

## Bi-Flow™ Arterial Cannula

Bidirectional perfusion  
in one unique cannula



The only femoral arterial cannula designed to easily and safely prevent limb ischemia.

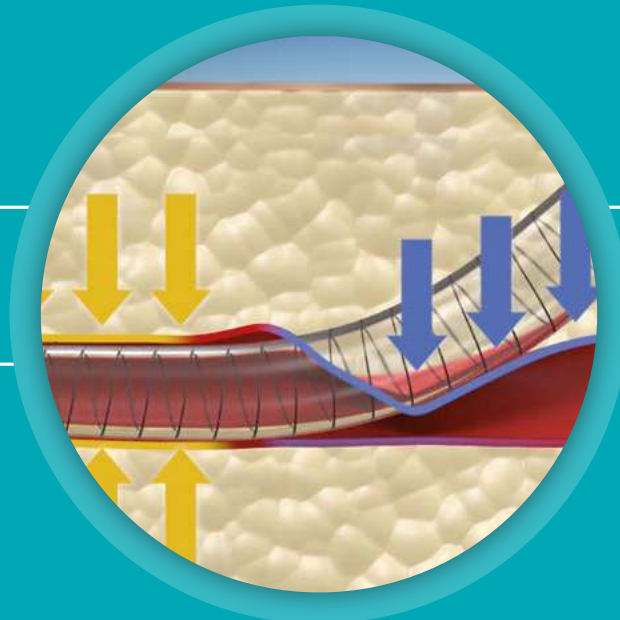
## Femoral cannulation and the incidence of limb ischemia.

Limb ischemia is a well known side effect of femoral artery cannulation. The body of a standard cannula can limit blood flow around it, and cause arterial spasm and downstream compression of the femoral artery. This contributes to compromised blood flow to the patient's lower limb, increasing the risk of limb ischemia.

Higher mortality, higher morbidity, longer hospital stay<sup>3</sup> and up to **5%** leg amputation rate in VA-ECMO<sup>4</sup>

Limb ischemia can affect more than **30%** of patients undergoing VA-ECMO<sup>1</sup> and **11%** of patients undergoing complex cardiac surgery procedures<sup>2</sup>

**STANDARD CANNULATION** of femoral artery



## Bi-Flow: designed to reduce the risk of limb ischemia during femoral artery cannulation.

The innovative, patented and award-winning design of the Bi-Flow cannula incorporates a unique shoulder and downstream perfusion channel.

These features make Bi-Flow the only cannula able to provide continuous, reliable blood flow down the femoral artery to adequately perfuse the limb.

Bi-Flow is available in two versions, one validated for 6h and the other for 29 days, to cover cardiac surgery as well as ECMO procedures.

## Easy to insert and remove for simultaneous systemic and distal perfusion of the cannulated limb<sup>5</sup>.

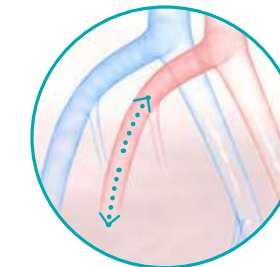
Vascular Dilator Kit included



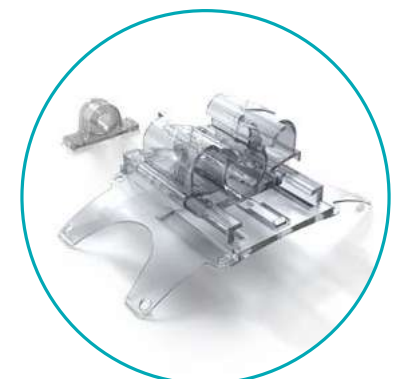
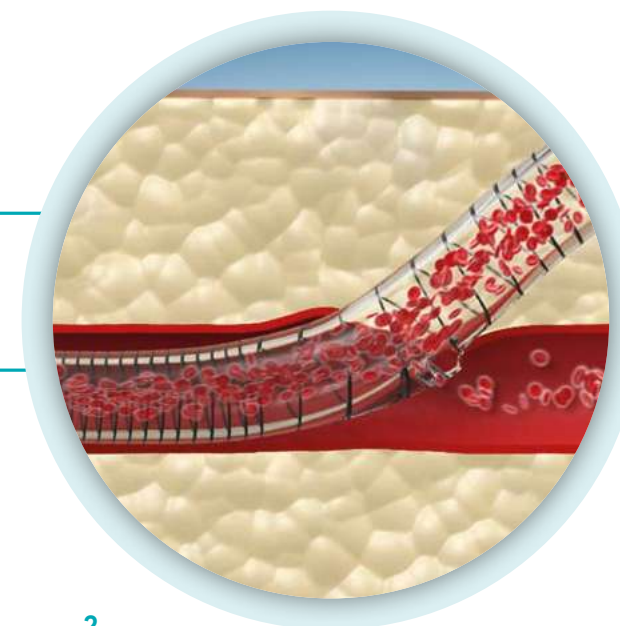
No-DOP, PH.I.S.I.O. Coated\* tubing for improved biocompatibility.



**1** Insert percutaneously using a standard needle and guide-wire technique or using a surgical cut-down.



**Bi-Flow CANNULATION** of femoral artery



**2** The shoulder and the downstream perfusion channel are in the correct position when the Bi-Flow is withdrawn and resistance is felt.

ECMO version features a unique fixation device designed to ensure that Bi-Flow remains correctly positioned for the duration of the treatment.

1. Bonicolini et al., 2019, 'Limb ischemia in peripheral veno-arterial extracorporeal membrane oxygenation: A narrative review of incidence, prevention, monitoring, and treatment', Critical Care, vol. 23, no. 1, 266  
 2. Hendrickson et al., A Method for Perfusion of the Leg During Cardiopulmonary Bypass via Femoral Cannulation, Ann Thorac Surg. 1998 Jun;65(6):1807-8  
 3. June et al., Acute Limb Ischemia After Cardiothoracic Surgery Is Associated With High Rates of Amputation and Mortality, Journal of Vascular surgery, 2015  
 4. Cheng et al., Complications of Extracorporeal Membrane Oxygenation for Treatment of Cardiogenic Shock and Cardiac Arrest: A Meta-Analysis of 1,866 Adult Patients., Ann Thorac Surg 2014;97:610-6

\*Coating applies only for the ECMO version

5. Marasco et al., A Phase 1 Study of a Novel Bidirectional Perfusion Cannula in Patients Undergoing Femoral Cannulation for Cardiac Surgery, Innovations. 2018

## ORDERING INFORMATION

ITEM #	DEVICE	DESCRIPTION	UNITS PER CASE
203-019	Bi-Flow	Bidirectional Femoral Arterial Cannula 19 fr	5
303-019	Bi-Flow ECMO	Bidirectional Femoral Arterial Cannula Coated 19 Fr	5



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



**Sorin Group Italia Srl**  
A wholly-owned subsidiary of LivaNova PLC  
Via Statale 12 Nord, 86 - 41037 Mirandola (MO) Italy  
Tel: +39 0535 29811 - Fax: +39 0535 25229  
[info.cardiacsurgery@livanova.com](mailto: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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