

# M50 Patient Monitor

Portable monitoring solution  
for Ambulatory / Emergency care  
Intermediate care / Rehabilitation

# EDAN

## Safety Standards

CE Marking in accordance to Council Directive 2007/47/EC concerning Medical Devices IEC 60601-1+A1+A2; IEC 60601-1-2+A1; IEC 60601-1-8 (Alarm)

## Physical Specification

Device dimension: 260 mm(L) x 140 mm(W) x 205 mm(H)  
Weight: Standard Configuration 3.6 kg

## Display

Color TFT LCD 8.4 Touchscreen Optional  
Resolution: 800 X 600 dpi  
Traces Displayed: up to 8  
Waveforms Displayed: up to 11  
Various Working Interface Selectable:  
Standard Monitoring Display  
Large Font Intensive Care Display  
Trend Graph/ Monitoring Co-Display  
Bed to Bed view Display (Optional)  
OxyCRG Dynamic View Display  
Drug Dose Calculation Interface  
Sweep Speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

## Environment Requirement

Ambient Temperature: -20 - 55°C (-4 - 131° F)  
Humidity: 15%-95% non-condensing

## Power Supply

External Power Supply  
100-240V AC, 50/60Hz  
Pmax=80VA  
Internal Battery Power Supply  
Type: Rechargeable Li-ion  
Voltage: 14.8 V DC  
Capacity: 2100 mAh (4200 mAh optional)  
Battery working period:  
up to 6 hours  
< 150 minutes (2100mAh)  
< 360 minutes (4200mAh)

## RESP

Method: Trans-thoracic impedance  
Operation mode: Auto/ Manual  
RR Measurement range:  
Adult: 0~120 rPM  
Neonate/Pediatric: 0~150 rPM  
Resolution:  
1rPM  
Apnea alarm threshold:  
10s, 15s, 20s (default), 25s, 30s, 35s, 40s  
Alarm:  
3 levels of audible and visual alarm,  
alarm events recallable  
Band width: 0.2-2.5Hz (-3dB)  
Sweep speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

## ECG

Lead type: 5-lead and 3-lead selectable  
3 leadwire cable: RA; LA; LL or R; L; F

5 leadwire cable: RA; LA; RL; LL; V or R; L; N; F; C  
Lead selection: 3-lead: I; II; III; 5-lead: I; II; III; aVR; aVL; aVF; V  
Gain selection: x0.125;x0.25; x0.5; x1; x2; auto  
Sweep speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s  
ECG HR Range:

Adult/Pediatric: 15-300bpm;  
Neonate: 15-350bpm  
Resolution & accuracy: ±1bpm or ±1%  
whichever is greater

## Filter:

Diagnostic mode: 0.05-150Hz  
Monitoring mode: 0.5-40 Hz  
Surgical mode: 1-20Hz

Protection: Withstand 5000VAC/50Hz voltage in isolation against  
Defibrillation and electrosurgical interference

ST-Segment Detection:

Measurement range: -2.0 mV~2.0mV  
Alarm range: -2.0 mV~2.0mV

ST-Segment Arrhythmia analysis and categorization : Yes

ARR Alarm: 3 levels of audible and visual alarm, alarm events recallable

Pace maker detection: Yes, and 5 types abnormal status detectable

IEC 60601-2-25; AAMI EC 11/EC 13

IEC 60601-2-27

## NIBP

Method: Automatic Oscillometric  
Operation modes: Manual/Automatic/Continuous  
Auto measurement time interval: Adjustable  
1/2/3/4/5/10/15/30/60/90/120/240/480 Minutes  
Measurement unit: mmHg/kPa selectable  
Measurement types: Systolic, Diastolic, Mean

Pressure range for Adults: Systolic: 40 - 270 mmHg  
Diastolic: 10 - 215 mmHg  
Mean: 20 - 235 mmHg

Pressure range for Pediatrics: Systolic: 40 - 200 mmHg  
Diastolic: 10 - 150 mmHg  
Mean: 20-165 mmHg

Pressure range for Neonates: Systolic: 40 - 135 mmHg  
Diastolic: 10 - 100 mmHg  
Mean: 20 - 110 mmHg

Leak test and pressure auto calibration: Yes

Over-pressure protection: Dual Safety protection

Resolution: 1mmHg  
Accuracy: Max mean error ± 5 mmHg  
Max standard deviation ± 8 mmHg

Alarm: Systolic, Diastolic, Mean

PR from NIBP: Measurement 40~240 bpm  
Resolution 1 bpm

Accuracy ± 3bpm or 3% whichever is greater

Leak test and pressure auto calibration: Yes

IEC 60601-2-30  
SPI0: 2002

## SpO<sub>2</sub>

Measurement & Alarm Range: 0 - 100%  
Resolution: 1%; Accuracy: ± 2% (70-100%, Adult/Pediatric);  
± 3% (70-100%, Neonate)  
PR Measurement and Alarm Range: 30 - 300bpm  
Resolution: 1 bpm;

Accuracy: 3bpm  
Refresh rate: 2s  
ISO 9919

## SpO<sub>2</sub> (Optional, by Nellcor Oximax™)

Measurement & Alarm Range: 0 - 100%  
Resolution: 1%;  
Accuracy: ± 2-3% (70-100%, Adult/Pediatric);  
± 3-3.5% (70-100%, Neonate)

PR Measurement and Alarm Range: 20 - 300 bpm

Resolution: 1 bpm;

Accuracy: 3bpm (depends on probe)

Refresh Rate: 1s  
ISO 9919

## Temperature (2 Channels, 1 probe by default)

Measurement /Alarm range: 0~50 (32-122 F)

Probe type: YSI (B Series) and CF-FI

Resolution: 0.1

Accuracy: ±0.1°C (without probe)

Channel: Dual-channel. Provide T1; T2; T

IEC 12470-4

## IBP (2 Channels, optional)

Measured Pressure:

ART, PA, CVP, RAP, LAP, ICP, P1, P2

Measurement range: -50 - 300 mmHg; Resolution: 1 mmHg

Accuracy: ± 2% or ± 1 mmHg,  
whichever is greater (without probe)

Sensitivity: 5 μV/V/mmHg; Impedance range: 300-3000

IEC 60601-2-34

## CO<sub>2</sub> (Mainstream and Sidestream, optional)

By Philips Respironics CAPNOSTAT® 5 & LoFlo™ Technology

Range: 0 - 150mmHg

Accuracy: ± 2% 0 ~ 40mmHg  
± 5% 41~70mmHg  
± 8% 71~100mmHg  
± 10% 101~150 mmHg

AwRR Accuracy: ± 1 rpm

Convenient design for intubated and non-intubated applications

Possible to work at low sample flow rate: 50ml / minute

Detailed specification refer to the user manual of Respironics

ISO 21647

## Recorder (Optional)

Built-in, direct thermal pixel array recorder

Up to 3 channels and 1,2,3channels selectable

Print speed: 25mm/s, 50mm/s

Paper width: 50 mm/Record width: 48mm

## I/O Interface

2-USB Ports

SD Card Socket

RJ-45 Ethernet Port. IEEE 802.3

VGA Output

Analog & Nurse Call output

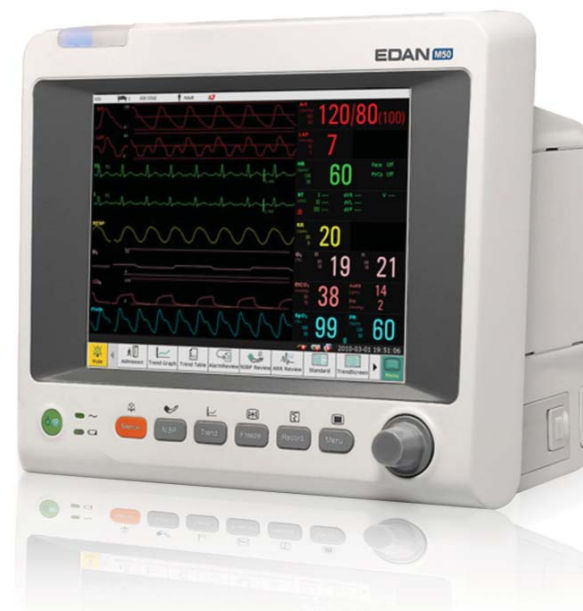
Defibrillation Synchronization output

WLAN Access Point 802.11g 54Mbps (optional)

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# EDAN

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reddot design award  
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# M50 Patient Monitor

The new generation of EDAN patient monitors M50 provides perfect transportation solution. The multifunctional all-in-one parameter module and new application platform greatly enhance the efficiency of full clinical parameter monitoring for patient transfer.

- 8.4" color TFT display with maximum 11 waveforms
- Pacemaker detection, electro-surgical interference proof
- Defibrillation protection and defibrillation synchronization
- Full touchscreen enables intuitive operation by clicking on the specific parameters or the waveform in real time, standard configuration includes the navigation knob
- OxyCRG available to judge the respiration and circulation function for neonates
- Large font display
- Arrhythmia and S-T segment analysis
- Built-in rechargeable Li-ion battery
- Nurse Call function and bi-directional communication with MFM-CMS central station
- SD card slot enables memory extension for large data storage
- USB and serial ports enables abundant future upgrades
- VGA output and analog output
- Complete and flexible mounting solution for different scenarios

**Standard parameters:** 3/5-lead ECG, EDAN SpO<sub>2</sub>, RESP, NIBP, 2-Temp, PR,  
**Optional:** Touchscreen, Thermal Recorder, WLAN accessory, Nellcor-SpO<sub>2</sub>, 2-IBP, Respiration CO<sub>2</sub> (for intubation and non-intubation application), 12V DC input



## TouchScreen Operations



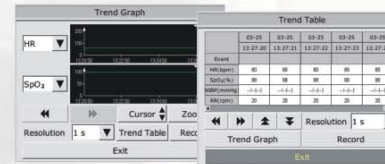
Easy to input and edit patient information  
 Rich functions access by navigation panel at touch

## Complete Documentation

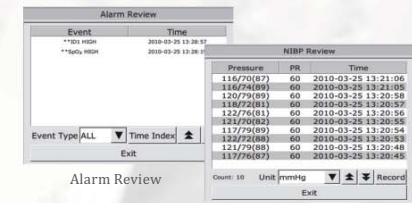


Built-in thermal recorder provides fully annotated printouts that simultaneously document up to 3 waveforms and numeric figures for active vital signs.

## Internal Review System

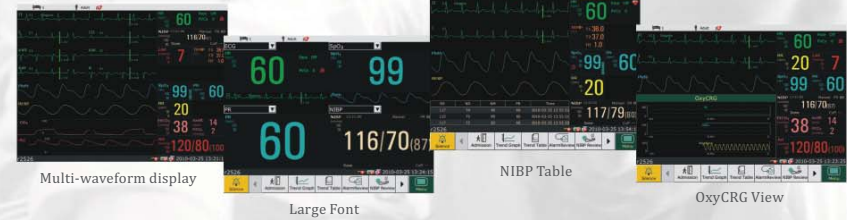


Graphical & Tabular Trend (up to 120hrs)



Alarm Review

NIBP Review



Multi-waveform display

Large Font

NIBP Table

OxyCRG View

## Barcode Scanner Support



Ambulatory Carrying Bag

## Transport solution



Built-in bedrail-hook providing an ideal bedside set-up even during transport.