

*EKG*  
*NIBP*  
*Temp*

*etCO<sub>2</sub>*  
*SpO<sub>2</sub>*  
*IBP*

*OEM Modules for  
Patient Monitoring  
2024/2025*

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PEARL<sup>®</sup>, Oxiflex<sup>®</sup> and NIBScan<sup>®</sup> are registered trademarks of Medlab GmbH

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## Multiparameter

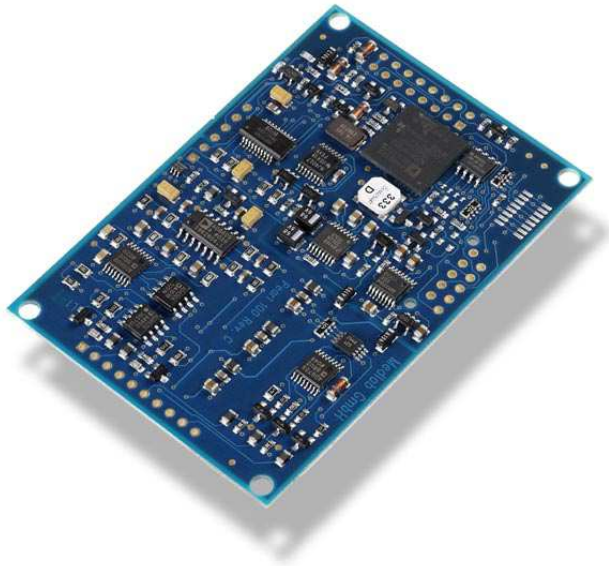
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# PEARL100\*

Pulse Oximeter OEM Module



# SpO<sub>2</sub>

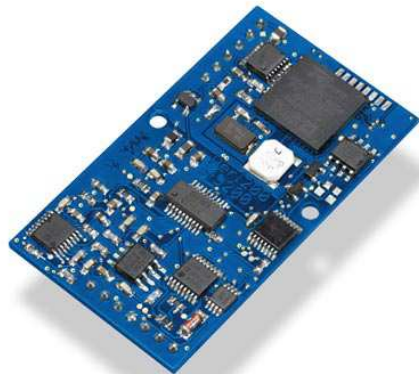
- *Advanced signal processor technology with artefact suppression, recommended for neonates, infants and adults*
- *Small size ( 77 x 53 mm ), maximum height 6 mm*
- *Lock-in based signal recovery down to a pulsation of 0.05 % ( AC / DC ratio )*
- *Ultra low noise design for highest performance on centralized patients*
- *Greatly improved suppression of ambient light and electromagnetic disturbances*
- *Easily integrable into handheld and desktop devices*
- *Single power supply ( 3.3 V to 5.5 V DC ), < 250 mW*
- *RS232 and TTL level serial UART interface*
- *Transmission of SpO<sub>2</sub>, pulse rate, plethysmographic waveform, “quality”-signal, status information, and perfusion index*
- *High flexibility in interface protocols*
- *Measurement of pulse rate between 30 min<sup>-1</sup> and 250 min<sup>-1</sup>*
- *Measurement of oxygen saturation between 0 % and 100 %*
- *Data of desaturation study available for regulatory purposes*
- *Complete line of probes available*
- *Complies with ISO 9919:2009 and ISO 80601-2-61:2018*



\* *Pulse Enhancement Artefact Rejection Logic*  
*PEARL is a registered trademark of Medlab GmbH*

# PEARL200\*

Pulse Oximeter OEM Module



# SpO<sub>2</sub>

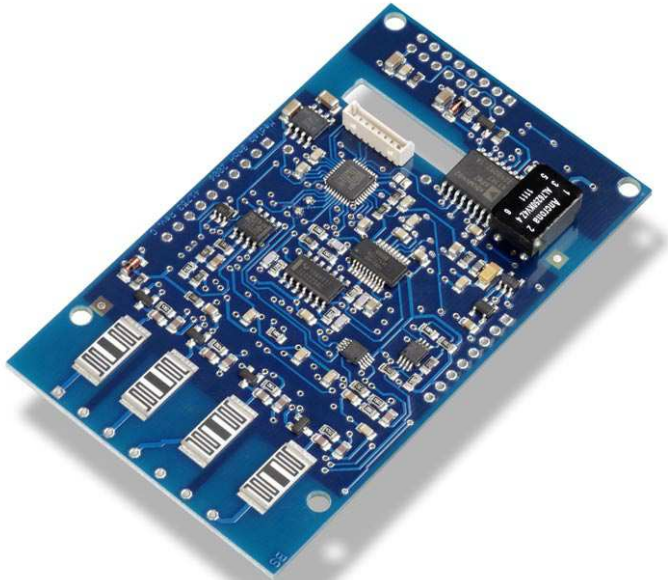
- *Advanced signal processor technology with artefact suppression, recommended for neonates, infants and adults*
- *Very small size ( 55 x 31.5 mm ), maximum height 4 mm*
- *Position of probe and host connector as on PEARL100 board*
- *Lock-in based signal recovery down to a pulsation of 0.05 % ( AC / DC ratio )*
- *Ultra low noise design for highest performance on centralized patients*
- *Greatly improved suppression of ambient light and electromagnetic disturbances*
- *Easily integrable into handheld and desktop devices*
- *Single power supply ( 3.3 V DC +/- 5 % ), < 150 mW*
- *CMOS level serial asynchronous interface*
- *Transmission of SpO<sub>2</sub>, pulse rate, plethysmographic waveform, "quality"-signal, and status information, and perfusion index*
- *Measurement of pulse rate between 30 min<sup>-1</sup> and 250 min<sup>-1</sup>*
- *Measurement of oxygen saturation between 0 % and 100 %*
- *Data of desaturation study available for regulatory purposes*
- *Complete line of probes available, coded or uncoded*
- *Complies with ISO 9919:2009 and ISO 80601-2-61:2018*



\* *Pulse Enhancement Artefact Rejection Logic*  
*PEARL is a registered trademark of Medlab GmbH*

# EG01010

## Three Channel ECG Module



# ECG

- *Advanced 32 Bit signal processor technology with digital filtering*
- *Small size ( 88 x 53 mm ), maximum height 10 mm*
- *Monitors Einthoven I, II or III with three lead cable*
- *Measurement of respiration rate over the electrodes ( Option )*
- *Single power supply ( 5 V DC +/- 10 % ), < 250 mW*
- *RS232 and TTL level serial UART interface*
- *Highly accurate isolated ECG Trigger output*
- *Integrated patient isolation according to IEC 60601-1*
- *Integrated defibrillation protection*
- *Integrated lead-off detection*
- *Complies with the newest version of IEC 60601-2-27*
- *Transmission of pulse rate and ECG waveform*
- *Measurement of pulse rate between 30 bpm and 248 bpm*
- *Three amplification stages*
- *Three curve transmission speeds*
- *ECG cables and adapters available*
- *Pacemaker detection and rejection*



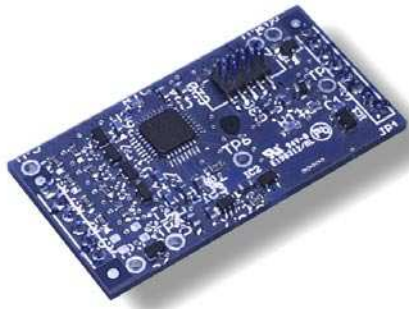
### *Applications:*

*ECG Monitoring*

*ECG Triggering for CT scanners, Gamma Cameras etc.*

# EG04000

## Six Channel ECG Module



# ECG

- *Advanced signal processor technology with digital filtering*
- *Small size ( 40 x 21 mm ), maximum height 5 mm*
- *Monitors I, II, III, aVR, aVL, aVF with four lead cable*
- *Monitors I or II or III with three lead cable*
- *Integrated pacemaker detection and rejection*
- *Lead-off detection for each electrode*
- *Single power supply ( 3.3 V DC +/- 5 % ), <75 mW*
- *CMOS level serial asynchronous interface*
- *Highly accurate ECG trigger output*
- *Complies with the newest revision of IEC 60601-2-27*
- *Transmission of pulse rate, ECG waves and status messages*
- *R-wave detection, measurement of pulse rate ( 30 bpm to 248 bpm )*
- *Four amplification stages, four curve transmission speeds*
- *ECG cables and adapters available*
- *neonate / pediatric mode selectable*



### *Applications:*

*Low power ECG monitoring*

*Portable ECG recorders*

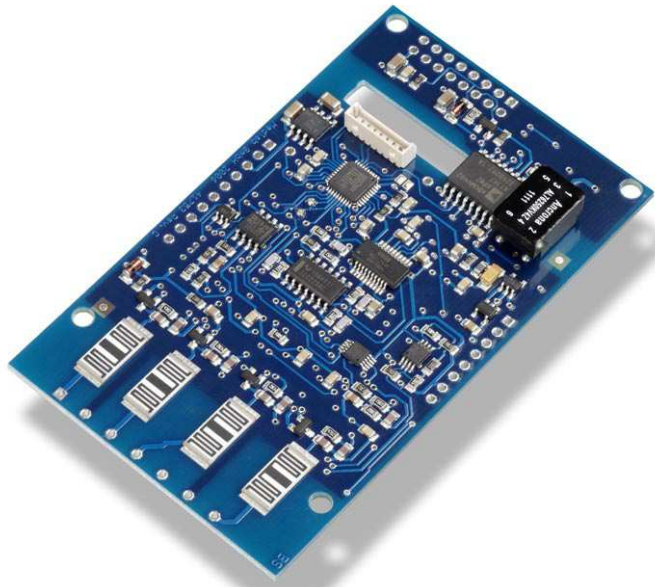
*Holter recorders*

*Event recording*

*Telemetry applications*

# EG05000

## Seven Channel ECG Module



# ECG

- *Advanced 32 Bit signal processor technology with digital filtering*
- *Small size ( 88 x 53 mm ), maximum height 10 mm*
- *Monitors I, II, III, aVR, aVL, aVF, and C with five lead cable*
- *Monitors I, II, III, aVR, aVL, aVF with four lead cable*
- *Monitors I, II or III with three lead cable*
- *Measurement of respiration rate over the electrodes ( Option )*
- *Single power supply ( 5 V DC +/- 10 % ), 250 mW*
- *RS232 and TTL level serial UART interface*
- *Highly accurate isolated ECG Trigger output pin*
- *Patient isolation according to IEC 60601-1 ( 4 kV, Type CF )*
- *Integrated defibrillation protection*
- *Integrated pacemaker detection and lead-off detection*
- *Complies with the newest version of IEC 60601-2-27*
- *Transmission of pulse rate, ECG and respiration waveform*
- *Measurement of pulse rate between 30 bpm and 250 bpm*
- *Four amplification stages*
- *Four curve transmission speeds*
- *ECG cables and adapters available*
- *Neonate / pediatric mode selectable*



### *Applications:*

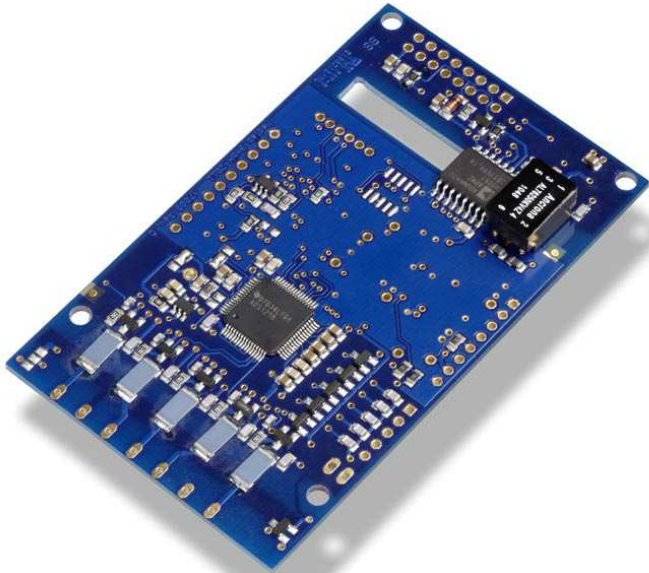
*High-End ECG Monitoring*

*ECG triggering for CT scanners, Gamma Cameras etc.*



# EG12000

## Twelve Channel ECG Module



# ECG

- *Advanced signal processor technology with digital filtering*
- *Small size ( 88 x 53 mm ), maximum height 10 mm*
- *Mechanically compatible to the three and five channel modules*
- *Monitors I, II, III, aVR, aVL, aVF, and C1 to C6 with ten lead cable*
- *Monitors I, II, III, aVR, aVL, aVF, and C with five lead cable*
- *Monitors I, II, III, aVR, aVL, aVF with four lead cable*
- *Monitors I, II or III with three lead cable*
- *Integrated pacemaker detection and lead-off detection for each electrode*
- *Measurement of respiration rate over the electrodes ( Option )*
- *Single power supply ( 5 V DC +/- 5 % ), < 300 mW*
- *RS232 and TTL level serial asynchronous interface*
- *Highly accurate isolated ECG Trigger output*
- *Integrated patient isolation according to IEC 60601-1, class CF*
- *Integrated defibrillation protection for limb leads*
- *Complies with the newest version of IEC 60601-2-27*
- *Transmission of pulse rate, ECG, and respiration waveform*
- *Four amplification stages, four curve transmission speeds*
- *ECG cables and adapters available*
- *Neonate / pediatric mode selectable*



### *Applications:*

*High-End 12 channel ECG Monitoring*

*ECG Triggering for CT scanners, Gamma Cameras etc.*

# NIBScan

## Non-Invasive Blood Pressure Module



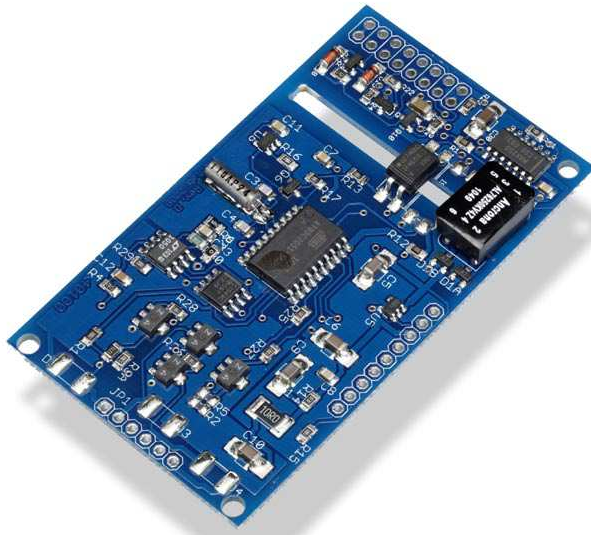
# NIBP

- *Advanced 32 Bit signal processor with artefact suppressing algorithm*
- *Very small size: 80 x 60 mm, maximum thickness 26 mm, weight 120 g*
- *Innovative pneumatic manifold design*
- *High reliability due to low pneumatic part count*
- *Power supply: 5.5 V to 15 V DC, one supply voltage only*
- *Low power consumption: < 2600 mW measuring, < 300 mW standby*
- *Purely oscillometric method, short measurement time*
- *Preselected or automatic pump-up pressure*
- *Redundant pressure sensor and pressure relieve valve*
- *Neonatal and adult mode*
- *Pulse rate: 30 bpm to 230 bpm*
- *SYS, DIA, MAP blood pressure: 5 mmHg to 280 mmHg*
- *Serial UART interface*
- *Transmission of pulse rate, systolic-, mean-, and diastolic pressure*
- *Status messages and commands sent over the serial interface*
- *Integrated automatic cyclic measurements*
- *Complies with the newest version of IEC 80601-2-30*
- *Complies with EN 1060-1, EN 1060-3, EN 1060-4 and ISO 81060-2*
- *Clinically validated for adults and neonates*
- *Clinical test data available for regulatory / registration purposes*
- *Latex free cuffs with bladder available*



# EG00700

## Two Channel Temperature Module



°C

- *Two independent channels plus reference channel*
- *Small size ( 77 x 44 mm ), maximum height 10 mm*
- *Single power supply ( 5 V DC ), < 75 mW*
- *RS232 and TTL level serial UART interface*
- *Integrated patient isolation according to IEC 60601-1 ( 4 kV, Type CF )*
- *Integrated sensor-off detection*
- *Transmission of temperature values, resolution 0.1 °C*
- *Measuring range 20 °C up to 44.0 °C*
- *Compatible with all YSI 400 Probes*
- *Accuracy: +/- 0.1 °C + Probe Tolerance*



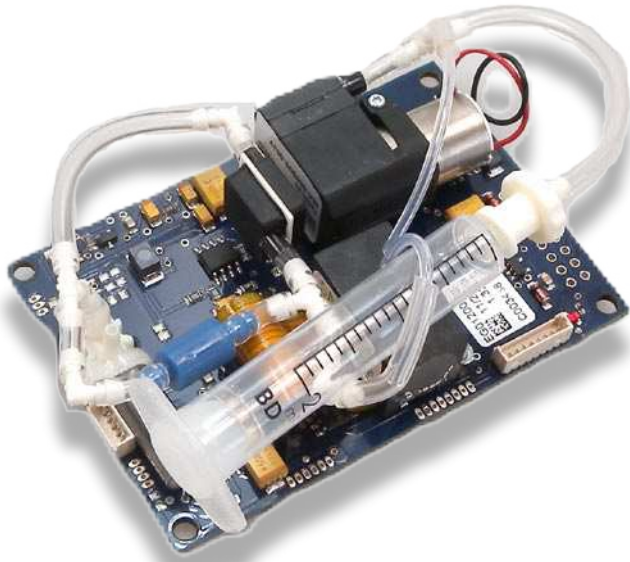
### *Applications:*

*Patient Monitors*

*Temperature measurement for incubators etc.*

# EG01200

## Sidestream Capnography Module



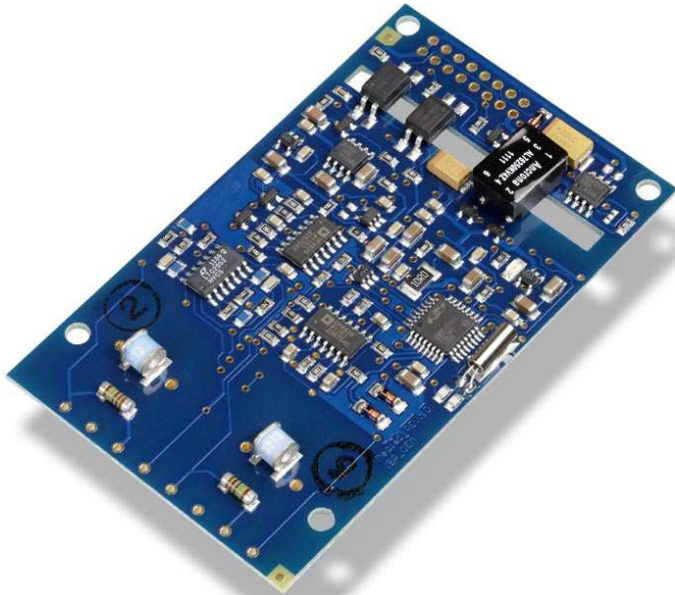
etCO<sub>2</sub>

- *Advanced technology, all compensations integrated*
- *Small size ( 77 x 53 mm ), maximum height 28 mm*
- *Single power supply ( 5 V DC +/- 5 %)*
- *Low power ( 450 mW, 1100 mW during zero calibration )*
- *Measures etCO<sub>2</sub>, inCO<sub>2</sub>, respiration rate*
- *Capnogram can be transmitted in three different sample rates*
- *Measurement of respiration rate between 0 min<sup>-1</sup> and 99 min<sup>-1</sup>*
- *Measurement of etCO<sub>2</sub> in either %Vol or mmHg ( 0 mmHg to 80 mmHg )*
- *Monitors bench temperature, ambient pressure, and flow rate*
- *Regulated flow rates of 60, 100, and 150 ml/min*
- *User adjustable compensation for N<sub>2</sub>O and O<sub>2</sub>*
- *Highest quality, long life-time pneumatics integrated ( >10000 hours )*
- *Integrated valve for auto-zeroing*
- *Two-point calibration*
- *Additional input for FiO<sub>2</sub> sensor ( galvanic oxygen cell )*
- *High resolution capnogram also on higher respiration rates*
- *Complies with the newest version of ISO 80601-2-55*
- *Status messages and commands send over serial interface*
- *RS232 and TTL level serial UART interface*
- *Filters and adapters available*



# EG02000

## Invasive Blood Pressure Module



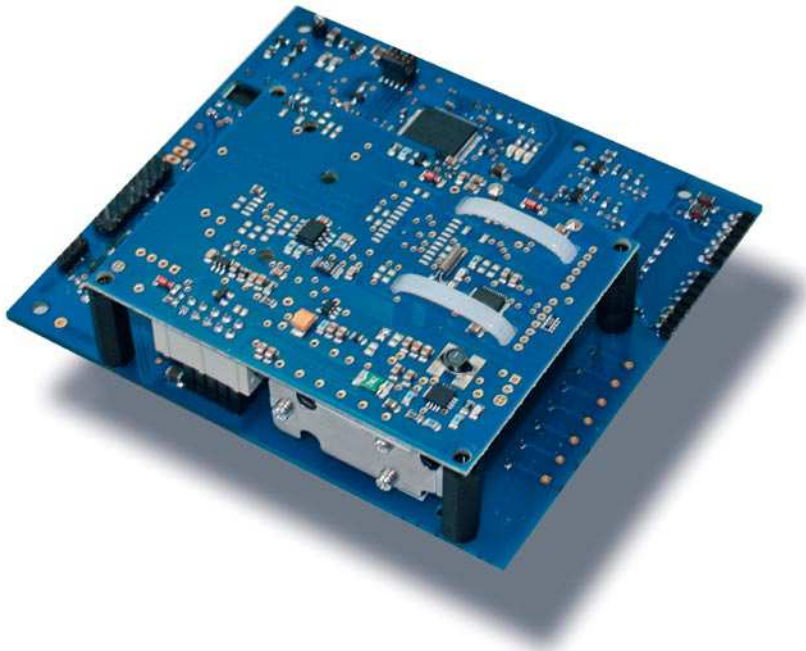
# IBP

- *Two independent channels*
- *Works with standard pressure transducers of 5  $\mu\text{V/V/mmHg}$*
- *Simulation mode built-in for easy integration into user system*
- *Waveform transmission speed selectable ( 50, 100, and 150 Hz )*
- *Displays static pressures and waveforms*
- *Integrated pulse rate detection: 30 bpm to 250 bpm*
- *Automatic detection of systolic -, mean-, and diastolic blood pressure*
- *Measuring range -100 mmHg to +300 mmHg ( +/- 1 % accuracy )*
- *Zero point can be shifted by -100 mmHg to +90 mmHg*
- *Zeroing commands built-in - independently for both channels*
- *Transmission of pulse rate, systolic -, mean-, and diastolic pressure*
- *Status messages and commands send over the serial interface*
- *Complies with IEC 60601-2-34*
- *Defibrillation protection and Patient isolation built-in ( 4 kV, Type CF )*
- *RS232 and TTL level serial UART interface*
- *Very small size: 88 x 53 mm, maximum thickness 10 mm*
- *Power supply: 5 V DC +/- 10 %, one supply voltage only*
- *Power consumption: < 600 mW, depending on transducer impedance*



# MP01000

## Multiparameter Patient Monitoring Module



ECG  
SpO<sub>2</sub>  
NIBP  
Temp

### GENERAL

- *Advanced signal processor technology with digital filtering for all parameters*
- *Small size ( 110 x 100 mm ), maximum height 40 mm.*
- *Single power supply ( 7 V to 15 V DC ), 980 mW ( @7 V, while NIBP not measuring )*
- *Maximum power requirement < 3 W, while NIBP measuring*
- *Power down input, powers down the complete system*
- *RS232 and TTL level serial asynchronous ( UART ) interface*
- *CAN interface with user selectable bit rate and identifier addresses*
- *Integrated patient isolation in accordance to IEC 60601-1*
- *Integrated defibrillation protection for ECG and temperature*

### ECG

- *Monitors I, II, III, aVR, aVL, aVF and one chest lead with five lead cable*
- *Measurement of pulse rate, range 30 bpm to 249 bpm*
- *User selectable curve transmission rate and amplification*
- *Command selectable monitoring bandwidth or diagnostic bandwidth*
- *Integrated pacemaker detection and lead-off detection for each electrode*
- *Measurement of respiration rate over electrode impedance (optional)*
- *Highly accurate isolated ECG trigger output*
- *Complies with newest revision of IEC 60601-2-27*

## **SpO<sub>2</sub>**

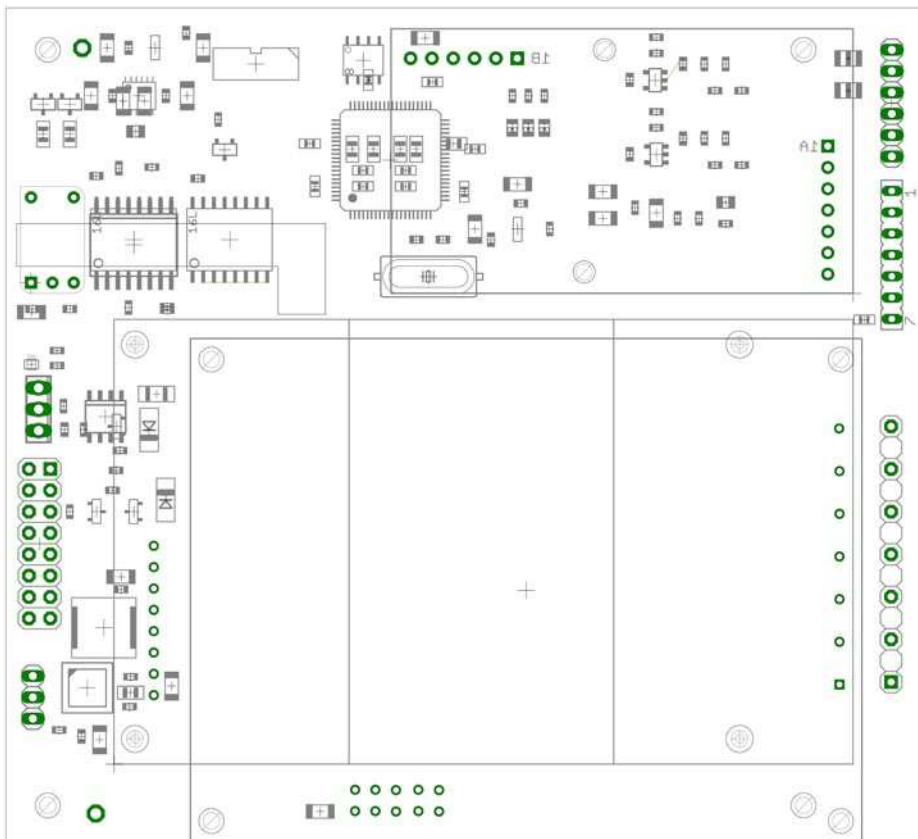
- Lock-in based signal recovery down to a pulsation of 0.05 % ( AC / DC ratio )
- Ultra low noise design for highest performance on centralized patients
- Excellent suppression of artefacts, ambient light and EM-disturbances
- Transmits SpO<sub>2</sub>, pulse rate, plethysmographic waveform, perfusion index
- Selectable transmission speed of waveform and averaging of SpO<sub>2</sub>
- Complete line of re-usable and disposable probes available
- Complies with newest revision of ISO 80601-2-61

## **NIBP**

- Purely oscillometric method, short measurement time
- Redundant pressure sensor and pressure relieve valve for increased patient safety
- Neonatal and adult modes
- Transmission of pulse rate, systolic-, mean- and diastolic pressure
- User selectable automatic cyclic measurements
- Clinically validated for adults and neonates
- Complies with newest revision of IEC 80601-2-30 and ISO 81060-2

## **TEMPERATURE**

- Two independent channels, plus reference channel
- Measuring range 25.0 °C up to 50.0 °C
- Compatible with all YSI 400 Probes



# SpO<sub>2</sub> probes for EG00352 and PEARL100 / PEARL200



## Ordering Info

### Reusable Probes:

Type	Patient Weight	Model No.
Fingerclip P-200	>20 kg	00535
Fingerclip PX-200	>20 kg	00536
Fingerclip PS-200	10 to 50 kg	00537
Oxiflex large R-200	>20 kg	00550
Multisite Probe Y-200	>1 kg	00526

### Disposable Probes:

Type	Patient Weight	Model No.
Disposable Adult	>20 kg	00520
Disposable Child	8 kg to 30 kg	00521
Disposable Infant	5 kg to 15 kg	00522
Disposable Neonate	<5 kg	00523

Medlab PEARL SpO<sub>2</sub> probes can be used with all Medlab pulse oximeters currently sold. They are the result of more than 15 years of experience in developing SpO<sub>2</sub> sensors. By using only the highest quality cabling, a Kevlar re-enforcement and a specially designed cable strain relief, we are able to offer all our reusable probes with a two year warranty.

The standard cable length of the sensors is 140 cm, extension cables are available as an option.



P-200  
Fingerclip probe



PS-200  
Small Fingerclip probe



R-200  
Oxiflex large finger probe



Extension Cable  
Lemo-DSUB



Y-200  
Multisite Y-probe



Extension Cable  
DSUB-DSUB



Disposable probes  
Delivery:  
Package of 24 pieces



# NIBScan Blood Pressure Cuffs



*The NIBScan blood pressure cuffs combine comfort with durability. They are designed with great care and made of robust materials, without using latex or PVC.*

*The textile cuff is coated with a skin friendly material and is easy to clean. The bladder is made of strong but flexible polyurethane for high durability.*

*NIBScan blood pressure cuffs are available in five sizes: three adult types and two cuffs for children and infants.*

## Applications

- Patient Monitoring
- Ambulatory Blood Pressure Recorders

## Ordering Info

### Cuffs with one connection hose:

Size	Limb Circumference	Model No.
Infant	9 to 15 cm	90110
Child	14 to 21 cm	90210
Small adult	20 to 28 cm	90310
Normal adult	27 to 35 cm	90410
Large adult	34 to 44 cm	90510

The cuffs are supplied with 20 cm hose and EN 80369-5 compliant male small-bore connector:

