



OEC Elite CFD

Premium Digital Mobile C-arm Technical Data

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



Workstation with 4K Display

21cm Ergo C-arm Model

31cm Super C-arm Model

Technical Specifications

Image Acquisition

21 cm CMOS Flat Panel Detector (CFD)	<ul style="list-style-type: none"> • Tri-mode 21 cm/15 cm/11 cm • Nominal resolution (at display): <ul style="list-style-type: none"> - 21 cm: 3.5 lp/mm - 15 cm: 3.6 lp/mm - 11 cm: 3.7 lp/mm • Active Matrix: 1536 x 1496 pixels • DQE(0): 72% • Pixel Pitch: 135.3 μm • Removable grid with on-screen detection status
31 cm CMOS Flat Panel Detector (CFD)	<ul style="list-style-type: none"> • Tri-mode 31 cm/21 cm/15 cm • Nominal resolution (at display): <ul style="list-style-type: none"> - 31 cm: 2.7 lp/mm - 21 cm: 2.8 lp/mm - 15 cm: 2.9 lp/mm • Active Matrix: 1548 x 1524 pixels • DQE(0): 72% • Pixel Pitch: 198.0 μm • Removable grid with on-screen detection status
Image Processing	<ul style="list-style-type: none"> • 1.5 k x 1.5 k x 16 bit
Generator	<ul style="list-style-type: none"> • 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 • Digital Cine pulse <ul style="list-style-type: none"> - 15 or 30 pulses per second - Up to 150mA - 9 ms pulse width • Full power from a standard wall outlet • Patented battery buffered design
X-ray Tube	<ul style="list-style-type: none"> • 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 • Housing cooling rate: <ul style="list-style-type: none"> - Super C: 34,000 HU/min (405W) - Ergo C: 22,500 HU/min (268W)

Digital Image Orientation	<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> - 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
PreView Collimator	<ul style="list-style-type: none"> • On-screen collimator position indication • PreView iris collimator • PreView Tungsten rotatable double leaf collimator • Adjust collimators without X-ray exposure
Fluoroscopy Mode	<ul style="list-style-type: none"> • kVp range: 40 - 120 • mA range: 0.2 - 10 normal mode 0.2 - 20 HLF • Auto and manual fluoroscopy modes • AutoTrak ABS, mA, kVp • Low dose mode
Pulsed Fluoroscopy Mode	<ul style="list-style-type: none"> • Pulse rate: 4, 8, 15 pps • Pulse width: 19 ms to 34 ms • kVp range: 40 - 120 • mA range: 0.2 - 28 normal mode 0.2 - 40 HLF • Auto and manual pulsed fluoroscopy modes • AutoTrak ABS, mA, kVp • Reduces X-ray dose to patient and operator • Low dose mode
Digital Cine Pulse Mode	<ul style="list-style-type: none"> • kVp range: 40 - 120 • mA range: up to 150 • Pulse rate: 15 or 30 pps • Pulse width: 9 ms • AutoTrak ABS, mA, kVp
Digital Spot Mode	<ul style="list-style-type: none"> • kVp range: 40 - 120 • mA range: up to 75 • Automatic exposure termination and automatic image save

Technical Specifications

Image Processing

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| Precision imaging with General Purpose Dynamic Range Management (GDRM) | <ul style="list-style-type: none">• Enhances anatomy of interest while attenuating background features• Preset Imaging Profiles<ul style="list-style-type: none">- 9900- General- Orthopedic- Spine- Vascular- Bolus Chase- Cardiac |
| AutoTrak Automatic Brightness Stabilization (ABS) | <ul style="list-style-type: none">• 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 Quality | <ul style="list-style-type: none">• Smart Window<ul style="list-style-type: none">- Dynamically senses the collimator position and automatically adjusts image brightness and contrast• Smart Metal<ul style="list-style-type: none">- 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<ul style="list-style-type: none">- Dense collimator limits X-ray exposure area- Reduces scatter radiation- Improves image detail |

Software Package

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|----------------------------------|--|
| Expanded Surgical Platform (ESP) | <ul style="list-style-type: none">• Preset Imaging Profiles<ul style="list-style-type: none">- 9900- 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<ul style="list-style-type: none">- Examination list- Customized patient information• Set-up functions<ul style="list-style-type: none">- Acquisitions- Image Profile- DICOM- Network- Regional- Security- Utilities• Last image hold• 40,000 image storage• USB export with DICOM viewer for displaying images on PC platforms<ul style="list-style-type: none">- Full-size or half-size- Web viewable- JPEG and BMP- DICOM compatible- OEC compatible- De-identify DICOM images- Remove patient information• HIPAA SecureView<ul style="list-style-type: none">- Password protection- Blank screen function- Delete all patient information• Zoom and pan function• Image annotation• Measurement<ul style="list-style-type: none">- Distance- Angles- Percent stenosis• On-screen free hand image marking<ul style="list-style-type: none">- Mark or draw on images directly |
|----------------------------------|--|

Technical Specifications

PMCare	Includes all ESP software features plus: <ul style="list-style-type: none">• Real-time digital subtraction (DSA)• Peak opacification• 40,000 image storage• Up to 8 fps Cine<ul style="list-style-type: none">- Recording/playback rate: 4, 8 fps- Minimum recording time: 30 minutes- Automatic image playback- Frame-by-frame review
Basic Vascular	Includes all PMCare software features plus: <ul style="list-style-type: none">• Vascular preset imaging profile• Roadmapping• Re-registration• Variable landmarking• Mask save/recall
Vascular 15	Includes all Basic Vascular software features plus: <ul style="list-style-type: none">• Digital Cine pulse mode<ul style="list-style-type: none">- 15 pulses/sec- Up to 150mA- 9 ms pulse width• Up to 15 fps Cine<ul style="list-style-type: none">- Recording/playback rate: 4, 8, 15 fps- Minimum recording time: 60 minutes- Automatic image playback- Frame-by-frame review
Vascular MTS	Includes all Vascular 15 software features plus: <ul style="list-style-type: none">• Bolus chase preset imaging profile with Motion Tolerant Subtraction (MTS)• Digital Cine pulse mode<ul style="list-style-type: none">- 30 pulses/sec- Up to 150mA- 9 ms pulse width• Up to 30 fps Cine<ul style="list-style-type: none">- Recording/playback rate: 4, 8, 15, 30 fps- Minimum recording time: 60 minutes- Automatic image playback- Frame-by-frame review
Cardiac	Includes all Vascular MTS software features plus: <ul style="list-style-type: none">• Cardiac preset imaging profile• Three pedal footswitch

Workstation

Connectivity	<ul style="list-style-type: none">• Ethernet - one port• Room interface - one port• Video Output:<ul style="list-style-type: none">- DVI-I (full screen requires dual link cable) - one port- Display port interfaces (configurable to left, right, full screen) - two ports• Video Input:<ul style="list-style-type: none">- DVI-D interface (PIP displays on right screen) - one port• USB - three ports• Wireless Data Transfer (optional)<ul style="list-style-type: none">- Dual Band (2.4GHz and 5GHz)- Enterprise security - WPA, WPA2, PEAP• Printers: Integrated film/paper/thermal (optional)
4K Image Display	<ul style="list-style-type: none">• 32 in (81cm) Ultra high definition (UHD) Color Display• Anti-reflection, anti-fingerprint• Optically bonded cover glass• Display mounted on an articulating arm<ul style="list-style-type: none">- 45 in (114 cm) horizontal travel- 17 in (43 cm) vertical travel- 27 in (69 cm) forward travel- 5° up/5° down tilt- Display viewable from all four sides of workstation- Horizontal and vertical viewing angle 170°• 600 cd/m² maximum brightness• Touch Screen system control• 3840 x 2160 UHD display• Integrated PIP window to display color DVI-D input

Technical Specifications

User Interface

- Touchscreen control simplifies operation
- Automated system operation requires minimum operator interface
- Multi-functional controls
 - Footswitch
 - Handheld 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

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|-------------------------|---|
| C-arm Positioning Aides | <ul style="list-style-type: none">• Integrated laser aimer Class IIIa/3R• Motorized vertical lift |
| TechView Monitor | <ul style="list-style-type: none">• 10.4" (26 cm) display, LCD flat panel monitor mounted on mainframe<ul style="list-style-type: none">- 270° side/side rotation- 30° up/ 5° down tilt- Horizontal viewing angle 80°- Vertical viewing angle 70°• 800 x 600 resolution monitor |
| Uninterruptible Power | <ul style="list-style-type: none">• Controlled shutdown• Power monitoring and display• Accidental power loss protection<ul style="list-style-type: none">- 20 seconds battery back-up power to workstation and C-arm |
| Operating Range | <ul style="list-style-type: none">• Temperature Range 10° to 35° C (50° to 95° F)• Humidity Range 10% to 80% |
| Regulatory Compliance | <ul style="list-style-type: none">• U.S. 21 CFR Subchapter J• NFPA 99• ANSI/AAMI 60601-1 (CSA/NRTL)• IEC 60601-1 (plus relevant Collateral and Particular Standards) |

System Configuration

	ESP	PMCare	Basic Vascular	Vascular 15	Vascular MTS	Cardiac
Super C- 34,000 HU/min (405W)	●	●	●	●	●	21 cm only
Ergo C - 22,500 HU/min (268W)	●	●	●	●	●	
4K Image Display	●	●	●	●	●	●
Rotating Anode X-ray tube	●	●	●	●	●	●
Dual Leaf collimator	●	●	●	●	●	●
Iris collimator	●	●	●	●	●	●
1.5k x 1.5k x 16 Bit Image Processing	●	●	●	●	●	●
Smart Metal	●	●	●	●	●	●
Measurement Software	●	●	●	●	●	●
Digital Image Rotation	●	●	●	●	●	●
Noise Filtering (averaging)	●	●	●	●	●	●
Minimal Difference Spatiotemporal Noise Filter	●	●	●	●	●	●
Digital Zoom and Roam	●	●	●	●	●	●
General Dynamic Range Management (GDRM)	●	●	●	●	●	●
Image Annotation Function	●	●	●	●	●	●
Freehand Marking Tool	●	●	●	●	●	●
Multi-Purpose Image Directory	●	●	●	●	●	●
Radiation Dose Summary Report (RDSR)	●	●	●	●	●	●
Static Image Storage	40,000	40,000	40,000	40,000	40,000	40,000
TechView Monitor	●	●	●	●	●	●
Detector Side Laser Aimer	●	●	●	●	●	●
Integrated DICOM interface	●	●	●	●	●	●
Footswitch	Two pedal	Two pedal	Two pedal	Two pedal	Two pedal	Three pedal
Hand Control	●	●	●	●	●	●
Injector Interface Capability		●	●	●	●	●
Room-in-Use Indicator Interface	●	●	●	●	●	●
Patient Privacy Control	●	●	●	●	●	●
Sony Thermal Hardcopy Printers (optional)	●	●	●	●	●	●

System Configuration

	ESP	PMCare	Basic Vascular	Vascular 15	Vascular MTS	Cardiac	Preset Image Profile
9900	●	●	●	●	●	●	
General	●	●	●	●	●	●	
Orthopedic	●	●	●	●	●	●	
Spine	●	●	●	●	●	●	
Vascular			●	●	●	●	
Bolus Chase					●	●	
Cardiac						●	
Digital Spot	●	●	●	●	●	●	
Fluoro Mode (PPS)	4, 8, Continuous	4, 8, Continuous	4, 8, Continuous	4, 8, 15, Continuous	4, 8, 15, Continuous	4, 8, 15, Continuous	
High Level Fluoro Mode (PPS)	4, 8, Continuous	4, 8, Continuous	4, 8, Continuous	4, 8, 15, Continuous	4, 8, 15, Continuous	4, 8, 15, Continuous	
Digital Subtraction Mode (PPS)		8, Continuous	8, Continuous	8, 15, Continuous	8, 15, Continuous	8, 15, Continuous	
Digital Cine Pulse Mode (PPS)				15	15, 30	15, 30	
Peak Opacification		●	●	●	●	●	
Roadmapping			●	●	●	●	
Re-Registration (Pixel Shift)			●	●	●	●	
Variable Landmark			●	●	●	●	
4 fps		60 minutes	60 minutes	240 minutes	480 minutes	480 minutes	
8 fps		30 minutes	30 minutes	120 minutes	240 minutes	240 minutes	
15 fps				60 minutes	120 minutes	120 minutes	
30 fps					60 minutes	60 minutes	
							Cine Record Time

Physical Specifications

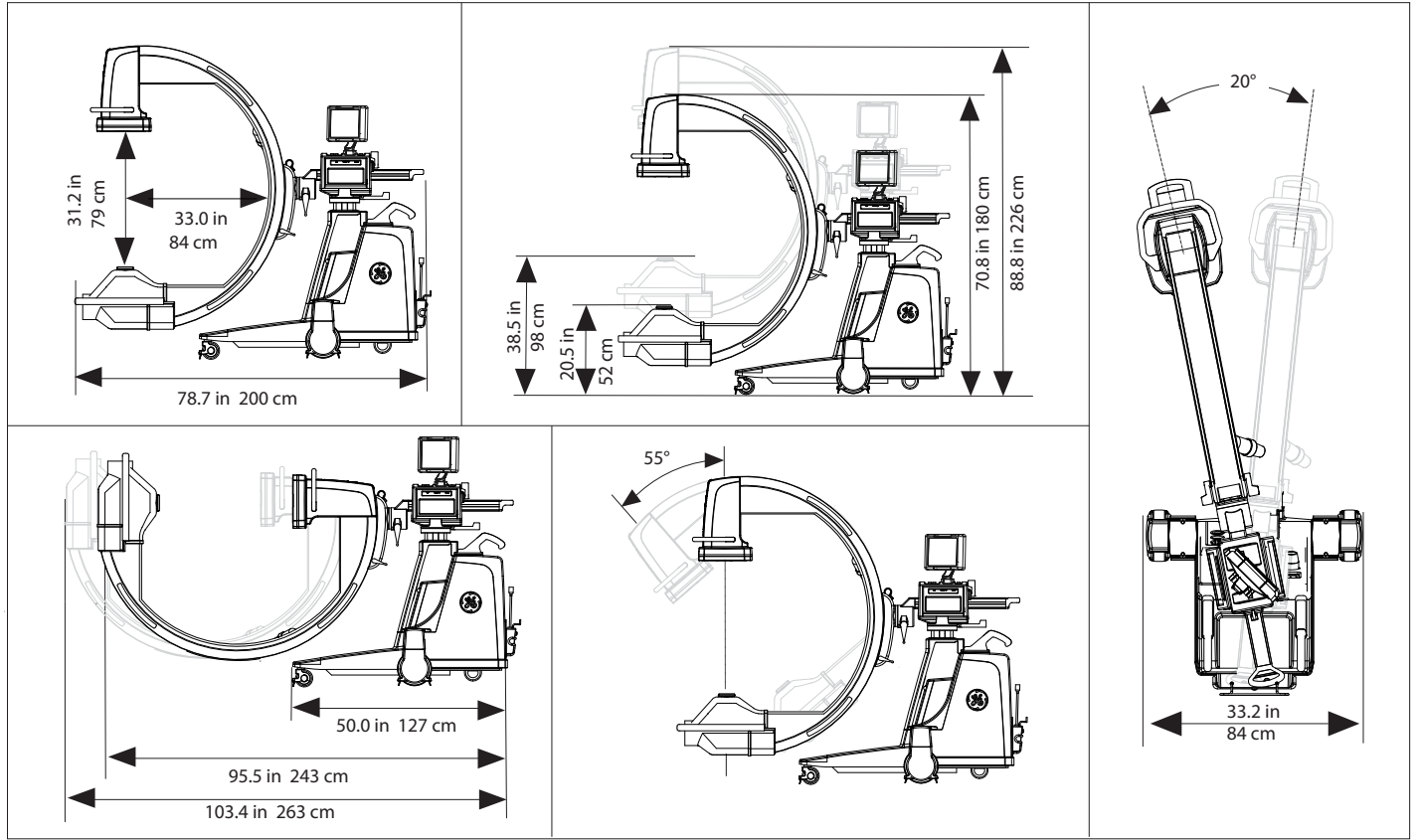
	21 cm Super C-arm	31 cm Super C-arm	21 cm Ergo C-arm	31 cm Ergo C-arm
Mainframe				
Length	78.7 in (200 cm)	78.7 in (200 cm)	80.0 in (203 cm)	80.0 in (203 cm)
Height	70.8 in (180 cm)	70.8 in (180 cm)	64.5 in (164 cm)	64.5 in (164 cm)
Width	33.2 in (84 cm)	33.2 in (84 cm)	33.2 in (84 cm)	33.2 in (84 cm)
Weight	635 lbs (288 kg)	654 lbs (297 kg)	644 lbs (292 kg)	653 lbs (296 kg)
C-arm				
SID	39.4 in (100 cm)	39.4 in (100 cm)	39.4 in (100 cm)	39.4 in (100 cm)
Lateral height	42.3 in (107 cm)	42.3 in (107 cm)	39.0 in (99 cm)	39.0 in (99 cm)
Free space in arc	31.2 in (79 cm)	31.2 in (79 cm)	31.2 in (79 cm)	31.2 in (79 cm)
Depth in arc	33.0 in (84 cm)	33.0 in (84 cm)	26.5 in (67 cm)	26.5 in (67 cm)
Orbital rotation	145° (90°/55°)	145° (90°/55°)	152° (97°/55°)	152° (97°/55°)
Lateral rotation	360° (90°/270°)	360° (90°/270°)	360° (180°/180°)	360° (180°/180°)
Flip/flop	N/A	N/A	360° (180°/180°)	360° (180°/180°)
Wig/wag	20°	20°	20°	20°
Horizontal travel	8.0 in (20 cm)	8.0 in (20 cm)	8.0 in (20 cm)	8.0 in (20 cm)
Vertical travel	18.0 in (46 cm)	18.0 in (46 cm)	18.0 in (46 cm)	18.0 in (46 cm)
Workstation				
Height	68.1 in (173 cm)	68.1 in (173 cm)	68.1 in (173 cm)	68.1 in (173 cm)
Width	34.1 in (87 cm)	34.1 in (87 cm)	34.1 in (87 cm)	34.1 in (87 cm)
Depth	25.8 in (66 cm)	25.8 in (66 cm)	25.8 in (66 cm)	25.8 in (66 cm)
Weight	428 lbs (194 kg)	428 lbs (194 kg)	428 lbs (194 kg)	428 lbs (194 kg)
AC Mains Electrical Supply System Requirements (50 or 60 Hz)				
100 V, 110 V	20 A	20 A	20 A	20 A
115 V, 120 V ⁽¹⁾ , 127 V ⁽²⁾	15 A	15 A	15 A	15 A
200 V, 220 V, 230 V, 240 V	10 A	10 A	10 A	10 A

(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.

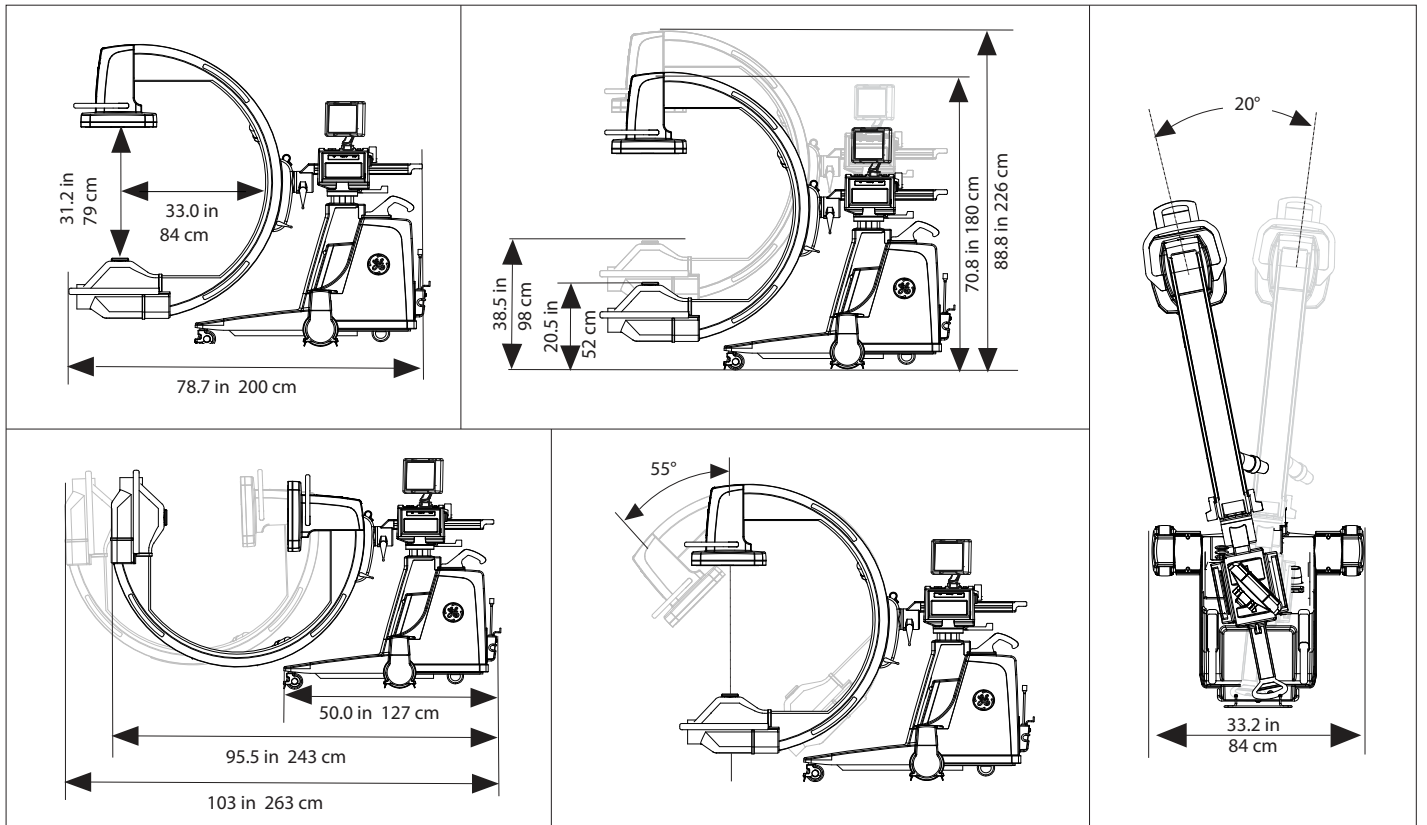
(2) 127 VAC tolerance -10% to +5%

C-arm Dimensions

21 cm CFD Super C-arm

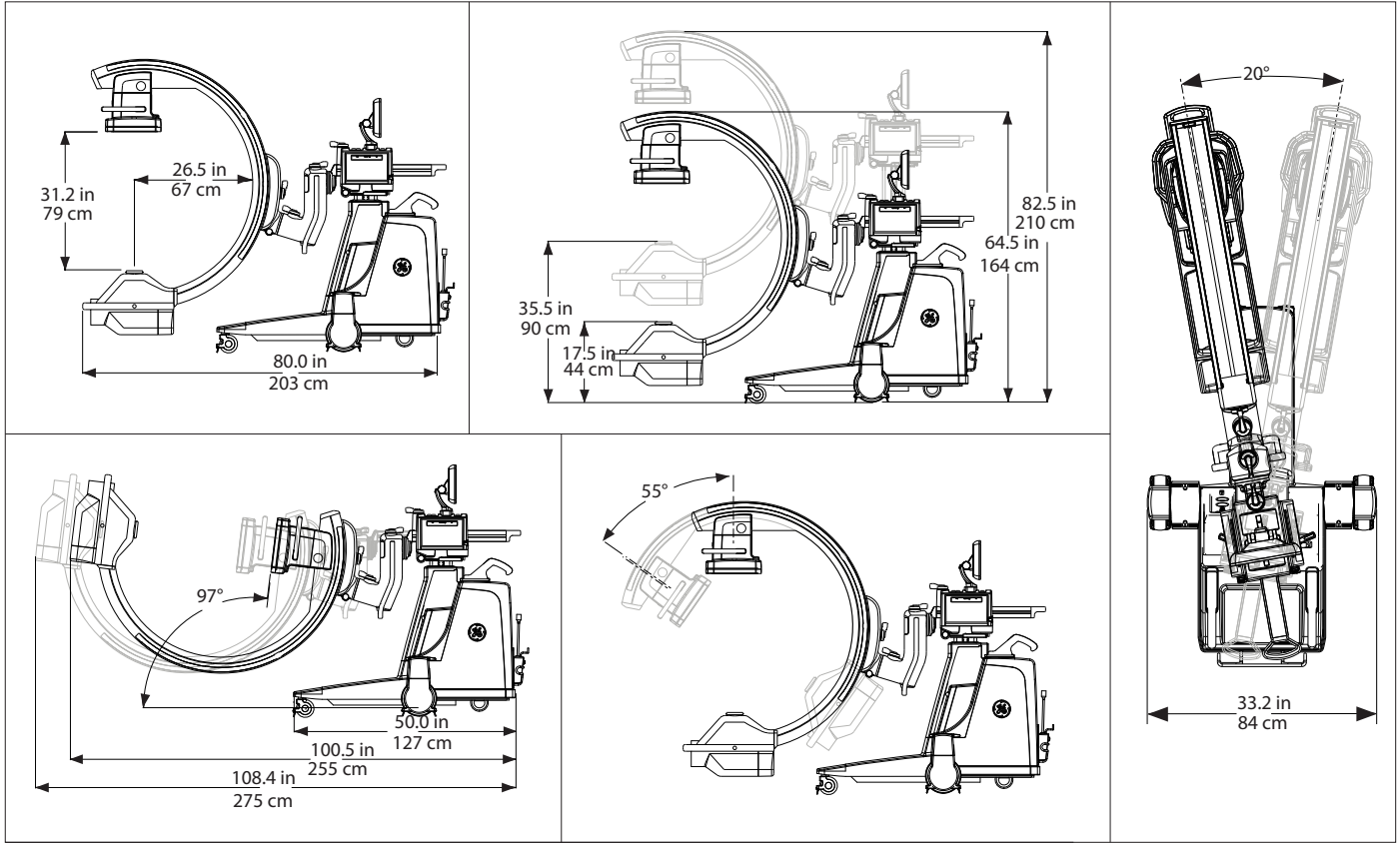


31 cm CFD Super C-arm

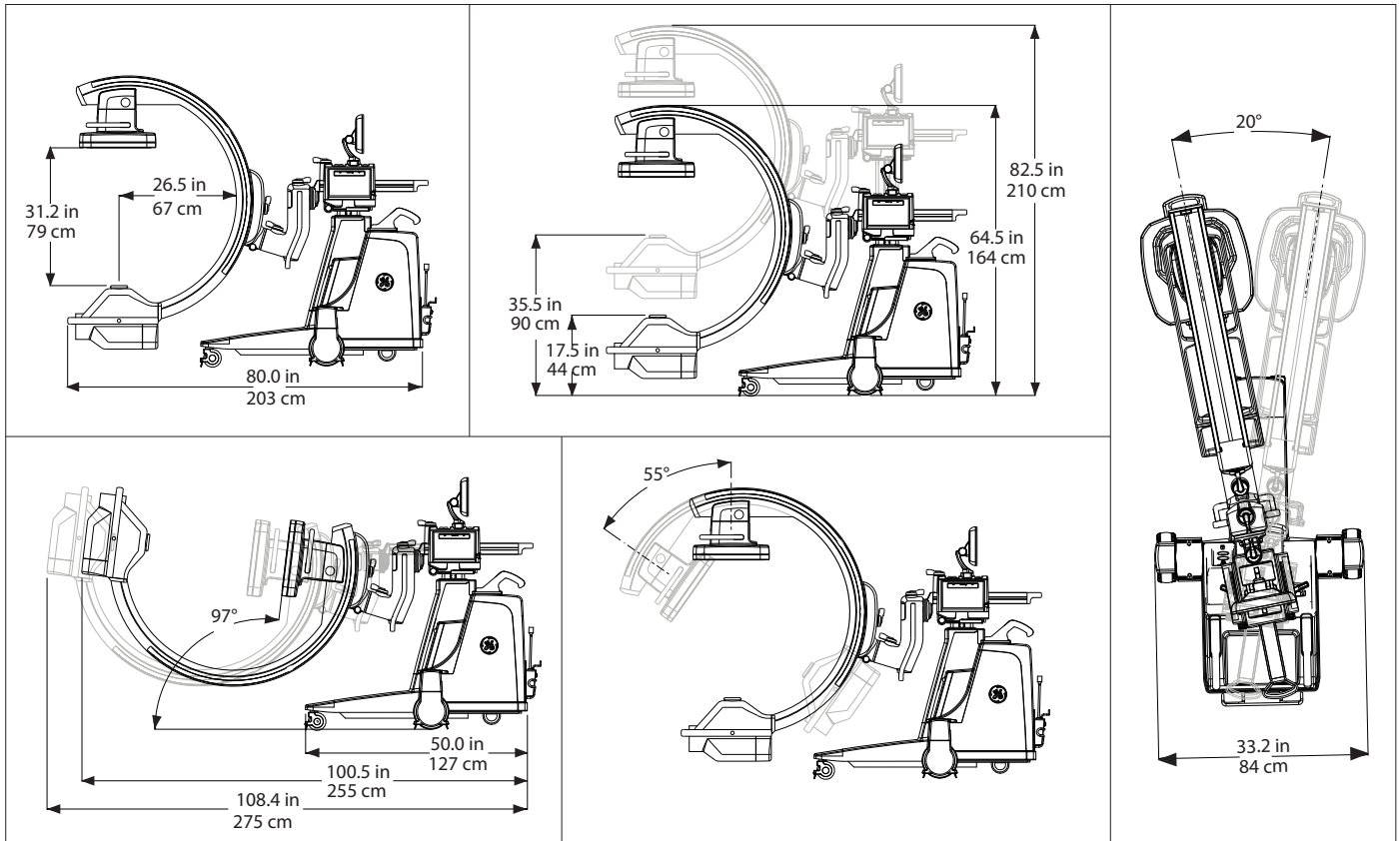


C-arm Dimensions

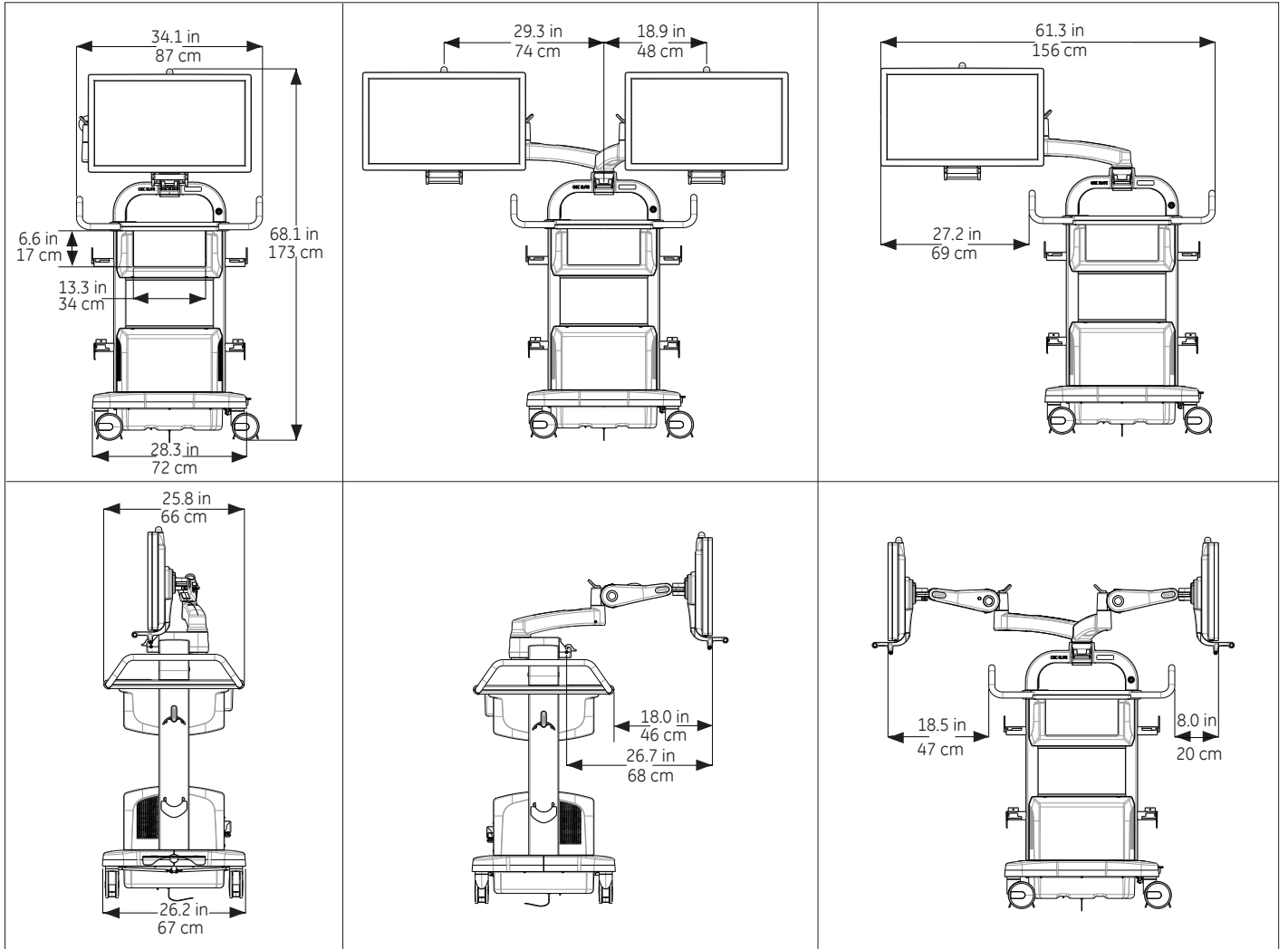
21 cm CFD Ergo C-arm



31 cm CFD Ergo C-arm



Workstation Dimensions





Availability of select models, configurations, and options varies by country.
Please contact your local sales representative.

Imagination at work

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