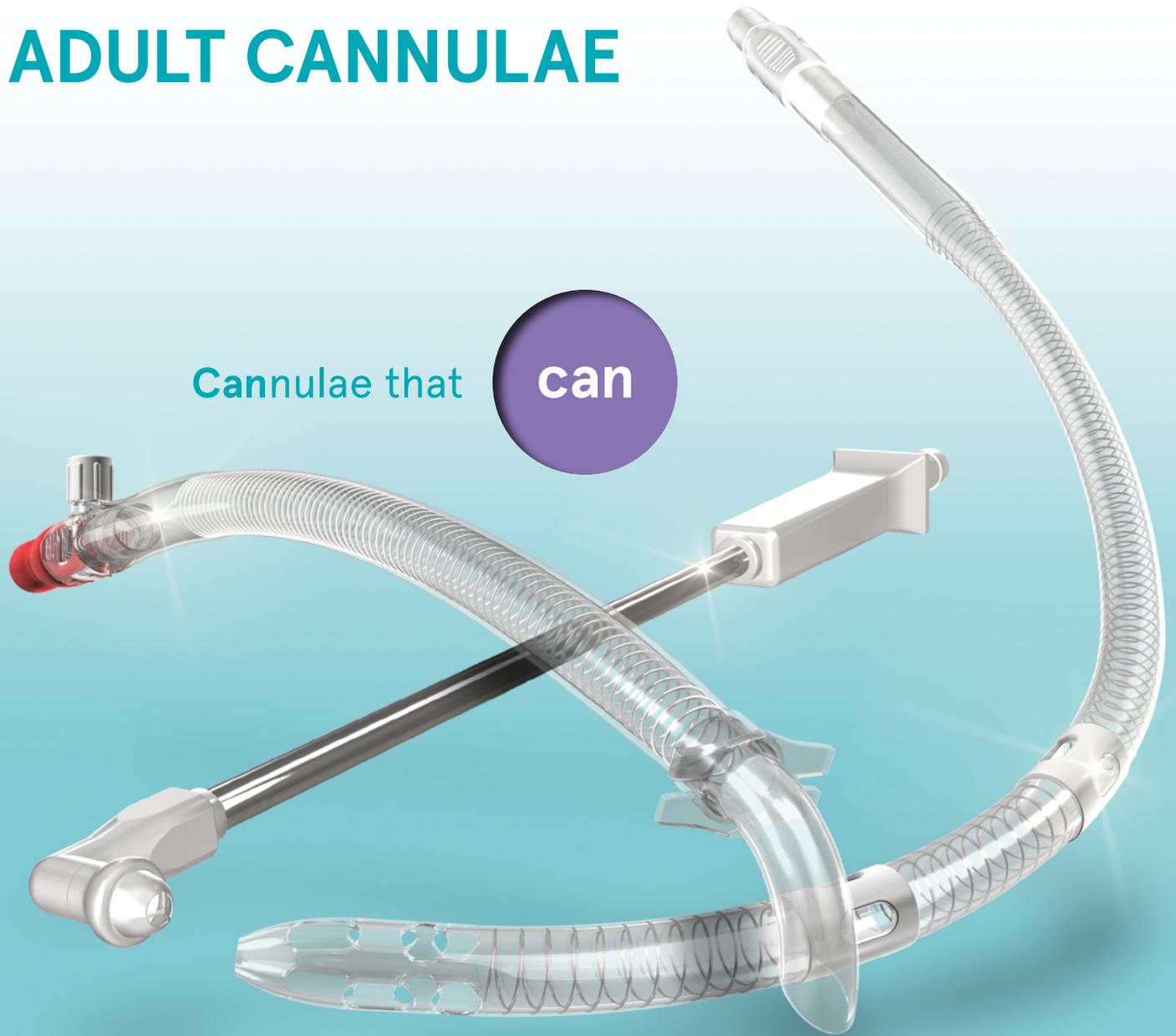


CONVENTIONAL ADULT CANNULAE



Comprehensive portfolio of aortic, venous and cardioplegia cannulae, vents, suction wands and sumps



1. *Assmann et al. Artificial Organs 2014; 39(3): 203-211*
2. *Pfeiffer et al. Interactive Cardiovascular and Thoracic Surgery 2015; 20:863-5*

Conventional Adult Cannulae

A comprehensive portfolio of conventional cannulae in a wide range of tips and sizes to meet diverse procedural requirements and needs.



Broad offering of aortic arch cannulae available in a variety of tips and configurations

can

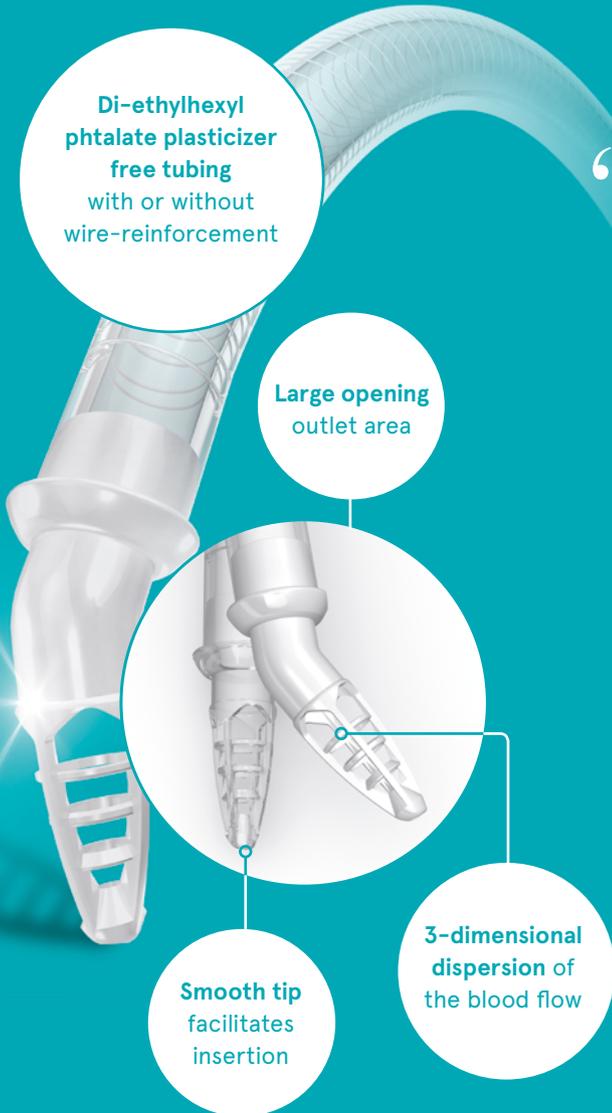
meet diverse procedural needs

Tailored offering of antegrade and retrograde cardioplegia, vents and suckers

Complete portfolio of high drainage venous cannulae

Optiflow Arterial Cannulae

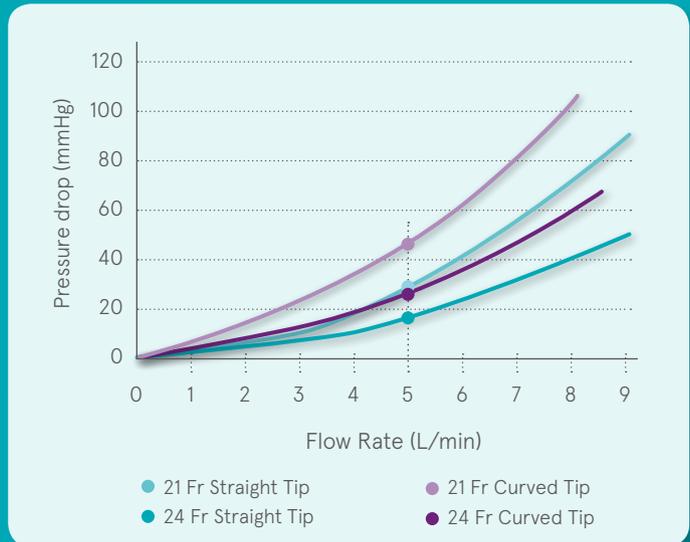
The Optiflow Arterial cannula is available with straight and bent tips, both of which feature an innovative and unique 3-dimensional dispersion tip that allows a more physiological flow. The tip reduces the pressure of the inlet jet stream on the aorta, thus mitigating arterial embolization of atherosclerotic plaques that are the potential cause of stroke or ischemia of other organs.¹



Reduced aortic wall shear stress

“Optiflow reduced the maximum and average aortic wall shear stress values to approximately 50% compared to control cannulas. Optiflow have the potential to reduce ECC-related complications such as stroke, endothelial damage and hemolysis.¹”

Pressure Drop



Optiflow Arterial Cannulae

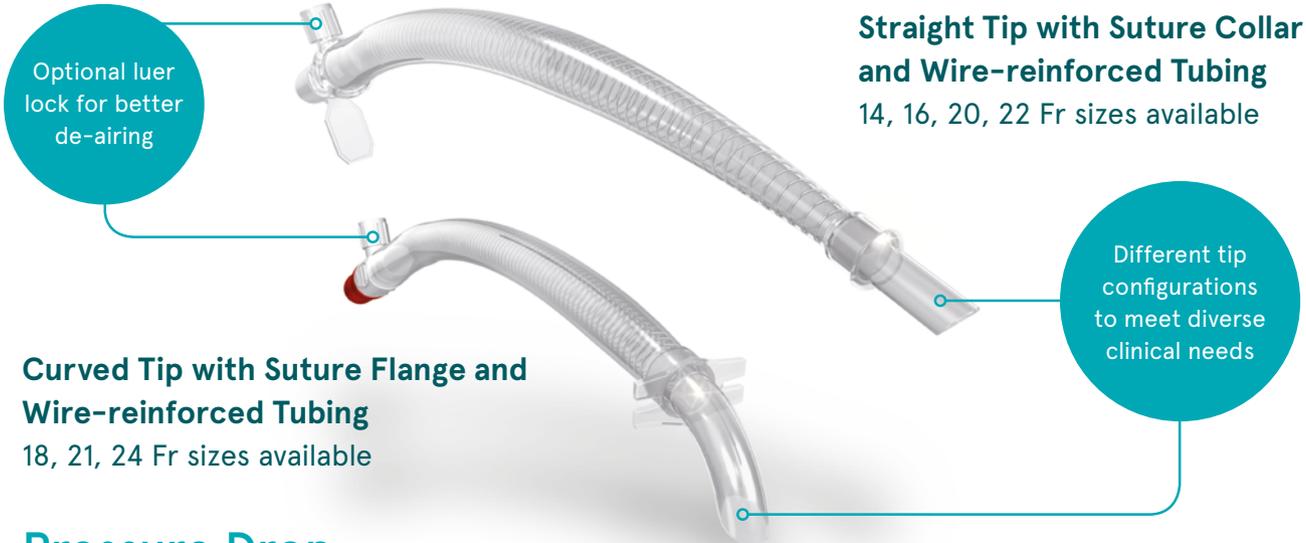
21 and 24 Fr sizes available

Available Configurations

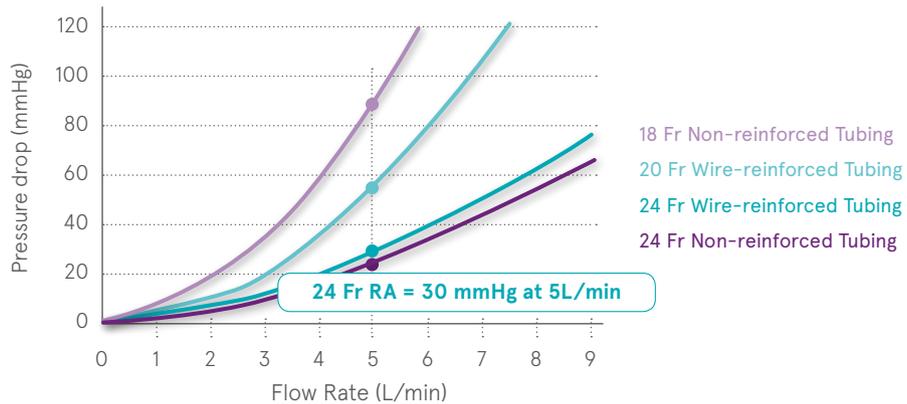


Curved and Straight Tip Aortic Arch Cannulae

The Aortic Arch Cannulae are available with different tip configurations to meet diverse clinical needs. The tips are available in white or transparent plastic, curved or straight, with two different lengths to suit all types of insertion. Suture flange, collar or double collar help cannula fixation. Suture flange, collar or double collar help cannula fixation.



Pressure Drop



Available Configurations

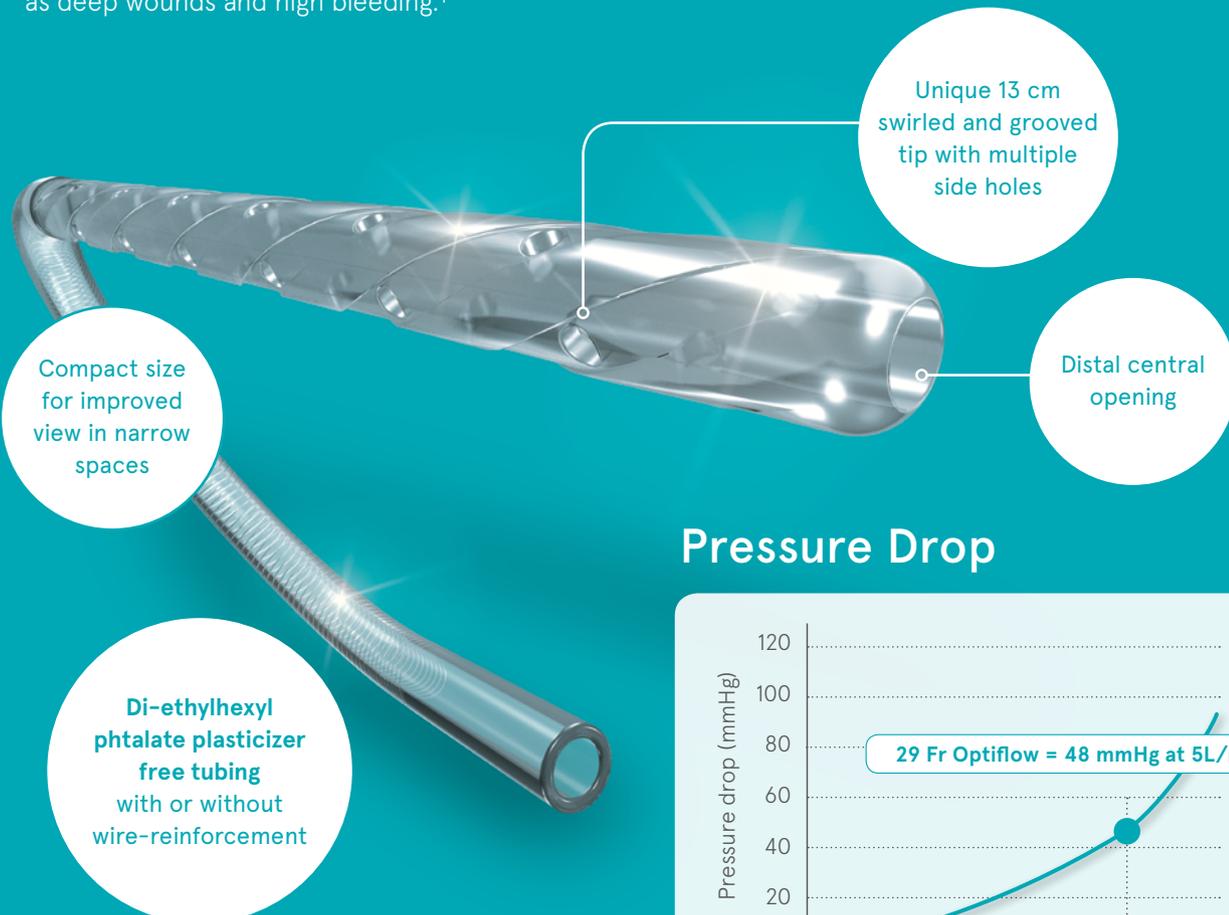
A212 Curved Tip, Suture Flange, Wire-reinforced Tubing	RA-11 Curved Tip, Suture Flange, Wire-reinforced Tubing	RA-12 Curved Tip, Suture Flange, Flexible Wire-reinforced Tubing	A222 Curved Tip, Suture Collar, Wire-reinforced Tubing	NA-11 Curved Tip, Suture Flange, Non-reinforced Tubing
NA-13 Curved Tip, Suture Flange, Flexible Non-reinforced Tubing	NA-12 Curved Tip, Suture Flange, Flexible Non-reinforced Tubing	A232 Straight tip, Suture Collar, Wire-reinforced Tubing	RA-21 Straight tip with Suture Collar, Wire-reinforced tubing	A262 Straight tip, Double Suture Collar, Wire-reinforced Tubing
NA-21 Straight Tip, Suture Collar, Non-reinforced Tubing	NA-55 Flexible Curved Tip, Suture Ring, Non-reinforced tubing	NA-45 Flexible Straight Tip, Suture Ring, Non-reinforced tubing	NA-34 Flexible Straight Tip, Moveable Suture Ring, Non-reinforced tubing	

Optiflow Venous Cannula

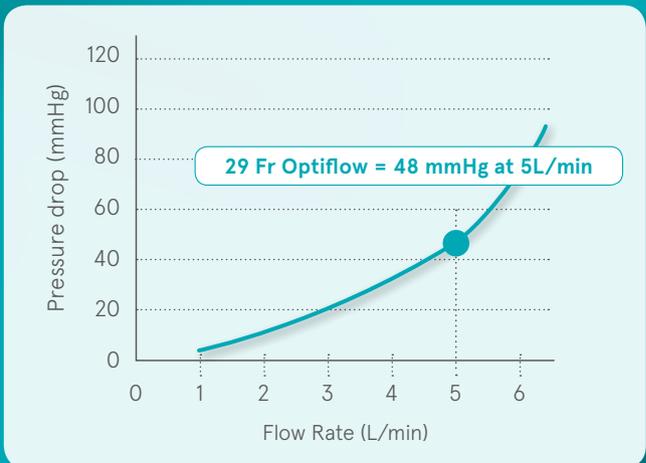
The Optiflow Venous cannula features a special swirled tip design with multiple side holes that facilitate active and physiological venous drainage regardless of the position of the heart.

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

The special tip can help reduce patient complications often associated with femoral venous cannulation, such as deep wounds and high bleeding.¹



Pressure Drop



V182-29

Optiflow Venous Cannula

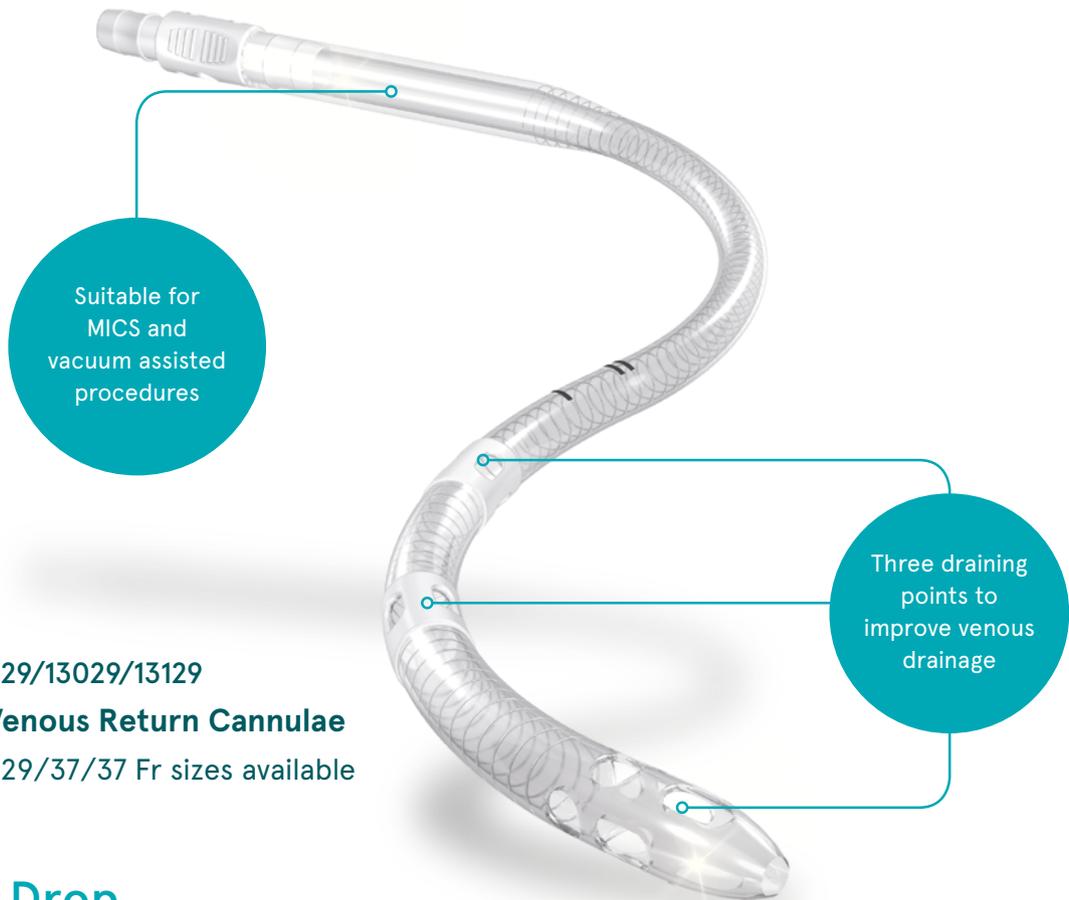
29 Fr size available

High Venous Drainage in Minimally Invasive Procedures

“In our experience, 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.²”

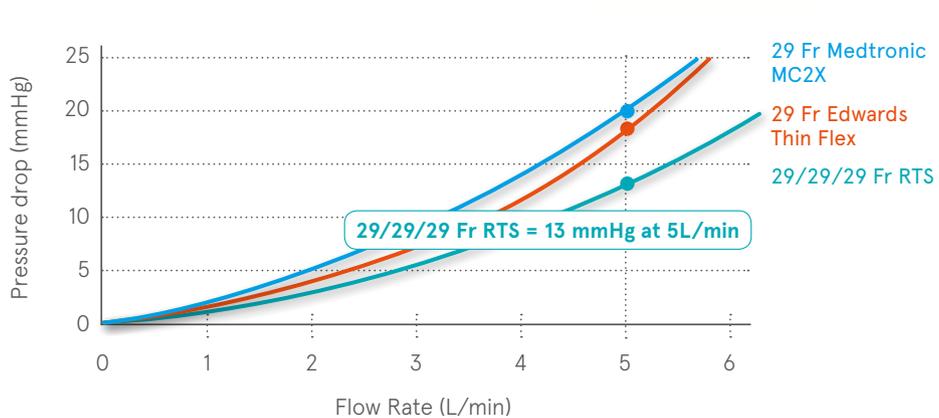
Triple Stage Venous Cannulae

The Triple Stage Venous Cannulae feature an open lighthouse tip for atraumatic insertion and three points of drainage for improved hemodynamics. The small, compact design guarantees optimal surgical view particularly in minimally invasive procedures.



RTS - 11029/11129/13029/13129
Triple Stage Venous Return Cannulae
 29/29/29 and 29/37/37 Fr sizes available

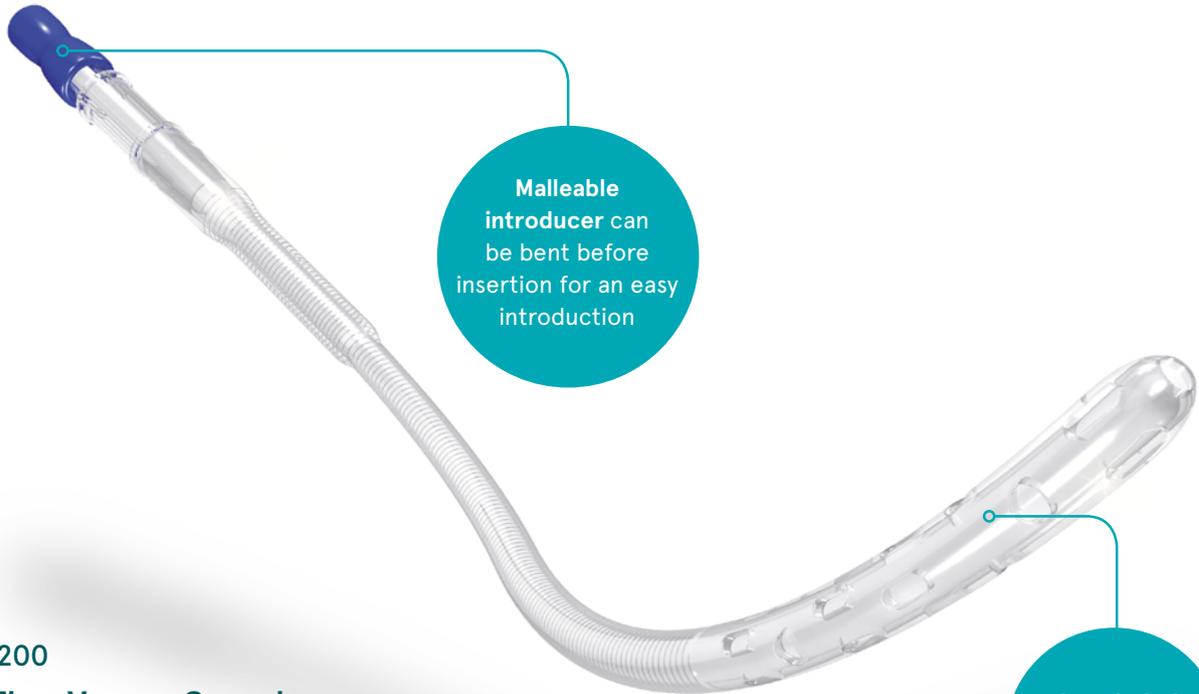
Pressure Drop



All data extracted from relevant Instructions For Use

FlexFlow Venous Cannula

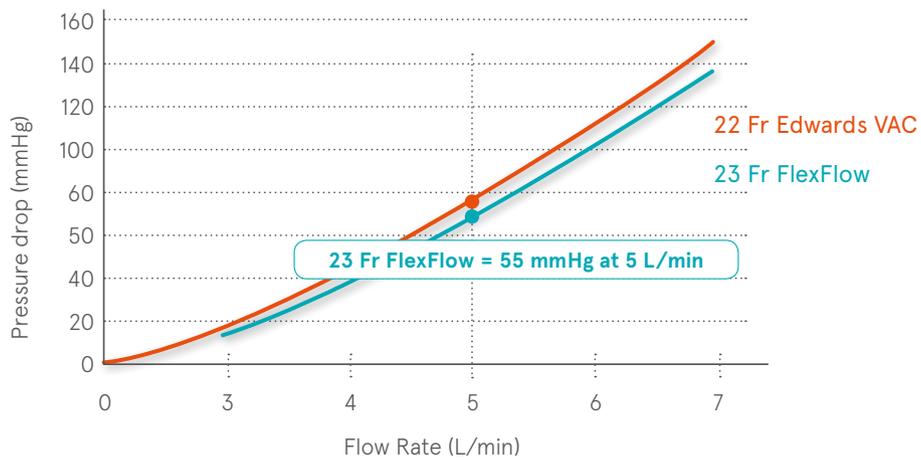
FlexFlow is a compact cannula with integrated obturator and malleable stylet designed for direct atrial cannulation. The 6 cm holed area and thin wire-reinforced tubing wall design provide high flow rates when using vacuum assisted venous drainage.



200-200
FlexFlow Venous Cannulae
 23 Fr size available

6 cm holed tip for a better venous drainage

Pressure Drop



All data extracted from relevant Instructions For Use

Venous Return Cannulae

Venous Return Cannulae are available with open lighthouse tip and a one piece construction for atraumatic insertion and optimal venous drainage. Bullet tip versions are also available for improved venous return. The minimal wall thickness of the cannula provides excellent dynamics with a low pressure drop across the entire cannula. Available in dual or single stage configurations to meet diverse venous insertion practices.

Available with and without connector

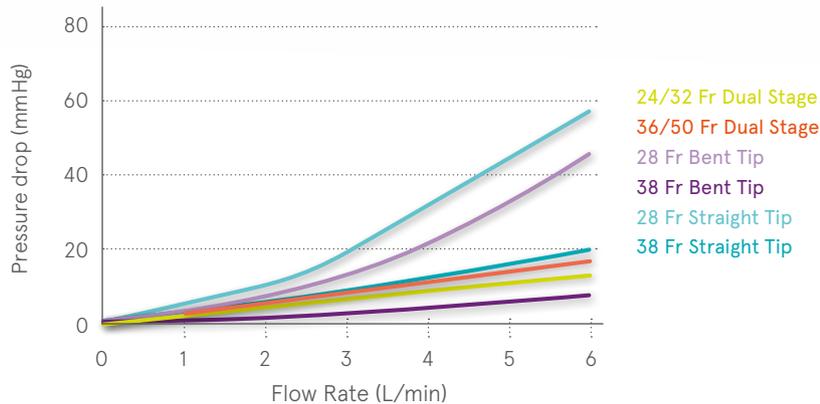


One-piece cannulae with open lighthouse tip for atraumatic insertion and high venous drainage

Single and Dual Stage Venous Return Cannulae with Wire-reinforced Tubing

From 12 to 38 Fr sizes available (with steps of 2 Fr)

Pressure Drop

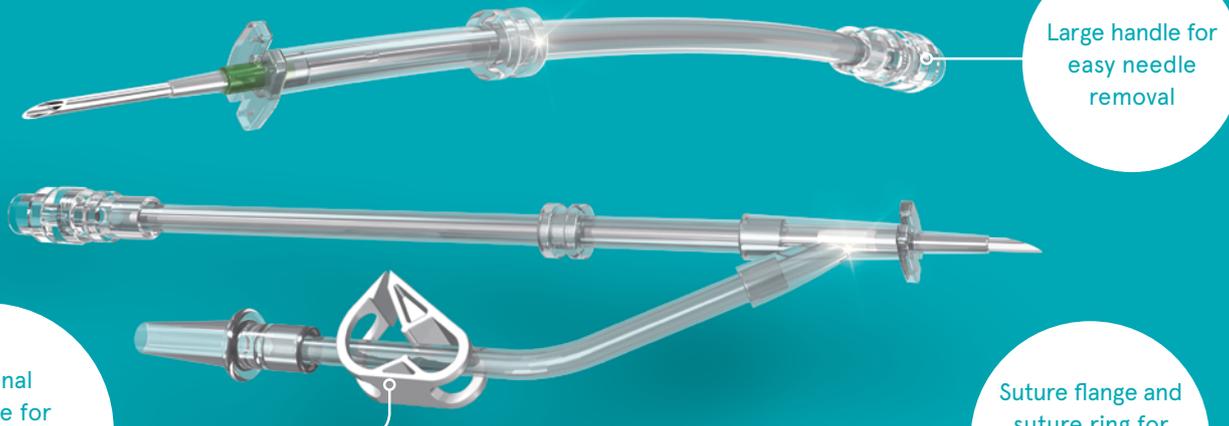


Available Configurations

RDS Dual Stage, Lighthouse Tip, Wire-reinforced Tubing	V112 Dual Stage, Bullet Tip, Wire-reinforced Tubing	V900 Dual Stage, Bullet Tip, Wire-reinforced Tubing with Obturator and with Connector	NDS Dual Stage, Bullet Tip, Non-reinforced Tubing
LRD Dual Stage, Lighthouse tip, Low Profile, Wire-reinforced Tubing	OV112 Dual Stage, Bullet Tip, Low Profile, Wire-reinforced Tubing	RV-400 Single Stage, Straight Lighthouse Tip, Wire-reinforced Tubing	V122 Single Stage, Straight Bullet Tip, Wire-reinforced Tubing
NV-200 Single Stage, Straight Bullet Tip, Non-reinforced Tubing	RV-410 Single Stage, Right Angle Lighthouse Tip, Wire-reinforced Tubing	V900 Single Stage, Right Angle Bullet Tip, Wire-reinforced Tubing	NV-210 Single Stage, Right Angle Bullet Tip, Non-reinforced Tubing

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.



Large handle for easy needle removal

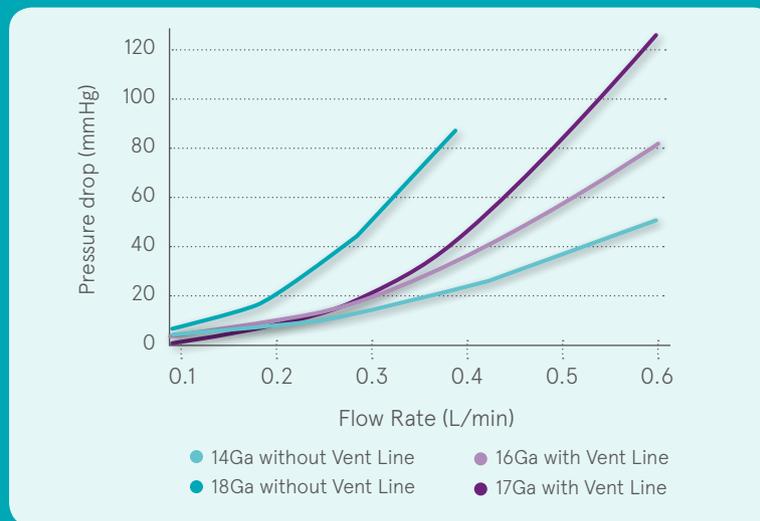
Optional vent line for left ventricle decompression

Suture flange and suture ring for better cannula fixation

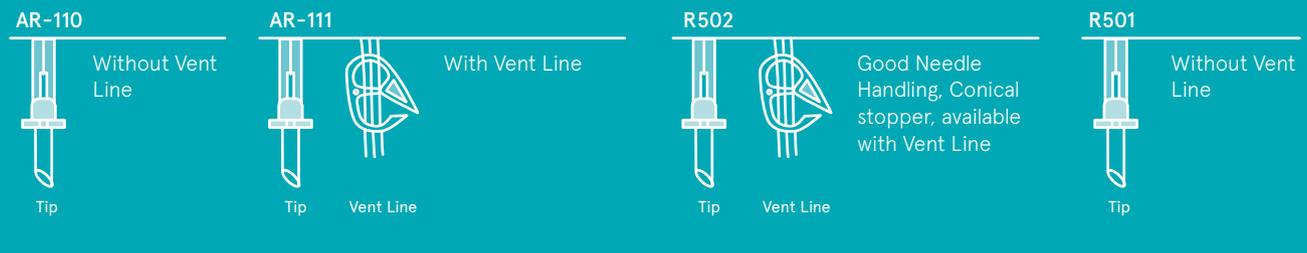
Aortic Root Cannulae with & without Vent Line

12, 14, 16, 17, 18, 20 Ga Insertion Needles

Pressure Drop

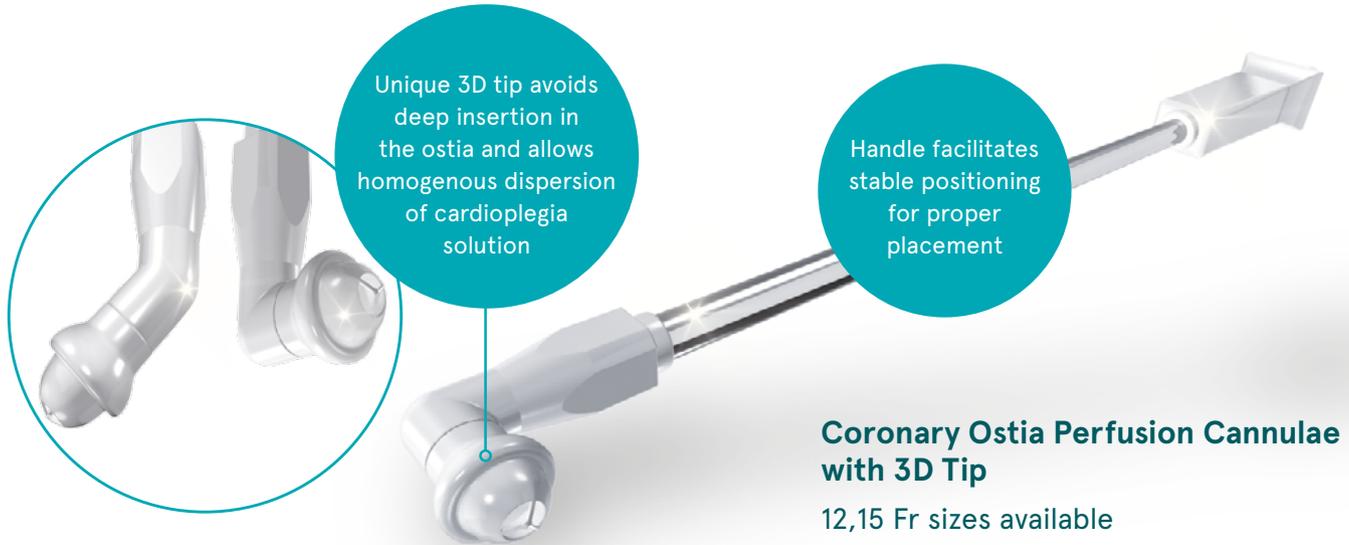


Available Configurations

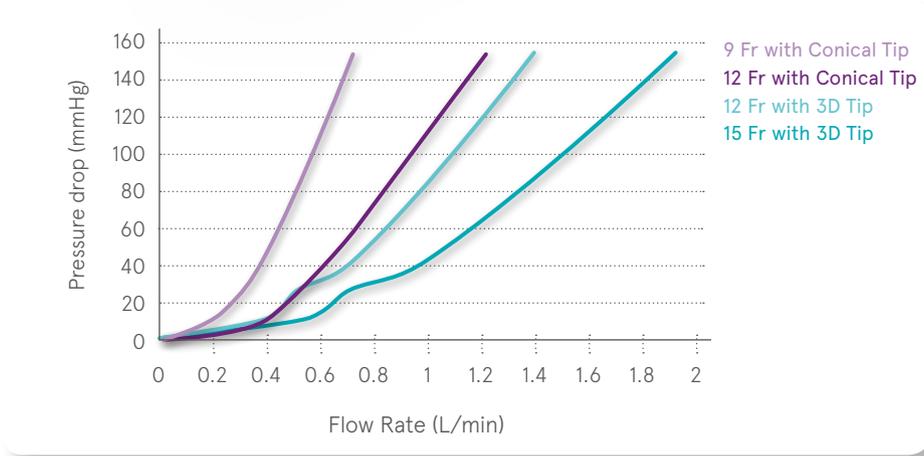


Coronary Ostia Perfusion Cannulae with 3D Tip

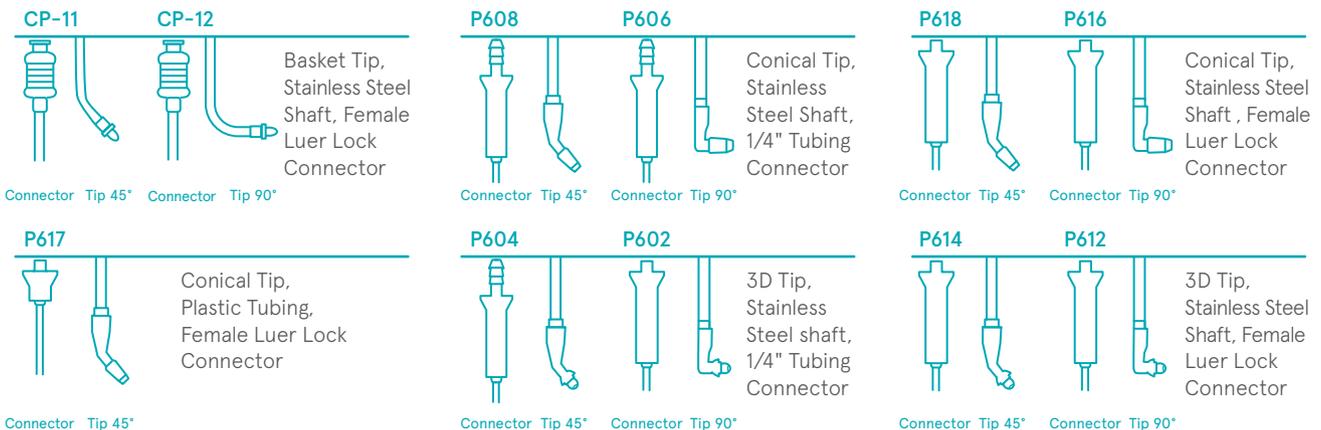
Coronary Ostia Perfusion Cannulae with 3D tip and stainless steel shaft. The unique 3D tip is angled at 45° or 90° to easily reach the right and left ostia and ensures homogeneous perfusion of the cardioplegia solution in the coronary path. Also available with female luer connector and with conical or basket tips.



Pressure Drop



Available Configurations



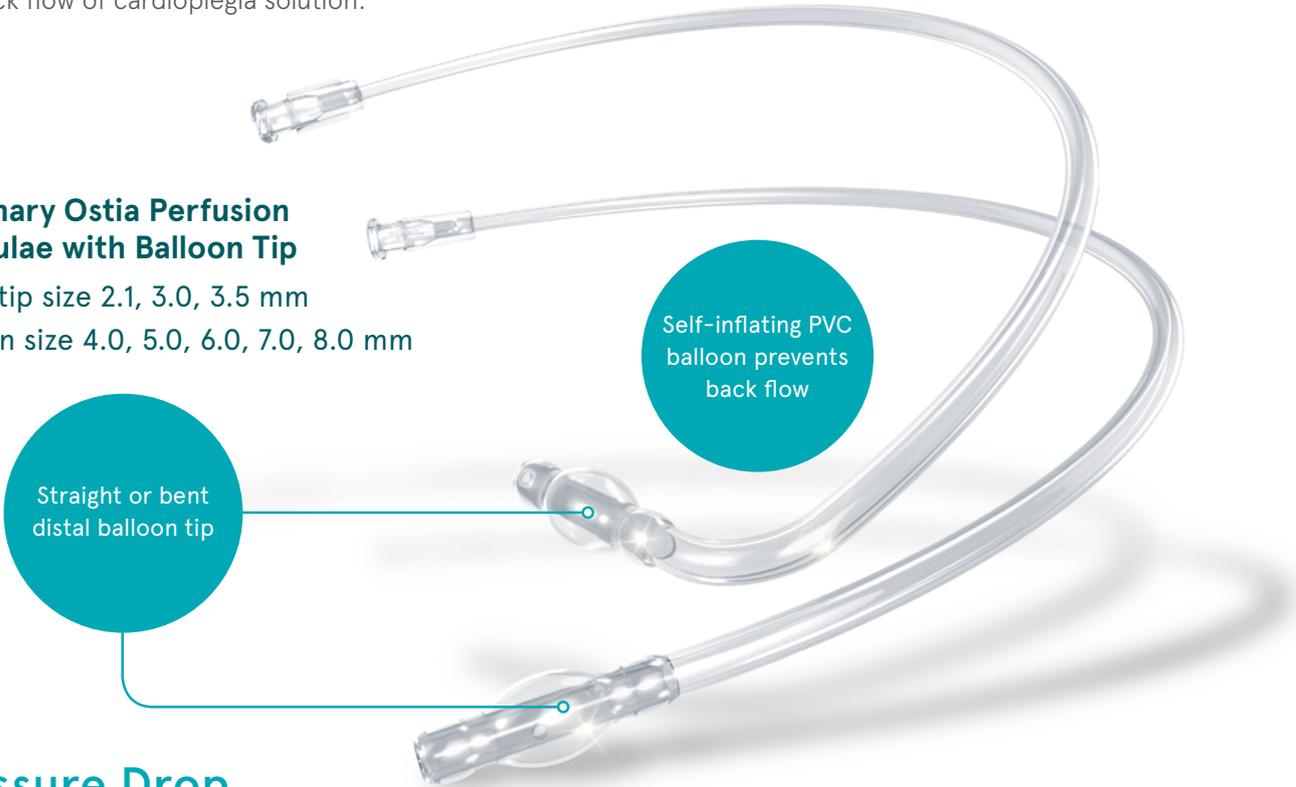
Coronary Ostia Perfusion Cannulae with Balloon Tip

Coronary Ostia Perfusion Cannulae with balloon tip, plastic tubing and female luer 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.

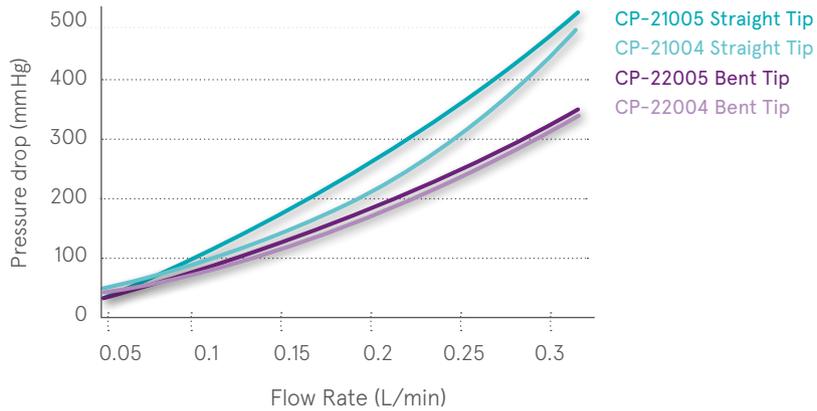
Coronary Ostia Perfusion Cannulae with Balloon Tip

Distal tip size 2.1, 3.0, 3.5 mm

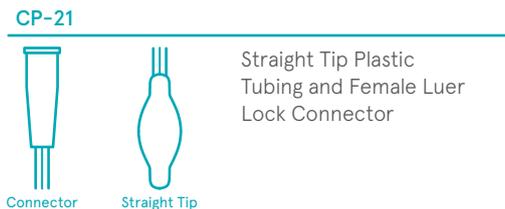
Balloon size 4.0, 5.0, 6.0, 7.0, 8.0 mm



Pressure Drop

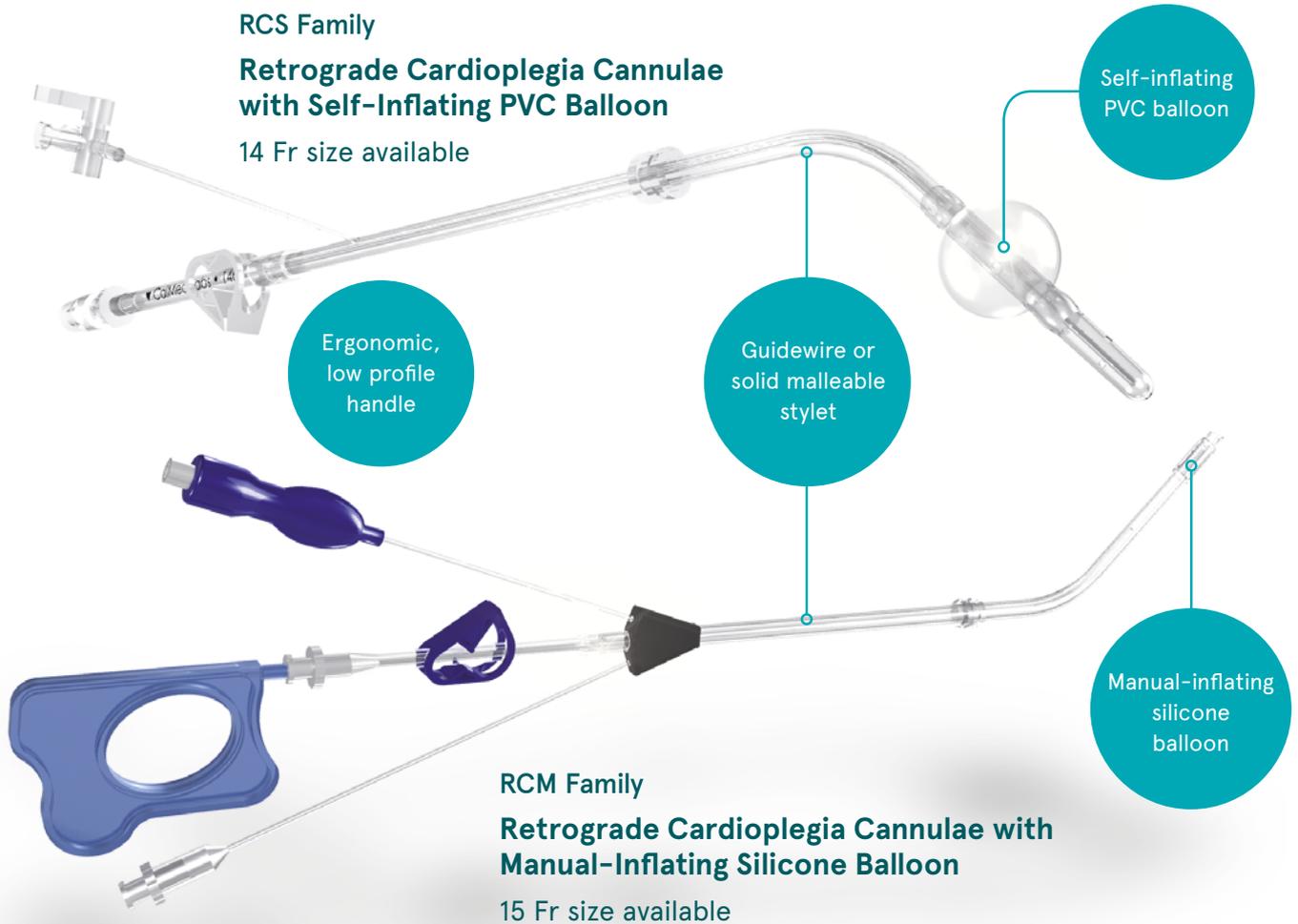


Available Configurations

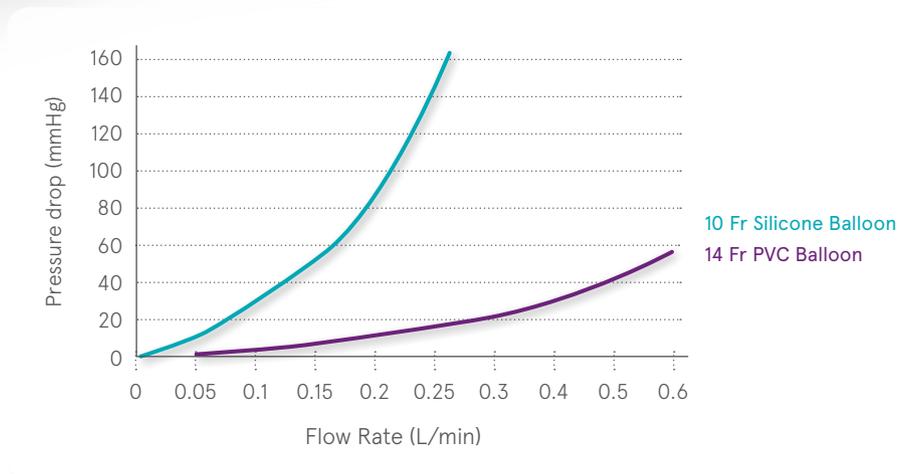


Retrograde Cardioplegia Cannulae

Retrograde Cardioplegia Cannulae are available with either a self-inflating PVC balloon, or a manual-inflating silicone balloon. Balloons are bonded with a unique method that provides a smooth transition to the body of the cannula. Both cannulae are available with either a guidewire or solid malleable stylet and a choice between a standard or low-profile stylet handle.

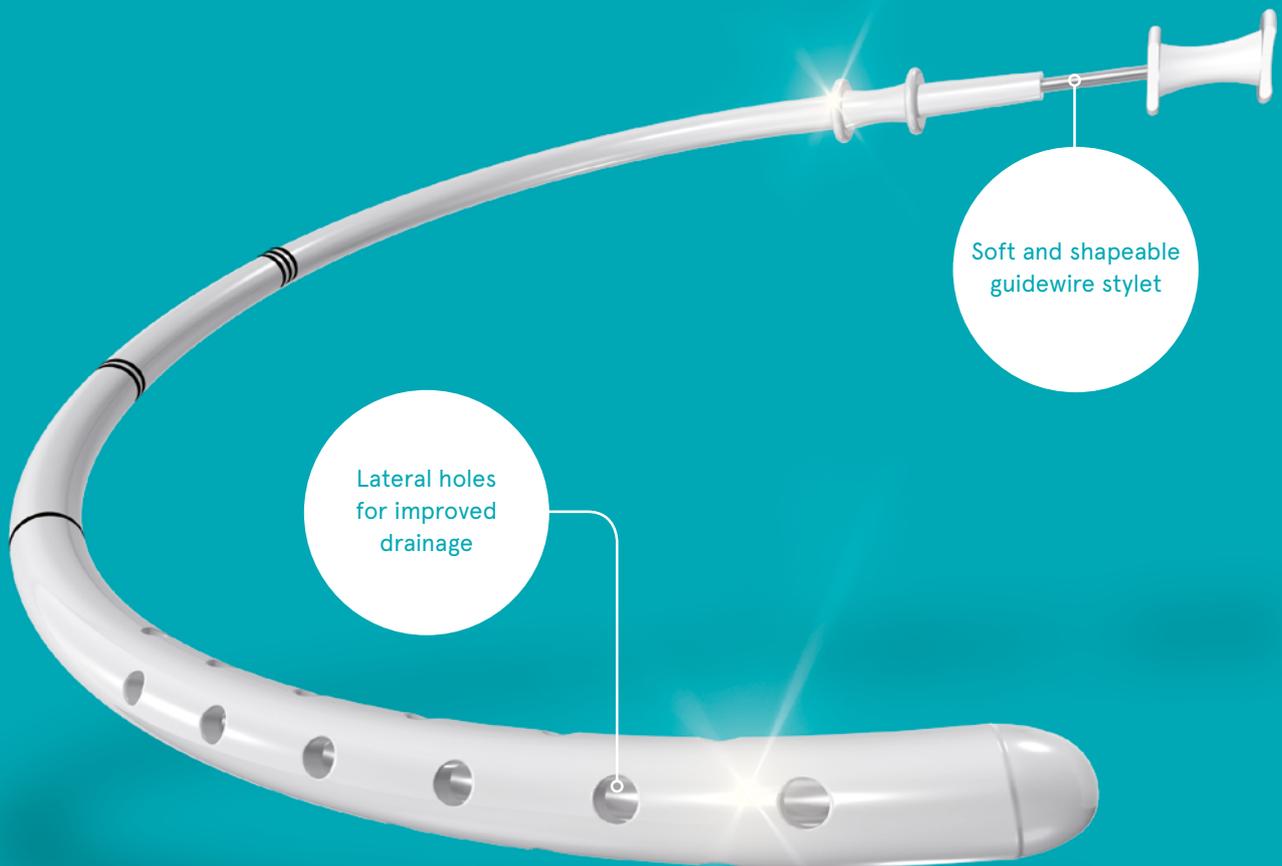


Pressure Drop



Silicone Vents

Silicone Vents for direct venting of the left ventricle. The biocompatible silicone material is less susceptible to cold environments. A soft, shapeable guidewire stylet helps vent insertion.

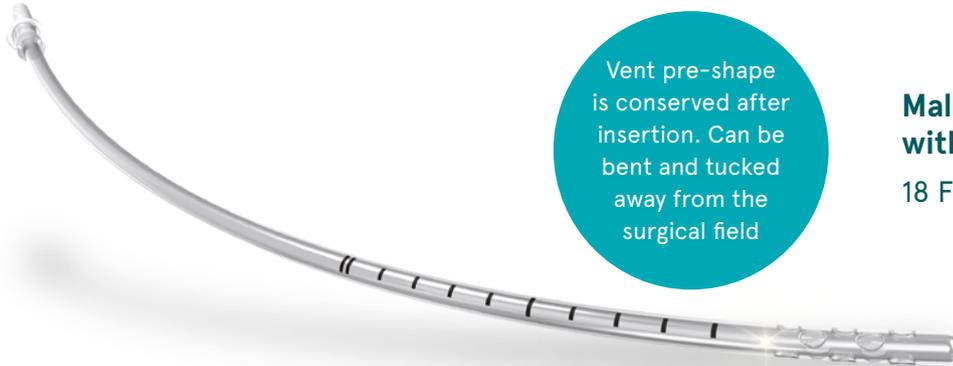


Silicone Bullet Tip, with Guidewire Stylet

16 and 20 Fr sizes available

PVC Malleable Vent

The PVC Malleable Vent allows pre-shaping of the catheter before insertion. The catheter maintains its shape during surgery. It may also be bent and tucked away from the surgical site.



Vent pre-shape is conserved after insertion. Can be bent and tucked away from the surgical field

Malleable Open Blunt Tip, with Internal Stylet

18 Fr size available

PVC Vent with Removable Stylet

The two-position latch on the stylet provides safe catheter insertion. Once inserted, the stylet can be retracted in order to reduce trauma to the surgical site and allow the catheter to conform to the anatomy.



Dual latch device facilitates cannula insertion by retracting the stylet after introduction

PVC Open Blunt Tip with removable Stylet and Two-Position Latching Device

12 and 18 Fr sizes available

Available Configurations

<p>VT-57</p> <p>Connector Tip</p>	<p>VT-46</p> <p>Connector Tip</p>	<p>VT-31/VT-53/VT-63</p> <p>Connector Tip</p>	<p>VT-92</p> <p>Connector Tip</p>
<p>VT-844</p> <p>Connector Tip</p>	<p>VT-845</p> <p>Connector Tip 90°</p>	<p>VT-83</p> <p>Connector Tip</p>	
<p>VT-896</p> <p>Connector Tip</p>	<p>VT-894</p> <p>Connector Tip</p>	<p>W410</p> <p>Connector Tip</p>	<p>W420</p> <p>Connector Tip</p>

Low Profile Suction Wand

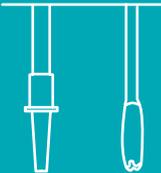
Low Profile Suction Wands have a malleable low-profile metal suction tube, plastic handle and pre-attached tubing with clamp and 1/4" slip connections.



Low Profile Suction Wand
Frazier and Soft Tip available

Available Configurations

SU-22702

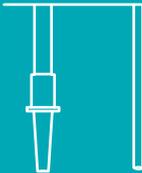


Connector

Soft Tip

Soft Tip Low Profile
Suction Wand

SU-26702



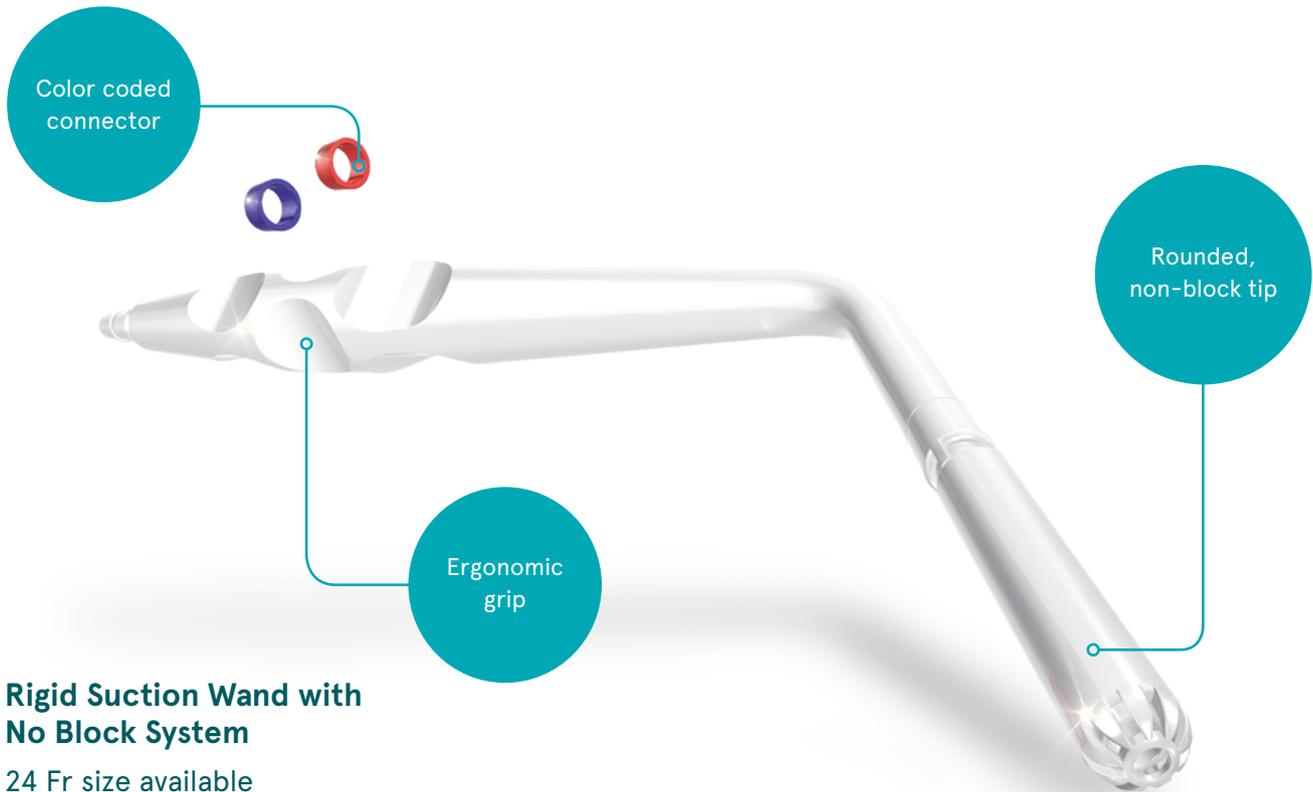
Connector

Frazier Tip

Frazier Tip Low Profile
Suction Wand

Suction Wand

The Suction Wand features a rounded, less traumatic tip and a non-block suction system that prevents damage to the cardiac wall tissue. The rigid, ergonomic grip allows fatigueless handling and can be color coded with colored rings to easily associate pumps. Also available with flexible tubing.

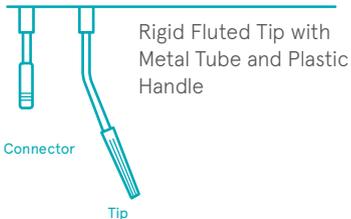


Rigid Suction Wand with No Block System

24 Fr size available

Available Configurations

SU-10101/SU-12202



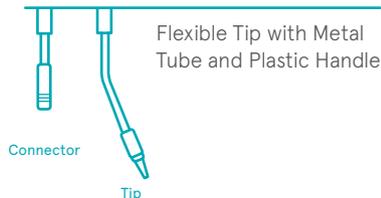
S351-70



S352-80



SU-14101/SU-18202



SU-12402/SU-12502



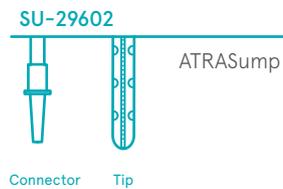
ATRASump

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.



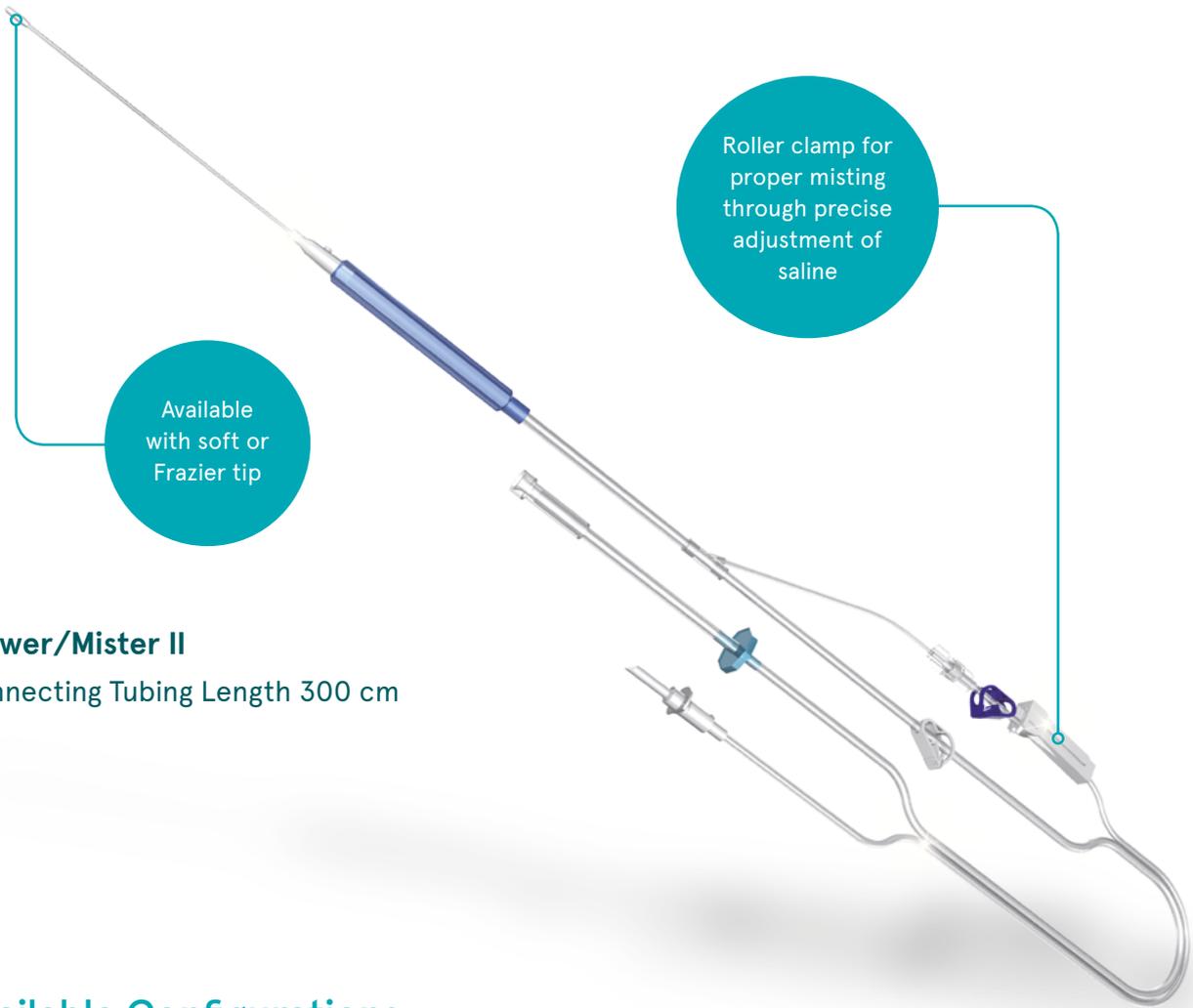
ATRASump

Available Configurations



Blower/Mister II

The Blower/Mister II flushes the surgical site to provide better visualization of the surgical field together with efficient humidification of the tissue. It is easy-to-use and comes with pre-assembled administration sets.



Blower/Mister II

Connecting Tubing Length 300 cm

Available Configurations

MT-22210

Blower/Mister II



MT- 11210

Blower/Mister



LivaNova

Health innovation that matters

Discover more at cannulae.livanova.com

www.livanova.com



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info.cardiacsurgery@livanova.com

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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