

Ziehm Vision²



ziehm imaging

... dedicated to clinical innovation

TECHNICAL SPECIFICATIONS

C-Arm Mobile Stand

Dimensions & Mechanics

- Motor-driven vertical travel: 17" [43 cm]
- Horizontal travel: 9" [22 cm]
- Orbital rotation:
 - 90° / +45° [9" [23 cm] i.i.] / +25° [12" [31 cm] i.i.]
- Angulation: $\pm 225^\circ$
- Swiveling (panning): $\pm 10^\circ$
- Source/image receptor distance: 38" [97 cm]
- C-arm vertical free space: 30" [76 cm]
- C-arm depth: 27" [68 cm]
- Width: 32" [80 cm]
- Length: 63-72 inch [160-182 cm]
- Height: 67-84 inch [170-214 cm]

Brakes

- Patented steering & braking lever, with parallel movement of the mobile stand in all directions

X-Ray Generator

- X-ray tube: stationary anode
- Single focus: 0.6 (IEC 336)
- Max. anode heat content: 45 kHU/34 kJ
- Max. anode heat dissipation: 600 W
- Generator type:
 - monoblock
 - 20 kHz high frequency
 - microprocessor-controlled

Operating Values

- Nominal output (100 kV): 2,000 W
- Maximum output: 2,200 W
- Pulsed fluoroscopy:
 - kV range: 40-110 kV
 - mA range: 0.2-20 mA
 - pulse width: 10-30 ms
 - pulse rate: 1, 2, 5, 10, 15, 30 pulses/s
- Digital radiography (snapshot):
 - kV range: 40-110 kV
 - mA: up to 20 mA
- Radiography:
 - kV range: 40-110 kV
 - mA: up to 20 mA

Filtering

- Total filtering: ≥ 4 mm Al equivalent
- Additional filtering: 0.1 mm Cu

Output

- Pulsed fluoroscopy: up to 20 mA
- Digital radiography (snapshot): up to 20 mA
- Tube housing heat capacity:
 - powered by integrated Advanced Active Cooling and heat management system
 - 5 million HU system heat capacity
 - 400 W continuous dissipation in clinical performance

Collimator System

- Collimator rotation: $\pm 90^\circ$
- Iris collimator:
 - 9" [23 cm] i.i.: 2-9" [50-230 mm] diameter
 - 12" [31 cm] i.i.: 2-12" [50-310 mm] diameter
- Slot collimator:
 - 9" [23 cm] i.i.: 2-9" [50-230 mm] diameter
 - 12" [31 cm] i.i.: 2-12" [50-310 mm] diameter
- Virtual collimation without radiation

Image Intensifier

- Type: cesium iodide
- DQE (IEC): 65 %
- Conversion factor: 240 Cd m⁻²/mR s⁻¹
- Anti-scatter grid: Pb 8/40

9" [23 cm] I.I.

- Central resolution 9-6-4" [23-15-10 cm]: 52-58-68 lp/cm
- Contrast ratio: 30:1

12" [31 cm] I.I.

- Central resolution 12-9-6" [31-23-15 cm]: 44-50-56 lp/cm
- Contrast ratio: 22:1

Digital Video Chain

Digital Video Camera (high contrast, non-interlaced)

- Active pixels: 1,048,576
- Camera matrix: 1024 x 1024 pixels
- Bandwidth of video signal: 20 MHz
- Bandwidth of video amplifier: 50 MHz
- Video (monitor): 1,125 lines
- Signal-to-noise ratio: 68 dB
- Control: ADR / AVR

Monitor Cart

Monitors

- High-resolution and high-brightness twin flat-screen monitors
 - screen size: 18.1 inch [46 cm]
 - native resolution: 1280 x 1024 pixels
 - viewing angle (horizontal & vertical): 170°
 - contrast ratio: 600:1
 - dimensions: 16 x 13 x 3" [41 x 34 x 7 cm]

User Interface

- TFT touchscreens on C-arm stand and monitor cart:
 - synchronized
 - intuitive icons for easy use
 - resolution: 640 x 480 pixels
 - multi-lingual user interface

Digital Image Processing

Real-Time Processing Functions

- Recursive filter: 4 levels (out of 16)
- Stack filter ('Last Image Hold'): 5 levels
- Edge enhancement filter: 5 levels
- Windowing and step windowing
- Digital image rotation and reversal without radiation
- Grayscale inversion
- Digital shutters

Application-Oriented Anatomical Programs

- Bone, Heart, Abdomen, Endo (option)
- Soft, Large Patient

Object Detected Dose Control (ODDC)

- Automatic motion detection
- Automatic metal correction

Image Acquisition

- Autosave
- Cine loop with auto-playback (option)
 - sequential image storage and display: 1, 2, 5, 10, 15, 30 frames/s
 - start, stop and replay rate controls

DSA Package (Option)

- DSA real-time subtraction with re-masking capability
- MSA maximum opacification sequence
- RSA roadmapping
- Pixel shift / landmarking
- Digital measurement functions (distance/angle)

Cine Loop

- Sequential image storage and display 1, 2, 5, 10, 15, 30 frames/s
- start, stop and replay rate controls

Postprocessing Functions

- Edge enhancement: 5 levels
- Zoom: 3 levels
- Image rotation
- Windowing
- Grayscale inversion
- Image cropping (digital shutters)

Digital Memory

- Storage capacity: up to 55,000 images
- Memory matrix: 1024 x 1024 pixels
- Image matrix: 1024 x 1024 pixels
- Digital image processing: up to 32 bit
- Grayscale: 1024 shades of gray (10 bit)



Data Organization

- Patient-based data management with 16-image mosaic display
- Pre-registration via DICOM Worklist
- Manual input or emergency registration
- Air Kerma Dose Display
- Air Kerma value tagged to stored image

Archiving

- Video printer (option):
 - paper and film: Sony® UP 990
 - paper: Sony® UP 970
- USB port:
 - storage capacity depends on storage medium
 - formats: DICOM, TIFF
 - downsized formats: DICOM, JPG
- DVD-RW drive:
 - 4.7 GB storage capacity
 - formats: DICOM, TIFF, Multimedia (AVI)
 - downsized formats: DICOM, JPG
- DICOM viewer software for DVD and USB device

Networking (Option)

- Ziehm NetPort: DICOM 3.0 interface for digital network integration
- 'Primary Capture' mode
- Available DICOM Classes:
 - Storage Class incl. multiframe capability, Storage Commitment and Media Class
 - Print Class
 - Worklist Class incl. Modality Performed Procedure Step (MPPS)
 - Query Class
 - Retrieve Class

Options

- Laser positioning device, mounted on image intensifier and/or generator
- Emergency stop button
- Video output for external documentation
- Endo functionality
 - 4-pedal foot switch
 - landscape colour monitor
 - endoscope s-video connection

Weight

- C-arm mobile stand: 573 lbs [260 kg]
- Monitor cart: 353 lbs [160 kg] (without printer and other options)

Electrical Requirements

- Power supply: 120/230 V_{AC}, 60 Hz
- Current consumption:
 - 10 A continuous
 - 22 A short-time
- Max. impedance: ≤ 0.6 Ω
- Class I equipment, Type B applied parts
- Security key switch (x-ray)

Standards & directives

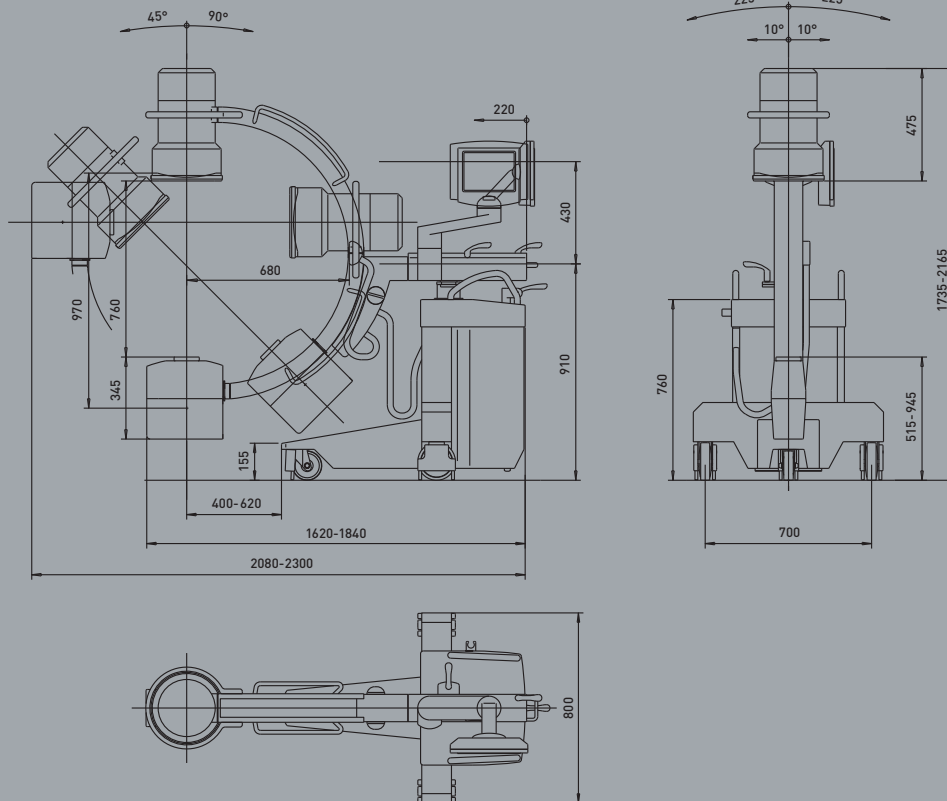
- 21 CFR subchapter J
- IEC 60601-1 ff
- EC directive 93/42/EEC

Certifications

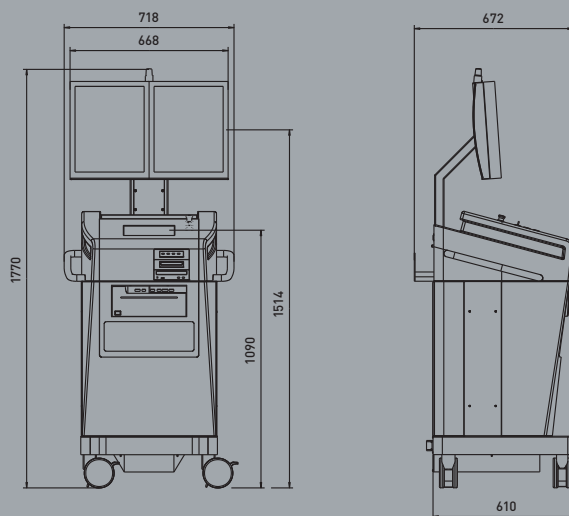
- CE mark
- UL / CSA



Ziehm Vision²
(C-Arm Mobile Stand)
Dimensions



Ziehm Vision²
(Monitor Cart)
Dimensions



Metric Conversion

1 cm = 0.39 inch

1 mm = 0.039 inch

1 inch = 2.54 cm

1 inch = 25.4 mm

All dimensions in mm.

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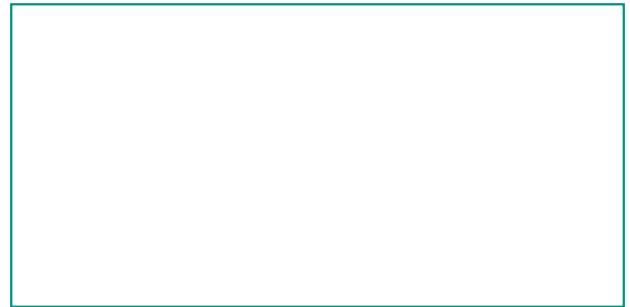
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Manufacturing complies with DIN EN ISO 13485 and DIN EN ISO 9001.

Ziehm Imaging is constantly improving its products and reserves the right to change these specifications without notice.



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