

PhysioFlow[®]

Hemodynamics Redefined[™]

Signal Morphology-based Impedance Cardiography (SM-ICG[™])
*A new era in noninvasive **Cardiac Output** monitoring*

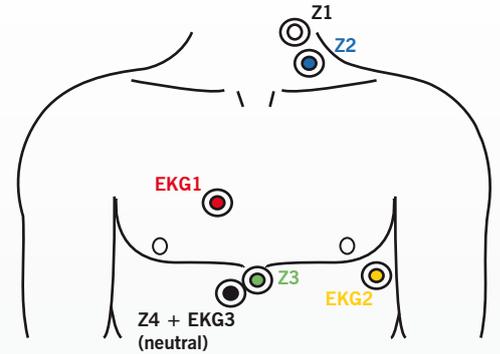
Noninvasive, Accurate, Easy to Use, Cost Effective



Signal Morphology-based Impedance Cardiography (SM-ICG™): A new era in noninvasive **Cardiac Output** monitoring

Technology

- Analysis of beat by beat heart impedance waveforms obtained noninvasively (6 chest surface electrodes)
- Elimination of the problematic impedance baseline (Z0) in the calculation of stroke volume
- HD-Z™ high performance signal stabilization filter for optimal noise cancellation



Validations

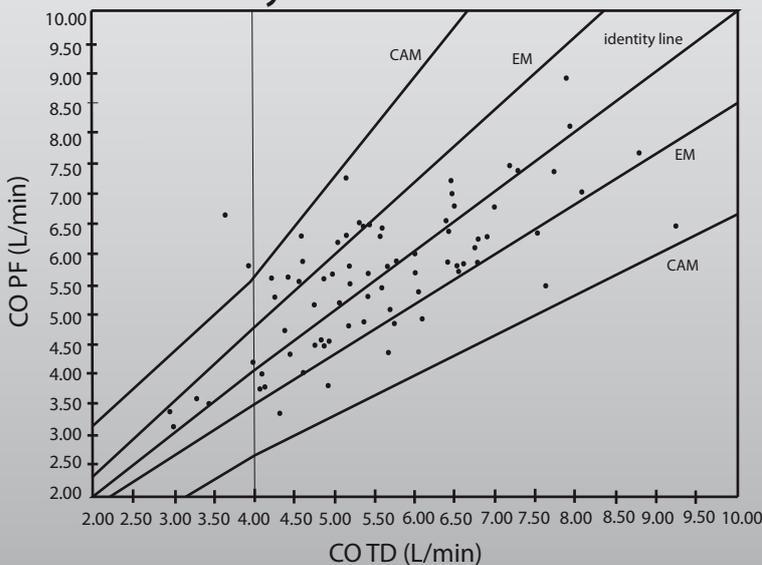
- 40+ peer-reviewed validations and application studies, showing Sensitivity, Reproducibility and Accuracy
- US-FDA approved technology, predicate device is thermodilution, proven superiority compared to other ICG devices
- 300+ users in 35+ countries for the most demanding applications at rest and during exercise

Applications

- 13+ useful hemodynamic parameters including preload, contractility and afterload
- Provides efficient assessment and control for optimal fluid management
- Early diagnosis thanks to the evaluation of signal abnormalities
- Powerful software for data display, trending, analysis and reports
- Critical care, cardiology, internal medicine, pulmonology, physiology and sports medicine

Noninvasive, Accurate, Easy to Use, Cost Effective

Parke's Error Grid
PhysioFlow® vs. TD



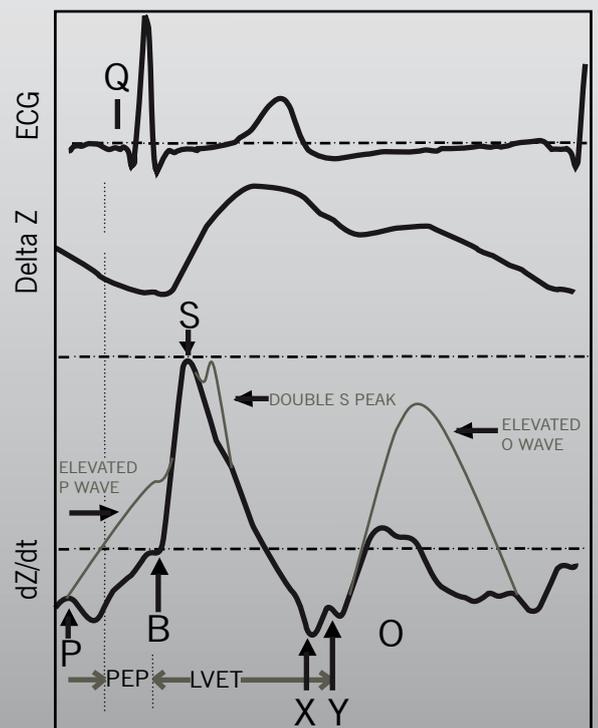
PhysioFlow® vs. TD N=80 bias=0.08 L/min SD=0.96 L/min

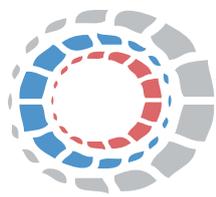
EM=TD Error Margin (20%)

CAM=Clinical Acceptance Margin (30%)

TD=Thermal Dilution Method

Impedance signals + abnormalities





PhysioFlow®

Hemodynamics Redefined™

EASY TO USE

MS-Windows™ based software:

- User friendly, short learning curve
- Works in every application
- Detailed printed report and data export to text and MS-Excel™ files

Easy to handle hardware:

- Few connections or wireless
- Transportable or handheld
- No maintenance

COST EFFECTIVE

Economical day-to-day use:

- Disposables: 6 electrodes per patient only
- Low cost compared to invasive or other noninvasive technologies
- Saves valuable time for operators

An attractive business model:

- No indirect costs (catheter complications)
- May improve patient outcome
- Potential direct or indirect revenue generator

NONINVASIVE

Fewer constraints:

- Complete safety for the patient
- No risk of infection or injury
- Saves time for patient care

More flexibility:

- Extensive applications (measurements at rest and during exercise)
- Snapshots or continuous monitoring
- Can be used routinely by nurses and/or technicians

RELIABLE

Validations:

- Unmatched reproducibility and sensitivity
- Good agreement with reference methods at rest (incl. severely ill patients) and during exercise
- Proven clinical value even in difficult patients and challenging measurement conditions

High quality standards:

- Excellence in manufacturing and customer service
- ISO 9001/13485 standards
- Market approvals in the USA (FDA), Europe, Japan, among other.

POWERFUL

- Potentially more efficient than other invasive or noninvasive hemodynamic systems thanks to similar accuracy, but better reproducibility and sensitivity.
- Offers a combination of parameters that enables accurate evaluation of any hemodynamic condition. For instance: fluid status and optimization can be efficiently assessed and guided.
- Features displays that enable a quick and efficient evaluation of the patient's hemodynamic equilibrium: the Hemodynamic Cross.
- The analysis of signal abnormalities is potentially extremely useful for the early diagnosis of severe pathologies when they are still reversible.

The combination of the low cost and ease of use, reduced limitations, zero risk and high performance make PhysioFlow® the technology of choice to finally establish noninvasive hemodynamic diagnosis and monitoring as a standard of care.

Contact:

Manatec Biomedical info@physioflow.com
44, rue de Laborde physioflow@yahoo.com
75008 Paris Tel: + 33 9 65 03 24 01
FRANCE Fax: + 33 1 30 74 46 48

Windows™ is a trademark of Microsoft Corporation



www.physioflow.com