

1 System Overview

The Piolter series system is a high performance dedicated POC system, simple to use, lightweight, and durable with best-in-class image quality. Piolter has unique designs providing best POC experience especially for MSK, pain management, nerve block, vascular access, emergency room and ICU.

1.1 Application

- Nerve block
- Pain management
- MSK
- Vascular access
- Abdomen
- Obstetrics
- Gynecology
- Basic Cardiology
- Small Parts
- Urology
- Vascular
- Pediatrics
- Emergency Medicine
- Others

1.2 Transducer Type

- Convex Array
- Linear Array
- Phased Array

1.3 Imaging Modes

- B Mode
- Harmonic Imaging
- M Mode
- Color Doppler Imaging
- Directional Power Doppler Imaging
- PW Doppler
- CW Doppler (Next version)

1.4 Standard Features

- B Mode
- Harmonic Imaging
- M Mode
- Color Doppler Imaging
- Directional Power Doppler Imaging
- Spatial compounding imaging (SCI)
- Time-spatial speckle suppression imaging (imaging enhancement)
- One key auto B imaging optimization
- Auto Doppler imaging optimization
- FZoom (Full Screen Zoom)
- ExFOV(Extended FOV)
- Clinical Application Packages
- 240GB SSD
- Battery
- Probe port: 1
- 1 USB3.0 Port
- 3 USB2.0 Ports
- HDMI
- Ethernet Port
- WIFI Adaptor

1.5 Optional Features

- PW Doppler and HPRF
- CW Doppler
- wiNeedle Intelligent Needle Enhance Visualization
- 4G Network Adaptor
- Extra Battery
- wiLearn Education Center
- IMT
- DICOM Basic
- DICOM QR
- DICOM worklist
- DICOM MPPS
- wiGuide (Magnetic Needle Tracking)
- ECG
- Probe Adapter (Extra 3 ports)
- Footswitch (2 pedals)
- Trolley G60

1.6 Language

- Software: English, Chinese
- Keyboard Input: English, Chinese, Germany
- User Manual: English, Chinese

2 Physical Spec

2.1 System Dimension and Weight

- Height: 340mm
- Width: 234mm
- Depth: 37mm
- Weight: Around 1.9kg (Include Battery)

2.2 Monitor

- 13.3-Inch LED
- Resolution: 1920*1080
- Brightness Adjustable

2.3 Audio Output

- High Quality Speaker

2.4 Trolley

- Height Range: 300mm
- Wheel Diameter: 75mm
- Wheel (4): Break and Lock
- Big Volume Basket
- Holder: 4 Including 2 for Disinfection

2.5 AC Adapter

- Model:MANGO060-19AB
- Voltage: 100-240V~
- Frequency: 50/60 Hz
- Current: 2.0-1.0A
- Output: 19V === ,3.15A

2.6 Battery

- Internal intergrated
- Lithium-Ion, 14.4V === , 2900mAH
- Charge to Full: 3 hours when system off
- Max Duration: 40 mins realtime scan

2.7 Operating Environment

- Temperature: 0-40 °C
- Humidity: 30%-85% (non-condensing)
- Pressure: 700hPa-1060hPa

2.8 Storage and Transport

- Temperature: -20-55 °C
- Humidity: 30%-95%(non-condensing)
- Pressure: 700hPa-1060hPa

- 2.9 Built-in WIFI Adapter
 - Encryption: WPA/WP2/WPAI, 64/128/152-bit WEP, WPS
 - Max transfer speed: 150Mbps
 - Protocol: 802.11b: CCK, QPSK, BPSK, 802.11g/n: OFDM

3 User Interface

- 3.1 Touch Screen
 - 13.3 inch touch screen
 - Support multi-gesture
 - Intuitive icon designed user interaction
 - Liquid disinfection supported
- 3.2 Boot-up and Power off
 - Hard boot-up in 45s
 - Power off in 15s
 - Quick recover from sleep in 5s
- 3.3 Comment
 - Text and arrow available
 - Size of text and arrow adjustable
 - Set home position for comment initiation
 - Full packages for all application
 - User-defined text
- 3.4 Bodymark
 - Over 200 bodymark patterns for all application
 - Support transducer mark
- 3.5 Screen Info*
 - Displayed Info:
 - Wisonic Logo
 - Hospital Name
 - Exam Date
 - Exam Time
 - Acoustic Power
 - MI
 - Thermal Index
 - ID, Name
 - Probe
 - TGC Curve
 - Focus Position
 - Image Parameters

*Not all items are listed in here, please refer to user manual for detailed info.

4 Imaging Parameters

- 4.1 Introduction
 - Fully digital beamformer
 - Up to 28672 channels
 - 64 beams imaging
- 4.2 B Mode
 - Display: Single B, Dual B
 - Image enhancement: Off; 4 levels
 - SCI: On/Off; Max 30°, Max 7 line
 - Auto: Gain, TGC, Dynamic Range
 - Frequency Compounding Imaging
 - Dual Live: Dual live compare
 - Optimization: Pen/Gen/Res (depends on probe)
 - ExFOV: available on convex and linear

- Depth: 1.0-30cm , 0.5/1cm per increment(depends on probe)
 - AP: 10%-100%,3% per increment
 - TGC: 3-Segment
 - Dynamic Range: 30-180, 4/Increment
 - Gain: 0-100, 41 levels
 - Focus Num: 1-4 (depends on probe)
 - Focus Pos: adjustable
 - FOV: 4-level,50%/70% /90%/100%
 - Line Density: L/M/H/UH
 - Persistence: Off,1-7
 - Horizontal Scale: On/Off
 - L/R and U/D Invert: On/Off
 - Gray Map: 10 types
 - Chroma: Off; 8 types
- 4.3 Harmonic
 - Image enhancement
 - Optimization: Pen/ Gen/ Res or Pen/ Pen-Gen / Gen/ Res (depends on probe)
 - 4.4 M Mode
 - AP: 10%-100%,3% per Increment
 - Dynamic Range: 30-180, 4/Increment
 - Gain: 0-100, 41 levels
 - M Speed: 8 levels
 - Edge Enhance: Off,1-3
 - Chroma: Off; 9 types
 - Gray Map: 10 types
 - Focus Pos:adjustable
 - Time Marker:On/Off
 - 4.5 Color Doppler Imaging
 - Dual Live
 - Optimization: Pen/Gen
 - Color Vel Range: 3mm/s~4.62m/s
 - ROI Steer: Max 30° (linear probe),1°/Increment
 - AP:10%-100%,3% per Increment
 - Gain: 0-100, 41 levels
 - ROI Size/Pos: available
 - Scale: 31 levels
 - Baseline: 21 levels
 - Wall Filter: 8 levels
 - PRF: 0.7-12kHz
 - Sensitivity: 4 levels
 - Smooth:Off,1-3
 - Color Priority: 0%-100%, 10%/Increment
 - Map: 8 types
 - Invert: On/Off
 - Persistence: Off,1-3 Increment
 - Line Density: L/M/H/UH
 - 4.6 Directional Power Doppler
 - Dual Live
 - Optimization: Pen/Gen/Res(depends on probe)
 - AP: 10%-100%,3% per Increment
 - Gain: 0-100, 41 levels
 - ROI Size/Pos: Adjustable
 - Steer: Max. 30° (linear probe),1°/Increment
 - Scale: 31 levels
 - Wall Filter: 8 levels

- PRF: 0.7-12kHz
 - Sensitivity: 4 levels
 - Smooth: Off, 1-3 levels
 - Color Priority: 0%-100%, 10%/Increment
 - Map: 6 types
 - Dir Map: 2 types
 - Persistence: Off, 1-3 levels
 - Line Density: L/M/H/UH
- 4.7 PW/CW Mode
- Optimization: Pen/Gen/Res
 - PW Vel Range: 2.7mm/s to 9.24 m/s
 - CW Vel Range: 13.4mm/s ~38.5m/s
 - SV: 1-30mm (only for PW), 6-8 levels(depends on probe)
 - SV Depth: Adjustable
 - Scale: Max 38.5m/s
 - Baseline: 9 levels
 - PW Steer: Max30° (linear), 1° per Increment
 - Audio: 0%-100%, 2%/Increment
 - PW PRF: 0.7-24kHz
 - CW PRF: 0.7-100kHz
 - Gain: 0-100, 41 levels
 - Dynamic Range: 24-70, 2/Increment
 - Speed: 8 levels
 - Wall Filter: 8 levels
 - Invert: On/Off
 - Correction Angle: -89~89 °, 1/Increment
 - Quick Angle: 0, -60°, 60 °
 - Chroma: Off; 7 types
 - T/F Res: 5 levels
 - Auto Trace: On/Off
- 4.8 wiNeedle Intelligent Needle Enhance Visualization
- Intelligent needle shaft recognition
 - Intelligent ultrasound beam steering
 - Support all linear transducers
- 4.9 SCI
- Spatial Compounding Imaging
 - Max 7 lines
 - Support on all linear and convex probes
- 4.10 Time-spatial Speckle Suppresion Imaging
- Only on B mode
- 4.11 Auto Image Optimization
- B, PW auto opt
 - Auto BCD available on all vascular related exams
 - B Mode:Gain, TGC, DR
 - PW:Scale, Baseline
 - AutoBCD:PW Steer,Color ROI Steer,PW Correction Angle, SV Depth, SV Pos, Color ROI Pos, Color Invert, PW Invert
- 4.12 ExFOV
- Extend more view area
 - On linear, convex
- 4.13 Zoom
- Zoom: 10x, gesture control
 - FZoom: Zoom image to full screen size
- 4.14 Quick Save Imaging Parameters
- Quick save parameters after adjustment

- completed
 - Support Save, Save as, Recovery
- 5 Cine Replay
- 5.1 Cine Replay
- On all modes available
 - Manual replay and auto replay
 - Save cine and record cine available. Length is customizable
 - Able to adjust current frame position and cine length at cine replay mode
 - Jump to first and last:quick locate to first or last frame

6 Measurement Analysis and Report*

- 6.1 Generic Measurement
- 2D Mode
 - Distance
 - Area: Ellipse, Trace, Spline
 - Volume:3-Dist,Ellipse+Distance
 - Trace Length
 - Parallel
 - Depth
 - Angle
 - Dist %Redcution
 - Area %Redcution
 - Color Vel
 - M Mode
 - Distance
 - Time
 - Slope
 - Heart Rate
 - Doppler Mode
 - Velocity
 - Time
 - Heart Rate
 - Acceleration
 - 2 point (RI)
 - D-Trace
 - Car Trace
 - Auto Trace
 - Heart Cycle (1, 2, 3, 4, 5)
 - Trace on realtime spectrum or frozen spectrum
 - Trace result configurable
 - Match with meas. package
- 6.2 Clinical Application Package
- Abdomen
 - 2D Mode
 - Liver
 - CHD
 - Porta V Diam
 - Gall Bladder: L, W, Wall Thickness
 - CBD
 - Pancreas: Head, Body, Tail, Duct
 - Spleen
 - Kidney: L, W, H, Vol, Cortex
 - AA Diam
 - AA Bif
 - CIA Diam

- Bladder: L, W, H, Vol, Void Vol
 - Doppler Mode
 - Abd Aorta
 - Celiac Trunk
 - SMA
 - Hepatic A
 - Splenic A
 - Renal A
 - Main Renal A
 - Arcuate A
 - Segmental A
 - Interlobar A
 - Portal V
 - Hepatic V, M hepatic V
 - Splenic V
 - IVC
 - Gynecology
 - 2D Mode
 - Cervix: L, W, H
 - Uterus: L, W, H, Vol, Endo
 - Ovary: L, W, H, Vol
 - Follicle: L, W, H, Mean Diam, Vol
 - Doppler Mode
 - Uterus A
 - Ovary A
 - OB
 - 2D Mode
 - OB1: GS, YS, CRL, BPD, FL, NT, AFI
 - OB2/3: BPD, HC, OFD, FL, AC, AFI, PL THK, APAD, TAD, LVW, HEM, EOD, IOD, HUM, Ulna, RAD, TIB, FIB, CLAV, Vertebra, Foot, Ear, APTD, TTD, FTA
 - Fetal Heart: LVID, RVID
 - Doppler Mode
 - FHR
 - Umb A
 - Ductus V
 - Placenta A
 - MCA
 - Fetal Aorta
 - Desc Aorta
 - Uterus A
 - Ovary A
 - Other Measurement
 - Prediction of GA
 - Fetal growth percentile
 - Trend graph
 - Fetal weight
 - Multi-gestation
 - Cardiology
 - 2D Mode
 - Dimension: LVIDd, LVIDs, IVSd, IVSs, LVPWd, LVPWs, RVAWd, RVAWs, LA Diam, Ao Root Diam, LVOT Diam, RVOT Diam
 - Area: MVA, AVA, TVA, PVA, LA Area, RA Area
 - LV Function: Teichholz, Cube, Simpson SP, Simpson BP, Mod. Simpson
 - LV Mass: Cube
 - Valves: MV Diam, MVA, EPSS, AV Diam, AV Cusp Sep, AVA, TV Diam, TVA, PV Diam, PVA
 - Vascular: Ao Root Diam, Ao st junct, Asc Ao Diam, Ao Arch Diam, Desc Ao Diam, MPA Diam, LPA Diam, RPA Diam, LCA Diam, RCA Diam, IVC Diam, IVC ins Diam, IVC Exp Diam
 - M Mode
 - LV Function: Teichholz, Cube
 - LV Mass: Cube
 - LV TEI Index, RV TEI Index
 - Doppler Mode
 - Mitral Valve: MV VTI, MV PHT, MVA(VTI), MV Dec Time, MR Vmax, MR VTI
 - Aortic Valve: LVOT Diam, LVOT VTI, AV Vmax, AV VTI, AV Acc Time, AV Dec Time, AVA(VTI), AVA(PHT), AR PHT, AR VTI, AAo Vmax, DAo Vmax
 - Tricuspid Valve: TV VTI, TV Vmax, TR PHT
 - Pulmonic Valve: RVOT VTI, PV Vmax, PV VTI, PV Acc Time, PVA(PHT), MPA Vmax, RPA Vmax, LPA Vmax
 - Urology
 - Prostate: L, W, H, Vol
 - PPSA, PSAD
 - Bladder: L, W, H, Vol, Void Vol
 - Kidney: L, W, H, Vol, Cortex
 - Adrenal: L, W, H
 - Seminal: L, W, H
 - Vascular
 - Carotid: CCA, ICA, ECA, Bulb, Vert A
 - UEA: Subclav A, Axill A, Brachial A, Ulnar A, Radial A, Innomi A
 - UEV: Subclav V, Axill V, Cephalic V, Basilic V, Brachial V, Ulnar V, Radial V
 - LEA: C.Iliac A, IIA, Ex.Iliac A, CFA, PFA, SFA, Pop A, TP Trunk A, Peroneal A, P. Tib A, A. Tib A, Dors. Ped A
 - LEV: C.Iliac V, IIV, Ex.Iliac V, Femoral V, CFV, SFV, PFV, Saph V, SSV, Pop V
 - TCD: MCA, ACA, PCA, BA, AComA, PComA
 - Small Parts:
 - 2D Mode
 - Thyroid: L, W, H, Vol
 - Isthmus H
 - Testicle: L, W, H
 - Doppler Mode
 - STA
 - ITA
 - Orthopedics
 - HIP(AB)
 - HIP(BA)
- ### 6.3 Report
- Dedicated report for respective exam
 - Able to modify report value
 - Add image to report

- Export report as PDF/HTML file

*Not all measurements are listed in here, detail info please refer to user manual.

7 Storage and Data Management

7.1 Storage

- 240GB SSD. More than 210GB for patient data
- Store up to 113,664 frames
- Digital format storage of single frame and cine loops

7.2 Exam Management

- "Station" for patient management
- Patient quick search and retrieve
- Able to review current exam and past exam
- Support new exam, activate exam, continue exam
- Able to measure on stored images and cines
- Able to export file as BMP/JPG/PNG/DCM/AVI
- Able to back up data to USB device

8 Connectivity

8.1 Network Connection

- Ethernet
- WIFI

8.2 DICOM 3.0

- DICOM Basic: Storage
- DICOM Worklist
- DICOM MPPS
- DICOM QR

9 Transducers

9.1 Convex

- C5-2B/C5-2
 - Application: Adult Abdomen, Ped-Abdomen, OB&GYN, Vascular, Nerve
 - Radius: 50mm
- C8-3
 - Application: Pediatric Abdomen, Neonatal head
 - Radius: 14m
- EV10-4
 - Application: OB&GYN, Urology
 - Radius: 10mm

9.2 Linear

- L15-4NB
 - Application: Small Parts, Vascular, MSK, Nerve, Pediatrics
 - FOV(Max): 38mm
- L10-5
 - Application: Small Parts, Vascular, MSK, Nerve
 - FOV: 38mm
- LH15-6
 - Application: Small Parts, Vascular, MSK, Nerve
 - FOV: 26mm

- L12-5
 - Application: Breast, Small Parts, Vascular, MSK, Nerve
 - FOV: 50mm

9.3 Phased

- P4-1
 - Application: Adult Cardiac, Ped-Cardiac, TCD, Adult Abdomen
 - FOV(Max): 90°
- P7-3
 - Application: Ped-Cardiac
 - FOV(Max): 90°

10 Peripherals and Accessories (Optional)

10.1 Digital B/W Video Printer

- SONY UP-D897

10.2 Video Converter Box

- HDMI In: 1
- S Video Out: 1
- VGA Out: 1
- Audio 3.5mm Out: 1

11 Certificate and Security

11.1 Quality Certificate

- ISO 9001
- ISO 13485

11.2 Complied Standards

- CSA C22.2 No. 601-1
- EN 60601-1 and IEC 60601-1
- EN 60601-1-2 and IEC 60601-1-2
- EN 60601-1-6 and IEC 60601-1-6
- EN 60601-2-37 and IEC60601-2-37
- EN 62304 and IEC 62304
- EN 62366 and IEC 62366
- EN ISO 17664 and ISO 17664

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