

iS15

Modular Patient Monitor



- Unique Vertical Design delivers outstanding readability
- 15" LCD super Display with Full Touch wide screen
- Both High-end parameter modules of M series seamlessly compatible with iS series
- With flexibility and freedom to pre-configure and major monitoring parameters
- High-end Parameters: SunTech NIBP, CO, EtCO₂, AG
- Exceptional connectivity by high-speed cable or wireless Networking

Size and Weight

-Size: 335mm×366mm×172mm
 -Weight: ≈6kg
 -Standard module slot: 3

Power supply

-Power Voltage: AC 100-240V 50/60Hz
 -Input Current: 1.7~0.8V
 -Safety class: Category I

Display

-15" Color TFT-LCD
 -Resolution: 768×1024 pixels

Battery

-Type: Rechargeable Lithium battery, 11.1V/4.0AH
 -Operating time under the normal use and full charge:
 ≈120minutes(2 batteries for 240 minutes)

Recorder (Option)

-Method: Thermal dot array
 -Paper width: 50mm(1.97 in)
 -Paper length: 15m
 -Paper Speed: 12.5/25/50(mm/sec)
 -Traces: Maximum 3 tracks
 -Recording way: Real-time recording
 Periodic recording
 Alarm recording

Alarm

-Level: Low, medium and high
 -Indication: Auditory and visual
 -Patient Physiological Alarm Light color: Yellow & Red;
 -Equipment Technical Alarm Light color: Blue
 -Supports Pitch Tone and multi-level volume;
 -Supports custom arrhythmia tone

Input device

-Touch screen: Standard config
 -Mouse input: Support
 -Keyboard input: Support

System Output & Extensible Interfaces

-Ethernet Network: 1 Standard RJ45 socket
 -Defibrillation Output: 1 BNC connector
 -Nurse Call: 1 RJ11 connector
 -Video Output: 1VGA port
 -SD memory card: 4Gb (Option)
 -Analog Output(EGG or IBP): Option

Trend & Reviewing

-Trend: Long trend: 168h, minimum resolution is 1min
 (Store when power goes off)
 High resolution trend: 2h, minimum resolution is 5s
 -NIBP measurement reviewing: 1000 groups
 -ARR event: 128 groups of ARR event and the associated waveform
 -Alarm events: 128 groups of parameter alarm events and associated
 parameter waveform at the alarm moment
 -Full Disclosure waveform: 24 hours for 3 waveforms(with 4Gb SD card)

Environment

-Operating temperature: 0℃~+40℃
 -Storage temperature: -20℃~+50℃
 -Operating humidity: 15% to 85% non condensing
 -Storage humidity: 10% to 93% non condensing
 -Operating atmospheric pressure: 860hPa to 1060hPa
 -Storage atmospheric pressure: 500hPa to 1060hPa

Safety

-IEC60601-1 Approved, CE marking according to
 MDD93/42/EEC

ECG

-Lead Mode: 3-leads ECG input
 5-leads ECG input
 12-leads ECG input
 -Lead selection: I, II, III
 I, II, III, aVR, aVL, aVF, V1-6(option)
 I, II, III, aVR, aVL, aVF, V1~V6(option)
 -Gain: 2.5mm/mV(×0.25), 5mm/mV(×0.5), 10mm/mV(×1),
 20mm/mV(×2), 40mm/mV(×4), Auto
 -CMRR: Monitor mode 0.5~40Hz
 Surgery mode 1~25Hz
 Diagnostic mode 0.05~150Hz
 -Frequency response(-3dB):
 Monitor mode ≈ 105dB
 Surgery mode ≈ 105dB
 Diagnostic mode ≈ 90dB
 -Input impedance: ≥5.0Mohm
 -ECG signal range: ±10.0mV
 -Electrode offset potential: ≤500mV
 -Patient Leakage Current: <10uA
 -Standardizing signal: 1mV±5%
 -Baseline recovery: <5s after Defibrillation. (Mon or Surg mode)
 -Indication of electrode separation: Every electrode(exclusive of RL)
 -Protection: Breakdown Voltage 4000VAC 50/60Hz; defibrillator proof
 -Sweep speed: 12.5mm/s, 25mm/s, 50mm/s

HR

-Range: Adult 10~300bpm
 Pediatric & Neonate: 10~350bpm
 -Refreshing time: ≈50 bpm Per 2 pulses
 50~120bpm per 4 pulses
 ≈120bpm per 6 pulses

-Resolution: 1bpm
 -Accuracy: ±1% or ±1bpm, whichever is greater

ST segment

-Measurement range: -2.0mV~2.0mV
 -Accuracy: -0.8mV~0.8mV: ±0.02mV or ±10% whichever is greater
 Over ±0.8mV: unspecified
 -Resolution: 0.01mV

RESP

-Method: Thoracic impedance
 -Lead Selected from: I (RA-LA) or II (RA-LL); Default: I
 -Gain: ×0.25, ×1, ×2, ×4
 -Bandwidth: 0.25Hz to 2.0Hz (-3dB)
 -Sweep Speed: 6.25mm/s, 12.5mm/s, 25mm/s
 -Measurement Range: 0~150 rpm
 -Resolution: 1rpm
 -Accuracy: ±2rpm or 2% whichever is greater
 -Delay of Apnea Alarm: 10s, 15s, 25s, 30s, 35s, 40s, 45s, 50s, 55s, 60s

NIBP

-Way of measurement: Automatic oscillometry
 -Range of measurement:
 Adult: SYS 30~270mmHg
 DIA 10~220mmHg
 MAP 20~235mmHg
 Child: SYS 30~235mmHg
 DIA 10~220mmHg
 MAP 20~225mmHg
 Neonate: SYS 30~135mmHg
 DIA 10~100mmHg
 MAP 20~125mmHg
 -Cuff pressure range: 0~300mmHg
 -Resolution: 1mmHg
 -Pressure Accuracy: Static: ±2% or ±3mmHg, whichever is greater
 Clinical: ±5mmHg average error
 Standard deviation: ≈8mmHg

-Unit: mmHg, kPa
 -Measurement mode: Manual, Auto, STAT
 -Intervals for AUTO measurement time: 1, 2, 3, 4, 5, 10, 15, 30, 60,
 90 minutes; 2, 4, 8, 12 hours
 -STAT mode cycle time: Keep 5 minutes, at 5 seconds interval.
 -Overpressure Protection: Hardware and software double protections
 -Pulse rate range: 40~240bpm

Standard SpO2 (Digital)

-Measurement Range: 0~100%
 -Resolution: 1%
 -Accuracy: At 70~100%, ±2%
 At 0~69%, unspecified

PR

-Measurement Range: 25~255bpm
 -Resolution: 1bpm
 -Accuracy: ±1% or ±1bpm, whichever is greater

Nellcor-SpO2 (Option)

-Measurement Range: 0~100%
 -Resolution: 1%
 -Accuracy: At 70~100%±2% (Adult)
 At 70~100%±3% (Neonate)
 At 70~100%±2% (Low Perfusion)
 At 0~69%, unspecified

PR

-Measurement Range: 20~300bpm
 -Resolution: 1bpm
 -Accuracy: 20bpm to 250bpm: ±3bpm
 251bpm to 300bpm: unspecified

Masimo-SpO2 (Option)

-Measurement Range: 0% to 100%
 -Resolution: 1%
 -Accuracy: 70% to 100%: ±2% (adult/pediatric, non-motion conditions)
 70% to 100%: ±3% (neonate, non-motion conditions)
 70% to 100%: ±3% (motion conditions)
 0% to 69%, unspecified
 -Average time: 2-4s, 4-6s, 8s, 10s, 12s, 14s, 16s

PR

-Measurement Range: 25bpm to 240bpm
 -Accuracy: ±3bpm (non-motion conditions)
 ±5bpm (motion conditions)
 -Resolution: 1bpm

TEMP

-Max Channel: 8
 -Measurement way: Thermal resistance way
 -Measurement Range: 0.0℃~50.0℃ (32℉~122℉)
 -Accuracy: ±0.1℃ or ±1℉ (exclusive of probe)
 -Resolution: 0.1℃ or 1℉
 -Unit: Celsius(℃), Fahrenheit(℉)

IBP

-Max Channel: 8
 -Measurement way: Directly invasive pressure measurement
 -Sensitivity of transducer: 5uV/V/mmHg, ±2%
 -Impedance of transducer: 300 to 3000Ω
 -Measurement Range: -50~+350mmHg
 -Resolution: 1mmHg
 -Unit: mmHg, kpa, cmH2O
 -Accuracy:
 Static: ±1mmHg or ±2%, whichever is grater(exclusive of transducer)
 ±4mmHg or ±4%, whichever is grater(inclusion of transducer)
 Dynamic: ±4mmHg or 4%, whichever is grater
 Transducer sites: Arterial Pressure (ART)
 Pulmonary Artery Pressure (PA)
 Left Atrium Pressure (LAP)
 Right Atrium Pressure (RAP)
 Central Venous Pressure (CVP)
 Intracranial Pressure (ICP)
 P1/P2

-Selection of measurement range:
 ART: 0~+350mmHg
 PA: -10~+120mmHg
 CVP/RAP/LAP/ICP: -10~+40mmHg
 P1/P2: -50~+350mmHg

EtCO2 (Sidestream)

-Measure method: Infrared spectrum
 -Measure Range: 0.0~13.1%(0~99.6mmHg)
 -Resolution: 1mmHg
 -Unit: %, mmHg, kPa
 -Accuracy: 0% to 4.9%, ±0.3%(±2.0mmHg)
 5.0% to 13.1%, <±10% of reading
 -Measurement range of awRR: 3~150rpm
 -Calibration: Offset calibration: auto, manual, Gain calibration

EtCO2 (Mainstream)

-Measure method: Infrared spectrum
 -Warm up time: Capnogram displayed in less than 15 seconds, At an ambient
 Temperature of 25℃, full specifications within 2 minutes.
 -Measure Range: 0.0~19.7%(0~150mmHg)
 -Resolution: 1mmHg
 -Rise time(10l/min): ≈60ms
 -Unit: %, mmHg, kpa
 -CO2 Accuracy: 0-40mmHg, ±2mmHg
 41-70mmHg, ±5% of reading
 71-100mmHg, ±8% of reading
 101-150mmHg, ±10% of reading
 (at 760 mmHg, ambient temperature of 35℃)
 -awRR measurement range: 0~150rpm
 -awRR measurement Accuracy: ±1rpm

EtCO2 (Microstream)

-Measure method: Infrared spectrum
 -Warm up time: Capnogram displayed in less than 20 seconds, At an ambient
 Temperature of 25℃, full specifications within 2 minutes.
 -Measure Range: 0.0-19.7%(0-150mmHg)
 -Resolution: 1mmHg
 -Unit: %, mmHg, kPa
 -CO2 Accuracy: 0-40mmHg, ±2mmHg
 41-70mmHg, ±5% of reading
 71-100mmHg, ±8% of reading
 101-150mmHg, ±10% of reading
 (At 760 mmHg, ambient temperature of 25℃)
 (When RR>80 rpm, all the range is ±12% or reading)
 CO2 response time: <3S
 -awRR measurement range: 2~150rpm
 -awRR measurement Accuracy: ±1rpm
 -Sample Flow Rate: 50ml/min ±10ml/min

Anesthetic Gas

-Measure method: Infrared spectrum
 -Measure mode: Mainstream or Sidestream
 -Fi and ET values: CO2, N2O, O2, AG(HAL, ISO, ENF, SEV, DES)
 -Resolution: 1%
 -Unit: %
 -Calibration: Room air calibration performed automatically when
 changing airway adapter (<5 sec)
 -Warm-up time: <10S, full accuracy within 1min
 -Measurement and alarm range of AG

Gas	Range	Accuracy
CO2	0-10%	±(0.3% ABS+4%REL)
N2O	0-100%	±(2% ABS+8%REL)
O2	10-100%	±(2% ABS+2%REL)
HAL, ISO, ENF	0-5%	±(0.15% ABS+10%REL)
SEV	0-8%	±(0.15% ABS+10%REL)
DES	0-18%	±(0.15% ABS+10%REL)

 -awRR measurement range: 0~150rpm
 -awRR measurement Accuracy: ±1rpm
 -Rise time(flowing speed 10l/min) CO2 ≈ 90ms
 O2 ≈ 300ms
 N2O ≈ 300ms
 Hal, Iso, Enf, Sev, Des ≈ 300ms
 -Total system response time: <1seconds

C.O.

-Measurement Mode: Thermal dilution method
 -Measurement Wave: Thermal dilution curve
 -Measurement parameters: C.O., TB, TI, C.I.
 -Measurement Range: C.O.: 0.1 L/min ~ 20 L/min
 TB: 23.0 ~ 43.0℃
 TI: -1.0 ~ 27.0℃
 -Resolution: C.O.: 0.1 L/min
 TB: 0.1℃
 TI: 0.1
 -Accuracy: C.O.: 2% SD
 -TB Alarm range: 23.0~43.0℃, high/low limit can be adjusted continuously

Standard Configuration of iS15:

3/5 Lead ECG, HR, RESP, NIBP, SpO2, PR, 2-TEMP

Main unit: 15" TFT-LCD display, 3 Standard Module slot, Touch Screen,
 1 RJ45 Ethernet Socket, 1 Defibrillation Output, 1 Nurse Call Socket, 1VGA Port,
 2 USB 1.1 Port, 1Lithium Rechargeable Battery

Option parameter & configuration of iS15:

Option Module: SideStream EtCO2 Module, MicroStream EtCO2 Module, MainStream EtCO2 Module,
 AG Module, C.O. Module, IBP Module, Temp Module, Nellcor SpO2 Module, Masimo SpO2 Module,
 SunTech-NIBP
 Navigating: USB Compatible Mouse and Keyboard
 Printing: 3 Channel Thermal Recorder
 Mounting: Rolling Stand, Wall Mount
 Battery: 11.1V/4.0AH Rechargeable Lithium Battery
 Other options: External Display, Wireless Lan, Extensive Memory card, Analog Output (ECG or IBP)

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