

# Specifications: S8

The logo features the word "COMEN" in a large, bold, 3D-style font. The letters are white with a blue gradient and a shadow effect. Above the main text, there is a decorative graphic consisting of various sizes and orientations of the word "COMEN" in a lighter blue color, arranged in a circular pattern that resembles a globe or a network.

**COMEN** Share with the world

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## Defibrillator/Monitor

### S8



#### Standard Configuration

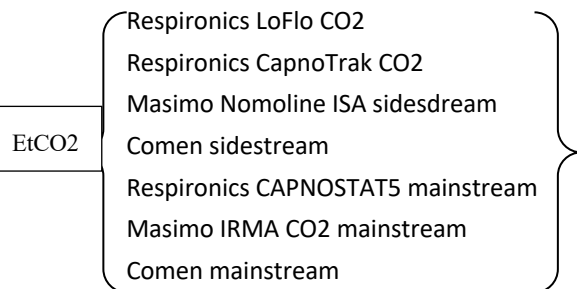
Manual defibrillation, AED, 5-lead ECG, RESP, Thermal Recorder

#### Application

For use in the ICU, surgical rooms, emergency area or during emergency life threatening situations. For adults and pediatrics

#### Optional

12-lead ECG, NIBP, TEMP, PR, EtCO<sub>2</sub>, IBP, SPO<sub>2</sub>, Pacing



Specific parameters refer to the CO<sub>2</sub> module parameter table

#### Safety Standards

ISO 13485:2016 approved, CE marking according to MDD93/42/EEC, IEC 60601-1 conformity

#### Physical Characteristics

Size:	323mm×277mm×338mm
Weight:	Standard Device: 6.55 kg (without battery)
	Standard Device + Paddles: 7.2 kg (without battery)
	Standard Device + Paddles: 7.9kg (with 1 battery)
Screen Size:	8.4" TFT screen
Resolution	800 × 600
Waveforms:	5 waveforms
	6 waveforms for 12-lead ECG
Ingress Protection:	IP44 (without external power)
Brightness:	Manual from 1 to 100

#### Operation Environment

Temperature:	0~45°C
Atmospheric pressure:	570hpa-1060hpa
Humidity:	10%~95%, non-condensation

#### Power

Power requirement:	100-240V~, 50/60Hz
Battery type:	Rechargeable Lithium-ion battery
Battery capacity:	7500mAh,dc.14.4V; 5000mAh, d.c.14.8V

Battery number:	Max 2
Battery recharging Time:	Less than 1.5 hours to 80% and less than 2.5 hours to 100% with equipment power off(5000mAh)

S8\_Specifications\_V1.9\_2022.05.13 0mAh)

#### Battery backup:

With 2 new fully charged batteries.

7500mAh	Monitoring Mode: Up to 12 hours; Defib Mode: Up to 420 discharges (360J charge at intervals of 1minute without recording); Pacing Mode: Up to 9 hours (50 Ω load impedance, pacing rate: 80bpm, Pacing output: 60mA, without recording)
5000mAh	Monitoring Mode: Up to 8 hours; Defib Mode: Up to 260 discharges (360J charge at intervals of 1minute without recording); Pacing Mode: Up to 6 hours (50 Ω load impedance, pacing rate: 80bpm, Pacing output: 60mA, without recording)

## Indicators

Two alarm indicators  
Power indicator  
Battery indicator  
Maintain indicator  
Error indicator  
QRS beep and alarm sound  
Operating key sound

## Interfacing

USB interface  
RJ45 interface  
AC power f  
VGA interface  
Multi-functional connector

## Data storage

Alarm Event: 200 groups  
Patient profiles: 100 groups  
Patient Events 1000 groups  
Wave Review: 16.6 hours  
NIBP Review: 2000 groups  
Trend Graph: 160 hours  
Trend Table: 160 hours  
ECG report: 500 cases of 12-lead ECG diagnosis report (Up to 5 case reports per patient)  
Voice recording: Max 240 min in total; (Up to 60 min for each patient)  
Marked events Available  
Power-off storage: Yes  
Alarm: User-adjustable High and Low 3-level Limits; Prioritized audible and visual alarm  
Network: Connected to Central Monitoring System by hardwire/wireless

## Recorder

Type: Built-in; Thermal array  
Channel: 4 channel waveforms  
Real-time recording: 3s, 5s, 8s, 16s, 32s, Continual  
Speed: 25mm/s, 50mm/s  
Record width: 80mm  
Resolution: 8dot/mm (Horizontal and vertical)  
Background grid: Configurable  
External printer: Not supported

## Defibrillation

Operating mode: Manual Mode, AED Mode, Synchronous defibrillation  
Waveform: Biphasic truncated exponential waveform, with impedance compensation  
Defibrillation pathway: External defibrillation  
Electrode type: External defibrillation paddles, multifunctional electrode (adult and pediatric)  
External defibrillation electrode paddles: Supports charging, discharging and energy selection; Charging completion indicator

## Charge Time:

With new, fully charged battery.

DC Charge Time (Battery Power): Less than 3 seconds to 200 Joules.  
Less than 7 seconds to 360 Joules.  
AC Charge Time (Battery power): Less than 4 seconds to 200 Joules.  
Less than 8 seconds to 360 Joules.  
Energy accuracy:  $\pm 1.5J$  or  $\pm 10\%$  of setting, whichever is greater, at 50  $\Omega$  impedance  
 $\pm 2J$  or 15% of setting, whichever is greater, at 25  $\Omega$ , 75  $\Omega$ , 100  $\Omega$ , 125  $\Omega$ , 150  $\Omega$ , 175  $\Omega$  impedance  
Patient Impedance Range: 20~300  $\Omega$  for external defibrillation  
Defibrillation proof: Type CF: ECG, RESP, SpO<sub>2</sub>, NIBP, IBP, TEMP, PR;  
Type BF: CO<sub>2</sub>

## Manual Mode

External defibrillators: 1J~360J, 25 types (1/2/3/4/5/6/7/8/9/10/15/20/30/50/70/100/120/150/170/200/220/250/270/300/360J)  
Synchronous Cardioversion: Energy transfer begins within 60ms of the R wave  
Energy transfer begins within 25ms of the External Sync signal

## AED

Output Energy:	Adjustable:100-360J
Number of electric shocks:	Adjustable: once, twice, 3 times
Maximum time required for cardiac rhythm analysis to be ready for discharge:	
Battery power supply:	18s
AC power supply:	21s
Arrhythmia types:	VF & VT

## Noninvasive Pacing

Waveform:	Monophasic square wave pulse
Pulse Width:	20 ms or 40ms
Accuracy:	±5%
Pacing Mode:	On-demand or fixed
Pacing frequency:	30 ppm to 210 ppm
Accuracy:	±1ppm or ±1.5% (whichever is greater)
Pacing output:	0 mA to 200 mA
Accuracy:	±5% or ±5mA, whichever is greater
Speed-down pacing:	Pacing pulse frequency reduced to 25% of original value.

## Monitoring ECG (leads)

Lead Type:	3 leads ECG, 5 leads ECG, 12 leads ECG, AUTO
Lead selection:	12-Lead: I; II; III; aVR; aVL;aVF; V1~V6 5-lead: I; II; III; aVR; aVL; aVF; V 3-lead: I; II; III
Multi-lead synchronization analysis:	Available
ECG wave gain:	Auto, 1.25 mm/mV (×0.125), 2.5 mm/mV (×0.25), 5 mm/mV (×0.5), 10 mm/mV (×1), 20 mm/mV (×2), 40 mm/mV (×4)
Accuracy:	Less than ±5%
Sweep speed:	6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s
Accuracy:	Less than ±10%
Heart Rate:	Adult: 15~300bpm Pediatric:15~350bpm Accuracy: ±1bpm
Alarm limit range	Adult:

High limit: (low limit+2bpm) ~ 300bpm

Low limit: 15bpm~ (high limit-2bpm)

Pediatric:

High limit:(low limit+2bpm) ~ 300bpm

Low limit: 15bpm~(high limit-2bpm)

Resolution: 1 bpm

Accuracy: ±1% or ±1bpm (whichever is greater)

Bandwidth: Monitoring: 0.5~40Hz (-3.0dB~+0.4dB)

Diagnosis: 0.05~150Hz (-3.0dB~+0.4dB)

Surgery: 1~20Hz (-3.0dB~+0.4dB)

ST: 0.05~40Hz(-3.0dB~+0.4dB)

CMRR: Monitoring: >105dB

Diagnosis: >90dB

Surgery: >105dB

ST: >105dB

Input Impedance: ≥5MΩ

Input signal range: ±8mV

HR trigger threshold 200μV

Lead off detection current: Measuring electrode: <0.1μV

Driving electrode: <1μV

Pacemaker pulse suppression switch: Manual selection when the pacemaker is turned on

Analog output: Magnification: 1:1000;

Accuracy: ±5%

Bandwidth: 0.5Hz~40Hz

Delay: ≤35ms

ST Detection: -2.0mV~+2.0mV

Resolution: 0.01mV

Accuracy: -0.8mV ~ +0.8mV: ±0.02mV or ±10%; Others: Unspecified

ST analysis review 20 groups

System noise: Less than 25μV

Calibration voltage 1 mV; Accuracy: ±5%

Arrhythmia Analysis: 26 Types

Pacemaker detection: Detectable

**ECG (paddles)**

Lead Type:	Single lead ECG
Heart Rate measurement & alarm range:	Adult: 15~300bpm Pediatric:15~350bpm
Resolution:	1 bpm
Accuracy:	±1% or ±1bpm (whichever is greater)
Bandwidth:	Defib: 1~20Hz
CMRR:	Defib: >105dB
Input Impedance:	≥5MΩ
Input signal range:	±8mV
HR trigger value	200μV
Arrhythmia Analysis:	5 Types, ASY, VF, VT, PNC, and PNP

**RESP**

Method:	Thoracic Impedance Method
RR measurement range:	Adult: 0~120bpm Pediatric: 0~150bpm
Accuracy:	7~150bpm: ±2bpm or ±2% (whichever is greater) 0~6bpm: unspecified
Apnea Alarm:	Adult: 10s~60s Ped: 10s~40s
Accuracy:	±5s
Alarm:	Audible and visual alarms; Alarm events reviewable

**Nellcor SpO<sub>2</sub>**

Measurement range:	0~100%
Resolution:	1%
Accuracy:	±2% (70~100%, Adu/Ped, non-motion) 1~69% unspecified
Alarm range:	20~100%
PR Measurement Range:	20~300bpm
PR Resolution:	1bpm
PR Accuracy:	±3bpm (20~250bpm) Unspecified (251~300bpm)
Alarm range:	20~350bpm

**MASIMO SpO<sub>2</sub>**

Monitoring & alarm range:	1~100%
Monitoring Resolution:	1%
Monitoring Accuracy:	±2% (70~100%, Ped/Adu, non-motion) ±3% (70~100%, non-motion); 1~69% unspecified
Alarm range:	1~100%
PR Measurement range:	25~240bpm
PR Resolution:	1bpm
PR Accuracy:	±3% (non-motion) ±5% (motion);
Alarm range:	20~350bpm
PI value range:	0.02~20%
PI Resolution:	0.01% (0.02%~9.99%) 0.1% (10.0%~20.0%)
PI Accuracy:	Unspecified
SIQ:	Available

**COMEN Sure-Oxi™ SpO<sub>2</sub>**

Monitoring & alarm range:	0~100%
Monitoring Resolution:	1%
Monitoring Accuracy:	±2% (70~100%, Ped/Adu, non-motion) 0~69% unspecified
PR Measurement range:	20~254bpm
PR Resolution:	1bpm
PR Accuracy:	±2bpm
Alarm range:	20~350bpm
PI value range:	0.05~20%
PI Resolution:	0.01% (0.05%~9.99%) 0.1% (10.0%~20.0%)
PI Accuracy:	Unspecified
SIQ:	Available

## Respironics EtCO<sub>2</sub> (Sidestream)

Measurement range:	0~150mmHg, 0to 25% (at 760mmHg)
Accuracy:	± 2 mmHg (0 – 40 mmHg) ± 5% of reading (41 – 70 mmHg) ± 8% of reading (71 –100 mmHg) ±10% of reading (101~150 mmHg)
Resolution:	1mmHg
awRR Range:	0~150rpm
awRR Accuracy:	±1rpm
Response time:	<240msec (10% to 90%)
Delay time:	<2s

## IBP

Channel:	2 Channels
Measured Pressure:	ART, PA, CVP, RAP, LAP, ICP, LV, AO, UAP, BAP, FAP, UVP, IAP, P1, P2, P3, P4
Measurement Unit:	mmHg/ kPa/ cmH <sub>2</sub> O selectable
Measurement range:	ART: 0~300mmHg PA: -6~120 mmHg CVP: -10~40mmHg RAP: -10~40mmHg LAP: -10~40mmHg ICP: -10~40mmHg LV: 0~300mmHg AO: 0~300mmHg UAP: 0~300mmHg BAP: 0~300mmHg FAP: 0~300mmHg UVP: -10~ 40mmHg IAP: -10~40mmHg P1, P2,P3,P4: -50~300mmHg
Accuracy:	±2% or ±1mmHg (whichever is greater)
Resolution:	0.1kPa or 1mmHg (-50mmHg~+300mmHg)
Alarm Range:	-50mmHg~+300mmHg
PR from IBP:	20bpm~350bpm
Resolution:	
Accuracy:	±1% or ±1bpm, whichever is greater
PPV/SPV measurement:	Available
PAWP measurement:	Available

## NIBP

Method	Automatic oscillometry
Work mode:	Manual/Automatic/Continuous
Interval Time:	Adjustable 1/2/2.5/3/4/5/10/15/30/60/90/120/180/240/480/720 min
Maximum measurement cycle	Adu/Ped: 120s
Measurement Unit:	mmHg / kPa selectable
Pressure types:	Systolic, Diastolic, Mean
Range of systolic pressure:	Adult Mode: 5.3~36kPa (40~270mmHg) Pediatric Mode: 5.3~26.7kPa (40~200mmHg)
Range of diastolic pressure:	Adult Mode:1.3~28.7kPa (10~215mmHg) Pediatric Mode: 1.3~20kPa (10~150mmHg)
Range of mean pressure:	Adult Mode: 2.7~31.3kPa (20~235mmHg) Pediatric Mode: 2.7~22kPa (20~165mmHg)
Over pressure protection:	Adult: 297mmHg Pediatric: 240mmHg Tolerance: ±3mmHg
Accuracy:	Maximum average deviation: ±5mmHgO(±0.667Kp)
Resolution:	Maximum standard deviation: ±8mmHg(±1.607kPa)
Alarm limit:	Same as the range of measurement
PR from NIBP:	40bpm~240bpm
Resolution:	1bpm
Accuracy:	±3% or ±3bpm, whichever is greater

## Temperature (Dual Channel)

Measurement & alarm

range: 0~50°C

TEMP sensor: Standard configuration-skin TEMP sensor

Resolution: 0.1°C

Accuracy: ±0.1°C (exclusive of error of sensor)

Channel type: T1, T2, TD (Temperature Difference)

## Cart

COMEN Universal Cart

## Accessories

12Pin 5Lead Clip

Connector ECG

Cable/Lead

replaceable Anti-Defibrillation/IEC

MSB Electrodes for 1bpm

Adult(pack)

Recorder Paper

Defibrillation

Extension Cable

Electrode Extension

Wire (For stress testing)

Conductive Gel

Operation guide

User Manual

Power Cord

## Warranty

COMEN provides the following warranties.

Comprehensive Warranty: 2 years

Spare parts after Warranty period: 5 years

Annual maintenance.

**\*Notice: Specifications subject to change without prior notice. All rights reserved by COMEN**