

ELI 280

Technical System Requirements

Product Version: 2.4.X

Revision Date: 2025-07

Overview

The **ELI 280** is a 12-lead resting ECG diagnostic electrocardiograph with a 10.1" color LCD display capable of acquiring, viewing, transmitting, printing, and storing resting ECG test data. The **ELI 280** is able to acquire, analyze, display and print electrocardiograms acquired through its internal front-end amplifier. The size of the screen will allow preview of the record for technicians to assess the quality of the acquired ECG.

The **ELI 280** utilizes a color touch screen LCD screen for display of ECG waveforms, menu options and status information. A custom keyboard is part of the **ELI 280** design and allows patient data entry as well as control of the functions and options available for the unit. The touch screen overlay on the LCD display allows the user to interact with the cardiograph by touching areas on the screen for select functions, input demographic parameters and navigate through menus using the touch screen interface.

The device is optionally equipped with the Baxter **VERITAS** resting ECG interpretation algorithm with age and gender specific criteria. If this option is enabled the **VERITAS** algorithm can provide an over-reading physician with a silent second opinion through diagnostic statements output on the ECG report. For additional information on the **VERITAS** algorithm, please refer to the Physician's Guide to **VERITAS** with Adult and Pediatric Resting ECG Interpretation.

The device can also be configured with expanded memory, bidirectional connectivity, and **DICOM** protocol support, and operates on battery or line power.

Supported print formats for the **ELI 280** include: standard or Cabrera 3+1, 3+3, 6, 6+6, or 12 channel in automatic mode; 3, 6, or 12 channel rhythm strip printing.

During rhythm strip printing the user can toggle between the various channels (default leads, limb and chest leads, etc.). To begin or resume a suspended rhythm strip print, press from the touchscreen display. To suspend or end a rhythm strip print, press from the touchscreen display.



Specifications and Interfaces

Device Specifications

Instrument Type	Multi-lead resting electrocardiograph						
Input Channels	Simultaneous acquisition of all 12 leads						
Standard Leads Acquired	I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6						
Display	Backlit, 10.1" high-resolution color LCD						
Digital Sampling Rate	40,000 samples/s/channel used for pacemaker spike detection 1,000 samples/s/channel used for recording and analysis 500 samples/sec/channel used for storing rhythm recordings						
Keyboard	Touchscreen keyboard with alphanumeric keys, soft-key menu, and dedicated function keys						
Filters	- High-performance baseline filter - AC interference filter 50/60 Hz - Low-pass filters: 40 Hz, 150 Hz, or 300 Hz						
A/D Conversion	20 bits (1.17 microvolt LSB)						
Device Classification	Class I, Type CF defibrillation-proof applied parts						
ECG Storage	- Internal storage up to 40 ECGs - Optional expansion up to 200 ECGs - Internal storage up to 5 rhythm recordings						
# of Active Orders	Up to 256 (dependent on query & information management system settings)						
Information Exchange	Requires ELI Link software version 4.2.0 or greater NOTE: Requires ELI Link software v5.2.x or greater for transmission of Rhythm Recordings						
SECUR-IT	Requires software v2.0.0 or greater and ELI Link software v4.4.0 or greater						
Power Requirements	- Universal AC power supply (100-240 VAC at 50/60 Hz) - Internal, rechargeable sealed lead-acid battery - Battery charge times from minimum level, 10.6V to: <table> <tr> <td>85%</td><td>4 hours</td></tr> <tr> <td>90%</td><td>7 hours</td></tr> <tr> <td>100%</td><td>7+ hours</td></tr> </table>	85%	4 hours	90%	7 hours	100%	7+ hours
85%	4 hours						
90%	7 hours						
100%	7+ hours						
Input Impedance	Meets or exceeds the requirements of IEC 60601-2-25						
Input Dynamic Range							
Electrode Offset Tolerance							
Common Mode Rejection							
Frequency Response							
Patient Leakage Current	Meets or exceeds the requirements of IEC 60601-1						
Chassis Leakage Current							
Additional Clinical Features	- Best 10: automatic capture of the 10 seconds of data with the least amount of noise from the last 5 minutes of full disclosure 5-minute running acquisition buffer - Configurable storage of up to 5 digital rhythm recordings						
Optional Functions	- Connectivity with bidirectional communication. - SECUR-it: <table> <tr> <td> - User logging </td><td> - User Authentication </td></tr> </table>	User logging	User Authentication				
User logging	User Authentication						

- Automatic termination of sessions
- Patient Demographic Query (PDQ) – allows for patient’s demographic search via **HL7** ADT

Network Specifications

Wireless Network (option)	Wired Network	▪ IEEE 802.3 LAN, 100 Mbps or faster
	Wireless Protocols	▪ IEEE 802.11 a/b/g/n (2.4 GHz or 5 GHz)
		▪ Channels: Up to 13 (3 non-overlapping) @ 2.4 GHz Up to 19 non-overlapping @ 5 GHz
	802.11a/g (OFDM)	▪ 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11b (DSSS, CCK)	▪ 1, 2, 5.5, 11 Mbps
	802.11n (single)	▪ Up to 150 Mbps
	802.11n (2x2 MIMO)	▪ Up to 300 Mbps
	Standards	▪ WPA2-PSK (Wi-Fi ® Protected Access II)
		▪ WPA2-PEAP (Protected Extensible Authentication Protocol)
		▪ WPA2-EAP-TLS (EAP Transport Layer Security)
Data Rates		▪ WPA2-EAP-TLS (p12/pfx)
	Encryption	▪ AES 256-bit
		▪ WEP, RC4
		▪ TKIP, RC4
	Direct Connection	▪ Serial port communication directly to PC
	User Authentication	▪ Local login or...
		▪ LDAP or Active Directory service
	Admin Account	▪ Configurable local administrator password or...
		▪ LDAP/ Active Directory authentication

Printer

Paper	- Smart (210 x 280 mm), perforated Z-fold thermal cued paper w/ full grid - A4 8.5" x 11" - Up to 250 sheets stored in paper tray
Thermal Printer	- Computer-controlled dot array 1 dot/ms horizontal, 8 dots/mm vertical
Thermal Printer Speeds	5*, 10*, 25, or 50 mm/s (*Rhythm prints only)
Gain Settings	5, 10, or 20 mm/mV
Report Print Formats	Standard or Cabrera: 3+1, 3+3, 6, 6+6, or 12 channel
Rhythm Print Formats	3, 6, 8, or 12 channel with configurable lead groups

Connectivity Interfaces

Orders	Supports external orders in the following formats: - XML Baxter XML - Accepts orders via XML files saved by external system in a shared folder DICOM Modality Worklist (via ELI Link) - Able to retrieve Resting test orders from a DICOM Service Class Provider (SCP) by performing a DICOM Modality Worklist query HL7 (by adding ELI Link and optional HL7 Gateway)
Export Formats for 10-second Resting ECGs	Supports exporting data in the following formats: - XML Via ELI Link: - PDF DICOM encapsulated PDF DICOM 12-Lead HL7 (by adding optional HL7 Gateway)
Export Formats for Digital Rhythm Recordings	Supports exporting data in the following formats: - XML Via ELI Link: - PDF - XML

Associated Software

- Optional: **ELI Link** v3.00 and later – or – **E-Scribe** v8.10 and later
Note: Information Exchange requires **ELI Link** v4.2.0 or later, SECUR-IT requires **ELI Link** v4.4.0 or later, Rhythm Recording transmission requires **ELI Link** v5.2.x or later.
- Optional: ECG Safe
- Optional: **VERITAS** Resting ECG interpretation algorithm v7.2.6 w/ age & gender specific criteria

Hardware Interfaces

Barcode Reader Supports barcode scanners with 39, 128, and 2D capabilities.

- Mounting**
- Optional ECG cart configurations
 - Table top

Physical Characteristics

Weight 13.9 lbs. (6.30 kg) including battery (without paper)

Dimensions 15.5 x 17 x 4" (39.4 x 43.2 x 10.2 cm)

- Operating Environment**
- Operating temperature: +10 to +40 deg. C (+50 to +104 deg. F)
 - Storage temperature: -40 to +70 deg. C (-40 to +158 deg. F)
 - Operating humidity: 10% to 95%, non-condensing
 - Storage humidity: 10% to 95%, non-condensing
 - Altitude (pressure): 3,000 meters

Supported Languages

- | | | |
|----------------------|--------------|--------------------------|
| ▪ Bulgarian | ▪ Greek | ▪ Portuguese - Brazilian |
| ▪ Chinese Simplified | ▪ Hungarian | ▪ Romanian |
| ▪ Croatian | ▪ Indonesian | ▪ Russian |
| ▪ Czech | ▪ Italian | ▪ Slovakian |
| ▪ Danish | ▪ Kazakh | ▪ Slovenian |
| ▪ Dutch | ▪ Korean | ▪ Spanish |
| ▪ English | ▪ Latvian | ▪ Swedish |
| ▪ Finnish | ▪ Lithuanian | ▪ Turkish |
| ▪ French | ▪ Norwegian | ▪ Vietnamese |
| ▪ German | ▪ Polish | |

Resting ECG Acquisition Modules

WAM – Wireless Acquisition Module



Instrument Type	12-lead wireless acquisition module for resting ECG
Input Channels	12-lead signal acquisition and transmission
ECG Leads Transmitted	I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, and V6
WAM Transmission Protocol	Bidirectional and frequency hopping; beacon and response method links a single acquisition module to a single electrocardiograph
Frequency Range	2400.96 MHz to 2482.56 MHz
WAM and Receiver Distance	Approximately 10 feet (3 meters)
Lead Set	RA, LA, RL, LL, V1, V2, V3, V4, V5, and V6 (R, L, N, F, C1, C2, C3, C4, C5, and C6) with detachable lead wires
Sampling Rate	40,000 samples/second/channel acquisition; 1,000 samples/second/channel transmitted for analysis
Resolution	1.875 microvolt LSB
User Interface	Two-button operation: ON/OFF and 12-lead ECG acquisition; Rhythm button is non-functional
Defibrillator Protection	Complies with IEC 60601-2-25
Special Functions	LED indication of power status, operating mode, lead fail, and remaining battery charge
Device Classification	Type CF, battery operated
Weight	6.7 oz. (190 g) with battery
Dimensions	4.45 x 4.25 x 1.1" (11.3 x 10.8 x 2.79 cm)
Battery	1 AA alkaline battery (typically powers WAM for 250 acquisitions)

See 80025243, *WAM Minimum System Requirements*, for additional details on the Wireless Acquisition Module.

AM12 – Wired Acquisition Module



Instrument Type	12-lead wired acquisition module for resting ECG
Input Channels	12-lead signal acquisition and transmission
ECG Leads Transmitted	I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, and V6
Device Connection Type	USB 2.0 type-A
Lead Set	RA, LA, RL, LL, V1, V2, V3, V4, V5, and V6 (R, L, N, F, C1, C2, C3, C4, C5, and C6) with detachable lead wires
Sampling Rate	40,000 samples/second/channel acquisition; 1,000 samples/second/channel transmitted for analysis
User Interface	Two-button interface to issue commands to start a 10-second ECG, rhythm strip, or enter special operating modes
Defibrillator Protection	Complies with IEC 60601-2-25
Special Functions	LED indication of power status, operating mode, lead fail, and remaining battery charge
Device Classification	Type CF, USB powered
Dimensions	4.7 x 4.3 x 1" (12cm x 11cm x 2.5cm)

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