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.
FEATURES

(1) Smooth and Quiet Movement
Power-assist technology allows moving the unit easily and quietly.

(2) Compact Design
Excellent forward visibility allows freely moving through even tight spaces.

(3) Easy Positioning
The system can be freely and quickly maneuvered into position using Inch-Mover buttons to move the main body and swiveling the column to move the X-ray tube.

(4) Standard Anatomical Programs
Anatomical programs (APR) are installed as standard, to allow setting radiography parameters easily.

(5) Cordless System
The built-in battery enables obtaining X-ray images without plugging in the unit.

(6) Status Indicator Light
The status indicator light illuminates or blinks in response to X-ray exposure or system abnormalities. This allows a visual confirmation of system status.

(7) FPD upgradeable (32 kW type only)

SPECIFICATIONS OF MAIN UNIT

(1) Rating
- Maximum tube voltage:
  32 kW type: 133 kV
  12.5 kW type: 125 kV
- Maximum tube current:
  32 kW type: 400mA
  12.5 kW type: 160mA
- Maximum power:
  32 kW type: 32 kW (20 msec)
  12.5 kW type: 12.5 kW (0.1 sec.)
- Nominal power:
  32 kW type: 16 kW (0.1 sec.)
  12.5 kW type: 12.5 kW (0.1 sec.)

(2) Power supply
  batteries: 12 V x 20 pcs

(3) Adjustment of tube voltage
  32 kW type: 40 to 133 kV in increment of 1 kV
  12.5 kW type: 40 to 125 kV in increment of 1 kV

(4) Setting of mAs
  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 mAs

(5) Maximum mAs for each kV

32 kW type:
- a) In case of General radiography
  - Large focus:
    - 40 to 90 kV: 320 mAs
    - 91 to 100 kV: 280 mAs
    - 100 to 110 kV: 220 mAs
    - 110 to 133 kV: 200 mAs
- Small focus:
  - 40 to 90 kV: 320 mAs
  - 91 to 100 kV: 280 mAs
  - 101 to 110 kV: 220 mAs
  - 111 to 133 kV: 200 mAs

12.5 kW type:
- a) In case of General radiography
  - Large focus:
    - 40 to 90 kV: 320 mAs
    - 91 to 100 kV: 280 mAs
    - 101 to 110 kV: 220 mAs
    - 111 to 125 kV: 200 mAs
- Small focus:
  - 40 to 90 kV: 320 mAs
  - 91 to 100 kV: 280 mAs
  - 101 to 110 kV: 220 mAs
  - 111 to 133 kV: 200 mAs

b) In case of FPD device radiography (after FPD upgrade)
- Large focus:
  - 40 to 50 kV: 200 mAs
  - 51 to 60 kV: 160 mAs
  - 61 to 80 kV: 125 mAs
  - 81 to 100 kV: 100 mAs
  - 101 to 125 kV: 80 mAs
  - 126 to 133 kV: 50 mAs
- Small focus:
  - 40 to 60 kV: 160 mAs
  - 61 to 80 kV: 125 mAs
  - 81 to 100 kV: 100 mAs
  - 101 to 125 kV: 80 mAs
  - 126 to 133 kV: 50 mAs

(6) Minimum exposure time:
  32 kW type: 1.0 msec.
  12.5 kW type: 3.2 msec.

(7) Anatomical program:
  32 kW type: Total 72
  (Upgrade single FPD unit: Total 144)
  (Upgrade dual FPD unit: Total 216)

12.5 kW type: Total 72

(8) X-ray tube focal spot size
  32 kW type: 0.7/1.3 mm
  12.5 kW type: 0.7 mm

(9) Max. size of X-ray field:
  43 cm x 43 cm (SID 1 m)

(10) Minimum inherent filtration
  X-ray tube assembly:
  Equivalent to 1.5 mmAl, measured at 70 kV
  Collimator:
  Equivalent to 1.0 mmAl, measured at 70 kV

(11) Drive
  Drive speed:
  Forward & Backward: Approx. 5 km/h (Max.)
  Grade ability: Maximum 7 degree

(12) This unit is not explosion-proof type.
SPECIFICATIONS OF X-RAY TUBE ASSEMBLY

(1) Nominal X-ray tube voltage:
   32 kW type: 133 kV
   12.5 kW type: 125 kV

(2) Nominal focal spot
   32 kW type
      Large focus: 1.3 mm
      Small focus: 0.7 mm
   12.5 kW type: 0.7 mm

(3) Max. X-ray tube anode heat capacity: 300 kHU (210 kJ)

(4) Max. X-ray tube anode heat dissipation rate: 1130 HU/s (800 W)

(5) Max. X-ray tube continuous heat input: 300 HU/s (210 W)

(6) Max. X-ray tube assembly heat content: 1060 kHU (750 kJ)

(7) Max. X-ray tube assembly continuous heat input: 170 HU/S (120 W)

(8) Nominal anode input power
   20 msec: 0.1 msec.
      Large focus: 36.4 kW 30.5 kW
      Small focus: 19.9 kW 16.8 kW

(9) Max. filament voltage: 15 V

(10) Max. filament current: 5.6 A

(11) Target material:
     Rhenium-tungsten faced on molybdenum

(12) Target angle: 16 degrees

(13) Focal track diameter: 58 mm

(14) Anode rotation:
     Direction of anode rotation is counter-clockwise as viewed from cathode side.
     32 kW type:
        RPM is 70 Hz: 3800 rpm (min-1) or more.
        12.5 kW type:
        RPM is 60 Hz: 3200 rpm (min-1) or more.

(15) Inherent filtration:
     Min. 1.5 mm Al at 70 kV

(16) X-ray protection:
     Less than 0.87 mGy (2.58 x 10^-5 C/kg) in an hour at distance of 1 m from focus.

(17) Min. ambient temperature: -10°C

(18) Weight: Approx.
     32 kW type: 12.8 kg
     12.5 kW type: 13 kg

Remarks:

*1 This is max. value which can be used at the time of adjustment of tube current.

*2

32 kW type:
   Conditions of detection for the leakage radiation are
   (1) Max. used tube input 125 kV, 120 W continuously.
   (2) Repeated radiographic loading to keep the average load to be 100 W (141 HU/s) at the max. voltage.

12.5 kW type:
   Conditions of detection for the leakage radiation are
   (1) Max. used tube input 125 kV, 160 W continuously.
   (2) Repeated radiographic loading to keep the average load to be 71 W (100 HU/s) at the max. voltage.

CONFIGURATION

(1) Inverter type high voltage generator

(2) X-ray tube unit
   32 kW type: 0.7/1.3U163C-36
   12.5 kW type: 0.7U163CS-36

(3) Collimator
   R-20C

(4) Cart

OPTION

(1) Remote controller
(2) Protective screen (folding)
(3) Dose area product meter
(4) Grid unit
(5) Keyless entry
(6) Dose calculator unit
(7) Distance indicator
(8) Changing the grip bar height
(9) Luminous hand switch
(10) Additional hand switch
(11) Large cassette box
(12) FPD upgrade (32 kW type)
(13) Wireless LAN (32 kW type, with FPD upgrade)
(14) Second FPD Kit (32 kW type, with FPD upgrade)
(15) FPD Bag (32 kW type, with FPD upgrade) (*)

(*) Not applicable for USA/Canada market

CUSTOM SPECIFICATION

High focal point (Short column type only): Lift focal point up by 150 mm

POWER REQUIREMENTS FOR BATTERY CHARGE

- Rating: 1 kVA
- Type: Single phase, AC
- Frequency: 50/60 Hz
- Standard voltage: 100, 110, 120, 200, 220, 230, 240 V
- Impedance
  - Single phase 100, 110, 120 VAC: 1.0 max.
  - Shingle phase 200, 220, 230, 240 VAC: 4.0 max.
- Ground resistance
  - Ground terminal: 100 max.
  - Additional ground terminal: 100 max.
- Fluctuation of voltage: ±10 % from standard voltage
- Power cable length: 4 m
### MobileArt Evolution

#### DIMENSIONS AND WEIGHT

<table>
<thead>
<tr>
<th></th>
<th>Tall column type</th>
<th>Short column type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height during transportation</td>
<td>Approx. 1930 mm (76.0 inch) from floor</td>
<td>Approx. 1780 mm (70.0 inch) from floor</td>
</tr>
<tr>
<td>Focal point height</td>
<td>Tall column type: Approx. 600 to 2010 mm (23.6 to 79.1 inch) from floor</td>
<td>Short column type: Approx. 600 to 1860 mm (23.6 to 73.2 inch) from floor</td>
</tr>
<tr>
<td></td>
<td>High focal point: Approx. 750 to 2010 mm (29.5 to 79.1 inch) from floor</td>
<td></td>
</tr>
<tr>
<td>Arm length</td>
<td>635 to 1200 mm</td>
<td></td>
</tr>
<tr>
<td>Column rotation range</td>
<td>270°</td>
<td></td>
</tr>
<tr>
<td>Tube rotation around support arm</td>
<td>180°</td>
<td></td>
</tr>
<tr>
<td>Tube rotation around tube axis</td>
<td>Forward 90°, Backward 20°</td>
<td></td>
</tr>
<tr>
<td>Rotation of collimator</td>
<td>110°</td>
<td></td>
</tr>
<tr>
<td>Total weight</td>
<td>32 kW type: Approx. 390 kg (with FPD upgrade: 420 kg)</td>
<td>12.5 kW type: Approx. 370 kg</td>
</tr>
</tbody>
</table>

#### DIMENSIONS

unit : mm

*Values shown in ( ) are for Type S*
Remarks
* Every value in this Product Data Sheet 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.
* Certain configurations may not be available pending regulatory clearance. Contact your Shimadzu representative for information on specific configurations.

After FPD Upgrade
(32 kW type only)

*Values shown in ( ) are for Type S