CM1200A Technical Specifications

Safety Standards	MDD93/42/EEC	Medical Device Directive
	IEC60601-1	Medical electrical equipment-Part 1: General requirements for basic safety and essential performance
	IEC 60601-2-25	Medical Electrical Equipment-Part 2-25: Particular requirements for the basic safety and essential performance of electrocardiographs
	ANSI/AAMI EC-11	Diagnostic ECG Record Device
Classification	Anti-electric-shock type:	Class I, with internal power supply
	Anti-electric-shock degree:	CF type, with defibrillation proof function
	Degree of protecting against harmful ingress of liquid:	Ordinary equipment, without the ability of water proof
	Safely degree in the presence of flammable gas:	It is not suitable to use in the presence of flammable gas.
	Working Mode:	Continuous Operation
	Electromagnetic Compatibility:	Group I Class A
Size	CM 1200A:410mm×316mm×135.8mm	
Weight	CM 1200A: about 5.2kg	
Display	(8.4inch screen) 800 × 600 Color LCD Display	

Work Environment	Temperature	5℃~40℃
	Relative Humidity	≤93%
	Atmospheric Pressure	700hPa ～1060hPa
Transport:	Must avoid severe shock ,vibration, rain and snow during transport	
Storage	Packed electrocardiographs must be stored in well ventilated rooms with -20℃～+60℃ temperature, relative humidity no more than 93%, and without corrosive gases	

Power Supply	AC Power Supply	Rated Voltage＝100-240V ～
		Rated Frequency＝50Hz/60Hz
		Rated Power＝95VA
	DC Power Supply (Built-in Rechargeable Lithium Battery)	Rated Capacity:4400mAh
		Rated Voltage:11.1V
		Discharging Final Voltage ≥11V
		Recharge Mode: Constant Current/ Constant Voltage
		Recharge Current (Standard)＝0.2C_5A (320mA)
		Recharge Voltage(Standard)＝(16.8±0.1V)
		Cycle Life ≥300 times
	Power Consumption	95VA(Maximum)

Recorder	Record Mode	Thermosensitive Dot-Matrix Record
	Specifications of the Record Paper	Rolled Thermosensitive Record Paper/ Folded Thermosensitive Record Paper
	Width of the Record Paper	216mm/210mm
	Effective Record Width	200mm/195mm
	Paper Driving Speed	5 mm/s, 10 mm/s, 12.5 mm/s, 25mm/s, 50mm/s（±2%）
	Accuracy of Record	±5%(X axis), ±5% (Y axis)

Calculation of the Heart Rate	Calculation Method	Peak Value Test
	Range of the Heart Rate	30bpm~300bpm
	Calculation Accuracy	±1% or ±1 bpm (whichever is greater)

ECG Main Unit	Input Mode	Floating ground, defibrillation protection and pacing pulse inhibition
	Lead	Standard 12 leads sample synchronously.
	Sampling Mode	Sequential sampling of each group, simultaneous sampling of each group.
	Rhythm Lead Mode	1 channel and 3 channel for choice, 12 leads can be selected for each channel.
	A/D Switching	No less than 12 bits
	Measurement Range	>±5mV
	Time Constant	≥5s
	Baseline Control	Adjust automatically
	Frequency Response	0.05Hz ~ 150Hz($^{+0.4dB}_{-3.0dB}$)
	Gain	AGC(auto), 2.5 mm/mV, 5 mm/mV, 10 mm/mV, 20 mm/mV, 20/10 mm/mV, 10/5mm/mV, totally seven options, AGC(auto) is defaulted as10 mm/mV, the error is ±2%.
	Input Impedance	≥50MΩ.
	Input Circuit Current	≤50nA
	Stand Voltage	±650mV±5%
	Calibration Voltage	1mV±1%
	Noise Level	≤15 μ Vp-p

	Interference between Channels	≤0.5mm
	Patient Leakage Current	<10 μ A (100V～240V 50Hz/60Hz)
	Patient Auxiliary Leakage Current	<0.1 μ A (DC)
	Dielectric strength	4000V rms
	Filter:	AC Filter:50Hz/60Hz/Off
		Drift Filter: 0.05Hz/0.10Hz/0.20Hz/0.50Hz
		EMG Filter: 25Hz/35Hz/45Hz/Off
		Lowpass Filter: 75Hz/100Hz/150Hz/Off
	CMRR	≥105dB
	Baseline stability	When the supply voltage is stable: baseline drift shall not be more than 1mm; When the supply voltage waves transiently: baseline drift shall not be more than 1mm; When sensitivity changes (no signal input), its displacement does not exceed 2mm; When temperature drift is in the 5 ℃ ~ 40 ℃, the baseline drift should not exceed 0.5mm/℃
	50Hz / 60Hz interference suppression filter	≥20db
	Accuracy of input signal reconstruction	System error: ± 5% or ± 40μV, both take the maximum. The frequency response of the system is determined according to the method A and method D or method A, method B and method C used in EC11.
	Reproduction of calibration voltage	Add an external step voltage (rise time is not more than 5ms, and amplitude is 1mV ± 0.01mV) to Lead I, II and V1 ~ V6, and record the waveform according to IEC 60601-2-25. Error of the reproduced calibration voltage error is within 5%.

External Input and Output (Optional)	Single End Input	≥100 kΩ; Sensitivity10mm/V±5%
	Single End Output	≤100 Ω; Sensitivity 1V/mV/ 0.5 V/mV±5%