



**Prime
Innovation
for Medical
Application**

**SPOTLIFE®
VITAL SIGNS MONITOR**

**VETERINARY
SERIES**

ZUG
MEDICAL SYSTEMS



ALL PARAMETERS AT A GLANCE, EVEN GRAPHS AND TRENDS

SpO2 only (SPLFV-OX)

SpO2
Pulse Rate (PR)
Perfusion Index (PI)
Photoplethysmogram

SpO2 + Mainstream CO2 (SPLFV-MC) SpO2 + Sidestream CO2 (SPLFV-SE)

SpO2	End-tidal CO ₂ (EtCO ₂)
Pulse Rate (PR)	Inspired CO ₂ (FiCO ₂)
Perfusion Index (PI)	Respiration Rate (awRR)
Photoplethysmogram	Capnogram

OVERVIEW

SpotLife Vet is a vital signs monitor that comes in 3 versions for the benefit of the veterinary market. The SpO2 only model helps accurate oximetry monitoring of even the smallest animals thanks to its high performances in low perfusion condition. The 2 other models include capnography (mainstream or sidestream) along with oximetry. They will appear to be indispensable and reliable with intubated animals during surgery. The clear and easy to read LCD will show re-

al-time pleth and capnogram, allowing vets to confirm proper intubation, and whether the animal is in respiratory distress. SpotLife compatible airway adapters allow smooth connection to any anesthesia systems.

Its handle and lightweight make it easy for transport use as well as use in operating theaters. Cost effective, it remains a comprehensive device for multiple applications on a wide range of animals and environments.

FEATURES

- Bright, large 5" Color TFT LCD for better readability of all parameters
- Intuitive user interface
- Selectable Display modes:**
 - digits only, showing parameters values
 - digits and graphs, showing real-time plethysmogram and capnogram/NIBP (according to model)
 - digits, graph and trends, displaying in addition the historical values.
- 9 LED indicators to easily control patient type, units, power and alarm status
- LAN connectivity to interface with central monitoring system (optional software).
- USB port for easy updates with new software functions (further connectivity and control options, addition of peripherals)
- New patient presets allowing a one step action to set all alarms limits according to patient type (Adult, Child, Neonate).
- 360deg Visible and Audible alarms
- Over 72h trend data with a 1min resolution
- Built-in power supply and 2400mAh lithium battery for 6h continuous monitoring
- Extension port upon request for custom protocols, raw data output for research and other device connectivity.

FUNCTIONS

Oximetry (All models):

- Real-time measurement of SpO2, pulse rate (PR), perfusion index (PI), and Variability of Pulse Index (PIV).
- Real-time photoplethysmogram display
- High Motion Interference Rejection with advanced anti-movement algorithm
- High accuracy and reliability even with low blood perfusion down to 0.05%, allowing application in OR, ICU and NICU.

Capnography (SPLFV-SE and SPLFV-MC models):

- Measurement of EtCO₂, FiCO₂ and Respiratory Rate (awRR)
- Real-time capnogram display
- Automatic barometric pressure, temperature compensation and manual anaesthetic gases compensation

Thermometry (Option TBD):

- Body temperature measurement using Fast temperature probe



ENVIRONMENTAL CHARACTERISTICS

Operation

Temperature: $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$
 Humidity: 15% ~ 95%, non-condensing
 Atmospheric pressure: 70.0kPa ~ 106.0kPa

Storage

Temperature: $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$
 Humidity: 10% ~ 95%, non-condensing
 Atmospheric pressure: 57.3kPa ~ 106.0kPa

ELECTRICAL AND MECHANICAL CHARACTERISTICS

Electrical Power Supply

AC: $100 \sim 240\text{V} \pm 10\%$ (built-in adapter)
 Input power: 60VA
 Frequency: $50\text{Hz}/60\text{Hz} \pm 3\text{Hz}$
 One equipotential grounding interface
 Product Class: IIb (in accordance with MDD93 /42/ EEC)

Battery

Built-in rechargeable lithium batteries:
 11.1 V / 2400mAh

Mechanical

Dimensions: 255*140*95mm (LxWxH)
 Weight: < 2kg (without accessories)

INTERFACES

Connectivity

- USB interface
- RS232 DB9 interface
- Ethernet Port

HMI

- Five buttons: Power switch, alarm stop, alarm pause, up and down buttons, menu
- Display: 5" Color TFT LCD, 800 x 480pixels
- Audio/Visual Indicators: alarm limit reached, alarm tone, alarm mute, pulse strength, patient ID, patient type, time, battery status.
- LEDs: Adult, neonate, pressure unit or SpO2/PR (according to model), battery in use, battery charging, silenced alarm.
- User Interface language: English, Italian, Hungarian (additional language upon request).



PERFORMANCES

• Oximetry (All models):

- SpO₂: Measurement Range: 0 – 100%, Accuracy Range: 70 – 100 %, $\pm 2\%$ < 70%, Undefined, Resolution: 1%
- PULSE RATE: Measurement Range: 25-250 bpm, Accuracy Range: $\pm 2\%$, Resolution: 1 bpm
- PI: Measurement Range: 0-20%, Resolution: 0.001%
- PIV: Measurement Range: 0-100%, Accuracy Range: Undefined, Resolution: 1%

• Capnography (SPLFV-MC and SPLFV-SE models)

- METHOD: *Infrared radiation absorption technology*
- CO₂ MEASUREMENT RANGE: 0 ~ 20 Vol%
- ACCURACY: 0 ~ 12 %: $\pm (0.2 \text{ Vol\%} + 2\% \text{ of reading})$, 12 ~ 20 %: $\pm (0.2 \text{ Vol\%} + 6\% \text{ of reading})$
- MEASUREMENT ACCURACY DRIFT: *accuracy requirements within 6 hours*
- RESOLUTION: 0.1 Vol%
- ACCURACY: **Mean error:** $< \pm 5 \text{ mmHg}$, **Standard deviation:** $< 8 \text{ mmHg}$
- APNEA ALARM DELAY TIME: 20s, 25s, 30s, 35s, 40s, 45s, 50s, 55s, 60s
- ALARM RANGE: EtCO₂: 0 ~ 150mmHg, FiCO₂: 0 ~ 150mmHg, awRR: 0 ~ 150rpm
- SAMPLING VOLUME: 50ml/min (applied to SPLFV-SE side-stream model only)

ORDERING

Models	Descriptions
◆ SPLFV-OX	➤ SpotLife Oximeter Only, with Adult SpO ₂ reusable probe
◆ SPLFV-MC	➤ SpotLife Oximeter and Mainstream CO ₂ sensor, with tongue/ear clip SpO ₂ reusable probe, one set of large/small animal reusable airway adapters
◆ SPLFV-SE	➤ SpotLife Oximeter and External Sidestream CO ₂ sensor, with tongue/ear clip SpO ₂ reusable probe, one CO ₂ microstream disposable canula.

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