OEC Elite™
Premium Digital Mobile C-arm
Technical Data

Now, a C-arm platform smart enough for you and your team.
This is just INGENIOUS.
Image Acquisition

21 cm CMOS Flat Panel Detector (CFD)
- Tri-mode 21 cm/15 cm/11 cm
- Minimum central resolution (at display): - 21 cm: 2.5 lp/mm - 15 cm: 3.0 lp/mm - 11 cm: 3.5 lp/mm
- Matrix: 1536 x 1496 total pixels
- DQE(0): 72%
- Pixel Pitch: 135.3 μm
- Removable grid with on-screen detection status

31 cm CMOS Flat Panel Detector (CFD)
- Tri-mode 31 cm/21 cm/15 cm
- Minimum central resolution (at display): - 31 cm: 1.8 lp/mm - 21 cm: 2.2 lp/mm - 15 cm: 2.4 lp/mm
- Matrix: 1548 x 1524 total pixels
- DQE(0): 72%
- Pixel Pitch: 198.0 μm
- Removable grid with on-screen detection status

9” Image Intensifier
- Tri-mode 9/6/4.5” image intensifier
- Minimum central resolution (at monitor): - 9”: 2.2 lp/mm - 6”: 3.0 lp/mm - 4.5”: 3.5 lp/mm
- DQE: 65% (typical)
- Removable grid

12” Image Intensifier
- Tri-mode 12/9/6” image intensifier
- Minimum central resolution (at monitor): - 12”: 1.6 lp/mm - 9”: 2.2 lp/mm - 6”: 2.6 lp/mm
- DQE: 65% (typical)
- Removable grid

Image Acquisition

X-ray Tube
- Rotating anode X-ray tube
- 0.3 mm and 0.6 mm nominal focal spots
- Anode heat capacity: 300,000 HU
- Anode cooling rate: 85.000 HU/min
- Housing heat capacity: 1,600,000 HU/min
- Housing cooling rate: - 21 cm CFD - 22,500 HU/min - 31 cm CFD - 31,000 HU/min - 9” I.I. - 22,500 HU/min
- 12” I.I. - 22,500 HU/min

Digital Image Orientation
- Digitally adjusts image display for live and last image hold
- Automatic image update preserves image orientation settings applied during live and last image hold for subsequent images
  - Image rotation
  - Live and last image hold rotated in real-time
  - On-screen display of rotation degrees
  - Image reversal (left-to-right)
  - Image invert (top-to-bottom)
- On-screen orientation indicator (real-time feedback without fluoroscopy)
- Fully digital with precise 1 degree rotation increments or auto-repeat for quick rotation (CFD models)

PreView Collimator
- On-screen collimator position indication
- PreView iris collimator
- PreView Tungsten rotatable double leaf collimator
- Adjust collimators without X-ray exposure

Fluoroscopy Mode
- kVp range: 40 - 120
- mA range: 0.2 - 10 normal mode 0.2 - 20 HLF
- Auto and manual fluoroscopy modes

Pulsed Fluoroscopy Mode
- kVp range: 40 - 120
- mA range: 0.2 - 10 normal mode 0.2 - 40 HLF
- Pulse rate: 8pps
- Pulse width: 25 ms
- Auto and manual pulsed fluoroscopy modes
- Reduces X-ray dose to patient and operator

Digital Spot Mode
- kVp range: 40 - 120
- mA range: Up to 75
- Automatic exposure termination and automatic image save

TechView Monitor
- optional on image intensifier models
- 10.4” (26.4cm) display, LCD flat panel monitor mounted on mainframe
  - 270° side/rotate
  - 30° up/5° down tilt
  - Horizontal viewing angle 80°, Vertical viewing angle 70°
- 800 x 600 resolution monitor

Image Processing

Precision imaging with General-Purpose Dynamic Range Management (GDRM) enhances anatomy of interest while attenuating background features.
- Preset Imaging Profiles
  - General
  - Orthopedic
  - Spine

AutoTrak Automatic Brightness Stabilization (ABS)
- Automatically seeks the subject anatomy anywhere within the imaging field
- Selects the optimum imaging technique by varying mA, kVp, and gain
- Automatically adjusts to anatomical size and location
- Provides uniform image quality throughout the entire image

Image I.Q.
- Smart Window
  - Dynamically senses the collimator position and automatically adjusts image brightness and contrast
- Smart Metal
  - Adjusts brightness and contrast automatically and allows user to adjust sensitivity levels for optimum image quality even when metal is introduced into the field
- Tungsten Collimator
  - Denser collimator limits X-ray exposure area
  - Reduces scatter radiation
  - Improves image detail

Generator
- 60 kHz high frequency
- 15 kW power
- Up to 120 kVp
- Continuous high level fluoroscopy (HLF) up to 20 mA
- Pulsed HLF up to 40 mA
- Digital spot up to 75 mA
- Full power from a standard wall outlet
- Patented battery buffered design

Image Processing
- 1.5 k x 1.5 k x 16 bit: CFD
- 1 k x 1 k x 16 bit: image intensifier

Specifications
Software Package

Expanded Surgical Platform (ESP)
- Preset Imaging Profiles
  - General
  - Orthopedic
  - Spine
- Noise filter with on-screen indicator
- Minimal difference spatiotemporal noise filter (MDST)
- Real-time dynamic general purpose range management (GDRM)
- Automatic digital brightness and contrast control
- Manual digital brightness and contrast control
- Negate mode
- Save and auto-save feature
- Swap and auto-swap feature
- Patient information
  - Examination list
  - Customized patient information
- Set-up functions
  - Acquisitions
  - Image Profile
  - DICOM
  - Network
  - Regional
  - Security
  - Utilities
- Last image hold
- 50,000 image storage
- USB export with DICOM viewer for displaying images on PC platforms
  - Full-size or half-size
  - Web viewable
  - JPEG and BMP
  - DICOM compatible
  - OEC compatible
  - De-identify DICOM images
  - Remove patient information
- HiPAA SecureView
  - Password protection
  - Blank screen function
  - Delete all patient information
- Zoom and pan function
- Image annotation
- Measurement
  - Distance
  - Angles
  - Percent stenosis
- Digital image rotation

Workstation

Hardcopy/Connectivity
- Wired Ethernet
- USB data transfer
- DVI-I output
  - Full screen (requires DVI-I dual link cable)
    - 2560 x 1600
    - 2560 x 1440
    - 2048 x 1536
    - 1920 x 1200
    - 1920 x 1080
  - Left screen only
    - 1280 x 1024 for input to a separate OEC Elite workstation or OEC 9900 Elite workstation
- Integrated film/paper printer (optional)*
  - No film developing required
  - Multi-format, 1, 2, 4 on 1
  - Multi-copy capability
- Thermal printers

Video Monitor
- 27 in (69 cm) LCD TFT color display
- Anti-glare
- Monitor mounted on an articulating arm
  - 45 in (114 cm) horizontal travel
  - 17 in (43.2 cm) vertical travel
  - 27 in (68.8 cm) forward travel
  - 5° up/5° down tilt
  - Display viewable from all four sides of workstation
  - Horizontal and vertical viewing angle 170°
- 450 cd/m² maximum brightness
- Touch screen system control
- 2560 x 1440 high resolution display
- Integrated PIP window to display color DVI-D input

User Interface
- Touchscreen control simplifies operation
- Automated system operation requires minimum operator interface
- Multi-functional controls
  - Footswitch
  - Hand-held control
- Physical keyboard with integrated touchpad
  - Sealed silicone design for dust-free, contaminant-free and water-resistant use
- Physical image control keypad
- On-screen virtual keyboard and image control keypad
- Multi-purpose image directory
  - Retrieve and review images
  - Copy image(s)
  - Manual deletion of image(s)
- Exams
  - Patient centric view of exams

- Manual deletion of exam(s)
- Display multi-modality exams
- View older exams
- Search saved/scheduled exams
- Integrated DICOM interface
  - Storage commit, store, query, retrieve, modality, worklist and print
  - Queue DICOM Store, Storage commit and Print requests for later transmission
  - Retrieve Modality Worklist (MWL)
  - Referenced Studies from PACS with one button press
  - On-board IT diagnostic support for DICOM transfer
- Radiation dose structured report (RDSR)
- X-ray dose summary
- Room-in-use indicator interface
- SmartConnect allows workstation to operate independently of C-arm and connect/disconnect C-arm when needed
- 3 Position X-ray and motion keyswitch
  - X-rays and lift movement are disabled
  - X-rays and lift movement are enabled
  - X-rays are disabled and lift movement is enabled

Additional Features

C-arm Positioning Aides
- Integrated laser aimer: CFD
- Optional laser aimer: IJ
- Motorized vertical lift

Uninterruptible Power
- Controlled shutdown
- Power monitoring and display
- Accidental power loss protection
  - 20 seconds battery back-up power to workstation and C-arm

Regulatory Compliance
- U.S. 21 CFR Subchapter J
- NFPA 99
- UL 60601-1 (CSA/NRTL)
- IEC60601-1 (plus relevant Collateral and Particular Standards)
# Physical Specifications

<table>
<thead>
<tr>
<th></th>
<th>21 cm CFD Super C-arm (Passive Cooling)</th>
<th>31 cm CFD Super C-arm (Active Cooling)</th>
<th>9&quot; I.I. Standard C-arm (Passive Cooling)</th>
<th>12&quot; I.I. Standard C-arm (Passive Cooling)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mainframe</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>80.25 in (204 cm)</td>
<td>80.25 in (204 cm)</td>
<td>77.8 in (197.6 cm)</td>
<td>81.0 in (205.7 cm)</td>
</tr>
<tr>
<td>Height</td>
<td>70.75 in (179.7 cm)</td>
<td>70.75 in (179.7 cm)</td>
<td>69.7 in (177.0 cm)</td>
<td>73.8 in (187.5 cm)</td>
</tr>
<tr>
<td>Width</td>
<td>33.2 in (84.3 cm)</td>
<td>33.2 in (84.3 cm)</td>
<td>33.5 in (85.1 cm)</td>
<td>33.5 in (85.1 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>635 lbs (288 kg)</td>
<td>654 lbs (297 kg)</td>
<td>610 lbs (277 kg)</td>
<td>660 lbs (299 kg)</td>
</tr>
<tr>
<td><strong>C-arm</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SID</td>
<td>39.4 in (100 cm)</td>
<td>39.4 in (100 cm)</td>
<td>39.4 in (100.1 cm)</td>
<td>39.4 in (100.1 cm)</td>
</tr>
<tr>
<td>Free space in arc</td>
<td>31.25 in (79.4 cm)</td>
<td>31.25 in (79.4 cm)</td>
<td>31.0 in (78.7 cm)</td>
<td>31.0 in (78.7 cm)</td>
</tr>
<tr>
<td>Depth in arc</td>
<td>33.0 in (83.8 cm)</td>
<td>33.0 in (83.8 cm)</td>
<td>26.0 in (66.0 cm)</td>
<td>28.0 in (77.1 cm)</td>
</tr>
<tr>
<td>Orbital rotation</td>
<td>145° (90°/55°)</td>
<td>145° (90°/55°)</td>
<td>115° (90°/25°)</td>
<td>115° (90°/25°)</td>
</tr>
<tr>
<td>Lateral rotation</td>
<td>360° (90°/270°)</td>
<td>360° (90°/270°)</td>
<td>360° (180°/180°)</td>
<td>360° (180°/180°)</td>
</tr>
<tr>
<td>Wig/wag</td>
<td>20°</td>
<td>20°</td>
<td>20°</td>
<td>20°</td>
</tr>
<tr>
<td>Horizontal travel</td>
<td>8.0 in (20.3 cm)</td>
<td>8.0 in (20.3 cm)</td>
<td>8.0 in (20.3 cm)</td>
<td>8.0 in (20.3 cm)</td>
</tr>
<tr>
<td>Vertical travel</td>
<td>18.1 in (46 cm)</td>
<td>18.1 in (46 cm)</td>
<td>18.0 in (45.7 cm)</td>
<td>18.0 in (45.7 cm)</td>
</tr>
<tr>
<td><strong>Workstation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>67.5 in (171.5 cm)</td>
<td>67.5 in (171.5 cm)</td>
<td>67.5 in (171.5 cm)</td>
<td>67.5 in (171.5 cm)</td>
</tr>
<tr>
<td>Width</td>
<td>34.1 in (86.7 cm)</td>
<td>34.1 in (86.7 cm)</td>
<td>34.1 in (86.7 cm)</td>
<td>34.1 in (86.7 cm)</td>
</tr>
<tr>
<td>Depth</td>
<td>25.8 in (65.5 cm)</td>
<td>25.8 in (65.5 cm)</td>
<td>25.8 in (65.5 cm)</td>
<td>25.8 in (65.5 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>428 lbs (194 kg)</td>
<td>428 lbs (194 kg)</td>
<td>428 lbs (194 kg)</td>
<td>428 lbs (194 kg)</td>
</tr>
<tr>
<td><strong>Operating Range</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>10° to 35° C (50° to 95° F)</td>
<td>10° to 35° C (50° to 95° F)</td>
<td>10° to 35° C (50° to 95° F)</td>
<td>10° to 35° C (50° to 95° F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>10% - 80%</td>
<td>10% - 80%</td>
<td>10% - 80%</td>
<td>10% - 80%</td>
</tr>
<tr>
<td><strong>AC Mains Electrical Supply System Requirements</strong> (50 or 60 Hz)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 V, 110 V</td>
<td>20 A</td>
<td>N/A [2]</td>
<td>20 A</td>
<td>20 A</td>
</tr>
<tr>
<td>115 V, 120 V[1], 127 V[3]</td>
<td>15 A</td>
<td>20 A</td>
<td>15 A</td>
<td>15 A</td>
</tr>
<tr>
<td>200 V, 220 V, 230 V, 240 V</td>
<td>10 A</td>
<td>10 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) In North America, 120 VAC systems are required to have a 20% de-rating from the service or outlet rating on the system rating labels for current. Therefore, systems designed for use with 120 VAC @ 15 A service are labeled as 12 A, and systems designed for use with 120 VAC @ 20 A service are labeled as 16 A.

(2) Active Cooling systems are not available at 100 or 110 VAC. These require a 115-127 or 200-240 VAC electrical supply.

(3) 127 VAC tolerance -10% to +5%
Dimensions: C-arm

21 cm CFD Super C-arm

31 cm CFD Super C-arm

9” I.I. Standard C-arm

12” I.I. Standard C-arm
Dimensions: Workstation

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Product not available for sale in the United States.
Availability of select models and configurations varies by country.
Please contact your local sales representative.

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