

The Schwarzer Cardiotek **evolution ProCart** represents the next generation of mobile hemodynamic measurement systems. Offering a convenient solution for hybrid labs where mobile equipment is a must.

With a streamlined design the evolution ProCart can be rapidly moved between laboratories as required. The system includes a **high-fidelity** amplifier for vital sign measurements that can be performed with ease through the **Smart Keyboard**, a dedicated element that facilitates the access to key functionalities.



## Features Overview

### Mobile and flexible design

As hospitals strive towards the most efficient and cost effective use models, many interventional lab spaces are expanding the range of procedures performed in the available lab spaces. This often requires new equipment, which may lead both the procedure and control rooms becoming cluttered working environments.

The **evolution ProCart** is designed with the modern, modular cathlab in mind. The whole system can be easily moved in and out at any moment, bringing the versatility of hemodynamic stations to a new level.

### Standardized Interfaces

- Patient data to X-ray modality via DICOM WLM
- Transfer of dose information from X-ray via DICOM MPPS
- ASCII data transfer

### Intuitive Operation

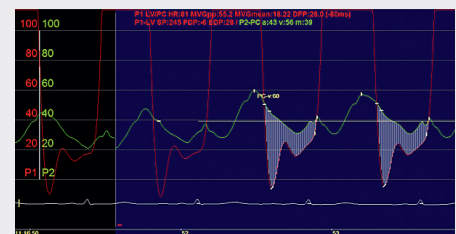
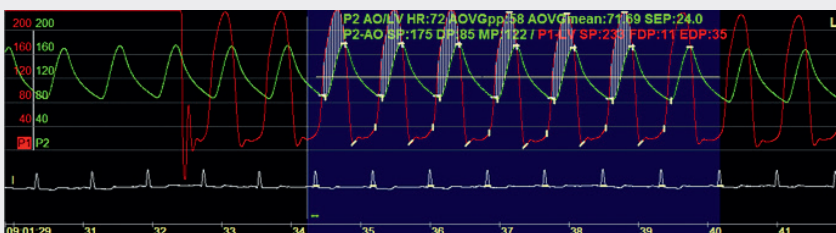
- Combining the benefits of a digital display with the haptic feedback of a traditional keyboard, the Smart Keyboard offers an intuitive user interface to support a steady workflow.
- Commonly used functions, such as record, zero pressure and measurement positions are all available via intuitive icons and a single key press.
- The Smart Keyboard enhances the systems intuitive software GUI and simple mouse-controlled features, such as clicking and dragging for curve segment definition and automatic measurement.

### Comprehensive Calculations

The evolution software can calculate systemic and pulmonary flows with shunt calculation, cardiac output, body surface, pressure gradients, valve opening areas, vascular resistance and more.

Furthermore, curve segments may be automatically or manually measured as desired. Pressure waveforms are reliably overlaid even during an arrhythmia, enabling a smooth „pullback“ analysis.

### Signal examples



## IT components



- 2 x 24" LCD monitors
- Disinfectable keyboard
- Disinfectable mouse
- 19" PC (64bit, Windows 10 IoT)

## Smart Keyboard



- 4,3 inch LCD display
- 15 transparent keys with full haptic feedback
- Power and coms via single cable
- Configurable key assignment\*

\*Note: editing of the digital layers may only be performed by Schwarzer Cardiotek personnel or an approved affiliate.

## Technical Data

### Integrable amplifier

Size 240 x 125 x 52 (mm)  
Weight 920g



### Surface ECGs

Number of Inputs 10  
Sampling rate 500 Hz  
Leads I, II, III, aVL, aVR, aVF, V1-V6  
QRS amplitude 0.15 ... 10mV  
Cable types 5- and 10-lead patient cable (type CF)

### Invasive blood pressure

Number of amplifiers 4 channels  
Sampling rate 500 Hz  
Display scales 10, 25, 50, 100, 200, 400 mmHg

### Analog Outputs

2 outputs  
Signal range +/- 5 V  
QRS trigger 1 - 25V; max delay 35 ms

### Options

#### Cardiac Output

Sampling rate 250 Hz  
Resolution 0.01 l/min  
Measurement method Thermodilution and/or Fick

#### SpO2

Resolution 0 -100% measurement range  
1%

#### NiBP

SYS 25 to 290 mmHg  
DIA 15 to 250 mmHg  
Pulse 25 to 250 mmHg  
Resolution 1 mmHg

#### Standards (excerpt)

IEC 60601-1 :2015  
IEC 60601-2-27:2014  
IEC 60601-2-34:2014

#### Patient safety

Protection Class II, Applied Parts Type CF (according to IEC 60601-1)

#### Certification

evolution ProCart is a medical system according to Art. 22 MDR combining CE certified medical devices.

Note: Content may be subject to change.