

**Sazgan Gostar Co.**  
**Safira Patient Care Monitor Specification**

**Display**

LCD	22-inch, TFT color LCD with LED Back light, 1680x 1050 pixel
Wave Forms	ECG PLETH IBP 1, 2, 3, 4 ( 4Traces ) Respiration EtCo2 (OPTIONAL)
Sweep Speed	6.25, 12.5, 25 mm/sec (Respiration ) 12.5, 25, 50 mm/sec (for ECG ), 12.5, 25(for others)
Trace Length	8 sec@ 25 mm/sec
Wave form Freeze	All Waveforms
User Interface	Capacitive Keys & KNOB
Numeric Parameters	Heart Rate, ST level , % SpO2, Pulse Rate, IBP1, IBP2, IBP3, IBP4 NIBP (Systolic, diastolic, mean), Body Temperature T1, T2, $\Delta T$ & EtCO2, INS CO2, Respiration Rate, Apnea

**ECG ( Adult, Pediatric , Neonate )**

Lead	I, II, III, aVR, aVL, aVF, V(5-Lead)
Rate	15-300 Adult, 15-350 Ped / Neo
Averaging	8 Second
Maximum Input	$\pm 8$ mv
DC Offset	up to $\pm 300$ mv
Leakage current	$< 10 \mu A$
Filters	"MONITOR" (0.5-40 Hz) "SURGERY" (1-20Hz) "DIAGNOSTIC" (0.05 -100 Hz)
CMRR	$\geq 90$ dB (Diag), $\geq 105$ (Mon,Sur)
Gain	1/4, 1/2, 1, 2, 4
Pacer Rejection	Duration: 0.1-2 msec Amplitude: $\pm 2$ to $\pm 700$ mv Type: Sync. With any distance from QRS or Async. Heart Rate Counter is not affected by pacemaker signals which have no overshoot
Alarm Limits:	Lower 15 to 298 bpm & off (no greater than Upper limit ) Upper : 17 to 300 bpm & off (no less than Lower limit )
Protection	Defibrillator & Electrocuttery protected

**ST segment measurement**

Measurement Range	-2.0 to +2.0 mv
Precision	$\pm 0.02$ mv or $\pm 10\%$ Whichever is greater

Update period 10 s

### Arrhythmia analysis

Type ASYSTOL , VFIB/VTAC, PVC, COUPLET, VT>2, BIGEMINY, TRIGEMINY, R on T, MISSED BEATS, TACHY, BRADY, PNC & PNP

### Respiration:

Respiration Method Thoracic impedance  
Lead Optional : Lead I & Lead II  
Range 0.3-3 ohm ( base impedance=200-2500 ohm)  
Gain 1/4, 1/2, 1, 2, 3, 4, 5  
Apnea Alarm 10-40 sec  
Respiration Rate 0 to 120 Br PM Adult,  
0 to 150 Br PM Ped /Neo

### Pulse Oximeter(Adult , Pediatric , Neonate)

Range 0- 100 %  
Accuracy  $\pm 2\%$  (70-100%)  
Unspecified (0-69%)  
Resolution 1 %  
Puls Range 25-240 bpm  
Sensor Type Dual wavelength LED (finger & Y-sensor)

### Invasive blood pressure (IBP)

Range -50 To 300 mm Hg  
Accuracy  $\pm 2\%$  or  $\pm 1\text{mmHg}$  , whichever is greater  
Numeric Parameters Systolic, Diastolic , Mean  
Transducer Sensitivity  $5\mu\text{ v/V/ mmHg}$

### Non - Invasive Blood Pressure( NIBP ) ( Adult, Pediatric, Neonate )

Measuring Method Oscillometric  
Pressure Range  
Systolic, Adult :25-265 mmHg  
Diastolic, Adult :15-220 mmHg  
MAP, Adult :20-245 mmHg  
Systolic, Pediatric :25-265 mmHg  
Diastolic, Pediatric :15-220 mmHg  
MAP, Pediatric :20-245 mmHg  
Systolic, Neonate :25-135 mmHg  
Diastolic ,Neonate :15-110 mmHg  
MAP, Neonate :20-120mmHg  
Accuracy  $\pm 5\text{ mmHg}$   
Resolution 1 mmHg  
Safety Features Automatic over pressure limit Redandant

over pressure switch operating limit

## Temperature 1,2(Adult,Pediatric,Neonate)

Measure Range	0-50°C
Accuracy	±0.1°C
Probe Type	YSI 400 Series Compatible

## Memory

Trendgraphs	HR, RR, SpO2, T1, T2, IBP1, 2, 3, 4, ST, PVCs, PR, Co2, Ins, AwRR
Trend time	long trend:96 hours, resolution:1, 5, 10 min short trend :1 hours, resolution:1, 5 sec
Trend Resolution	1 seconds with cursor
Recall Store Type	Alarm, Arrhythmia, NIBP
Alarm & Arrhythmia Recall	64 events
Recall Stored Data	to see all waveforms all parameters, Alarm ID save Time & Data
NIBP Recall	1024 Records

## Alarm

Limits	Tunable for HR, RR, SpO2, IBP, NIBP, Resp, TEMP, Apnea
Alarm on/ off	Selectable for each
Alert	Blinking on display , volume selectable audio alarms

## General

Safety Standard & Class	IEC 60601-1, Class I, Type CF & BF
Protection	Against Electrosurgery & Defibrillation
Power Requirements	100-240 VAC ,50/60Hz , 140VA
Dimension	390(W) X 630 (D)X 150(H) mm
Weight	Approx 8.3kg

## Environmental

Temperature	Operation: 0 to 40°C ( 32 to 104° F) Storage: -20 to 60°C
Humidity	Operating 15-95% (non condensing ), Storage 10 to 95% (non condensing)

## OPTIONS

Cardiac Output  
Capnograph  
Multi GAS Analyzer  
Recorder  
Rechargeable Battery(Internal)  
Trackball  
Touch Pad  
Touch screen

