

# Virgo

## Patient Monitor



Committed to Excellence

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12.1" color TFT LCD screen, wide and flat screen design, economic and reliable

### Configuration

ECG+SpO2+NIBP+2TEMP+PR+RESP, Li-ion battery

### Optional

Masimo SpO2, Suntech NIBP, IBP, CO2, Thermal recorder, Touch screen, CMS

- 12.1" color TFT LCD screen( touchscreen is optional )
- 8 waveform display, up to 12-lead ECG analysis
- Powerful calculation(Hemodynamic,Dose,Oxygenation,Ventilation)
- Pacemaker detection
- ST & arrhythmia analysis(17 types)
- SpO2 support PI, low perfusion 0.2%
- Night mode, standby mode, venipuncture mode
- Various mounting solutions
- Wired/Wireless CMS, support HL7 protocol to HIS
- SpO2 pulse-tone modulation (Pitch Tone)
- MEWS(Modified Early Warning Score)
- Graphical & tabular trend review( 240 hours), USB data output
- Rechargeable Lithium-Ion Battery
- 48 Hours full disclosure waveforms review & print for each patient

### Specifications

#### Physical Specification

Display  
12.1" TFT LCD screen  
Resolution: 800 x 600 (1024 x 768 optional)  
Number of traces: 8, up to 12 ECG waveforms  
Dimension: 310x292x174mm(WxHxD)  
Weight: < 4 kg under standard configuration  
LAN: 1 standard RJ45 port  
WLAN: IEEE 802.11b/g/n  
USB: 2 USB connectors

#### ECG

Lead type :3-lead,5-lead,12-lead(optional)  
ECG waveform:2 channels,7 channels, 12 channels  
Display sensitivity(wave gain):  
1.25mm/mV(x0.125), 2.5mm/mV (x0.25), 5mm/mV (x0.5), 10mm/mV (x1.0), 20mm/mV (x2.0), 40mm/mV (x4.0), Auto  
Wave sweep speed:  
3.125mm/s, 6.25mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s  
Bandwidth  
Diagnostic mode: 0.05Hz~100Hz  
Monitor mode: 0.5Hz~40Hz  
Surgery mode: 1Hz~20Hz  
Strong filter mode: 5Hz~20Hz  
CMRR>100dB  
Notch: 50/60Hz notch filter can be set to on or off  
Differential input impedance>5MΩ  
Electrode polarization voltage range: ±400mV  
HR range: 15 - 350 bpm  
ST Measurement Range: -1.0 - +10 mv  
Baseline recovery time<3s after defibrillation (in monitor and surgery mode)  
Calibration signal:1mV (peak - peak), accuracy ±3%

#### Pulse Rate

Range: 30~300bpm  
Resolution: 1bpm  
Accuracy: ±2bpm (non-motion)  
±5bpm (motion)  
Refreshing rate: 1s

#### SpO2

Measurement range : 0-100%  
Resolution: 1%  
Perfusion index display  
Accuracy: ±2% (70-100%, Adult/Pediatric);  
±3% (70-100%, Neonate);  
0-69%,unspecified  
Refreshing Rate: 1s

#### RESP

Measurement method : Thoracic electrical bioimpedance  
Operation modes: Auto/Manual  
Measuring lead: Lead I, II  
Measurement range: Adult:0~120 bmp;  
Neonate/Pediatric:0~150bpm  
Resolution: 1 bpm  
Apnea alarm delay:10s,15s,20s,25s,30s,35s,40s  
Apnea alarm: Selectable  
Wave gain: x0.25, x0.5, x1, x2  
Respiratory impedance range: 0.5-5Ω  
Baseline impedance: 500-4000Ω  
Gain: 10 grades  
Scan speed: 3.125mm/s, 6.25mm/s, 12.5 mm/s, 25mm/s

#### TEMP

Accuracy:±0.1°C or ±0.2°F  
Measurement range: 5~50°C (41~122°F)  
Channel: Two channels  
Resolution: 0.1°C  
Parameters: T1,T2 and TD

#### NIBP

Measurement method : Automatic oscillometric method  
Operating mode:Manual, automatic, continuous  
Measurement unit: mmHg/kPa selectable  
Typical measurement time: 20~40s  
Measurement type: Systolic, Diastolic, Mean  
Measurement range (mmHg)  
Range of Systolic pressure:  
Adult 40-280  
Pediatric 40-200  
Neonatal 40-135  
Range of Diastolic pressure:  
Adult 10-210  
Pediatric 10-150  
Neonatal 10-95  
Range of Mean pressure:  
Adult 20-230  
Pediatric 20-165  
Neonatal 20-105

Measurement accuracy  
Maximum average error: ±5mmHg  
Maximum standard deviation: 8mmHg  
Resolution: 1mmHg  
Interval:1,2,3,4,5,10,15,30,60,90,120,180,240,480minutes  
Overpressure protection: Software and hardware,  
double safety protection  
Cuff pressure range: 0-300mmHg

#### Recorder (Optional)

Build-in, Thermal dot array  
Horizontal resolution :16 dots/mm (25 mm/s paper speed)  
Vertical resolution:8 dots/mm  
Paper speed:25 mm/s, 50 mm/s  
Number of waveform channels:3

#### Masimo SET® SpO2(Optional)

Measurement range : 0-100%  
Resolution: 1%  
Accuracy: ±2% (70-100%, Adult/Pediatric,non-motion,  
low perfusion);  
±3% (70-100%, Neonate,non-motion);  
±3% (70-100%, motion);  
0-69%,unspecified  
Refreshing Rate: 1s

#### Mainstream CO2(Optional)

Measurement range: 0-19.7%,150mmHg, or 0-20kPa  
Resolution: 0.1mmHg  
Measurement accuracy  
0 - 40 mmHg: ± 2 mmHg  
41 - 70 mmHg: ± 5% of reading  
71 - 100 mmHg: ± 8% of reading  
101 - 150 mmHg: ± 10% of reading  
Respiration rate: 3-150 bpm  
Respiration rate accuracy: 1% ±1bpm  
Warm-up time: 97% within 8s, full accuracy within 20s

#### Sidestream CO2(Optional)

Measurement range: 0-20% (0 - 150mmHg)  
Accuracy: < 5.0% CO 2: ± 2 mmHg  
> 5.0% CO 2: < 6% of reading  
Respiration rate: 2 ~ 150 BPM  
Respiration rate accuracy: 1% ±1BPM  
Warm-up time: 97% within 45s, full accuracy within 10 min  
Rise times(t10-90%): About 100ms, when flow is 100 ml/min,  
adult water trap, 1.5m sampling tube  
Delay time: <3sec when flow is 100 ml/min, adult water trap,  
1.5m sampling tube

#### IBP(optional)

Channel:2-channel or 4-channel  
ART: 0 to 300 mmHg  
PA: -6 to 120 mmHg  
CVP/RAP/LAP/ICP : -10 to 40 mmHg  
Measurement range: P1/P2 -50 to 300 mmHg  
Resolution:1mmHg  
Accuracy:  
±2% or ±1mmHg, whichever is greater(without sensor)  
Sensitivity: 5uV/mmHg/V  
Impedance range: 300 to 3000Ω

#### Operation Environment

Power: AC 100-250V, 50/60Hz  
Temperature: 5-40°C  
Humidity: <80%  
Patient Range: Adult, Pediatric, Neonate



7-lead ECG

Time	SPO2	PR	T1
09:11:28:40	98	60	36.0
09:11:28:39	98	60	36.0
09:11:28:38	98	60	36.0
09:11:28:37	98	60	36.0
09:11:28:36	98	60	36.0
09:11:28:35	98	60	36.0

Graphical & Tabular Trend

- 240 Hours long trend
- 120 Mins short trend
- 1000 NIBP measurements
- 200 Alarm events



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