

VS-900

Vital Signs Monitor



Physical Specifications

Weight	0.2.5 kg (with SpO ₂ , NIBP recorder and a battery.)
Size	178 mm × 150 mm × 260 mm
Display screen	Color TFT LCD 8.4", 800×600 pixels Touch screen (optional)
Display waveform	Up to 2 waveforms, SpO ₂ and CO ₂

Patient Type Adult, Pediatric, Neonatal

NIBP

Meet standards of IEC 80601-2-30, ISO 81060-2.	
Technique	Oscillometry
Operation mode	Manual, Auto, STAT, Program
Parameters	Systolic, diastolic, mean, Heart Rate
Auto mode intervals	1, 2, 2.5, 3, 5, 10, 15, 20, 30, 60, 90, 120min
STAT mode cycle time	5 min
Max Measure time	Adult/Pediatric: 180 s, Neonate: 90 s
Systolic range	Adult: 25 to 290 mmHg Pediatric: 25 to 240 mmHg Neonate: 25 to 140 mmHg
Diastolic range	Adult: 10 to 250 mmHg Pediatric: 10 to 200 mmHg Neonate: 10 to 115 mmHg
Mean range	Adult: 15 to 260 mmHg Pediatric: 15 to 215 mmHg Neonate: 15 to 125 mmHg
NIBP accuracy	Max mean error: ± 5 mmHg Max standard deviation: 8 mmHg
NIBP resolution	1 mmHg

Mindray SpO₂

Meet standards of ISO 80601-2-61.	
SpO ₂ range	0 to 100 %
SpO ₂ resolution	1%
SpO ₂ accuracy	70 to 100%: ±2% (without motion in adult /pediatric mode) 70 to 100%: ±3% (without motion in neonate mode) 0% to 69%: Not specified.
Perfusion indicator (PI)	Yes, for Mindray SpO ₂
Pitch Tone	Yes

Masimo SpO₂

Meet standards of ISO 80601-2-61.	
SpO ₂ range	1 to 100 %
SpO ₂ resolution	1%
SpO ₂ accuracy	70 to 100%: ±2% (without motion in adult /pediatric mode) 70 to 100%: ±3% (without motion in neonate mode) 70 to 100%: ±3% (measured with motion) 1% to 69%: Not specified.
Perfusion indicator (PI)	Yes, for Masimo SpO ₂
Pitch Tone	Yes

Nellcor SpO₂

Meet standards of ISO 80601-2-61.	
SpO ₂ range	0 to 100 %
SpO ₂ resolution	1%
SpO ₂ accuracy	70 to 100%: ±2% (adult/pediatric) 70 to 100%: ±3% (neonate) 0% to 69%: Not specified..
Perfusion indicator (PI)	No
Pitch Tone	Yes

PR from Mindray SpO₂

PR range	20 to 300 bpm
PR accuracy	± 3 bpm (without motion)

PR from Masimo SpO₂

PR range	25 to 240 bpm
PR accuracy	f 3 bpm (without motion) f 5 bpm (with motion)

PR from Nellcor SpO₂

PR range	20 to 300 bpm
PR accuracy	±3 bpm (20 to 250 bpm) not specified (251 to 300 bpm)

PR from NIBP

PR range	30 to 300 bpm
PR accuracy	f 3 bpm or ±3%, whichever is greater

SmarTemp™ Temperature

Meet standard of ISO 80601-2-56.	
Technique	Thermal resistance
Operating mode	Adjusted mode (predictive mode) Direct mode (monitor mode)
Measurement range	Monitor mode: 25 °C to 44 °C (77 °F to 111.2 °F) Predictive mode: 35 °C to 43 °C (95 °F to 109.4 °F)
Accuracy (Monitor mode)	25 °C to 32 °C (not include 32 °C): ±0.2 °C 32 °C to 44 °C (include 32 °C): ±0.1 °C or 77°F to 89.6°F (not include 89.6°F): ±0.4 °F 89.6°F to 111.2°F (include 89.6 °F): ±0.2 °F
Resolution	f 0.1 °C or ± 0.2 °F
Refreshing rate	1 s

Genius™ 2 Tympanic Thermometer

Measurement range	33 to 42 °C (91.4 to 107.6 °F)
Calibrated accuracy	± 0.1 °C (environment temperature 25 °C, target temperature 36.7 to 38.9 °C) ± 0.2 °C (environment temperature 16 °C, target temperature 33 to 42 °C)
Resolution	0.1 °C or 0.1 °F
Response time	< 2 s

THP79JU Infrared Ear Thermometer

Technique	Infrared.
Measurement range	32 °C to 42.2 °C (89.6 °F to 108 °F)

Exergen TemporalScanner™ Thermometer

Measurement range	16°C to 43 °C
Accuracy	± 0.2 °C
Resolution	0.1 °C
Battery Type	Alkaline battery, 9V
Battery Run time	1 hour continuous use or 15000 readings

SMR connector (1)

Multi-function connector (1), nurse c371 ()T6(I)9.9 (0)1 (a)
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CO₂

Meet standard of ISO 80601-2-55.

CO₂ sample flow rate

Connecting the Oridion sampling line: 50 ml/min

CO₂ sample flow rate tolerance

± 15 ml/min or ±15 %, whichever is greater.

Response time

Measured with a Oridion sampling line:

0.5s @ 50ml/min (standard sampling line)

0.6.5s @ 50ml/min (extended sampling line)

CO₂ range

0 to 20% (0 to 150 mmHg)

CO₂ accuracy, full accuracy mode:

± 0.1% (CO₂ concentration<1%)

± 0.2% (1% ≤ CO₂ concentration<5%)

± 0.3% (5% ≤ CO₂ concentration<7%)

± 0.4% (7% ≤ CO₂ concentration<12%)

± 0.5% (12% ≤ CO₂ concentration ≤ 13%)

± 0.43%+8%rel

(13%≤CO₂ concentration ≤ 20%)

Unspecified (CO₂ concentration>20%)

CO₂ accuracy, ISO accuracy mode:

Add ±0.3% ABS to the full accuracy

CO₂ resolution

1 mmHg

awRR range

0 to 150 rpm

awRR accuracy

± 1 rpm (<60 bpm)

± 2 rpm (60 to 150 rpm)

awRR resolution

1 rpm

Apnea time

10, 15, 20, 25, 30, 35, 40 s

Alarms

Audible indicator

3-level audible alarm tones

Visible indicator

Alarm message, with 3 level lamp indicator

High level alarm, red with flashes

Medium level alarm, yellow with flashes

Low level alarm, yellow without flashing

Data Management

Trends review

5000 groups

Data output

HL7 format

Network

CMS connectivity

Support

3rd party system connectivity

via eGateway, VitalsLinks

Direct connecting to EMR through HL7 protocol

Wi-Fi Communications

WiFi support

Yes, 5G band

Protocol

MSD45N module, IEEE 802.11a/b/g/n

WM1010BGN module, IEEE 802.11b/g/n

Interfacing

Main unit

AC power connector (1)

Network connector (1), standard RJ45

USB 2.0 connector (2)

www.mindray.com

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