High performance cannulae for direct and femoral cannulation, either in conventional or minimally invasive cardiac surgery
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
- Comprehensive portfolio to manage cardioplegia, venting and suction

Can expand performance standards
Polyurethane tubing for better biocompatibility

Integrated silicone obturator facilitates insertion

Optional side hole for better flow dynamics

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.

Femoral Arterial Cannulae

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

Pressure Drop

All data extracted from relevant Instructions For Use
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.

**Pressure Drop**

<table>
<thead>
<tr>
<th>Flow Rate (L/min)</th>
<th>Pressure drop (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>19 Fr EasyFlow DUO = 240 mmHg at 5L/min</td>
</tr>
<tr>
<td></td>
<td>23 Fr EasyFlow DUO = 125 mmHg at 5L/min</td>
</tr>
</tbody>
</table>

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

**Pressure Drop**

<table>
<thead>
<tr>
<th>Flow Rate (L/min)</th>
<th>20 Fr Edwards Quick Draw</th>
<th>23 Fr Medtronic Biomedicus Next Gen</th>
<th>23/25 Fr RAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>38 mmHg at 5 L/min</td>
</tr>
<tr>
<td>1</td>
<td>20</td>
<td>40</td>
<td>50 mmHg</td>
</tr>
<tr>
<td>2</td>
<td>40</td>
<td>70</td>
<td>70 mmHg</td>
</tr>
<tr>
<td>3</td>
<td>60</td>
<td>90</td>
<td>90 mmHg</td>
</tr>
<tr>
<td>4</td>
<td>80</td>
<td>110</td>
<td>110 mmHg</td>
</tr>
<tr>
<td>5</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All data extracted from relevant Instructions For Use
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.

Malleable introducer can be bent before insertion for an easy introduction.

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.¹

V182-29
Optiflow Venous Cannula
29 Fr size available

Pressure Drop

![Pressure Drop Graph]

29 Fr Optiflow = 48 mmHg at 5L/min
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

29/37 Fr LRD
29/37 LRD = 8 mmHg at 5L/min
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.

Pressure Drop

All data extracted from relevant Instructions For Use
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 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
Connector
Straight Tip Plastic Tubing and Female Luer Lock Connector

CP-22
Connector
Tip 90°
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 stylet handle.

**RCS Family**
Retrograde Cardioplegia Cannulae with Self-Inflating PVC Balloon
14 Fr size available

**RCM Family**
Retrograde Cardioplegia Cannulae with Manual-Inflating Silicone Balloon
15 Fr size available

**Pressure Drop**

![Pressure drop graph](image)

- **10 Fr Silicone Balloon**
- **14 Fr PVC Balloon**
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

- **VT-57**
  - Connector
  - Silicone Bullet Tip, with removable Stylet

- **VT-46**
  - Connector
  - Malleable PVC, Open Blunt Tip, with Stylet

- **VT-31/VT-53/VT-63**
  - Connector
  - PVC Open Blunt Tip, with removable Stylet, with Two Position Latching Device

- **VT-92**
  - Connector
  - PVC Open Blunt Tip, without Stylet

- **VT-844**
  - Connector
  - PVC Straight, Bullet Tip, with Guidewire Stylet

- **VT-845**
  - Connector
  - PVC Right Angle, Bullet Tip, without Stylet, with Venting Luer Connector

- **VT-896**
  - Connector
  - PVC Bullet Tip, without Stylet with Venting Luer Lock

- **VT-894**
  - Connector
  - PVC Bullet Tip, with Guidewire Stylet

- **W410**
  - Connector
  - Pre-bent Left Ventricle Catheters, PVC Bullet Tip, with Stylet

- **W420**
  - Connector
  - Pre-bent Left Atrium Catheters, PVC Bullet Tip, with Stylet
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

- **SU-10101/SU-12202**
  - Rigid Fluted Tip with Metal Tube and Plastic Handle

- **S351-70**
  - Rigid Fluted Tip with Plastic Handle

- **S352-80**
  - Rigid Tip with No Block System with Plastic Handle

- **SU-14101/SU-18202**
  - Flexible Tip with Metal Tube and Plastic Handle

- **SU-12402/SU-12502**
  - Flexible and Malleable Sucker with Fluted Tip
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.

Available Configurations

<table>
<thead>
<tr>
<th>SU-29602</th>
<th>SU-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector</td>
<td>Connector</td>
</tr>
<tr>
<td>Tip</td>
<td>Tip</td>
</tr>
<tr>
<td>ATRASump Flexible and Malleable Sump with Wire-wound Tip</td>
<td></td>
</tr>
</tbody>
</table>