iM3s

Patient Monitor

Version 1.4

Main Unit Specification

Physical Specifications

Dimension	Monitor: (77±1) mm (W) × (150±1) mm (H) × (28±1) mm (D) CS-04 Charger Stand: (165±1) mm (L) × (113±1) mm (W) × (164±1) mm (H) CS-05 Extended Stand: (165±1) mm (L) × (113±1) mm (W) × (164±1) mm (H)
Weight	Monitor: <300g (standard configuration, without battery and accessories) Monitor: <350g (standard configuration, with rechargeable battery, without accessories) Monitor: <370g (standard configuration, with AA battery, without accessories) CS-04 Charger Stand: <900g CS-05 Extended Stand: <2,000g (including recorder, not including TEMP module and accessories)

Power Supply

Power Supply	CS-04 Charger Stand: 100 V to 240 V~, 50 Hz/60 Hz CS-05 Extended Stand: 100 V to 240 V~, 50 Hz/60 Hz
Current	CS-04 Charger Stand: 0.5 A-0.25 A CS-05 Extended Stand: 0.5 A-0.3 A

Monitor Battery

Battery Type	Rechargeable lithium-ion battery or 3 AA batteries
Capacitance	Lithium-ion battery ≥2700 mAh
Operating Time	Lithium-ion battery ≥12 hrs (Standby) Lithium-ion battery ≥8 hrs (Normal working status) AA battery ≥10 hrs (Standby) AA battery ≥6 hrs (Normal working status)
Fast Charging Time	<4 hrs, when the monitor is off (Lithium-ion battery)
Charging Time	≤14 hrs, the monitor is on or in standby mode (Lithium-ion battery)

CS-05 Extended Stand Battery

Battery Type	Rechargeable lithium-ion battery
Capacitance	Lithium-ion battery ≥2400 mAh
Operating Time	≥20 hrs (without external modules used) ≥8 hrs (with external modules used)
Fast Charging Time	<3.5 hrs, in OFF status, not connected with monitor

Display

Display screen	5-inch color TFT LCD, capacitive touch screen
Resolution	720×1280

Data Storage

Round Mode	Patient information, parameters data (SpO_2, NIBP, TEMP measurement data and custom parameters data), storage time, etc.	Minimum 20000 sets in internal storage
Spot-checking mode	Minimum 20000 sets of spot-checking data for multiple patients	

Wi-Fi

IEEE	802.11a/b/g/n
Bandwidth	2.4 GHz & 5 GHz 20 MHz

E-link (Bluetooth)

Radio Technology	BR, EDR, BLE
Frequency Range	2402 MHz ~ 2480 MHz
Modulation	GFSK, π/4-DQPSK, 8-DPSK

Interfaces and others

USB Port	2
Built-in Barcode Scanner	Optional

NIBP

Method	Oscillometric
Mode	Manual, Continuous, Average
Continuous	5 min, interval is 5 s
Measuring Type	SYS, DIA, MAP, PR
Average measurement	Interval: 1/2/3/4/5 min Times: 3/5
Measuring Range	
Adult Mode	SYS: 25 mmHg to 290 mmHg DIA: 10 mmHg to 250 mmHg MAP: 15 mmHg to 260 mmHg
Pediatric Mode	SYS: 25 mmHg to 240 mmHg DIA: 10 mmHg to 200 mmHg MAP: 15 mmHg to 215 mmHg
Neonatal Mode	SYS: 25 mmHg to 140 mmHg DIA: 10 mmHg to 115 mmHg MAP: 15 mmHg to 125 mmHg
Cuff Pressure Measuring Range	0 mmHg to 300 mmHg
Pressure Resolution	1 mmHg
Maximum Mean Error	±5 mmHg
Maximum Standard Deviation	8 mmHg
Maximum Measuring Period	Adult/Pediatric: 120 s Neonatal: 90 s

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Typical Measuring Period	30 s to 45 s (depend on HR/motion disturbance)
Overpressure Protection	Adult: 297 mmHg ±3 mmHg Pediatric: 245 mmHg ±3 mmHg Neonatal: 147 mmHg ±3 mmHg
Pre-inflation Pressure	
Adult	Default: 160 mmHg Range: Auto/80/100/120/140/150/160/180/200/220/240 mmHg
Pediatric	Default: 140 mmHg Range: Auto/80/100/120/140/150/160/180/200 mmHg
Neonatal	Default: 100 mmHg Range: Auto/60/70/80/100/120 mmHg

SpO_2

Measuring Range	0% to 100%
Resolution	1%
Data update period	1 s
Accuracy	Adult/Pediatric: ±2% (70% to 100% SpO_2) Undefined (0% to 69% SpO_2) Neonatal: ±3% (70% to 100% SpO_2) Undefined (0% to 69% SpO_2)

PI (Perfusion Index)

Measuring Range	0-10
Resolution	1

PR

PR (SpO_2)

Measuring range	**25 bpm to 300 bpm**
Accuracy	**±2 bpm**
Resolution	**1 bpm**

PR (NIBP)

Measuring range	**40 bpm to 240 bpm**
Accuracy	**±3 bpm or 3.5%, whichever is greater**
Resolution	**1 bpm**

F3000 Module (Covidien Quick TEMP) TEMP

Measuring range	30°C ~ 43°C
Prediction measurement range	35°C ~ 43°C
Cold mode prediction measurement range	33°C ~ 43°C
Sensor type	Oral / Axillary / Rectal
Resolution	0.1°C
Accuracy	Monitoring Mode and Predictive Mode: ±0.1°C Quick Predictive Mode: ±0.3°C
Typical measurement time	Oral (Quick Predictive Mode): (3 ~ 5) s (non-fever temps); (8 ~ 10) s (fever temps) Oral (Predictive Mode): (6 ~ 10) s Axillary: (8 ~ 12) s Rectal: (10 ~ 14) s Monitoring Mode (all sites): (60 ~ 120) s
Measuring Mode	Direct Mode /Adjusted Mode

TAT-5000S Module (Exergen Infrared TEMP)

Measuring range	61 °F to 110 °F (16 °C to 43 °C) (16 °C rounded up from 15.5 °C)
Resolution	0.1 °C or 0.1 °F
Arterial heat balance Range for Body Temperature	94 °F to 110 °F (34.5 °C to 43 °C)
Clinical Accuracy	±0.2 °F or 0.1 °C Per ASTM E1112
Response time	~0.04 seconds

T100A (Edan Infrared Forehead TEMP) TEMP

Measuring range	34℃～43℃（93.2 ° F~109.4 ° F）
Accuracy	34.0℃～34.9℃：±0.3℃ 35.0℃～42.0℃：±0.2℃ 42.1℃～43.0℃：±0.3℃ 33℃～43℃
Measuring site	Forehead
Resolution	0.1℃(0.1 ° F)
Response time	＜2 s

Safety Specifications

Compliant with Standards	IEC 60601-1: 2005+A1: 2012; IEC 60601-1-2: 2014; EN 60601-1: 2006+A1: 2013; EN 60601-1-2: 2015; EN 80601-2-30: 2010+A1: 2015; EN ISO 80601-2-56: 2017+A1:2018; EN ISO 80601-2-61: 2017
Anti-electroshock Type	Class I equipment and internal powered equipment
Anti-electroshock Degree	SpO_2, NIBP: CF F3000 TEMP: BF
Ingress Protection	Monitor IPX44 CS-04 Charger Stand: IPX1 CS-05 Extended Stand: IPX1

Environmental Specifications

Temperature	Working: +0°C to +40°C (32ºF ~ 104ºF) With TEMP: +10°C ~ +40°C (50ºF ~ 104ºF) Transport and Storage: -20°C to +55°C (-4ºF ~ 131ºF)
Humidity	Working: 15%RH to 95%RH (non-condensing) Transport and Storage: 15%RH to 95%RH (non-condensing)
Altitude	Working: 86 kPa to 106 kPa Transport and Storage: 70 kPa to 106 kPa

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