SHIMADZU

PRODUCT DATA

Mobile X-ray System

MobileArt Evolution

MX8 Version

GENERAL

The MobileArt Evolution is a general purpose mobile X-ray system, which can be freely moved throughout a hospital to directly obtain X-ray images of various areas of the body.

The TM and ® symbols are omitted in this document.

FEATURES

(1) Great Forward Visibility
During travel the collapsible column and compact X-ray tube design does not obstruct visibility.

(2) Intuitive Maneuverability
The system provides natural, responsive light touch driving capabilities.

(3) Easy Positioning (All free function)
"All Free" buttons enable one-step positioning by releasing electromagnetic locks of arm and column at the same time.

(4) Wide Exposure Coverage
The system is useful for imaging in confined andlimited spaces of numerous equipment with broadexposure range.

(5) Inch-Mover
The main unit can be moved forward or backward by simply operating form the collimator without technologist's moving around the patient bed.

(6) Status Indicator
The color-coded indicator lamps illuminate or blink in response to X-ray exposures or system abnormalities.

(7) High Frequency Inverter
Using a high-frequency inverter, with a maximum frequency of 60kHz, the system can obtain high and efficient X-ray generation with low-ripple.

(8) Bright irradiation field
LEDs have been adopted as the light source to indicate the irradiation field, helping imaging in a bright room or in the daytime.

(9) Wireless Features
Wireless exposure switch or Infrared remote controller allows you to perform exposures remotely for even more ease-to-use(option).

(10) Dose Management
Area dose is calculated before exposure to display estimated dose value on the console. After exposure, it shows recalculated value based on actual conditions of exposure area and parameter.

CONFIGURATION

(1) Inverter type high voltage generator
(2) X-ray tube unit
(3) Collimator
(4) Cart

OPTION

(1) Wireless exposure switch
(2) Protective screen (folding)
(3) Dose area product (DAP) meter mount kit (*1)
(4) Keyless entry
(5) Luminous hand switch
(6) Additional hand switch
(7) Adjustable handle kit
(8) Decoration Label : Sweet Animals
(9) IR Remote Controller

(*1) Physical DAP meter can substitute calculated dose function, when needed.

SPECIFICATIONS

Power Supply

Item		Specification
When Powered by Battery	Power Supply	Internal battery
	Battery Type	Sealed lead storage battery (12 V x 20 cells)
When Charging Battery	Phase	Single phase AC
	Supply Frequency	50/60 Hz
	Supply Voltage	100, 110, 120, 200, 220, 230, 240 V AC (Set to one of the voltages when installing)
	Power Supply Rating	1 kVA
	Supply Impedance	Single phase 100, 110, 120 V AC: 1.0 Ω max.
		Single phase 200, 220, 230, 240 V AC: 4.0 Ω max.
	Ground Resistance	Ground terminal: 100 Ω max.
		Additional ground terminal: 100Ω max.
Power Cable Length		4 m

High-Voltage Generator

Item			Specification 32 kW type	12.5 kW type
Max. Electric Power			32 kW (100 kV, 320 mA, 20 ms / 80 kV, 500 mA, 20 ms)	12.5kW (100 kV,125 mA, 0.1 sec)
Ratings	Nominal maximum tube voltage and maximum tube current where nominal maximum tube voltage output is possible		133 kV, 200 mA	125 kV, 100 mA
	Maximum tube current and maximum tube voltage where maximum tube current output is possible		500 mA, 80 kV	160 mA, 80 kV
	Combination of tube voltage and tube current that outputs maximum electrical power		0.32 mAs	
	Maximum current-time product		500 mAs	
	Exposure time		0,001-10 sec	3.2 msec
Current-Time Product Settings Possible at Given Radiography Voltage			40 - 90 kV: 0.32 to 500 mAs 91 - 100 kV: 0.32 to 320 mAs 101 - 110 kV: 0.32 to 250 mAs 111 - 120 kV: 0.32 to 220 mAs 121 - 133 kV: 0.32 to 200 mAs	
Tube Voltage Setting Range and Display *1		Setting Range	40 kV to 150 kV, in 1 kV increments	40 kV to 125 kV, in 1 kV increments
		Display	Digital	
Current-Time Product Setting Range and Display		Setting Range	0.32, 0.36, 0.40, 0.45, 0.50, 0.56, 0.63, 0.71, 0.80, 0.90, 1.0, 1.1, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.5, 2.8, 3.2, 3.6, 4.0, 4.5, 5.0, 5.6, 6.3, 7.1, 8.0, 9.0, 10, 11, 12, 14, 16, 18, 20, 22, 25, 28, 32, 36, 40, 45, 50, 56, 63, 71, 80, 90, 100, 110, 125, 140, 160, 180, 200, 220, 250, 280, 320, 500 mAs	
		Display	Digital	
Anatomical Programs			144 types	

*1: The various conditions are as follows (conform to IEC-standards):
Tube voltage (within +/- 10 %), Tube current (within +/- 20 %)
mAs within +/- (10 % + 0.2 mAs), Time within +/- (10 % + 1 ms)

X-ray Tube Unit

Item		Specification	
		32kW type	12.5kW type
Model		0.7/1.3U163C-36	0.7U161CS-36
Nominal Focal Spot Size		0.7/1.3 mm	0.7 mm
Target Angle		16 degrees	
Nominal Max. Tube Voltage	Radiography	133 kV	125 kV
X-ray Tube Unit (tube and housing)	Max. Heat Content	750 kJ (1060 kHU)	
	Max. Continuous Heat Dissipation Rate	120 W (170 HU/s)	
X-ray Tube (tube only)	Max. Anode Heat Content	210 kJ (300 kHU)	100 kJ (140 kHU)
	Max. Anode Heat Dissipation Rate	800 W (1130 HU/s)	360 W (510 HU/s)
	Max. Continuous Heat Dissipation Rate	210 W (300 HU/s)	180 W (250 HU/s)
Minimum Inherent Filtration *1		2.0 mmAl equivalent at 75 kV	
Mass		12.8 kg	12.5 kg

*1: The minimum inherent filtration of the entire system is 2.5 mmAl equivalent at 75 kV or higher for both the X-ray tube unit and collimator.

Collimator

Item		Specification
Model		R-20C
Field	Shape	Rectangular
	Max. Field	430 mm x 430 mm at SID 1 m
	Min. Field	0 mm x 0 mm (leaves closed)
Illumination Field	Average Illumination	160 lx min.
	Illuminance Ratio	3 min.
	Precision	2% of SID
	Center Indicator	Cross hairs
	Type of Lamp	LED
	Illumination Period	30 seconds max., with automatic off timer
Field Size Indicator	SID Display	1 m, 1.5 m, 1.8 m
	Dimensions Display	20 (8), 23 (9), 25 (10), 28 (11), 30 (12), 36 (14), 43 (17) cm (in.)
Leaf Movement		Manual
Minimum Inherent Filtration *1		1.0 mmAl equivalent at 75 kV
Focal Length (distance between focal spot and collimator attachment surface, when installed)		56 mm
Rotation Range Around the X-ray Axis		+/- 90 degrees
External Dimensions		202 mm x 211 mm x 170 mm

*1 The minimum inherent filtration of the entire system is 2.5 mmAl equivalent at 75 kV or higher for both the X-ray tube unit and collimator.

X-ray Tube Support and Cart

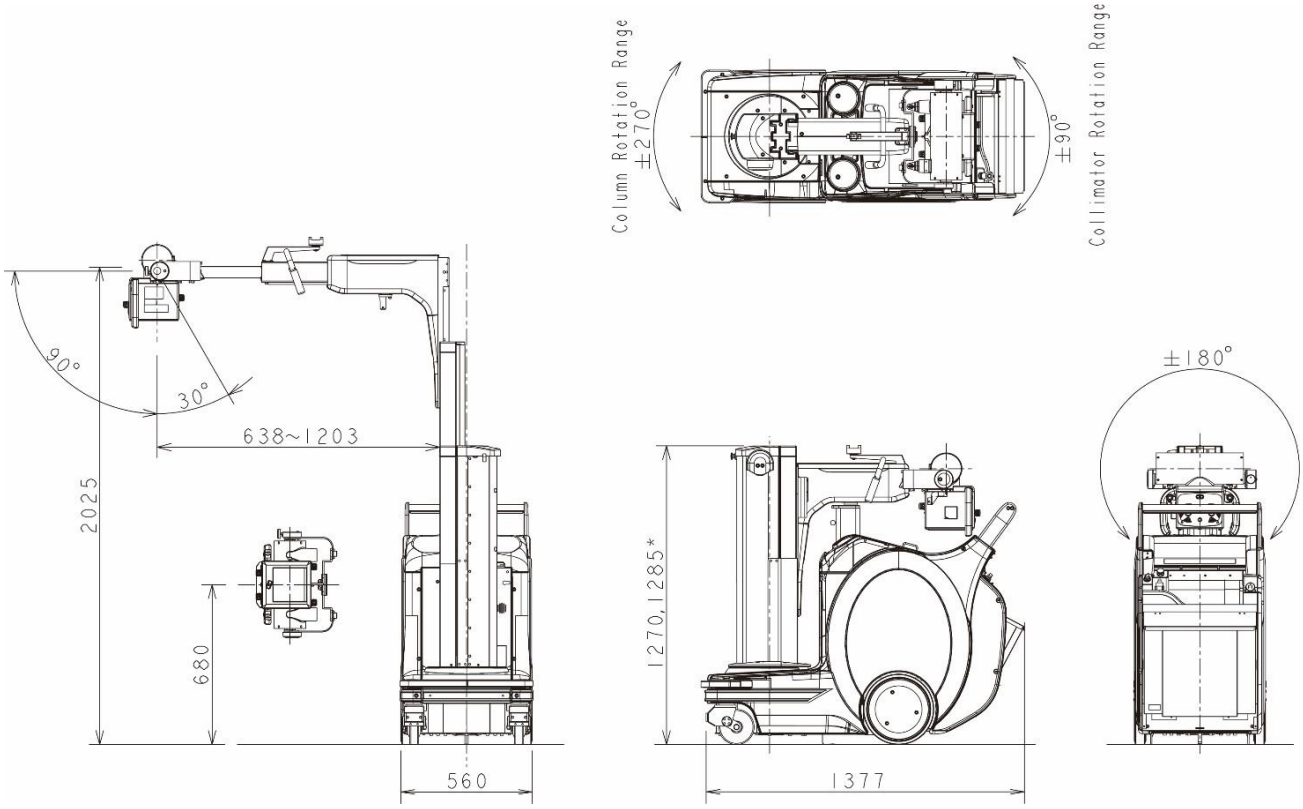
Item	Specification
Focal Spot Height	680 mm to 2025 mm
Arm Length	638 mm to 1203 mm
Column Rotation Range	+/- 270 degrees
X-ray Tube Unit Rotation Angle	+/- 180 degrees
X-ray Tube Unit Axial Rotation	Forward 90 degrees, backward 30 degrees
Total Width	560 mm
Total Length	1377 mm (For system with Cassette storage case) 1285 mm (For system with FPD storage case)
Height of Column	1270 mm (Standard) 1285 mm (When the dose area product meter (option) is equipped)
Mass	High Power Type (32 kW): 335 kg Standard Type (12.5 kW): 300 kg
Maximum Travel Speed	Approx. 5 km/h (Maximum instantaneous travel speed: 6 km/h, may vary depending on condition)

Operating Environment

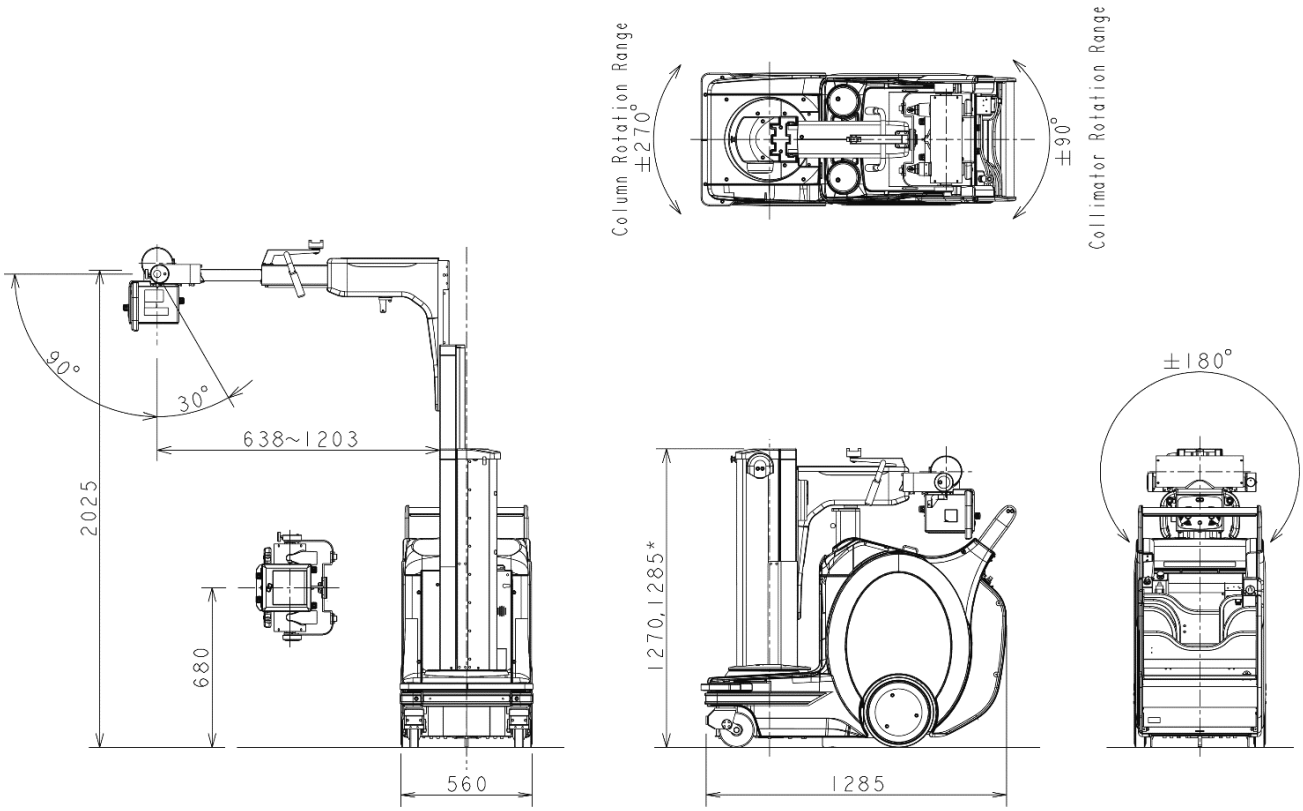
Item	Specification
General	The system which is used in hospitals, corridor, patient room etc.
Ambient Temperature	10 to 40 degrees C
Relative Humidity	35 to 80 % (with no condensation)
Atmosphere	No explosive or corrosive gases
Atmospheric Pressure	800 to 1060 hPa
Environment Luminosity	150 to 500 lx
Condition of Visibility	Ambient brightness is 100 lx min., 800 lx max.
Frequency of Use	15,000 exposures / year

DIMENSIONS unit:mm

The system with Cassette Storage case:



The system with FPD Storage case choice:



*) When the dose area product meter (option) is equipped

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Label Description: Mobile X-ray System MobileArt Evolution

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Remarks:

- Every value in this document is a standard value, and it may vary a little from the actual at each site.
- The appearances and specifications are subject to change for reasons of improvement without notice.
- Items and components in the photos may include optional items. Please confirm with your sales representative for details.
- Certain configurations may not be available pending regulatory clearance.
- Contact your sales representative for information on specific configurations.
- Before operating this system, you should first thoroughly review the Instruction Manual.