



C-ARM MOBILE STAND

Dimensions and Mechanics

- Motor-driven vertical travel: 42 cm
- Horizontal travel: 22 cm
- Orbital rotation: -120° / +45°
- Angulation: $\pm 225^\circ$
- Swiveling (panning): $\pm 10^\circ$
- Source-image receptor distance: 105 cm
- C-arm vertical free space: 84 cm
- C-arm depth: 68 cm
- Width: 80 cm
- Length:
 - 188 cm / 210 cm (flat-panel 3131)
 - 187 cm / 209 cm (flat-panel 2121)
- Height: 159 cm / 201 cm
- Weight C-arm mobile stand (weight can vary depending on balancing and configuration): 396 kg ± 2 %

Brakes

- Steering & braking lever, with parallel movement of the mobile stand in all directions
- Color-coded brake handles for all movements

X-Ray Generator

- X-ray tube: rotating anode
- Dual focus: 0.3 / 0.6 (IEC 60336)
- Anode angle: 10°
- Anode speed:
 - Bis zu 3,600 U/min. (60 Hz)
 - Bis zu 10,800 U/min. (180 Hz)*
- Max. anode heat content: 365 kHU / 260 kJ
- Max. anode heat dissipation: 1,000 W / 85 kHU/min
- Powered by integrated Advanced Active Cooling and heat management system
- 11.3 million HU system heat capacity
- 1,200 W / 102 kHU/min continuous heat dissipation in clinical performance
- Generator type:
 - monoblock
 - high-frequency generator
 - frequency: 40 kHz
 - microprocessor-controlled
- Maximum output: 25 / 30* kW

Filtration

- Total filtration: ≥ 4.3 mm Al + 0.1 mm Cu

Collimator System

- Dedicated pre-collimator for FPD
- Collimator rotation: $\pm 90^\circ$
- Iris collimator
- Asymmetric slot collimator
- Virtual collimation without radiation

Operating Values

- Continuous fluoroscopy:
 - kV range: 40-120 kV
 - mA range: 1.7-17 mA (200-240 V)
- Pulsed fluoroscopy:
 - kV range: 40-120 kV
 - mA range: 1.5-250 mA / 300 mA* (200-240 V)
 - pulse width: 4-40 ms
 - pulse rate: 1, 2, 4, 8, 12.5, 25 pulses/s
- Digital radiography (snapshot):
 - kV range: 40-120 kV
 - mA: up to 250 mA / 300 mA*

Flat-Panel Detector System

- Type: CMOS technology
- Scintillator: cesium iodide
- Pixel size: 100 μm
- Grayscale: 65,536 gray scale values (16 bit)
- System resolution (Nyquist): 5 lp/mm
- Anti-scatter grid:
 - 70 lines/cm; grid ratio 8:1
 - 70 lines/cm; grid ratio 10:1
- Laser positioning device integrated in detector housing
- Auto calibration
- Removable grid (option)
- DQE according to RQA5 @ 0 lp/mm: 75 %
- MTF:
 - 1 lp/mm: 55 %
 - 2 lp/mm: 23 %
 - 3 lp/mm: 10 %
 - 4 lp/mm: 5 %
- Dynamic range:
 - 1 x 1 binning: 84 dB
 - 2 x 2 binning: 95 dB
- Frame rate: max. 30 frames/s

Flat-Panel 3131

- Detector matrix:
 - overview format: 3,072 x 3,072 pixels
 - Mag. mode 1: 2,048 x 2,048 pixels
 - Mag. mode 2: 1,536 x 1,536 pixels

Flat-Panel 2121

- Detector matrix:
 - overview format: 2,053 x 2,051 pixels
 - Mag. mode 1: 1,536 x 1,536 pixels
 - Mag. mode 2: 1,024 x 1,024 pixels

MONITOR CART

User Interface

Vision Center - TFT Touchscreens on C-arm Stand and Monitor Cart

- Synchronized
- Intuitive icons for ease of use
- Resolution: 640 x 480 pixels
- Multi-lingual user interface
- Ziehm SmartEye live fluoro screen with SmartControl
- SmartArchive

Vision Center - TFT Touchscreen on C-arm Stand

- Emergency stop button
- X-ray button
- X-ray indication lamp

Remote Vision Center – Synchronized Touchscreen for Table Side Control (Option)

- Emergency stop button
- X-ray button
- X-ray indication lamp

Dimensions and Mechanics

- Width: 71 cm
- Depth: 70 cm
- Height: 175 cm
- Monitor Cart basic weight: 156 kg ± 10 %
(up to 62 kg additional weight depending on the configuration)

With Articulating Monitor Arm (Option):

- Monitor rotation: ± 40°
- Rotation of the arm: ± 115°
- Adjustment height: +23 cm, -16 cm
- Max. reach: 83 cm

Monitor

- 19" DUO High-brightness and high-contrast monitor:
 - screen size: 2 x 19" (48 cm)
 - native resolution: 1,280 x 1,024 pixels
 - viewing angle (horizontal and vertical): 178° (with contrast ratio ≥ 10:1)
 - tilt range: ± 10°
 - contrast ratio: typ. 1,000:1
 - brightness (panel): typ. 1,000 cd/m²
 - brightness (calibrated): ≥ 550 cd/m²
 - dimensions: 68 cm x 45 cm x 9 cm
- 32" UHD High-resolution and high-brightness monitor (option)¹:
 - screen size: 31.5" (80 cm)
 - native resolution: 4k (3,840 x 2,160 pixels)
 - viewing angle (horizontal and vertical): typ. 178° (with contrast ratio ≥ 10:1)
 - tilt range: ± 10°
 - contrast ratio: typ. 2,000:1
 - brightness (panel): typ. 800 cd/m²

- brightness (calibrated): ≥ 530 cd/m²
- dimensions: 72 cm x 47 cm x 8 cm

Digital Image Processing

Real-Time Processing Functions

- Last Image Hold
- Recursive filter: 4 levels (out of 16)
- Edge enhancement filter: 5 levels
- Windowing and step windowing
- Digital image rotation and reversal without radiation
- Grayscale inversion
- Digital collimators
- Ziehm Adaptive Image Processing (ZAIP)
- PreMag: radiation-free digital magnification

Application-Oriented Anatomical Programs

- Bone: Extremities, Trunk
- Heart, Abdomen, Soft
- Heart Coro, Heart EP (option)
- Vascular (option): Extremities, Trunk, Bolus
- Urology (option)
- Endo (option)

Additional Functions

- Metal
- Reposition
- High Quality
- Pediatric
- Large Patient

Object Detected Dose Control (ODDC)

- Automatic object detection
- Automatic motion detection
- Automatic dose reduction
- Automatic metal correction

Image Acquisition

- Max. resolution (in accordance with DIN 6868-150):
 - 4.0 lp/mm / 5.0 lp/mm*
- Image processing size: 1k x 1k / 2k x 2k*
- Autosave
- Cine loop with auto-playback:
 - sequential image storage and display:
 - 1-8 frames/s
 - 1-12.5 frames/s (option)
 - 1-25 frames/s (option)
 - start, stop and replay rate controls

Postprocessing Functions

- Edge enhancement: 5 levels
- Zoom: 3 levels
- Image rotation
- Windowing and step windowing
- Grayscale inversion
- Image cropping (digital collimators)

SmartVascular Plus Package (Option)

- Smart Vascular workflow
 - DSA real-time subtraction with re-masking capability
 - MSA max. opacification sequence

¹Only available monitor for QuantumStream technology

*In combination with QuantumStream technology

- Single frame, Multiframe RSA (roadmapping)
- Pixel shift / landmarking
- Wireless Dual Plus footswitch
- Cine Loop 1-12.5 frames/s
- 2 video connectors for external DVI display, for left and right monitor in landscape mode
- Anatomical Marking Tool

SmartVascular Advance Package (Option)

- Smart Vascular workflow
 - DSA real-time subtraction with re-masking capability
 - MSA max. opacification sequence
 - Single frame, Multiframe RSA (roadmapping)
- Pixel shift / landmarking
- Wireless Dual Plus footswitch
- Cine Loop 1-25 frames/s
- 2 video connectors for external DVI display, for left and right monitor in landscape mode
- Measurement functions
- Anatomical Marking Tool
- CO₂ Package

Vascular Color Package (Option):

- Enhanced Vessel Visualization: Automatic display of colored vessel overlay
- Color on live monitor for Anatomical Marking Tool and Measurement functions
- High-resolution and high brightness 32" UHD monitor

Anatomical Marking Tool - AMT (Option)

- Mark anatomical structures
- Indicate side of body
- Line and connected line

Measurement Function (Option)

- For precise measurement of distances, angles and vessel lumen

CO₂ Package (Option)

- Automatic image optimization when using negative contrast medium in vascular modes

Endo package (Option)

- Wireless multifunctional footswitch
- 26" color monitor
- S-video or DVI/HDMI interface
- Anatomical Marking Tool
- Endo APR
- Measurement functions
- Cine loop 8-25 f/s

Digital Memory

- Storage capacity: 100,000 / up to 350,000* images
- Image storage: up to 16 bit
- Digital image processing: up to 32 bit

Data Organization

- Patient-based data management with 16-image mosaic display
- Pre-registration via DICOM Worklist
- Manual input or emergency registration
- Calculated Dose Area Product (DAP)
- DAP value tagged to stored image
- Air Kerma dose display

- Air Kerma value tagged to stored image
- Radiation Dose Structured Report (RDSR)

Data Protection

- DICOM TLS security (1.2 & 1.3)
- HIPAA security package (option)
- Encryption of sensitive data on hard drive

Video Output

- Full HD SDI (split display), 1,920 x 1,080 pixels, 60Hz

Archiving

- Paper printer (option)
- USB port:
 - storage capacity depends on storage medium
 - formats: DICOM, TIFF, Multimedia (AVI)
 - downsized formats: DICOM, JPG
- DVD-RW drive (option):
 - 4.7 GB storage capacity
 - formats: DICOM, TIFF, Multimedia (AVI)
 - downsized formats: DICOM, JPG
- DICOM viewer software for DVD and USB 3.0 device (option)

Networking

- Ziehm NetPort (option): DICOM 3.0 interface (LAN interface or WLAN connection) for digital network integration
- 'Primary Capture' mode
- Available DICOM Classes:
 - Storage Class incl. multiframe capability and Storage Commitment
 - Print Class
 - Media Class
 - Worklist Class incl. Modality Performed Procedure Step (MPPS)
 - Query Class
 - Retrieve Class
 - Verification Class
- WLAN interface for wireless data transfer (option)

Electrical Requirements

- Power supply: 100-240 V_{AC} (± 10 %), 50/60 Hz
- Current consumption:
 - 20 A continuous (100-120 V)
 - 16 A continuous (200-240 V)
- Max. impedance:
 - ≤ 0.3 Ω (100-200 V)
 - ≤ 0.6 Ω (220-240 V)
- Installation fuse (release characteristic compliant to VDE 0641, Part 11; EN 60898 & IEC 60898):
 - 100-200 V: C 20 A or C 32 A
 - 220-240 V: C 16 A

Safety Features

- Electrical Protection Class I equipment, Type B (IEC 60601-1)
- Security key switch (X-ray)
- Emergency stop button on the C-arm

Options

- Laser positioning device integrated in generator housing
- Remote Service
- Measured dose area product (DAP) with digital display
- Video connectors for external monitors:
 - DVI
 - Analog
 - SDI*
- Connector for external radiation lamp
- Wireless Video Package (option)
- Additional handrails on the C for orbital rotation support

Accessories

- Disposable sterile covers
- Remote Vision Center TFT touchscreen
- **Dual Plus footswitch** with programmable configuration (also available with protection bar)
- **Wireless multifunctional footswitch** Dual Plus with programmable configuration (also available with protection bar)
- Skin Cone for the generator: A removable mechanical extension of the generator cap in order to avoid a focal spot to skin distance smaller than 30 cm.
- Mobile Cart for Remote Vision Center (stand accommodates both the Position Control Center and Remote Vision Center)

Regulatory Compliance

Device Classification

- MDR (EU) 2017/745 Annex VIII: IIb
- U.S. 21 CFR: II

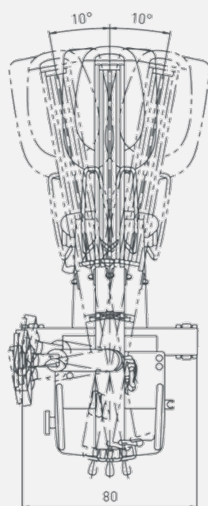
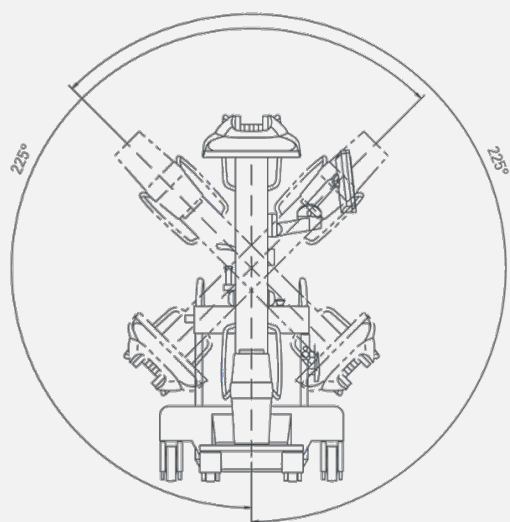
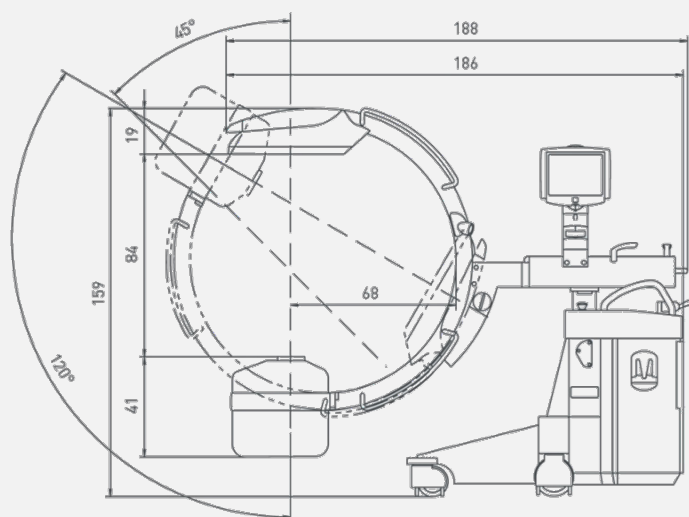
Compliance to QM Requirements

- EN ISO 13485:2016 certified
- MDR (EU) 2017/745 Annex IX certified
- MDSAP certified
 - Australia Therapeutic Goods (Medical Devices) Regulations, 2002, Schedule 3 Part 1 (excluding Part 1.6) – Full Quality Assurance Procedure
 - Brazil RDC ANVISA n. 665/2022, RDC ANVISA n. 551/2021, RDC ANVISA n. 67/2009
 - Canada Medical Device Regulations Part 1 – SOR 98/282
 - Japan MHLW Ministerial Ordinance 169, Article 4 to Article 68, PMD Act (as applicable)
 - United States 21 CFR 820, 21 CFR 803, 21 CFR 806, 21 CFR 807 – Subparts A to D
- ISO 14971
- IEC 62304
- IEC 62366

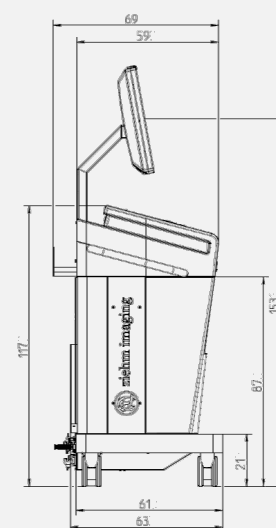
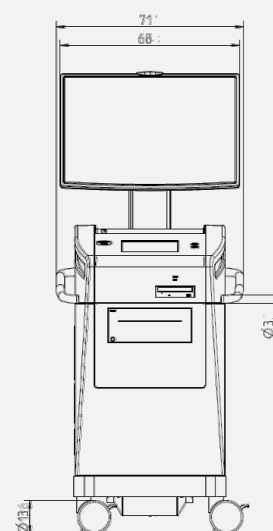
Product Compliance

- IEC 60601-1 and relevant collateral and particular standards
- U.S. 21 CFR subchapter J

Ziehm Vision RFD (CMOS)
(C-Arm Mobile Stand)

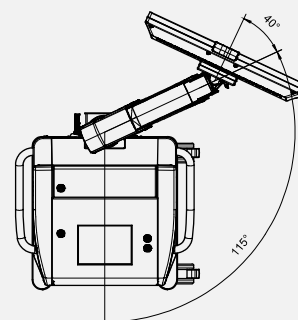
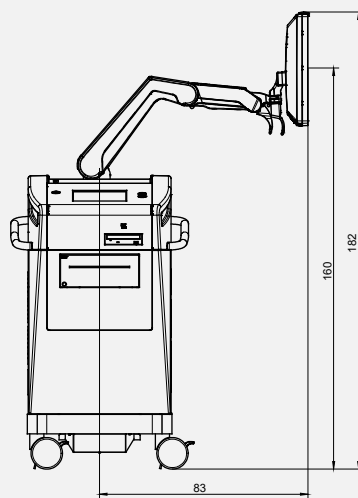
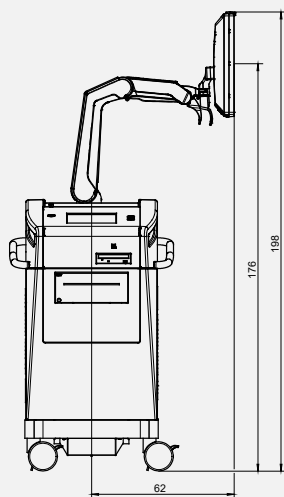
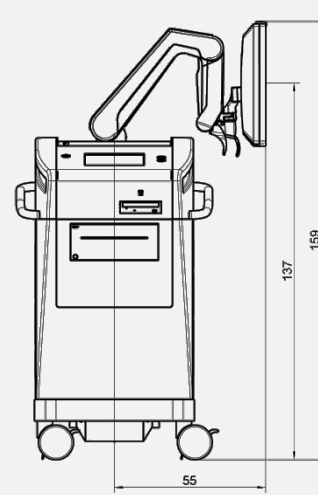
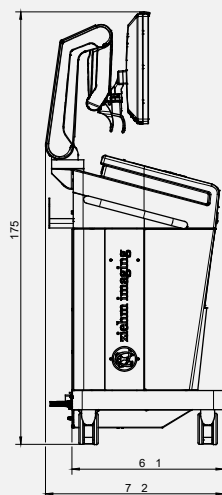
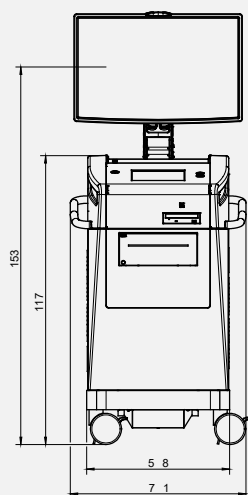


Ziehm Vision RFD (CMOS)
(Monitor Cart)



All dimensions in cm.

Ziehm Vision RFD (CMOS)
(Monitor Cart with Articulating Monitor Arm)



All dimensions in cm.

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