**X-ray System**

**Generator**
- 60kHz high frequency
- 15kW power
- Up to 120kVp
- Up to 75mA for radiographic film exposure
- Continuous high level fluoro (HLF) up to 20mA
- Digital spot up to 75mA
- Digital cine pulse
  - 15 pulses per second, 60 Hz
  - 12 pulses per second, 50 Hz
  - Up to 150mA
  - 10ms pulse width
- Full power from standard wall outlet
- Patented battery buffered design

**X-ray Tube**
- Rotating anode X-ray tube
- 0.3 and 0.6 nominal focal spots
- Anode heat capacity: 300,000 HU
- Anode cooling rate: 85,000 HU/min.
- Housing heat capacity: 1,600,000 HU
- 9” (23cm) Standard C-arm housing cooling rate 15,000 HU/min.
- 9” (23 cm) Super C-arm and 12” (31 cm) standard C-arm housing cooling rate 22,500 HU/min.

**Digital Image Rotation**
- Digitally adjusts image display
- Image update
  - Image rotation
  - Image reversal (side-to-side)
  - Image invert (top-to-bottom)
- Image positioning without additional exposure

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

**Fluoro Mode**
- kVp range: 40 - 120
- mA range: 0.2 - 10 normal mode
  - 0.2 - 20 HLF (high level fluoro)
- Auto and manual fluoro modes
- AutoTrak™ ABS varies mA, kVp, camera gain

**Pulsed Fluoro Mode**
- kVp range: 40 - 120
- mA range: 0.2 - 10
- Pulse rate: 1, 2, 4, 8
- Pulse Width: 25 or 50ms
- AutoTrak™ ABS, mA, kVp, camera gain
- Reduces X-ray dose to patient and operator

**High Level Pulsed Fluoro**
- kVp range: 40 - 120
- mA range: 0.2 - 40 normal mode
  - 0.2 - 20 HLF (high level fluoro)
- Pulse rate: 1, 2, 4, 8
- Pulse width: 25 or 50ms
- AutoTrak™ ABS, mA, kVp, and camera gain

**Digital Cine Pulse Mode**
- kVp range: 40 - 120
- mA range: up to 150
- Pulse rate: 15 pps (60 Hz), 12 pps (50 Hz)
- Pulse width: 10ms
- AutoTrak™ ABS, mA, kVp, camera gain

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

**Radiographic Mode**
- mA range: up to 75
- mAs range: up to 300
- Computer controlled exposure time
- Optional Film Cassette Holder
  - 10” x 12” (24cm x 30cm) for 9” I.I.
  - 14” x 14” (35cm x 35cm) for 12” I.I.

**AutoTrak™ Automatic Brightness Stabilization (ABS)**
- Automatically seeks the subject anatomy anywhere within the imaging field and selects the optimum imaging technique
- Automatically adjusts to anatomical size and location
- Provides uniform image quality throughout entire image
- Simplifies operation

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

**12” Image Intensifier**
- Tri-mode 12”/9”/6” (31cm/23cm/15cm) image intensifier
- Minimum central resolution (at monitor):
  - 12” (31cm): 1.5 lp/mm
  - 9” (23cm): 2.1 lp/mm
  - 6” (15cm): 2.6 lp/mm
- DQE: 65% (typical)

**Video Imaging System**

**9” Image Intensifier**
- Tri-mode 9”/6”/4.5” (23cm/15cm/11cm) image intensifier
- Minimum central resolution (at monitor):
  - 9” (23cm): 2.1 lp/mm
  - 6” (15cm): 2.9 lp/mm
  - 4.5” (11cm): 3.4 lp/mm
- DQE: 65% (typical)

**Video Camera**
- High resolution 1k x 1k CCD camera
- Full frame capture
- Motorized rotation
- On-screen orientation indicator (real-time feedback without fluoror)
- Left-right image reversal
- Top-bottom image invert
Video Display
- Dual 19" (48cm) display anti-glare LCD flat panel monitors
  -7° up/10° down
  -Horizontal and vertical viewing angle 170°
- 800 CD/m² maximum brightness
- Touch screen system control
- 1280 x 1024 high resolution monitors

Configurations

ESP Platform
- 1k x 1k x 16 bit image processing
- Noise filter with on-screen indicator
- Real-time variable edge enhancement
- 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
- Customize functions
  - Workstation set-up
  - Mainframe set-up
  - Patient information set-up
  - Date/time set-up
  - DICOM 3.0 interface set-up
- Last image hold
- 400 image storage
- Integrated DICOM interface (store, print, worklist)
- HIPAA SecureView®
  - Password protection
  - Blank screen function
  - Delete all
- Zoom and roam function
- Image annotation
- Measurement software

PMCare Platform
Includes all the ESP features and:
- Real-time subtraction
- Roadmapping
- Peak opacification
- Re-registration
- Variable landmarking
- Mask save/recall
- Auto cine loop playback
- Digital cine pulse mode
  - 15 pulses/sec
  - Up to 150mA
  - 10ms pulse width
- 15fps Dynamic digital disk
  - Recording/playback rate: 1, 2, 4, 8, 15fps
  - Recording time: 10 minutes @ 15fps (time depends on record frame rate)

Vascular Platform
Includes all the ESP features and:
- Real-time subtraction
- Roadmapping
- Peak opacification
- Re-registration
- Variable landmarking
- Mask save/recall
- Auto cine loop playback
- Digital cine pulse mode
  - 15 pulses/sec
  - Up to 150mA
  - 10ms pulse width
- 15fps Dynamic digital disk
  - Recording/playback rate: 1, 2, 4, 8, 15fps
  - Recording time: 10 minutes @ 15fps (time depends on record frame rate)

Other Image Storage Options
- CD/DVD Writer digital interface (external)
- Integrated DICOM 3.0 interface

Hardcopy Options
- Integrated film/paper printer
  - No film developing required
  - 8" x 10" (20.3 cm x 25.5 cm)
  - Laser quality film/paper
  - Multi-format, 1, 2, 4 on 1
  - Multi-copy capability

User Interface
- Entire system is computer controlled and software upgradeable
- Touchscreen control simplifies operation
- Automated system operation requires minimum operator interface
- Multi-functional controls
  - Footswitch
  - IR remote (optional)
  - Hand-held control
- Simplified keyboard
- Multi-purpose image directory
  - Retrieve and review images
  - Compose hardcopy films
  - Copy images
- X-ray dose summary

Electrical
- Input power [60Hz or 50Hz]
  - 9800 Plus
    - 100V @ 20 A (Japan)
    - 120V @ 12 A
    - 200V, 220V, 230V, 240V @ 10A

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

<table>
<thead>
<tr>
<th>Description</th>
<th>ESP</th>
<th>PM Care</th>
<th>Vascular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard C-arm Assembly with 9”/6”/4.5” (23/15/11cm) I.I.</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Standard C-arm Assembly with 12”/9”/6” (31/23/15cm) I.I.</td>
<td>■</td>
<td>■</td>
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<tr>
<td>Super C-arm Assembly with 9”/6”/4.5” (23/15/11cm) I.I.</td>
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<tr>
<td>Rotating Anode X-ray Tube</td>
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<td>●</td>
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<tr>
<td>Tungsten Dual-Leaf Collimator</td>
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<tr>
<td>Iris Collimator</td>
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<tr>
<td>Pulsed Fluoro (up to 8pps)</td>
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<tr>
<td>Digital Subtraction Angiography(DSAI)</td>
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<td>Roadmapping</td>
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<td>Peak Opacification</td>
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<td>Re-Registration (Pixel Shift)</td>
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<td>Variable Landmark</td>
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<td>Digital Cine Pulse (15 PPS, Up to 150 mA)</td>
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<tr>
<td>Digital Spot</td>
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<td>High Level Pulsed Fluoro (up to 40 mA)</td>
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<td>Radiographic Film Mode</td>
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<tr>
<td>1k x 1k x 16 Bit Image Processing</td>
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<td>Image I.Q. (Smart Window/Smart Metal)</td>
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<td>Measurement Software</td>
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<td>Digital Image Rotation</td>
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<td>Noise Filtering (Averaging)</td>
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<td>Digital Zoom and Roam</td>
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<td>Real-time Edge Enhancement</td>
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<td>Image Annotation Function</td>
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<td>Multi-Purpose Image Directory</td>
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<td>X-ray Summary</td>
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<td>Floppy Disk Drive</td>
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<td>8fps Dynamic Disk</td>
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<td>15fps Dynamic Disk</td>
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<tr>
<td>9” I.I. (23cm) Laser Aimer/Image Localizer</td>
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<tr>
<td>12” I.I. (31cm) Laser Aimer/Image Localizer</td>
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<tr>
<td>IR Remote Control</td>
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<tr>
<td>CD/DVD Writer (external)</td>
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<td>Two Pedal Footswitch</td>
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<tr>
<td>MedRad/Nemoto Injector Interface Capability*</td>
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<tr>
<td>Room-In-Use Indicator Interface</td>
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<tr>
<td>HIPAA SecureView®</td>
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<tr>
<td>Sony Thermal Hardcopy Printers*</td>
<td>■</td>
<td>■</td>
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</tbody>
</table>

*Contact your sales representative for specific model options.

● = Standard feature
■ = Optional feature
Blank = Feature not available
# Physical Specifications

<table>
<thead>
<tr>
<th></th>
<th>9&quot; I.I. (23cm)</th>
<th>12&quot; I.I. (31cm)</th>
<th>Super C 9&quot; I.I. (23cm)</th>
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</thead>
<tbody>
<tr>
<td><strong>Mainframe</strong>*</td>
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<td></td>
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</tr>
<tr>
<td>System length</td>
<td>77.8 in (197.6 cm)</td>
<td>81.0 in (205.7 cm)</td>
<td>80.1 in (203.5 cm)</td>
</tr>
<tr>
<td>System height</td>
<td>69.7 in (177.0 cm)</td>
<td>73.8 in (187.5 cm)</td>
<td>71.7 in (182.1 cm)</td>
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<tr>
<td>System width</td>
<td>33.5 in (851 mm)</td>
<td>33.5 in (851 mm)</td>
<td>33.5 in (851 mm)</td>
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<tr>
<td>Weight</td>
<td>610 lbs (277 kg)</td>
<td>660 lbs (299 kg)</td>
<td>630 lbs (286 kg)</td>
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<tr>
<td><strong>C-arm</strong></td>
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<tr>
<td>SID</td>
<td>39.4 in (100.1 cm)</td>
<td>39.4 in (100.1 cm)</td>
<td>39.0 in (991 mm)</td>
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<tr>
<td>Free space in arc</td>
<td>31.5 in (800 mm)</td>
<td>31.5 in (800 mm)</td>
<td>31.0 in (787 mm)</td>
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<tr>
<td>Depth in arc</td>
<td>26.0 in (660 mm)</td>
<td>28.0 in (711 mm)</td>
<td>33.0 in (838 mm)</td>
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<tr>
<td>Orbital rotation</td>
<td>115° (90°/25°)</td>
<td>115° (90°/25°)</td>
<td>145° (90°/55°)</td>
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<td>Lateral rotation</td>
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<td>360° (180°/180°)</td>
<td>360° (270°/90°)</td>
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<td>Flip/flop</td>
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<td>180°/90°</td>
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<td>8.0 in (203 mm)</td>
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<td>Vertical travel</td>
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<td>18.0 in (457 mm)</td>
<td>18.0 in (457 mm)</td>
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<td><strong>Workstation</strong>*</td>
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<tr>
<td>Height</td>
<td>69.5 in (1765 mm)</td>
<td>69.5 in (1765 mm)</td>
<td>69.5 in (1765 mm)</td>
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<tr>
<td>Width</td>
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<td>34.5 in (876 mm)</td>
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<tr>
<td>Depth</td>
<td>27.25 in (692 mm)</td>
<td>27.25 in (692 mm)</td>
<td>27.25 in (692 mm)</td>
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<tr>
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<td>450 lbs (204 kg)</td>
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<td><strong>Operating Range</strong></td>
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<td>Temperature</td>
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<td>10° to 35°C</td>
<td>10° to 35°C</td>
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<tr>
<td>Humidity</td>
<td>20% - 80%</td>
<td>20% - 80%</td>
<td>20% - 80%</td>
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<td><strong>Electrical Service</strong></td>
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<td>120V</td>
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<td>200, 220V, 230V, 240V</td>
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</table>

* System in transport position.