

Infinity® PiCCO SmartPod®

Now you can monitor hemodynamic and volumetric parameters without a pulmonary artery catheter, using the Infinity® PiCCO SmartPod®. Infinity PiCCO-Technology uses quantitative parameters that are determined both intermittently through PULSION's transpulmonary thermodilution technique and continuously through arterial pulse contour analysis.

The Infinity PiCCO SmartPod integrates four invasive pressures and cardiac output at the bedside using a single cable that connects the pod to the Infinity monitor. This design streamlines connection between the pod and the monitor and reduces cable clutter at the point of care.

The Infinity PiCCO SmartPod can be used with Infinity Delta, Delta XL, Kappa and Siemens SC 7000, SC 8000 or SC 9000XL monitors with VF7 software versions or higher, with the compatible hardware versions for those parameters specified below.

Features

- Provides less invasive, beat-to-beat hemodynamic and volumetric monitoring
- Determines parameters both intermittently and continuously
- Integrates four invasive pressures and cardiac output

Measuring Capabilities

Displayed parameters

Pulse Contour Cardiac Output (PCCO)
Continuous Cardiac Index (PCCI)
Stroke Volume (p-SV)
Stroke Volume Index (p-SVI)
Stroke Volume Variation (SVV)
Systemic Vascular Resistance (p-SVR)
Systemic Vascular Resistance Index (p-SVRI)
Pulse Pressure Variation (PPV)
Index of Left Ventricular Contractility (dPmax)¹
Cardiac Output (p-CO)
Cardiac Index (p-CI)
Cardiac Function Index (CFI)
Global End Diastolic Volume (GEDV)



Global End Diastolic Volume Index (GEDVI)
Extra Vascular Lung Water (EVLW)¹
Extra Vascular Lung Water Index (EVLWI)¹
Global Ejection Fraction (GEF)¹
Pulmonary Vascular Permeability Index (PVPI)¹
Arterial Pressure, Systolic, Diastolic and Mean (ART)
Intrathoracic Blood Volume (ITBV)
Intrathoracic Blood Volume Index (ITBVI)

Parameters obtained from Pulse Contour Analysis

Pulse Contour Cardiac Output (PCCO)

Method	Resistive strain gauge transducer and pulse contour analysis calibrated with transpulmonary thermodilution
Measurement range	0.25 to 25 l/min
Display resolution	0.01 l/min
Accuracy ²	<3%

Continuous Cardiac Index (PCCI)

Measurement range	0.01 to 15 l/min/m ²
Display resolution	0.01 l/min/m ²

Stroke Volume (p-SV)

Measurement range	1 to 250 ml
Display resolution	1 ml

Stroke Volume Index (p-SVI)

Measurement range	1 to 125 ml/m ²
Display resolution	1 ml/m ²

Stroke Volume Variation (SVV)

Measurement range	0 to 50%
Display resolution	1 %

Systemic Vascular Resistance (p-SVR)

Measurement range	0 to 30,000 dyn·sec·cm ⁻⁵
Display resolution	10 dyn·sec·cm ⁻⁵

Systemic Vascular Resistance Index (p-SVRI)

Measurement range	0 to 30,000 dyn·sec·cm ⁻⁵ /m ²
Display resolution	10 ddyn·sec·cm ⁻⁵ /m ²

Pulse Pressure Variation (PPV)

Measurement range	0 to 50%
Display resolution	1%

Index of Left Ventricular Contractility (dPmax)¹

Measurement range	200 to 5,000 mmHg/s
Display resolution	1 mmHg/s

¹ GEF, PVPI, EVLW, EVLWI and dPmax not available in the United States

² Measured using synthetic and/or database waveforms (laboratory testing)

Parameters obtained from Transpulmonary Thermodilution

Cardiac Output (p-CO)

Measurement range	0.25 to 25 l/min
Display resolution	0.01 l/min
Accuracy ²	<1%

Cardiac Index (p-CI)

Measurement range	0.10 to 15.0 l/min/m ²
Display resolution	0.1 l/min/m ²
Accuracy	Co-efficient of variation <1%

Cardiac Function Index (CFI)

Measurement range	1.0 to 15.0 l/min
Display resolution	0.1 l/min

Global End Diastolic Volume (GEDV)

Measurement range	40 to 4800 ml
Display resolution	1 ml
Accuracy ²	<2%

Global End Diastolic Volume Index (GEDVI)

Measurement range	80 to 2,400 ml/m ²
Display resolution	1 ml/m ²

Extra Vascular Lung Water (EVLW)

Measurement range	10 to 5000 ml
Display resolution	1 ml

Extra Vascular Lung Water Index (EVLWI)

Measurement range	0 to 50 ml/kg
Display resolution	1 ml/kg

Global Ejection Fraction (GEF)¹

Measurement range	1 to 99%
Display resolution	1%

Pulmonary Vascular Permeability Index (PVPI)¹

Measurement range	0.1 to 10
Display resolution	0.1

Arterial Pressure, Systolic, Diastolic, Mean (ART)

Method	Resistive strain gauge transducer and pulse contour analysis
Measurement range	0 to 300 mmHg
Display resolution	1 mmHg
Accuracy	±1 mmHg or ±3% (whichever is greater) exclusive of transducer

Intrathoracic Blood Volume (ITBV)

Measurement range	50 to 6000 ml
Display resolution	1 ml

Intrathoracic Blood Volume (ITBVI)

Measurement range	100 to 3000 ml/m ²
Display resolution	1 ml/m ²

Trended parameters	PCCO, p-SVI, SVV, PVPI ¹ , GEF ¹ , PCCI, p-SVRI, EVLWI, GEDVI, p-SVR
Trend duration	24 hours for Delta, Delta XL and Kappa
Alarms	User selectable alarm limits for PCCO and PCCI

Product Specifications

Connectors	Four invasive pressures, C.O.
Power source	Powered directly from monitor via pod communication connection
Dimensions	Length: 205 mm (8.1 in.) Width: 60 mm (2.3 in.) Height: 140 mm (5.5 in.) Weight: 0.9 kg (1.9 lbs)

Environmental Requirements

Temperature range	Operating: 5 °C to 45 °C (41 °F to 113 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Humidity	Operating: 10% to 95%, non-condensing Storage: 10% to 95% with packaging
Pressure range	Operating: 485 to 795 mmHg (65 to 106 kPa) Storage: 375 to 795 mmHg (50 to 106 kPa)

Standards

The PiCCO pod complies with Medical Devices Directive (MDD) 93/42 EEC and bears the CE mark.

Ordering Information

Infinity PiCCO pod kit MS16734

includes:

- PiCCO Pod (universal pole mount and pod communication cable included)
- C.O. Catheter Cable
- C.O. Thermistor Cable
- C.O. Intermediate Cable
- HemoPod Adapter
- Pulsion to HemoPod Adapter Cable

The Siemens SC 7000/SC 8000/SC 9000XL monitors with a software level below VF4 and the following hardware revision require a memory expansion board:

Siemens SC 7000 below 14, SC 8000 below 17 and SC 9000XL below 6

Memory expansion board for

Siemens SC 7000, SC 8000 and SC 9000XL 7494557

Procure from PULSION

Blood Pressure Transducer Kits

PULSION PV8115, PV8103 and PV8115CVP kits include PV4046 injectate temperature sensor housing

PULSIOCATH arterial thermodilution catheters for

- Femoral artery
- Brachial artery (adult only)
- Axillary artery (adult only)
- Radial* artery (adult only)

*not available in U.S.

PiCCO, PULSION, PULSIOCATH are registered trademarks of PULSION Medical Systems AG.

The Infinity PiCCO SmartPod requires 510(k) review and is not yet available commercially in the US.

The Infinity PiCCO SmartPod is not licensed in accordance with Canadian Medical Device Regulations.

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The quality management system at Draeger Medical Systems, Inc. is certified according to ISO 13485, ISO 9001 and Annex II of Directive 93/42/EEC (Medical devices).