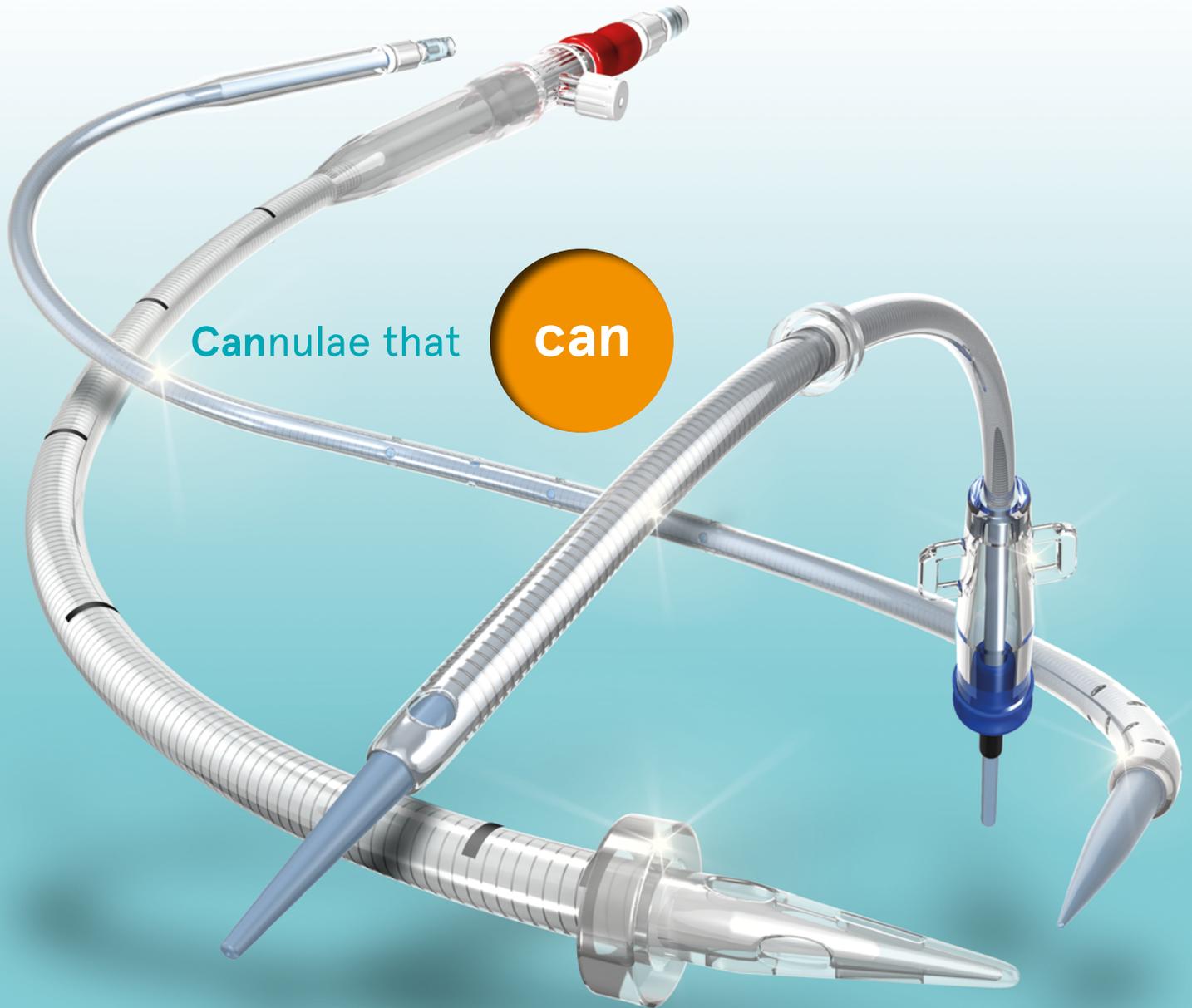
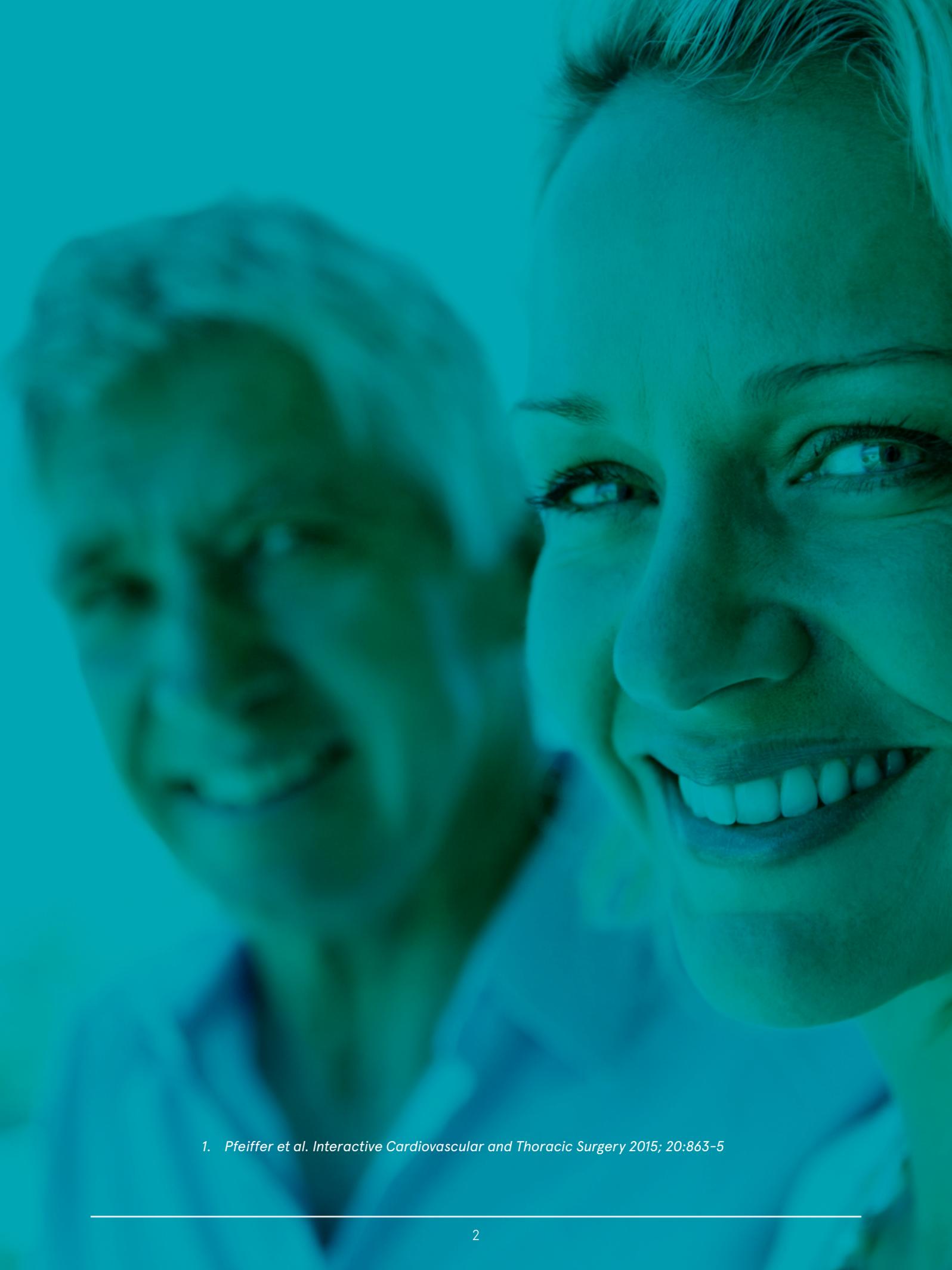


# MICS & FEMORAL CANNULAE



High performance cannulae for direct and femoral cannulation, either in conventional or minimally invasive cardiac surgery



1. Pfeiffer et al. *Interactive Cardiovascular and Thoracic Surgery* 2015; 20:863-5

# MICS and Femoral Cannulae

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

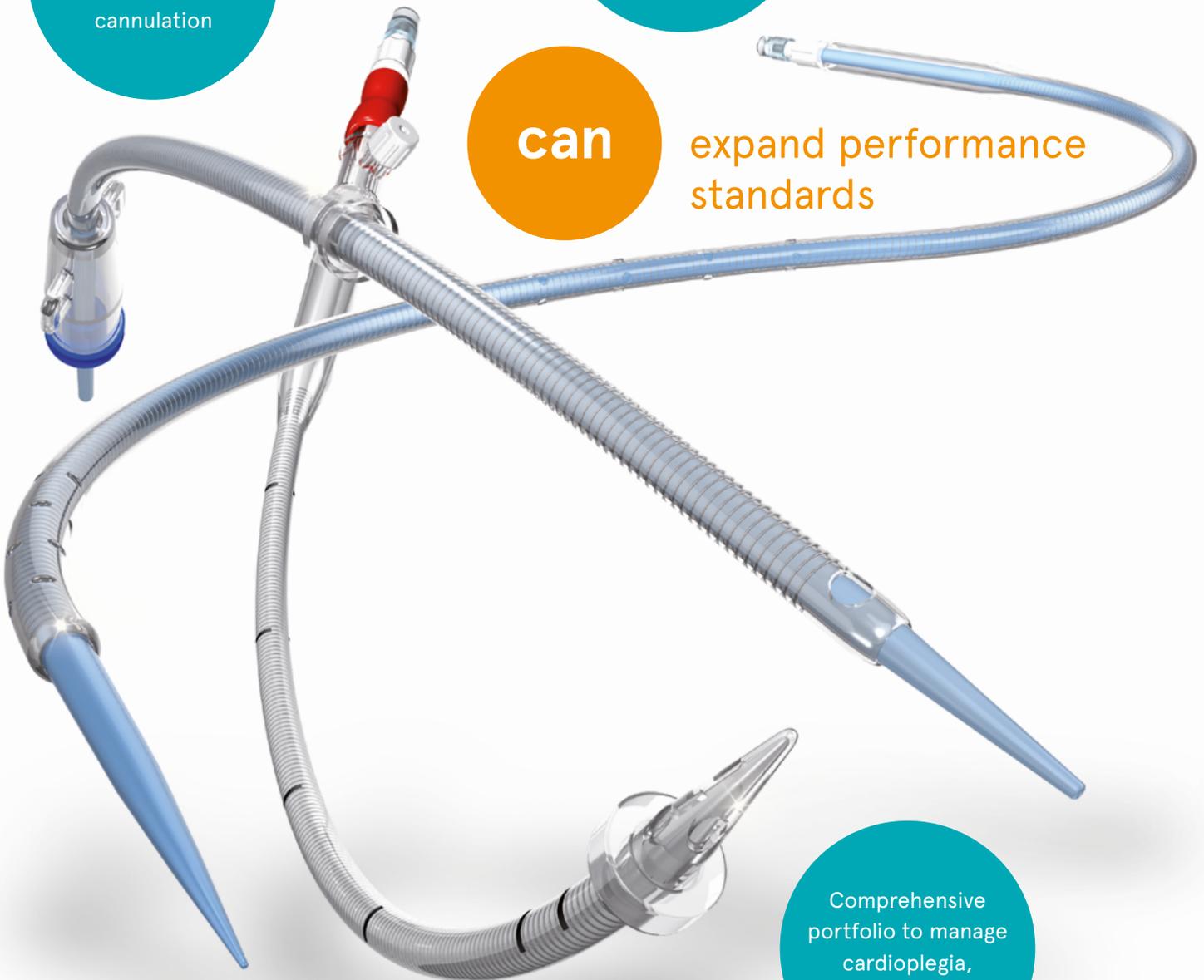
Easy and bloodless,  
direct or  
femoral, arterial  
cannulation

High venous  
drainage through  
both direct and  
femoral access

can

expand performance  
standards

Comprehensive  
portfolio to manage  
cardioplegia,  
venting and suction



# Femoral Arterial Cannulae

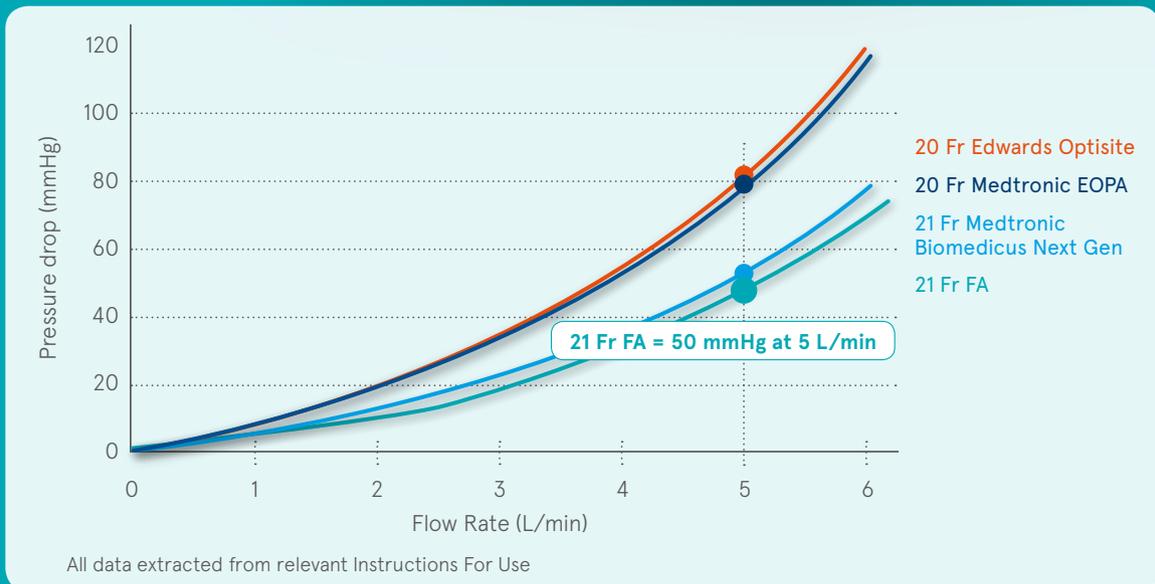
The Femoral Arterial Cannulae feature a closely wound, thin walled, flat wire-reinforced polyurethane tubing with movable suture ring for secure fixation and optional side holes for lateral dispersion.

Tube wall thickness has been reduced to a minimum to obtain the highest flow with the smallest anatomical footprint. These cannulae can be inserted either surgically or percutaneously, with the use of the dedicated Seldinger kit.



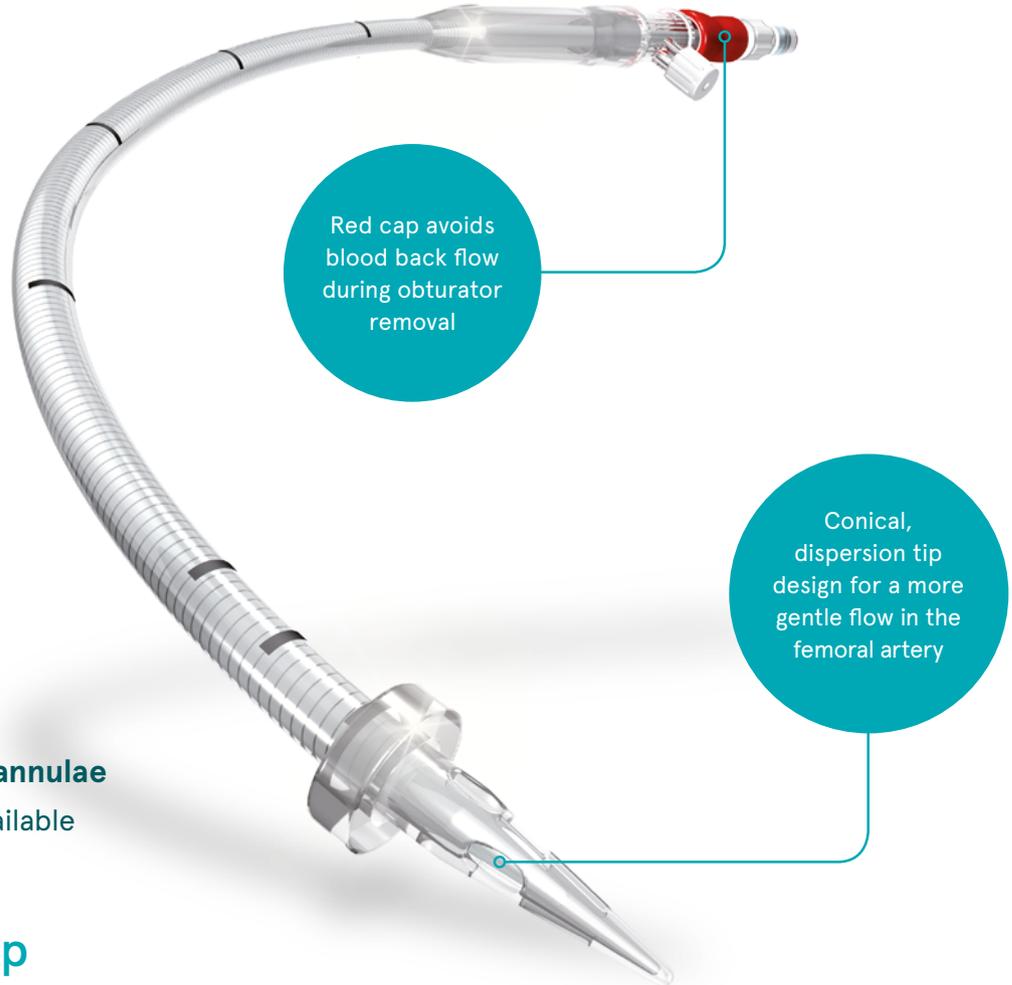
FA - 119/219/121/221/223  
**Femoral Arterial Cannulae**  
19, 21 and 23 Fr sizes available

## Pressure Drop



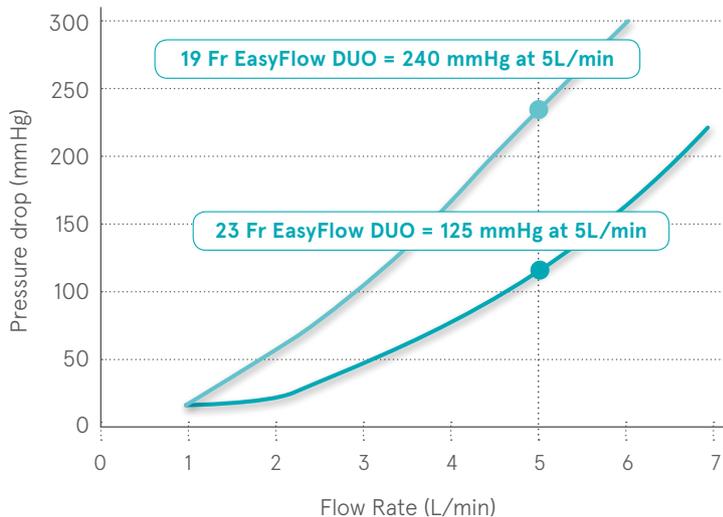
## EasyFlow DUO Cannulae

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 Seldinger kit for percutaneous cannula insertion.



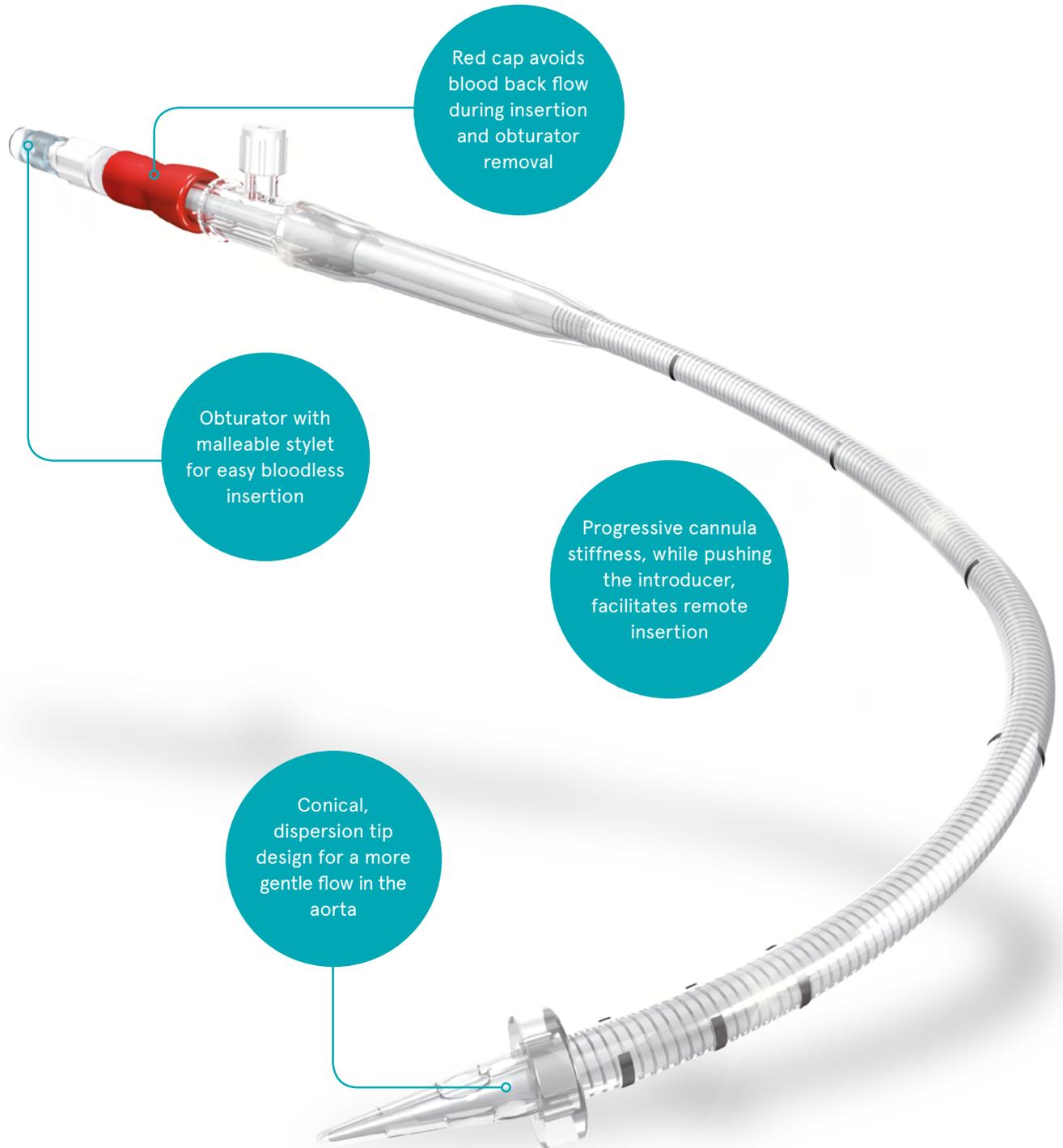
**103-210/103-310**  
**EasyFlow DUO**  
**Femoral Arterial Cannulae**  
 19 and 23 Fr sizes available

## Pressure Drop



## EasyFlow Cannulae

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.



**103-200/103-300**

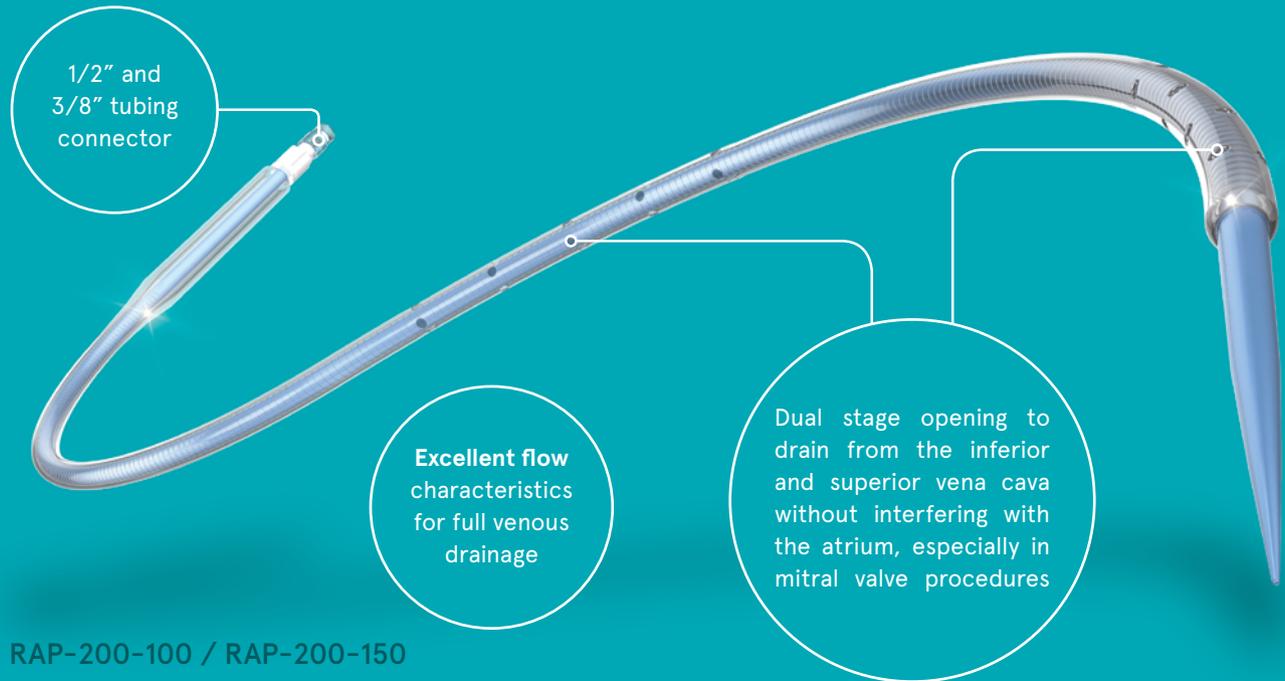
**EasyFlow  
Arterial Cannulae**

19 and 23 Fr sizes available to cover all patients

## RAP Cannulae

Dual stage venous femoral cannulae, designed to drain from superior and inferior vena cava, available in 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 via Seldinger technique.

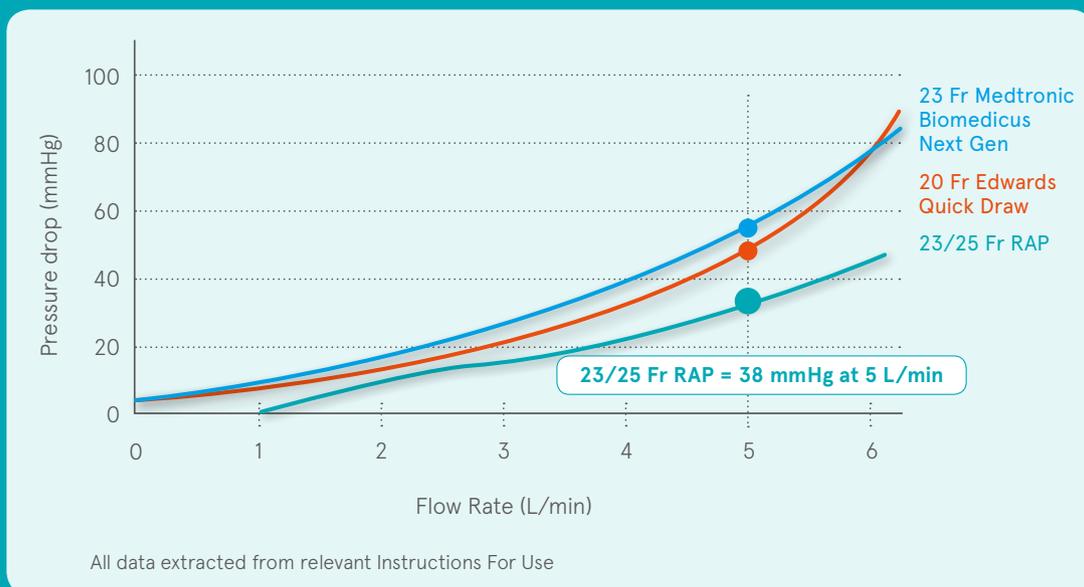


RAP-200-100 / RAP-200-150

**Femoral Venous Cannulae**

22/22 and 23/25 Fr sizes available

## Pressure Drop



## 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.



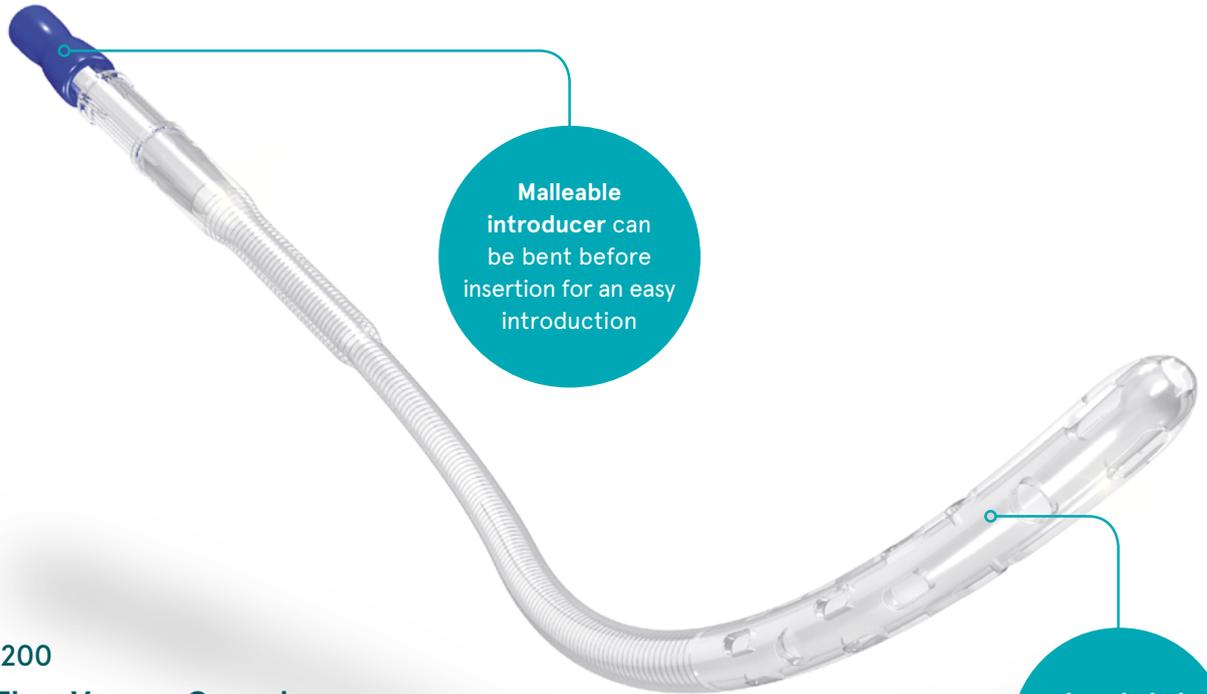
200-120

### Vascular Dilator Kit

Includes 8, 12, 16, 20 and 24 Fr dilators

## FlexFlow Venous Cannula

FlexFlow is a minimally invasive venous 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.

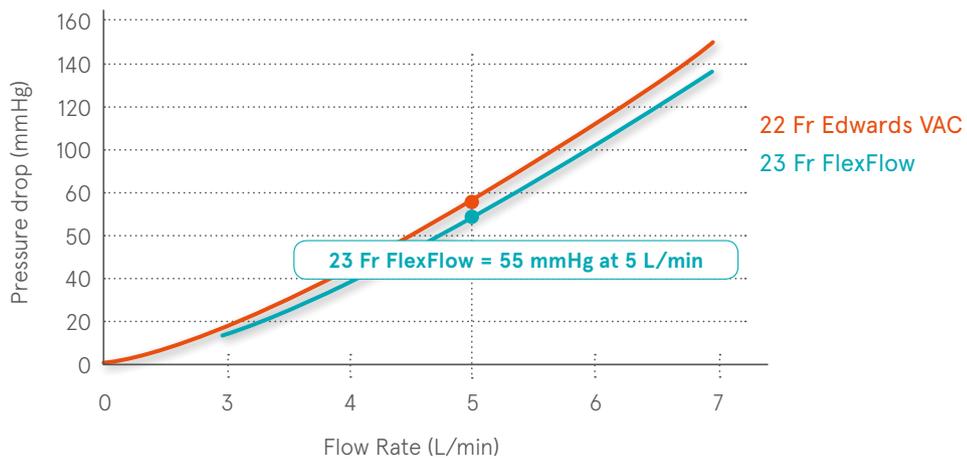


200-200

**FlexFlow Venous Cannulae**

23 Fr size available

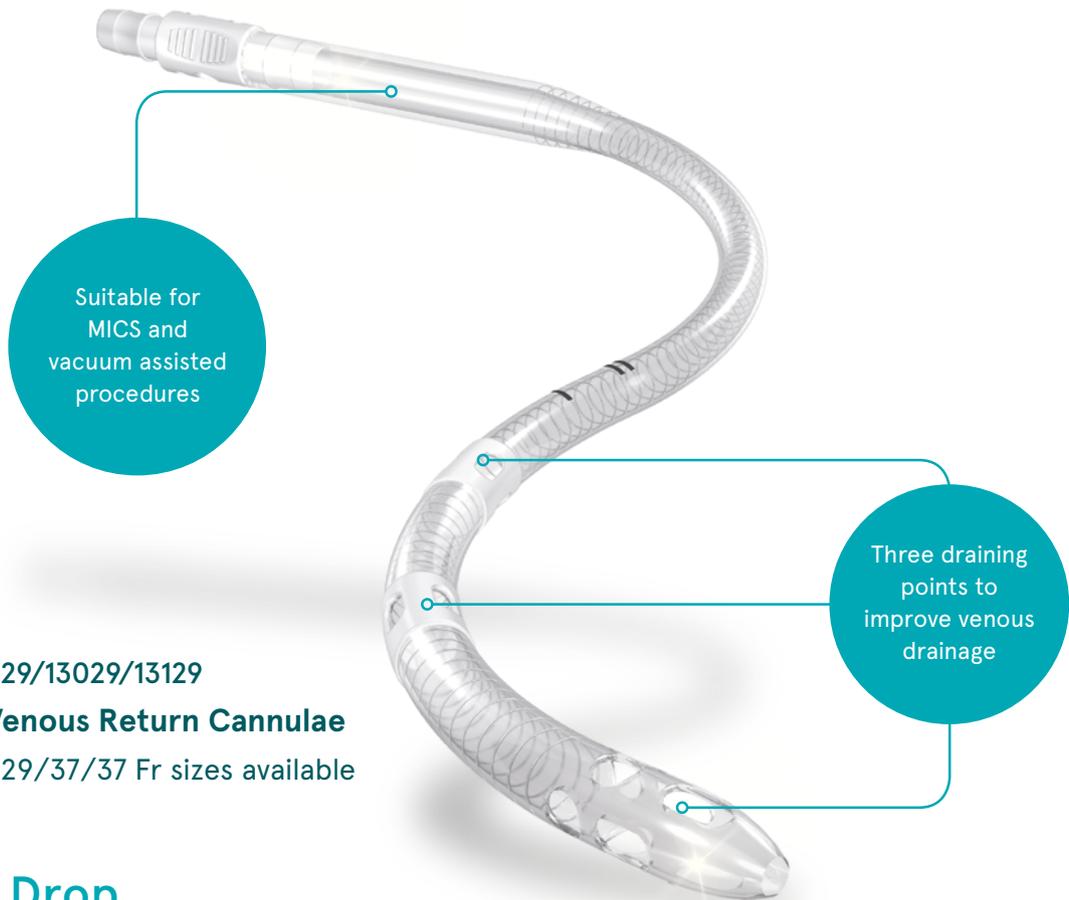
## Pressure Drop



All data extracted from relevant Instructions For Use

## 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.

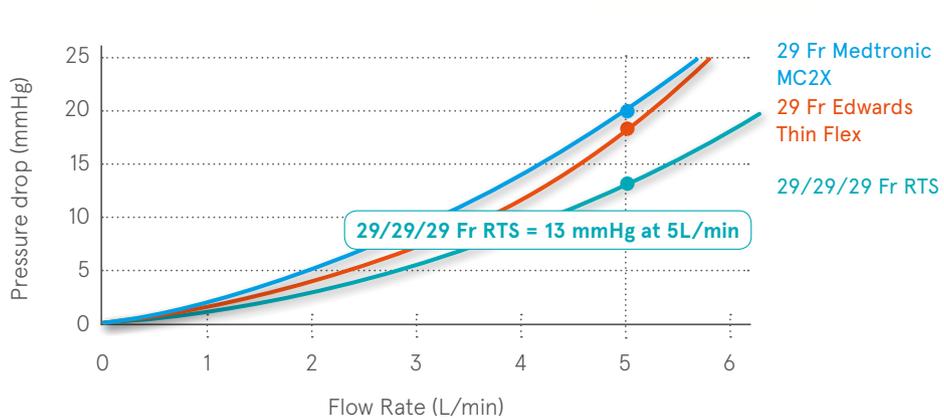


RTS - 11029/11129/13029/13129

### Triple Stage Venous Return Cannulae

29/29/29 and 29/37/37 Fr sizes available

## Pressure Drop



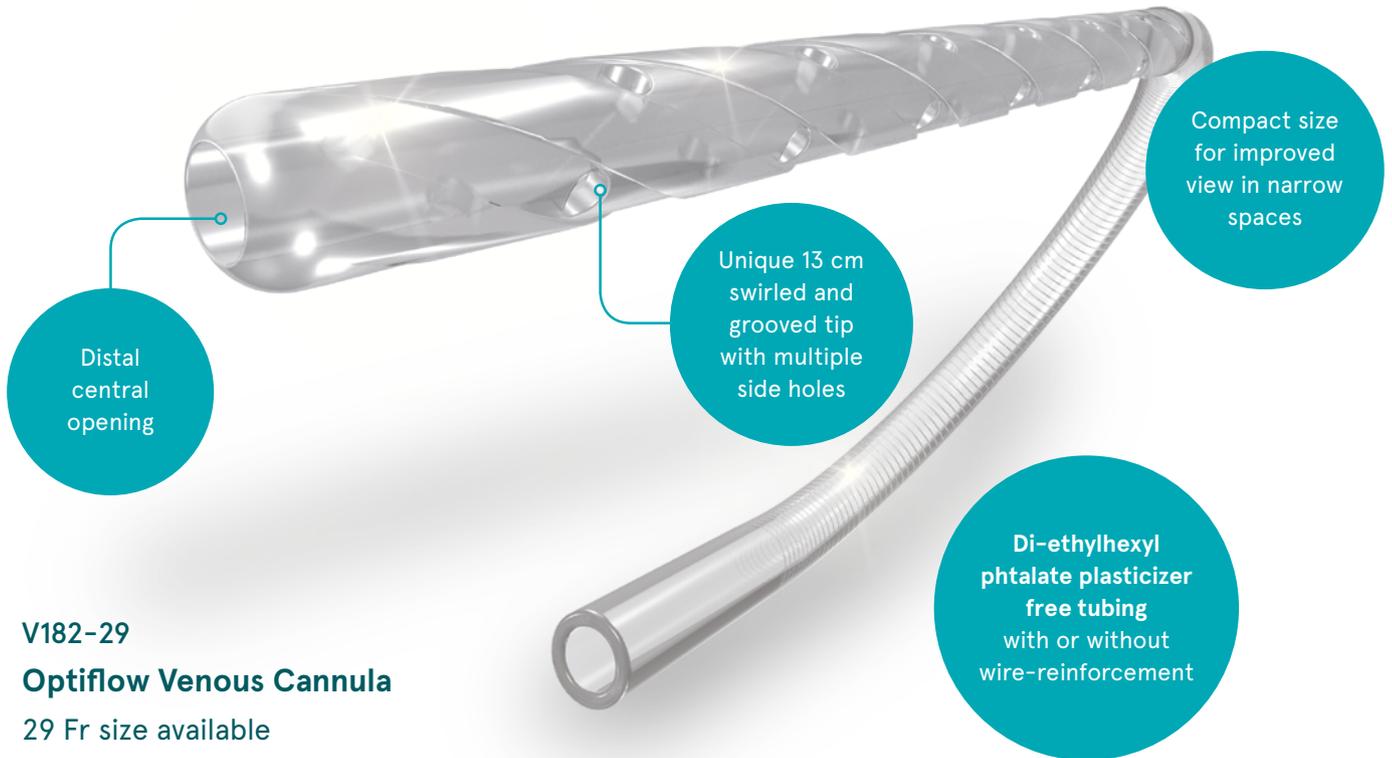
All data extracted from relevant Instructions For Use

## 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.

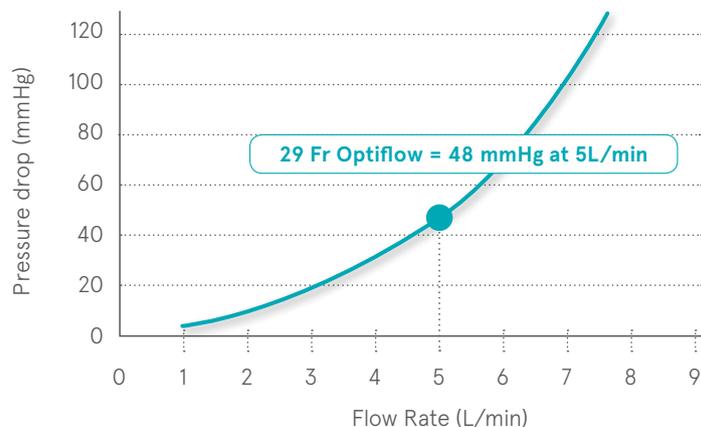
This cannula is more compact than a standard cannula which makes it easier to insert and remove while improving the surgical view, especially in minimally invasive procedures.

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



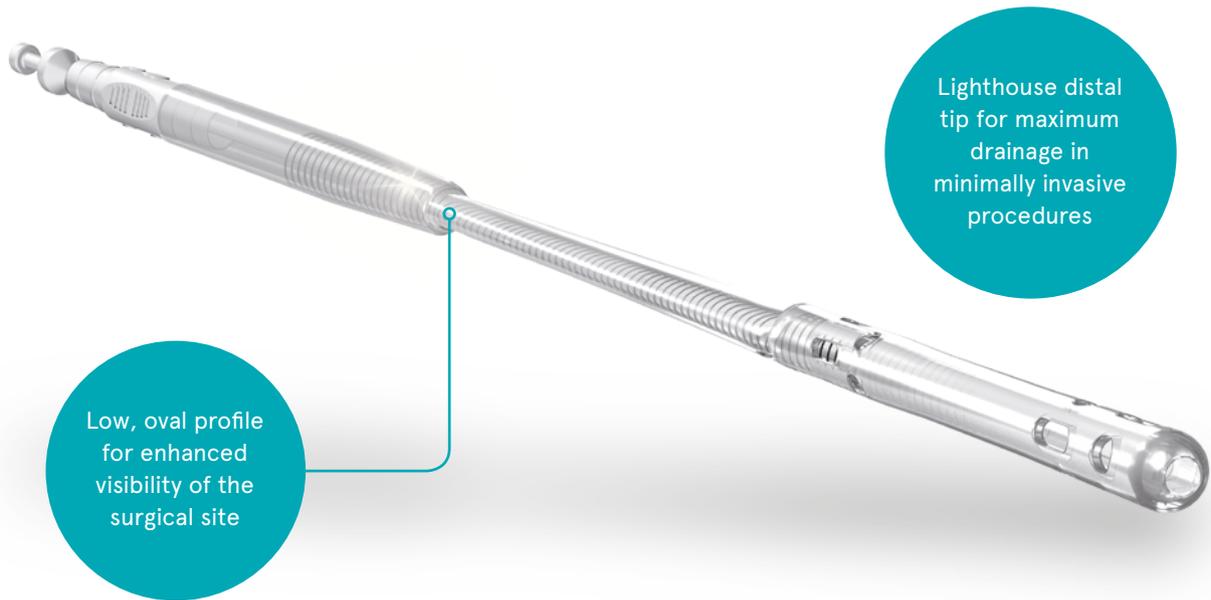
V182-29  
**Optiflow Venous Cannula**  
 29 Fr size available

## Pressure Drop



## Low Profile Venous Cannulae

The Low Profile Venous Cannula is a one-piece constructed, wire reinforced dual-stage venous return cannula with a lighthouse distal tip for maximum drainage in minimally invasive procedures. It has a low, oval profile which allows better visibility of the surgical site and can be easily flexed with very gentle force for easy manipulation.

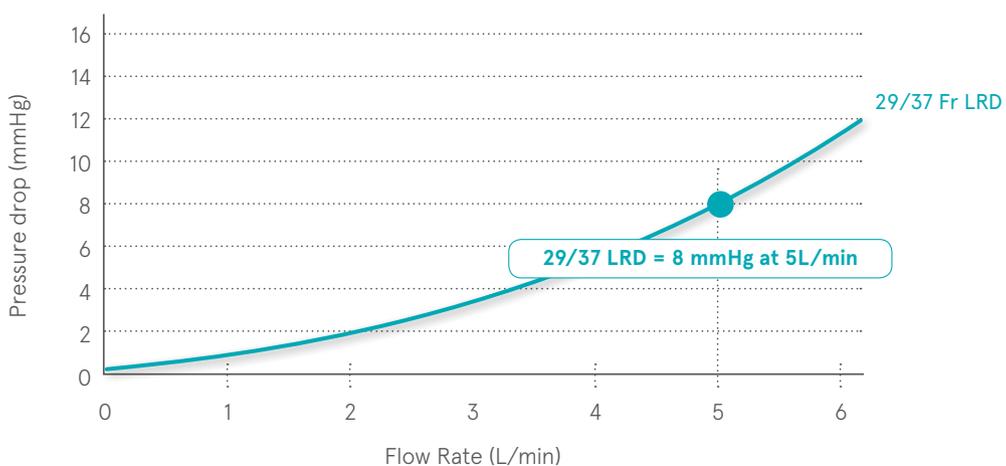


LRD Family

### Low Profile Venous Cannulae

29, 32, 34, 36 Fr sizes available

## Pressure Drop



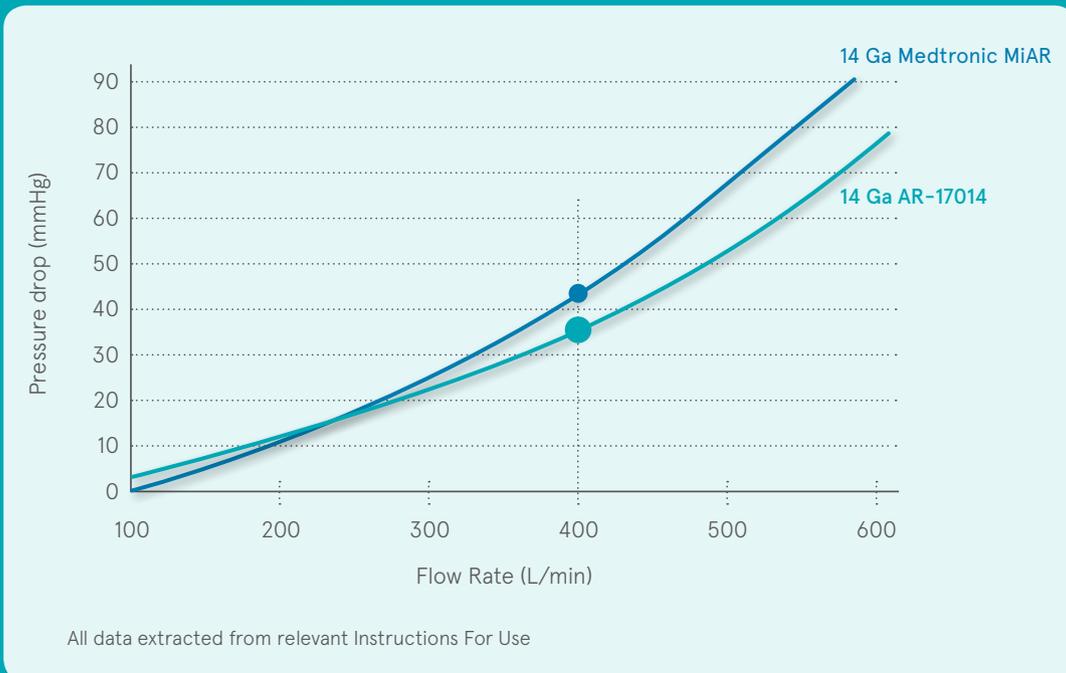
## Aortic Root Long Needle

The Aortic Root Long Needle has been specifically designed for minimally invasive cardiac surgery in lateral thoracotomy, especially mitral valve procedures. It is longer than a conventional aortic root (35 cm) which allows it to be positioned in lateral thoracotomy.



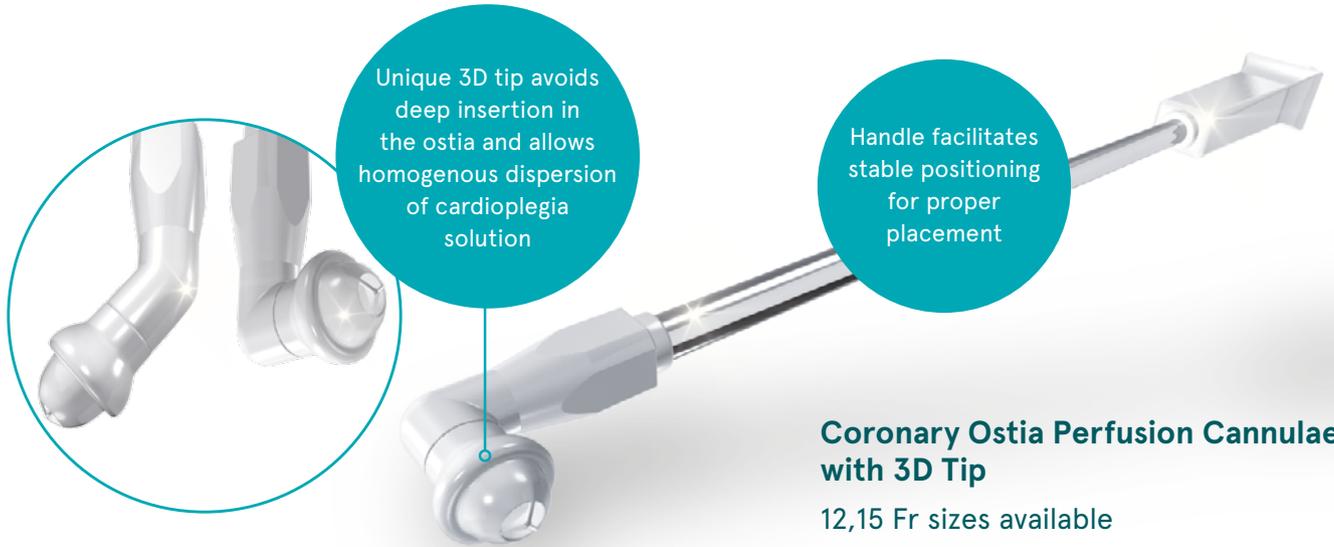
AR-17012 / AR-17014  
**Aortic Root Long Needle**  
12, 14 Ga sizes available

## Pressure Drop

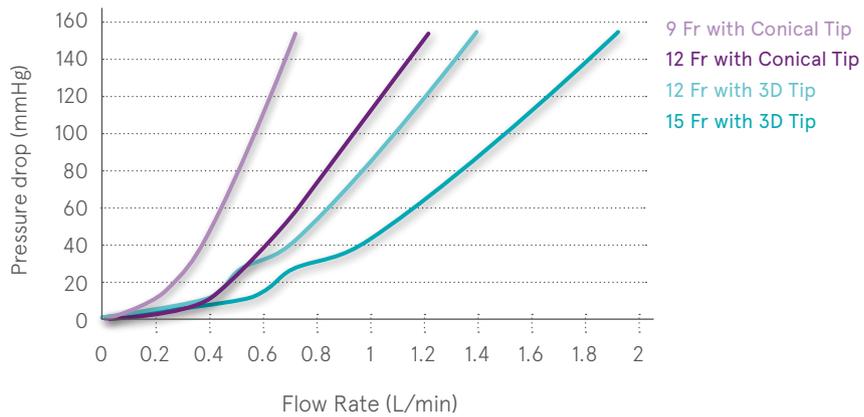


# Coronary Ostia Perfusion Cannulae with 3D Tip

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

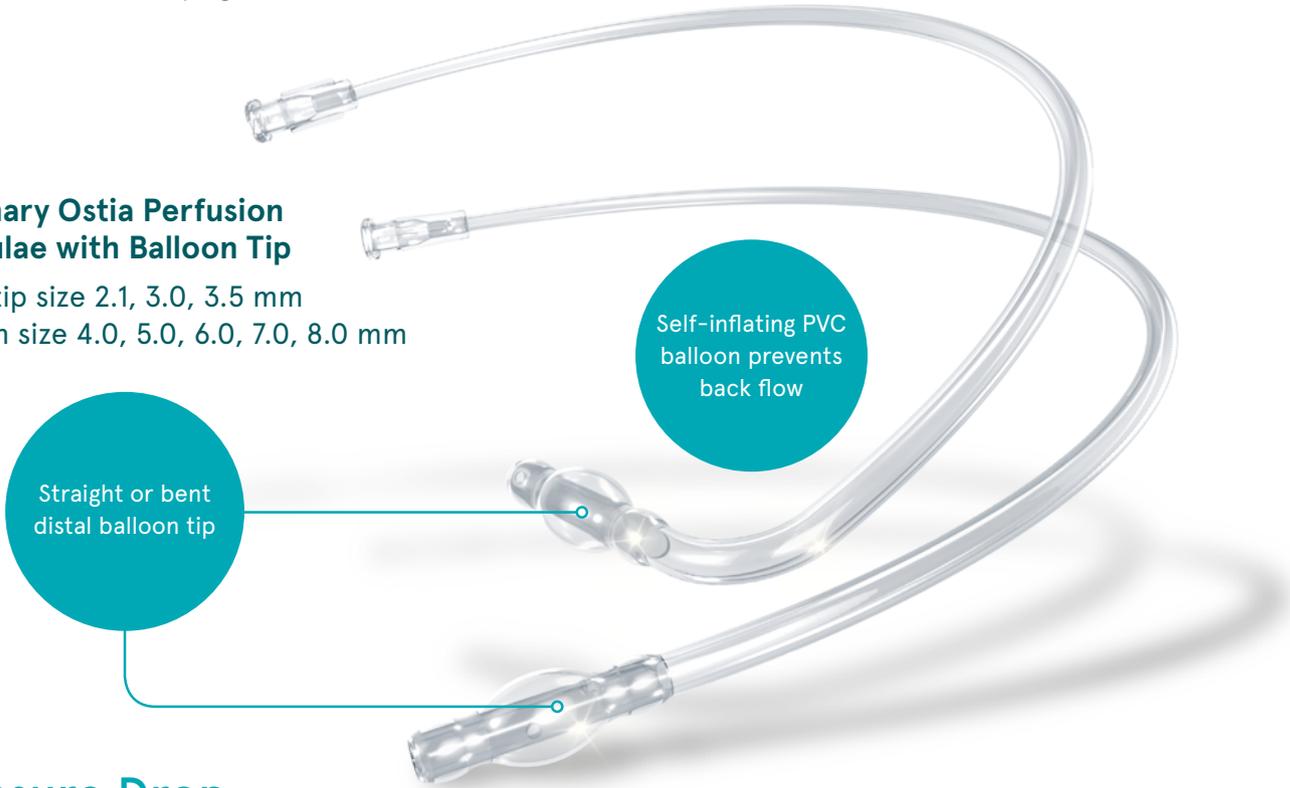
<p><b>CP-11</b></p> <p>Connector Tip 45°</p>	<p><b>CP-12</b></p> <p>Connector Tip 90°</p>	<p><b>P608</b></p> <p>Connector Tip 45°</p>	<p><b>P606</b></p> <p>Connector Tip 90°</p>	<p><b>P618</b></p> <p>Connector Tip 45°</p>	<p><b>P616</b></p> <p>Connector Tip 90°</p>
<p><b>P617</b></p> <p>Connector Tip 45°</p>		<p><b>P604</b></p> <p>Connector Tip 45°</p>	<p><b>P602</b></p> <p>Connector Tip 90°</p>	<p><b>P614</b></p> <p>Connector Tip 45°</p>	<p><b>P612</b></p> <p>Connector Tip 90°</p>

## Coronary Ostia Perfusion Cannulae with Balloon Tip

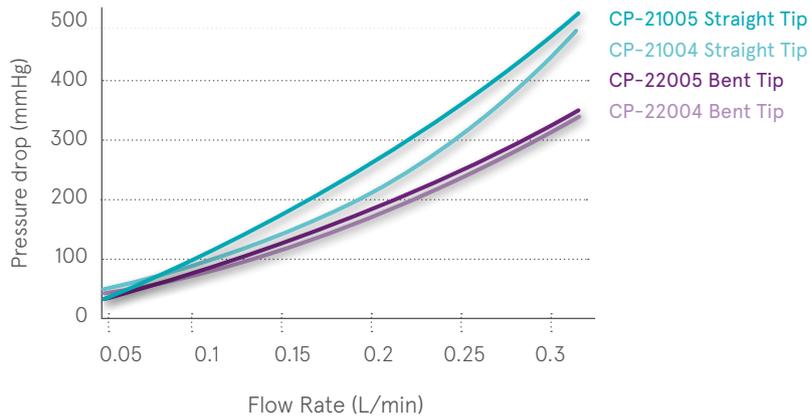
Coronary Ostia Perfusion Cannulae with balloon tip, plastic tubing and female lure lock connector. The flexible, plastic tubing terminates with a self-inflating PVC balloon designed to occlude the coronary ostia and prevents any back flow of cardioplegia solution.

### 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

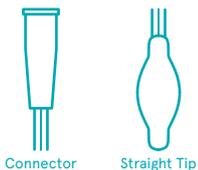


### Pressure Drop



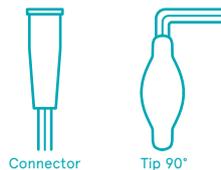
### Available Configurations

CP-21



Straight Tip Plastic Tubing and Female Luer Lock Connector

CP-22



Bent Tip Plastic Tubing and Female Luer Lock Connector

## 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 handle.

### RCS Family

#### Retrograde Cardioplegia Cannulae with Self-Inflating PVC Balloon

14 Fr size available

Self-inflating PVC balloon

Ergonomic, low profile handle

Guidewire or solid malleable stylet

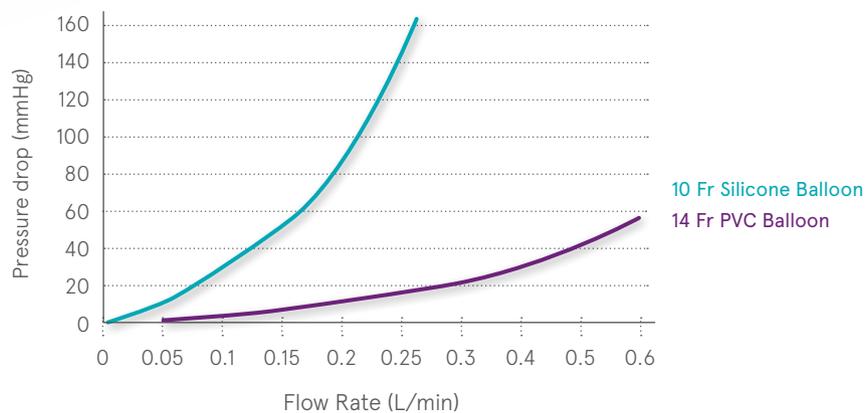
Manual-inflating silicone balloon

### RCM Family

#### Retrograde Cardioplegia Cannulae with Manual-Inflating Silicone Balloon

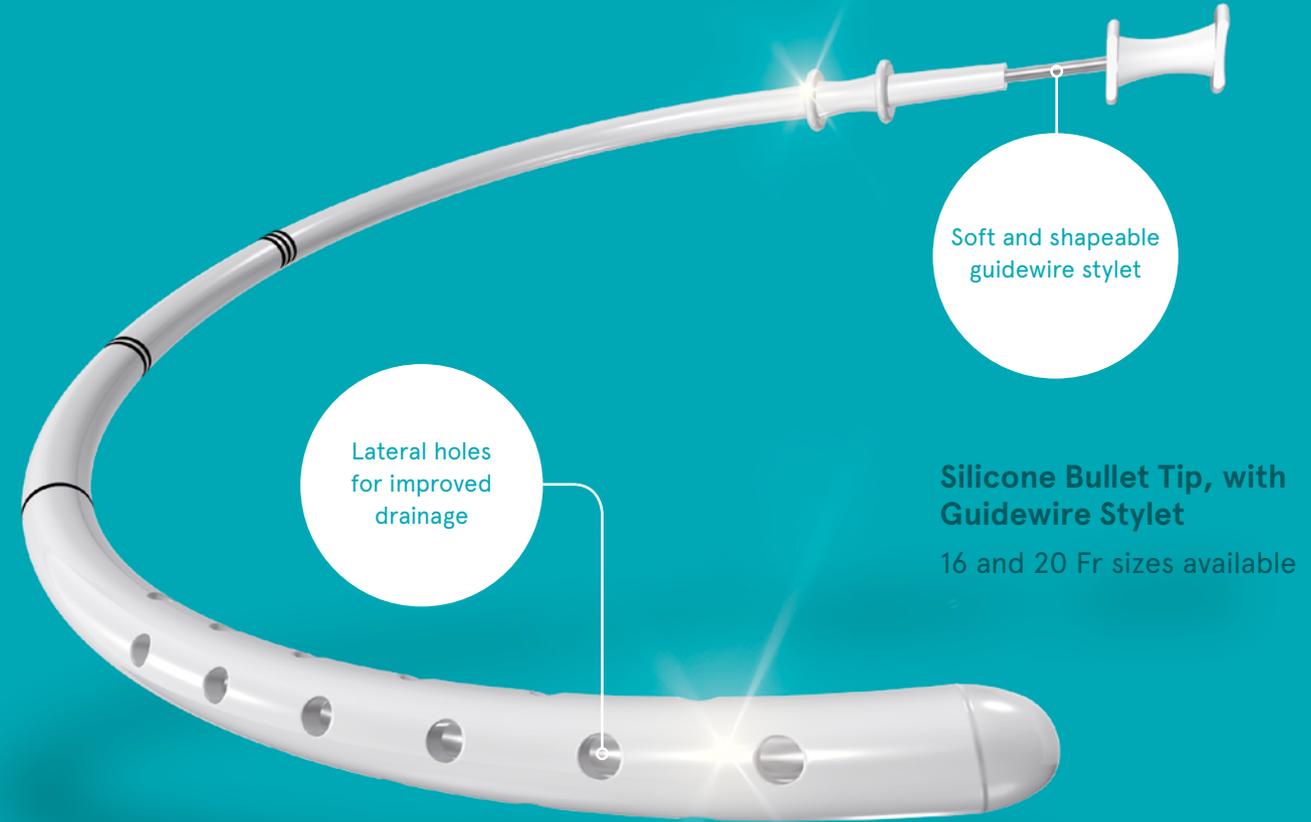
15 Fr size available

## Pressure Drop



# 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 guidewire or malleable stylet with a two-position latching mechanism.

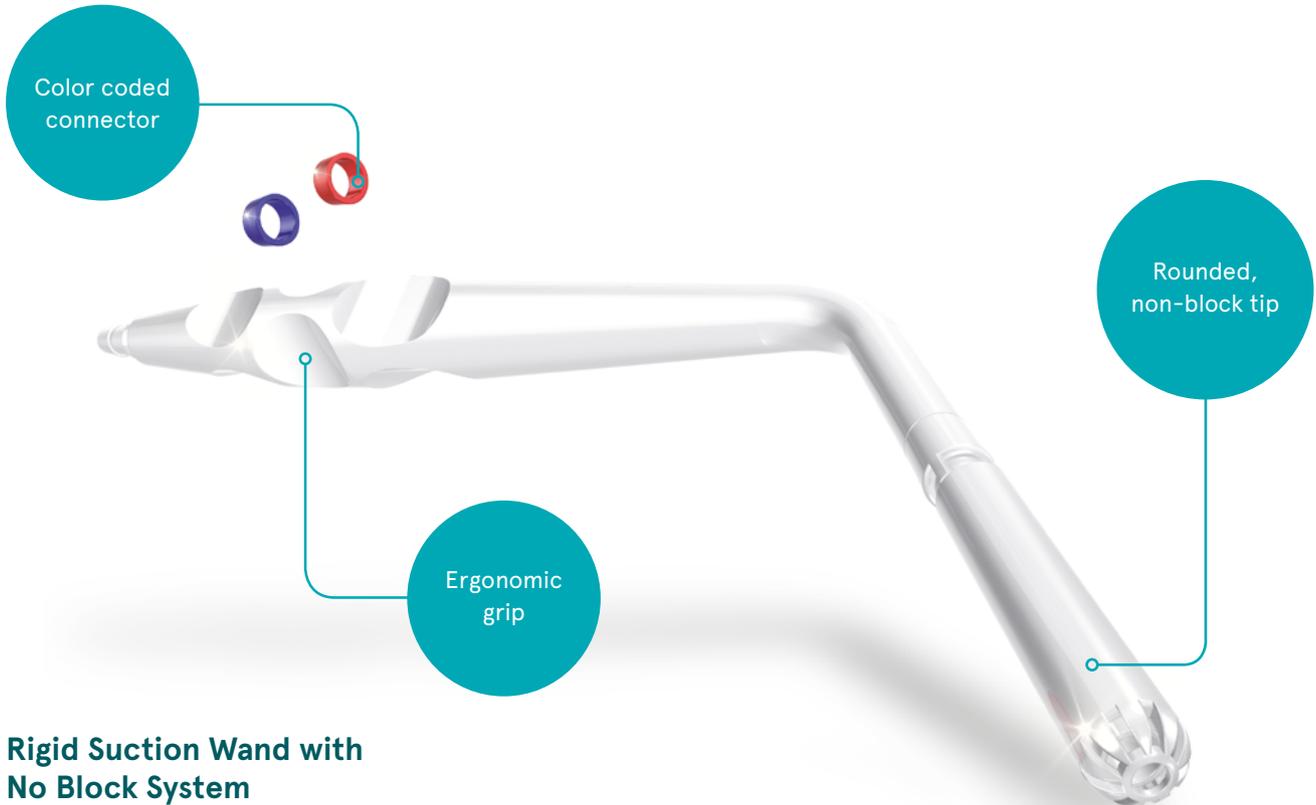


## Available Configurations

<p><b>VT-57</b></p>  <p>Connector Tip</p> <p>Silicone Bullet Tip, with removable Stylet</p>	<p><b>VT-46</b></p>  <p>Connector Tip</p> <p>Malleable PVC, Open Blunt Tip, with Stylet</p>	<p><b>VT-31/VT-53/VT-63</b></p>  <p>Connector Tip</p> <p>PVC Open Blunt Tip, with removable Stylet, with Two Position Latching Device</p>	<p><b>VT-92</b></p>  <p>Connector Tip</p> <p>PVC Open Blunt Tip, without Stylet</p>
<p><b>VT-844</b></p>  <p>Connector Tip</p> <p>PVC Straight, Bullet Tip, with Guidewire Stylet</p>	<p><b>VT-845</b></p>  <p>Connector Tip 90°</p> <p>PVC Right Angle, Bullet Tip, without Stylet, with Venting Luer Connector</p>	<p><b>VT-83</b></p>  <p>Connector Tip</p> <p>PVC Bullet Tip, without Stylet</p>	
<p><b>VT-896</b></p>  <p>Connector Tip</p> <p>PVC Bullet Tip, without Stylet with Venting Luer Lock</p>	<p><b>VT-894</b></p>  <p>Connector Tip</p> <p>PVC Bullet Tip, with Guidewire Stylet</p>	<p><b>W410</b></p>  <p>Connector Tip</p> <p>Pre-bent Left Ventricle Catheters, PVC Bullet Tip, with Stylet</p>	<p><b>W420</b></p>  <p>Connector Tip</p> <p>Pre-bent Left Atrium Catheters, PVC Bullet Tip, with Stylet</p>

## Suction Wand

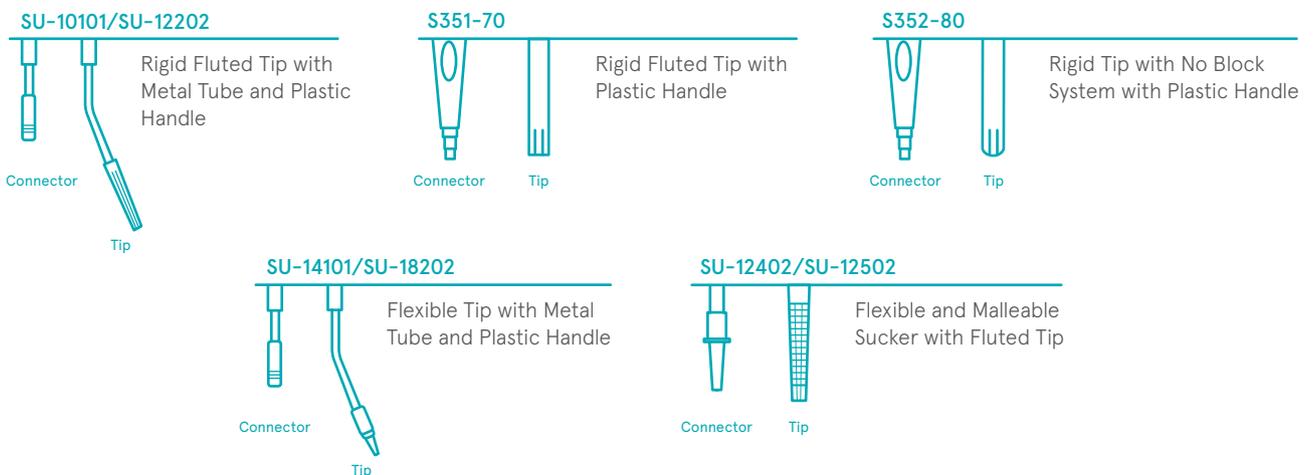
The Suction Wand features a rounded, less traumatic tip and a non-block suction system that prevents damage to the cardiac wall tissue. The rigid, ergonomic grip allows fatigueless handling and may be color coded with colored rings to easily associate pumps. Also available with flexible tubing.



### Rigid Suction Wand with No Block System

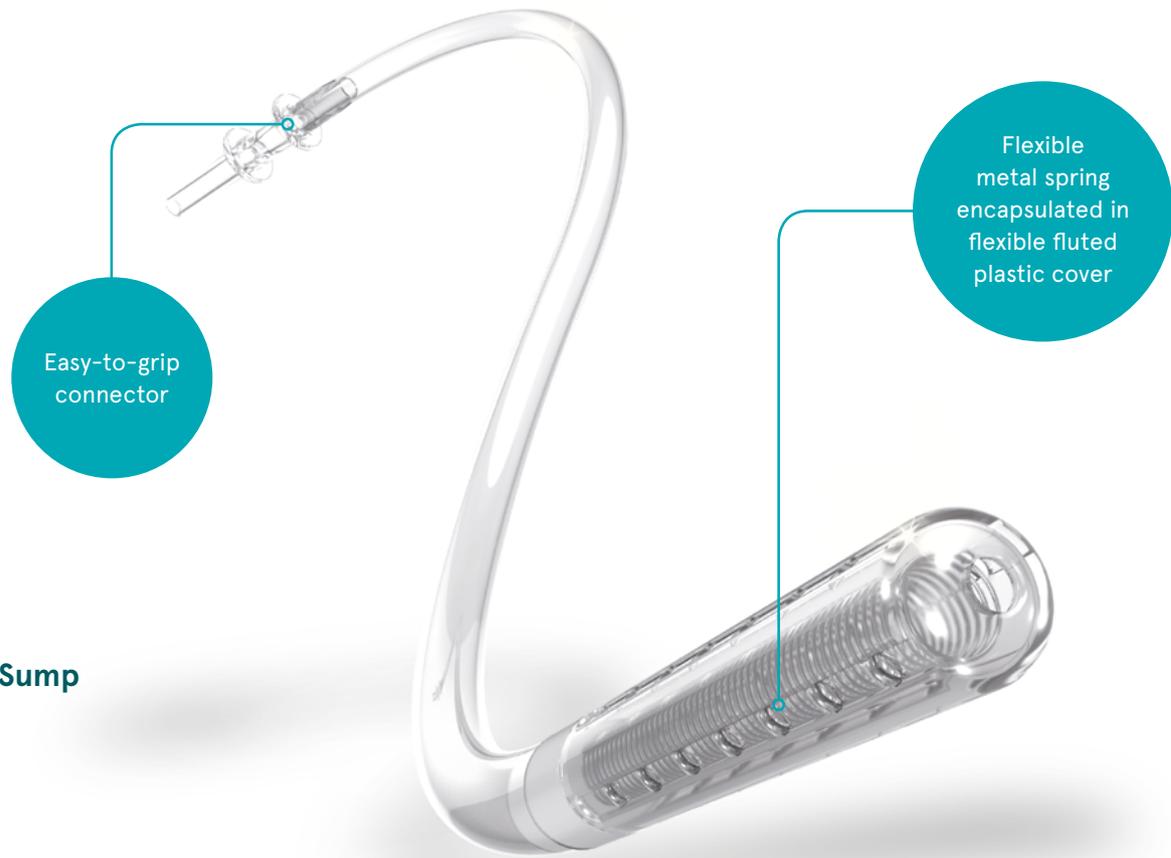
24 Fr size available

## Available Configurations



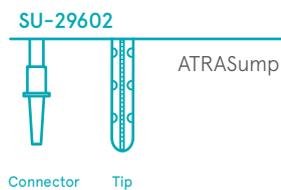
## ATRASump

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



# LivaNova

Health innovation that matters

Discover more at [cannulae.livanova.com](http://cannulae.livanova.com)

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