In touch with you

Advanced yet easy to use, the PageWriter TC35 is an affordable and compact solution that can grow with you as your workflow needs evolve. Native DICOM modality worklists can be downloaded or ADT information retrieved, providing patient demographics at the bedside. ECG reports can be wirelessly exported using 802.11 b/a/g/n/ac WiFi 5 speed and WPA3 (Personal)/WPA2 (Enterprise) wireless data security to an electronic medical record. With advanced systems communications, the previous ECG can be automatically retrieved at the bedside. PageWriter's native DICOM interoperability provides direct access to ECG orders from your current DICOM MWL provider and storage of resulting DICOM format ECGs to your existing PACS. The result – a fast, efficient clinical workflow with reliable operation for you and your patients.

Key advantages

- Fast 1-2-3 operation with touchscreen and light-guided buttons

- Streamlined workflow with wired and WiFi 5, WPA3 (Personal)/WPA2 (Enterprise) wireless connectivity via HL7, XML, and native industry-standard DICOM

- Exceptional clinical decision support with DXL Algorithm

PageWriter TC35 Cardiograph (860437)

Features

ECG functions

Simultaneous lead acquisition	12 leads
ECG reports	3×4, 3×4 1R, 3×4 3R, 3×4 1R plus ST maps, 6×2, 12×1 Standard and Cabrera formats, plus Pan 12 Cabrera
Standard measurements	• Ten interval, duration, and axis measurements • Configurable QT correction method
Rhythm strips	Up to 12 configurable leads
Disclosure (D05)	• Five-minute history of all 12 leads • Complete ECG report of any selected 10 seconds
Event marking (D05)	• Six independent events can be marked for later review and analysis • Event markers appear on ECG reports • Note can be added for each event
Timed ECG	Support for pharma stress protocols
Report storage and transfer	Full fidelity at 1000Hz of 10 seconds for all 12 leads
Data format	PDF, Philips XML, DICOM General ECG/DICOM 12-Lead ECG/DICOM Encapsulated PDF formats
Pace Pulse Detection	0.02 mVms (e.g. 0.2mV*0.1ms pulse or 0.1mV*0.2ms pulse)

DXL ECG Algorithm (D03)

Interpretive statements	• >600 interpretive statements • Integrated pediatric analysis
Borderline statement suppression	Three configurable settings
Extended measurements	• 46 measurements of morphology analysis in each of the 12 leads • 21 parameters of rhythm analysis
Reasons	Selectable explanations of all interpretive statements
Nomenclature	Aligned with 2007 AHA/ACCF/HRS Recommendations, Part II[2]

STEMI diagnostic aids

Graphical ST presentation	• Two ECG reports with polar ST Maps • Frontal and transverse planes
Age and gender criteria (D03)	Based upon Fourth Universal Definition of Myocardial Infarction, 2018[1]
STEMI-CA (Culprit Artery) (D03)	• Criteria that suggest any of four probable sites of the occluded coronary artery • Based upon 2009 AHA/ACCF/HRS Recommendations, Part VI[5]
Critical Values (D03)	Highlights four conditions requiring immediate clinical attention

Wide QRS Correction

QTc Measurements	Bazett Fridericia Hodges Framingham
Correction of QT interval & QRS duration	Rautaharju

Advanced bi-directional network communications[3]

Central time management	Time can be manually or automatically synchronized to a Network Time Server
Orders worklist (D01)	• Download of orders worklist from networked server • User-configurable drop down lists (e.g., by location) • Ad-hoc query for specific orders based upon multiple user-entered or scanned search criteria (e.g., patient ID, last/ first name) • Supported by Open Worklist with IntelliBridge Enterprise and select departmental systems • Supported by HL7 interface via IntelliBridge Enterprise • Supported by DICOM Modality Worklist
ADT (D02)	• Query and retrieval of patient demographic information • Based upon user-entered or scanned search criteria (e.g., patient ID, last/ first name) • Supported by standard HL7 interface via IntelliBridge Enterprise for hospital systems
DICOM ECG result output (D08)	• Create DICOM 12-lead ECG • Create DICOM General ECG • DICOM Encapsulated PDF

Privacy and Security

User authentication via AD/LDAP	
Data encryption at rest (SHA-256 and AES-128)	
Network access initiated only by PageWriter	
Support TLS 1.2 or greater for communications within hospital network	
Security configuration capabilities behind customer-defined password	• USB port access (on/off) • HTTP, HTTPS • Encryption at rest (on/off) • Delete archived ECG after transfer (on/off) • User Authentication (on/off) • Consistent security approach across PageWriter TC series – TC70, TC50, TC35, TC30, TC20, TC10 • Device Management Dashboard available to manage configurations and software revisions centrally

Signal quality indicators

Leads-off advisory	Anatomical lead map displays the location and label of loose or disconnected leads/ electrodes
Lead color	Four colors to indicate quality of individual leads
LeadCheck	Lead-placement software detects 20 different lead reversals
Heart rate	Continuous display of patient heart rate
Print preview	Full-screen preview of ECG waveforms prior to printing

User training and self help

Training mode	Integrated waveform simulation

User interface

Touchscreen	• 1-2-3 operation • Five-wire, resistive touchscreen
Keyboard	• Backlit 1-2-3 buttons • 65-button, standard full alphanumeric keyboard • Special characters supported
Membrane keyboard cover	Silicone-based flexible cover protects keyboard from particulate and liquid ingress

Technical Specifications

Display

Size	6.5in TFT active matrix
Resolution	640 × 480 VGA
Colors	64K colors
Screen adjustability	18 degrees tilt

Patient connections

Integrated lead set	• Defib-protected ECG acquisition provides 1µV resolution • Acquire data at 8,000 samples per second, per lead wire
Long lead set (H23)	Extended-length lead wires enable greater distances between the cardiograph and the patient connections

End connectors (adaptors)

Welsh bulbs (E04)	Six Welsh bulbs and four limb clamps
Snap/Tab adaptor (E06)	Fits both snap and tab electrodes with metal on both sides

Printer

Resolution	High-resolution, digital-array printer using thermal-sensitive paper; 200dpi (voltage axis) by 500dpi (time axis) at 25mm/sec

Connectivity

LAN	10/100 Base-TX IEEE 802.3 ethernet via on-board RJ45
Wireless (D24)	802.11 b/a/g/n/ac (WiFi 5)
Wireless credential (D24)	WPA3 (Personal) WPA2 (Enterprise)
FIPS	Communication supported by FIPS 140-2 certified encryption algorithm
Archive / Internal storage (D06)	200 ECGs
External storage (D06)	200 ECGs with optional USB device

Automated data input

1D Bar code reader (H12)	• Reads Code 39 Symbology • Reads up to 80 characters
2D Barcode reader (H17)	• High scan speed • Motion tolerance • Curved surfaces

Configurable filters

AC noise	50 or 60Hz
Signal processing	Artifact Rejection and Baseline Wander

Presentation filters – 10 sec reports

High pass	0.02, 0.05, and 0.15Hz
Low pass	40, 100, 150 and 300Hz

Presentation filters – rhythm

High pass	0.02, 0.05 and 0.15Hz
Low pass	40, 100, 150 and 300Hz

Electrical

Battery	Lithium ion
Battery capacity[4]	• 10 hours of continuous operation without printing, or • 13.9 hours of normal operational cycles (7 minutes run, 1-page print, 8 minutes standby), or • 55 ECGs produced during normal operational cycles, or • 3 hours of continuous rhythm printing
Battery recharge	Four hours to full capacity
Main power	100-240VAC, 50/60Hz
Power consumption	60W max

Technical Specifications

Battery Management Statistics

Statistics	• Current status • Voltage • Expected max error (%) of charge calculation • Predicted capacity when fully charged • Remaining capacity in mAh • Current charge and state of health % • Charge current: value while charging • Discharge current: value while discharging • Cycle Count: number of full charge and discharge cycles • Temperature • Battery unique ID, vendor information, device name, DOM, and SN

Mechanical

Dimensions	31 × 40 × 21cm (12 × 16 × 8in)
Weight	8.6kg (19lb) includes battery, lead wires, clips, electrode pack, and paper pack

Environmental

Operating conditions	• 10° to 40°C (50°F to 104°F) • 10% to 90% relative humidity (non-condensing) • Up to 3,048 m (10,000 ft) altitude
Storage conditions	-20°C to 50°C (-4°F to 122°F) 10% to 90% relative humidity (non-condensing) Up to 4,572 m (15,000 ft) altitude

Cleaning and disinfecting

Approved solutions	• Mild soap and water • Isopropyl alcohol (consisting of 70% solution) • Chlorine bleach (5.25% sodium hypochlorite content) mixed as 3% solution in water • Quaternary ammonium compounds such as Steris Coverage Plus NPD, 0.5 fluid oz/1 gallon water • Diethylene glycol butyl ether (5-10% by weight) • Ethanol (ethyl alcohol) 70% (v/v) • Metrex CaviWipes® Disinfectant • Phenol 2% (v/v) • Gama Healthcare Clinell® Universal Range Disinfectant

Safety and performance

International standards and regulations	• General Requirements for Safety IEC 60601-1: 2005+A1: 2012 • Particular Requirement for Safety of Electrocardiographs IEC 60601-2-25 2011 edition 2.0 • Electromagnetic Compatibility IEC60601-1-2 2014

1. Fourth Universal Definition of Myocardial Infarction. Circulation 2018; 138 (2): pg e618 -e651.
2. AHA/ACCF/HRS Recommendations for the Standardization and Interpretation of the Electrocardiogram, Part II: Electrocardiography Diagnostic Statement List. J Am Coll Cardiology, 2007; 49:1128-135.
3. When networked with select hospital and departmental solutions; refer to supplier specifications
4. Performance can vary in different environmental conditions
5. AHA/ACCF/HRS Recommendations for the Standardization and Interpretation of the Electrocardiogram, Part VI: Acute Ischemia/Infarction. Circulation. 2009; 119:e262-e270

PHILIPS