



High resolution
24" flatscreen
mounted on
mobile stand

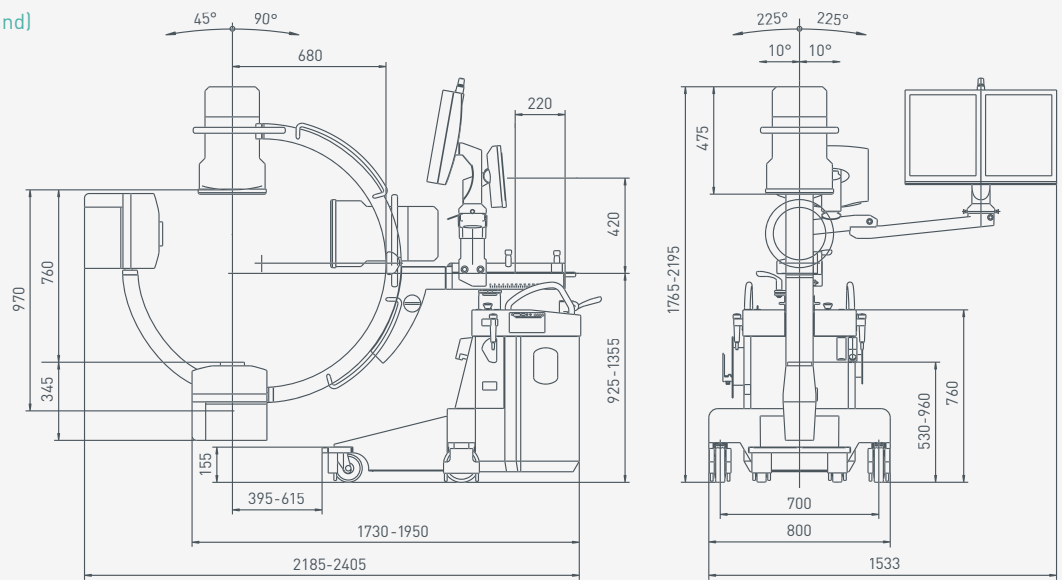
Intuitive touchscreen
user interface

1k x 1k imaging chain
for high resolution

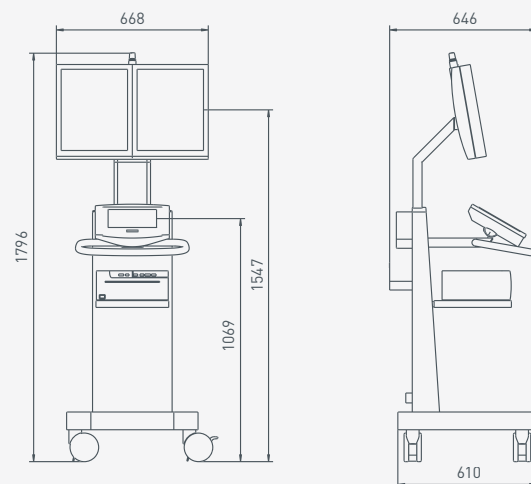
Single component
platform with
compact footprint

Pulsed mono-
block generator
for optimal
image quality

Ziehm Solo
(C-Arm Mobile Stand)



Ziehm Solo
(Monitor Cart)



All dimensions in mm.

C-Arm Mobile Stand

Dimensions and Mechanics

- Motor-driven vertical travel: 42 cm
- Horizontal travel: 22 cm
- Orbital rotation: -90° / +45° [23 cm i.i.]
- Angulation: $\pm 225^\circ$
- Swiveling (panning): $\pm 10^\circ$
- Source-image receptor distance: 97 cm
- C-arm vertical free space: 76 cm
- C-arm depth: 68 cm
- Width: 80 cm
- Length: 173 cm / 195 cm
- Height: 177 cm / 220 cm
- Weight: 310 kg

Brakes

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

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
- Nominal output (100 kV): 2,000 W
- Maximum output: 2,020 W

Collimator System

- Collimator rotation: $\pm 90^\circ$
- Iris collimator:
 - 23 cm i.i.: 50-230 mm diameter
- Slot collimator:
 - 23 cm i.i.: 50-230 mm diameter
- Virtual collimation without radiation

Operating Values

- Pulsed fluoroscopy:
 - kV range: 40 - 110 kV
 - mA range: 0.2 - 10 mA
 - pulse width: 10 - 30 ms
 - pulse rate: 1, 2, 4, 8, 12.5, 25 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, including 0.1 mm Cu

Output

- Pulsed fluoroscopy: up to 10 mA
- Digital radiography (snapshot): up to 20 mA
- Tube housing heat capacity:
 - powered by integrated advanced heat management system
 - 1.14 million HU system heat capacity
 - cooling rate 32 kHU/min

Digital Video Chain

Digital Video Camera (high contrast, non-interlaced)

- Active pixels: 1,048,576
- Camera matrix: 1,024 x 1,024 pixels
- Bandwidth of video signal: 20 MHz
- Bandwidth of video amplifier: 50 MHz
- Signal-to-noise ratio: 68 dB
- Control: ADR / AVR

Image Intensifier

- Type: cesium iodide
- DQE (IEC): 65 %
- Conversion factor: 240 Cd m⁻²/mR s⁻¹
- Anti-scatter grid: Pb 8/40 f₀ 90
- Central resolution 23-15-10 cm: 52-58-68 lp/cm
- Contrast ratio: 30:1

User Interface

- TFT touchscreens on monitor support arm:
 - intuitive icons for easy use
 - resolution: 640 x 480 pixels
 - multi-lingual user interface

Monitors

- High-resolution and high-brightness splitscreen monitor
 - screen size: 24" (61 cm)
 - native resolution: 1,920 x 1,200 pixels
 - viewing angle (horizontal and vertical): 178°
 - luminance: max. 400 cd/m²
 - contrast ratio: 600:1
 - dimensions: 56 x 37 x 10 cm
 - mounted on monitor support arm
- High-resolution and high-brightness twin flatscreen monitors (option)
 - screen size: 2 x 18.1" (46 cm)
 - native resolution: 1,280 x 1,024 pixels
 - viewing angle (horizontal and vertical): 170°
 - luminance: 600 cd/m²
 - contrast ratio: 600:1
 - dimensions: 41 x 34 x 7 cm
 - mounted on monitor support arm

Digital Image Processing

- Application-Oriented Anatomical Programs**
- Bone, Heart, Abdomen
 - Soft, Large Patient
 - Metal, Soft, Large Patient

Real-Time Processing Functions

- Recursive filter: 4 levels
- 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

Object Detected Dose Control (ODDC) (Option)

- Object detection
- Motion detection
- Automatic dose reduction
- Automatic metal correction

Image Acquisition

- Autosave
- Cine loop with auto-playback (option)
 - sequential image storage and display: 1, 2, 4, 8 frames/s
 - start, stop and replay rate controls
- Grayscale: 4,096 shades of gray (12 bit)

Postprocessing Functions

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

DSA Package (Option)

- DSA real-time subtraction with re-masking capability
- Pixel shift / landmarking
- Digital measurement functions (distance/angle)

Archiving

Cine Loop

- Sequential image storage and display: 1, 2, 4, 8 frames/s
- Start, stop and replay rate controls

Digital Memory

- Storage capacity: up to 55,000 images
- Memory matrix: 1,024 x 1,024 pixels
- Image matrix: 1,024 x 1,024 pixels
- 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
- Air Kerma dose display
- DAP value tagged to stored image

- Video printer (option):
paper: Sony® UP 897
- 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

- Ziehm NetPort (option): DICOM 3.0 interface (RJ45 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

Options

- Security key switch (x-ray)
- Laser positioning device, integrated in image intensifier and/or generator
- Measured dose area product
- Emergency stop button
- Video output for external documentation
- Color-coded brake handles all movements (steering/braking, orbital/pivot rotation, swiveling)
- Measurement functions

Accessories

- Disposable sterile covers
- Hand surgery table

Electrical Requirements

- Power supply: 230 V_{AC}, 50 Hz
- Current consumption: 10 A continuous, 16 A short-time
- Max. impedance: ≤ 0.6 Ω
- Class I equipment, Type B applied parts

Certifications

- CE mark

Standards and Directives

- IEC 60601-1 ff
- EC directive 93/42/EEC

Monitors Mounted on Ceiling Support (Option)

Mechanics

- Mounting: VESA 100

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