Hillrom™

Welch Allyn® CP 150™ Electrocardiograph

SPECIFICATIONS

Dimensions, incl. rubber feet L x H x W	380.9 mm (15 in) x 358.1 mm (14.1 in) x 136.2 mm (5.4 in)	
Weight, incl. battery	5.3 kg (11.7 lb)	
Keyboard type (power button)	Polyester overlay	
Display	Type	TFT, 18 cm (7 in) color touchscreen
	Resolution	WVGA, 800 x 480
Instant On	Yes	
Thermal paper	Z-fold 21 cm (8.25 in) x 28 cm (11 in) x 200 sheets	
Thermal printer (internal)	Computer-controlled dot array, 8 dots/mm	
Thermal chart paper speeds	10, 25 or 50 mm	
Gain settings	Auto ECGs	2.5, 5, 10 or 20 mm/mV, AUTO
	Rhythm ECGs	10, 25 or 50 mm/mV
Lead configurations	Standard, Cabrera	
Interpretation algorithm	MEANS (Modular ECG Analysis System)	
Common mode rejection ratio (CMRR)	>80 dB	
Input impedance	>2.5 MΩ	
Patient leakage	<10 µA (normal condition), <50 µA (single fault condition)	
Dynamic range	AC differential +/-5 mV, DC offset +/-300 mV	
Resolution	2.5 µV	
A/D conversion	16 bits	
Heart rate range	30 to 250 bpm	
Report formats, internal printer	Auto	3×4-2.5s @ 25 mm, 3×4-2.5s @ 50 mm, 3×4+1R-2.5s @ 25 mm
		3×4+3R-2.5s @ 25 mm, 3×4-5.0s @ 25 mm, 3×4-5.0s @ 50 mm
		6×2-5.0s @ 25 mm, 6×2-5.0s @ 50 mm,12×1-10.0s @ 25 mm
	Average cycles	3×4+3R @ 25 mm, 3×4+3R @ 50 mm, 6×2+1R @ 25 mm, 6×2+1R @ 50 mm, no print
ECG storage (in test directory)	At least 100 ECG tests	
Frequency range	0.3 to 150 Hz	
Digital sampling rate	8000 samples/second/channel for data acquisition 500/1000 samples/second/channel for adult/pediatric ECG data analysis and storage	
Pacemaker detection	ANSI/AAMI EC11	
Lead detection	Lead off and noise	
Power requirement	Universal AC power supply ~110–240 V, ~50/60 Hz, 1.5 A maximum	
AC fuses	Time-lag type, 2.0-amp 250-V rating, Littlefuse 0218002P or equivalent	
Protection against electric shock	Class I, internally powered type CF	
Rechargeable battery	10.8 V, 6.75 Ah (73 Wh), 9-cells Lithium-Ion. Recharge time to 90% capacity: 4 hrs Full charge capacity—25 ECG tests @ 20 minutes/test. 8 hours of continuous operation or 250 continuous ECGs	
Filters	High-performance baseline	0.5 Hz
	Muscle tremor	35 Hz
	AC interference	50 Hz or 60 Hz

Standard connectivity	1 USB client, 4 USB hosts and Ethernet	
Safety, EMC and regulatory compliance	CE Marking for Council Directive 93/42/EEC concerning medical devices	
	ANSI/AAMI EC11*	UL60601-1
	CAN/CSA C22.2 No. 601.1	IEC/EN 60601-1
	CAN/CSA C22.2 No. 601.1.1	IEC/EN 60601-1-1
	CAN/CSA C22.2 No. 601.1.2	IEC/EN 60601-1-2
	CAN/CSA C22.2 No. 601.1.4	IEC/EN 60601-1-4
	CAN/CSA C22.2 No. 601.2.25	IEC/EN 60601-1-6
		IEC/EN 60601-2-25**
		IEC/EN 60601-2-51*** (3×4 report format)
	ANSI/AAMI	EC53
	EN 50581	
	EN/IEC	62304
		62366
	EN/ISO	14971
		10993-1
		26782
Connectivity options	DICOM®-compatible platforms (EMR, PACS, CVIS): Bidirectional capability with worklist download and ECG waveform upload. No middleware/software needed.	
	PDF to network folder, PDF to USB drive	
	Electronic medical records: Through the Welch Allyn CardioPerfect® WorkStation software. Middleware required (HL7 connectivity optional).	
Wireless radio	Integrated 802.11 a/b/g/n inside the device, no external dongle required	
	Standards	Wireless Equivalent Privacy (WEP), Wi-Fi® Protected Access (WPA), IEEE 802.11i (WPA2)
	Encryption	Wireless Equivalent Privacy (WEP, RC4 Algorithm), Temporal Key Integrity Protocol (TKIP, RC4 Algorithm), Advanced Encryption Standard (AES, Rijndael Algorithm)
	Encryption key provisioning	Static (40-bit and 128-bit lengths), Pre-Shared (PSK), Dynamic
	802.1X Extensible Authentication Protocol Types	EAP-FAST, EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, PEAP-TLS, LEAP
Electrodes	Rigorously tested for conductivity, adhesion and hypoallergenic qualities; exceed all AAMI standards	
Power cable	Meets or exceeds Type SJT	
Patient cable and leads	Meets or exceeds ANSI/AAMI EC53, EN/IEC 60601-2-25 and EN/IEC 60601-2-51	
Environmental operating conditions	Temperature	10° – 40° C (50° – 104° F)
	Relative humidity	15 – 95% noncondensing (30 – 70% for printing)
	Atmospheric air-pressure limits	700 – 1060 hPa (525 – 795 mmHg)
Environmental storage conditions	Temperature	-20° – 50° C (-4° – 122° F)
	Relative humidity	15 – 95% noncondensing
	Atmospheric air-pressure limits	700 – 1060 hPa
Mode of operation	Continuous	
Warranty	CP 150 device: 3 years. Patient cable/battery: 90 days.	

* If you print at a high gain setting, the waveform or calibration marks might be clipped. This clipping does not comply with clause 51.103.1 of the IEC/EN 60601-2-51 standard. Use a lower gain setting to observe the full waveform.
** Per AAMI EC11:1991/®2007 Diagnostic Electrocardiographic Devices, Section 3.1.2.1 Disclosure of cautionary information/performance characteristics paragraph c) Accuracy of input signal reproduction, the manufacturer shall disclose the methods used to establish overall system error and frequency response. Welch Allyn has used methods A & D, as prescribed in section 3.2.7.2 and 4.2.7.2 of this same standard, to verify overall system error and frequency response. Because of the sampling characteristics and the asynchronism between sample rate and signal rate, digital ECG systems such as the CP 150 may produce a noticeable modulating effect from one cycle to the next, particularly in pediatric recordings. This phenomenon is not physiologic.
*** Disposable electrodes from Welch Allyn shall be used during patient defibrillation

For more information, please contact your local distributor or Hillrom sales representative at 1-800-535-6663.

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