

# PRODUCT DATA

---

## RADspeed Pro

XF type

---



### GENERAL

RADspeed Pro XF type is a radiographic system that provides a comfortable examination environment for operator and patient alike.

The TM and ® symbols are omitted in this document.

## FEATURES

**(1) Space saving concept**

The compact, space-saving high voltage generator and tube support provides working space and flexible layout.

**(2) 50kHz Inverter system**

Microprocessor-controlled, maximum 50kHz High frequency inverter system creates very low ripple kV waveform with high X-ray quantum efficiency, which reduces unwanted X-rays.

**(3) Color-coded Status Indicator**

The console panel indicates the status of the X-ray generator using color perimeter display with audible sound. The hand switch also lights up to indicate 'Ready' and 'Exposure' status.

This feature allows the operator to concentrate on patient care:

- Infant and frail elderly patients who need constant attention
- Split-second timing is required for patients who have difficulty holding their breath.
- Quick positioning and image capture

**(4) 1260 kinds Advanced APR**

Up to 1260 Anatomical Programs can be registered on the system. Registering the conditions as programs associated with examination area and technique allows conditions to be set up smoothly.

Up to 7 different directions can be stored in each technique key. This feature is particularly effective for orthopedic surgery which requires exposures from several different directions.

**(5) Energy saving collimator with a bright irradiation field**

LED is adopted as the light source to indicate the irradiation field. This reduces power consumption and improves brightness levels and durability.

**(6) Bucky tracking function**

Easily synchronize the travel of a bucky unit with the X-ray tube support position. This function is also available in oblique projection in supine position.

**(7) Vertical tracking function**

The X-ray tube automatically tracks the height of the bucky stand. Also, it tracks the height of the bucky table to maintain a constant distance.

**(8) Dose Management**

A calculated Dose Area Product is available. After the exposure, the calculated Dose Area Product, based on the actual exposure parameters, is displayed.

The measured exposure parameters and calculated Dose Area Product can be displayed on a Generator console and sent to RIS/PACS system. (option)

**(9) Removable Grid**

Removing the grid during radiography allows reducing the exposure dose level in pediatric and orthopedic applications. Radiography is also possible using phototimer.

**(10) Heavy Duty 4-way floating table**

The bucky table can support up to 350kg. Patient positioning is made easier with the extremely smooth-moving tabletop. The wireless foot switch enables the 4-way floating.

**(11) Upgradable to DR system**

The DR<sup>\*</sup>) system significantly improves diagnostic accuracy and workflow.

<sup>\*</sup>) The DR system is not a component of RADspeed Pro. Please use one belonging to your facility.



**SPECIFICATIONS**

**X-Ray High Voltage Generator**  
**80kW type/65kW type/50kW type**

Item		Specifications	
Radiography technique		General radiography, Bucky radiography, Digital radiography	
Number of connectable X-ray tubes		1 tube	
Setting range *1 *2	Radiography	Tube voltage	40 to 150kV
		Tube current	80kW type : 10 to 1,000mA 65kW type : 10 to 800mA 50kW type : 10 to 630mA
		mAs	0.5 to 800mAs
		Time	0.001 to 10sec
Nominal supply voltage (50/60Hz)		80kW type, 65kW type : 200/220/240/380/400/415/440/480VAC, 3-phase  50kW type : 200/220/240/380/400/415/440/480VAC, 3-phase or 200/220/240VAC, single-phase  Factor depending on the waveform: 1.00	
Power input		80kW type, 65kW type : 3-phase AC: 120kVA 50kW type : 3-phase AC: 80kVA or single-phase AC: 95kVA	
Rated output		80kW type : 80kW (100kV, 800mA) 65kW type : 65kW (100kV, 650mA) 50kW type : 50kW (100kV, 500mA)  Product of tube voltage and max. current that can flow in 0.1s at 100kV tube voltage	
Short-time rating *1		80kW type : 150kV 500mA, 125kV 630mA, 100kV 800mA, 80kV 1000mA 65kW type : 150kV 400mA, 125kV 500mA, 100kV 650mA, 80kV 800mA 50kW type : 150kV 320mA, 125kV 400mA, 100kV 500mA, 80kV 630mA	
Nominal max. tube voltage and max. tube current that can flow at nominal max. tube voltage *1		80kW type : Short-time rating: 150kV 500mA Long-time rating: 125kV 12mA 65kW type : Short-time rating: 150kV 400mA Long-time rating: 125 kV 9mA 50kW type : Short-time rating: 150kV 320mA Long-time rating: 125kV 9mA	
Max. tube current and max. tube voltage to achieve max. tube current *1		80kW type : Short-time rating: 80kV 1000mA Long-time rating: 75kV 20mA 65kW type : Short-time rating: 80kV 800mA Long-time rating: 125kV 9mA 50kW type : Short-time rating: 80kV 630mA Long-time rating: 125kV 9mA	
Tube voltage and tube current combination for max. electrical output *1		80kW type : Short-time rating: 80kV 1000mA, 100kV 800mA Long-time rating: 75kV 20mA, 125kV 12mA 65kW type : Short-time rating: 100kV 650mA Long-time rating: 125kV 9mA 50kW type : Short-time rating: 80kV 630mA, 100kV 500mA Long-time rating: 125kV 9mA	
Dimensions	Operation panel (GSC-TAB)	237(W) x 114(H) x 294(D)mm	
	Operation panel (GSC-MONO) (Without monitor) (Canon DR only)	49(W) x 102(H) x 235(D)mm	
	Control cabinet	700(W) x 1,830(H) x 400(D)mm	
Mass	Operation panel (GSC-TAB)	3.2kg	

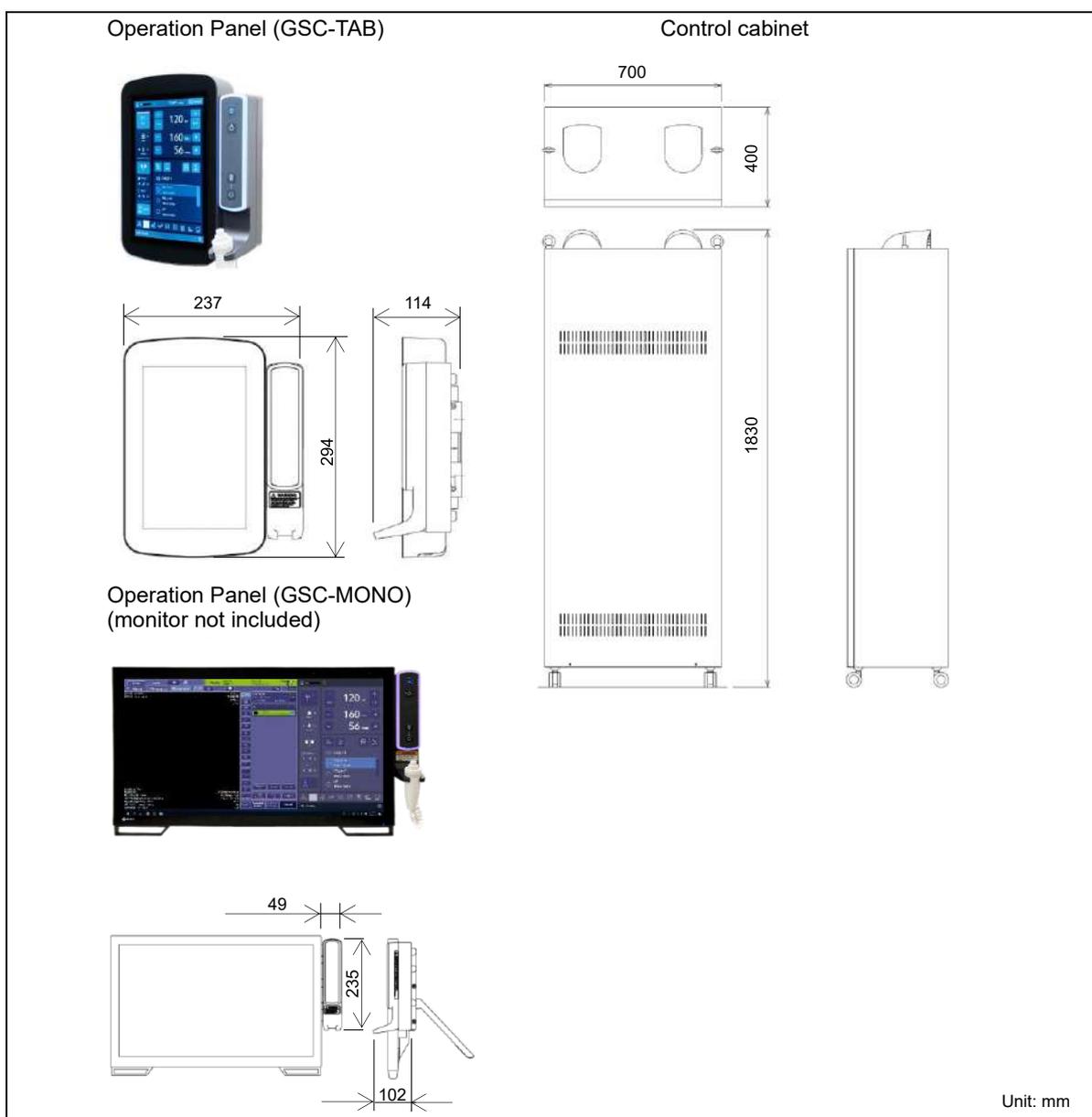
**PRODUCT DATA** RADspeed Pro  
XF type

Item		Specifications	
	Operation panel (GSC-MONO) (Without monitor)	1.7kg	
	Control cabinet	80kW type, 65kW type :	250kg
		50kW type :	240kg

\*1: Specifications are limited according to the X-ray tube type.

\*2: The various conditions are as follows (conform to IEC-standards):

Tube voltage (within +/-8 %), Tube current (within +/-20 %)  
mAs within +/- (10 % + 0.2 mAs), Time within +/- (10 % + 1 ms)



**Options**

Item	Specifications
Direct phototimer (AEC) radiography option	Combination with a Shimadzu receiver permits phototimer(AEC) radiography. The following types can be used: Xe detector-type phototimer receiver (SPT-XD series) Number of pick up fields: 1/3/4(3 types) Permitted combination: up to three receivers
Communication Unit	Permits communication of radiographic conditions with DR unit
Wireless Hand Switch	<p>Able to expose in wireless by Bluetooth communication with Hand Switch and its holder. The holder can be set in examination room and operation room.</p> <div style="text-align: center;">  </div> <p>(Available in conjunction with GSC-TAB or GSC-MONO) (Availability of the option depends on the regional regulation.)</p>
Dose Calculation Unit	Calculates the input dose at the exposure surface (skin dose) based on the distance to the patient measured by an ultrasonic distance meter and the specified X-ray parameter settings. The calculated value is displayed on the X-ray high voltage generator control panel.

**PRODUCT DATA** RADspeed Pro  
XF type

**X-ray Tube Assembly**

**0.6/1.2P324DK-85 & 0.6/1.2P364DK-85**

Item		Specifications	
Nominal X-ray tube voltage	Long-time	125kV	
	Short-time	150kV	
X-ray tube assembly	Max. heat content	1100kJ (1600kHU)	
	Nominal continuous input power	470W (660HU/s) (with fan)	
X-ray tube	Max. anode heat content	280kJ (400kHU)	
	Max. anode heat dissipation rate	1600W (2200HU/s)	
	Max. continuous heat dissipation rate	300W (420HU/s)	
Nominal focal spot		0.6mm	1.2mm
Nominal anode input power (0.1sec, 180Hz)	324DK	38kW	92kW
	364DK	24kW	65kW
Anode Target	Material	Rhenium-tungsten faced molybdenum	
	Angle/diameter	324DK	12° / 100mm
		364DK	16° / 100mm
Minimum total Filtration		1.7mm Al / 75kV (including added filter)	
Permanent Filtration		1.0mm Al / 75kV	
X-ray radiation field	324DK	350 x 350mm at SID 1m	
	364DK	350 x 350mm at SID 0.65m	
Mass (w/o Support ring and Fan)		21kg	

**0.6/1.2P164DK-85**

Item		Specifications	
Nominal X-ray tube voltage	Long-time	125kV	
	Short-time	150kV	
X-ray tube assembly	Max. heat content	1100kJ (1600kHU)	
	Nominal continuous input power	470W (660HU/s) (with fan)	
X-ray tube	Max. anode heat content	280kJ (400kHU)	
	Max. anode heat dissipation rate	1600W (2200HU/s)	
	Max. continuous heat dissipation rate	300W (420HU/s)	
Nominal focal spot		0.6mm	1.2mm
Nominal anode input power (0.1sec)	50Hz	12.7kW	34.3kW
	60Hz	13.8kW	37.3kW
Anode Target	Material	Rhenium-tungsten faced molybdenum	
	Angle/diameter	16° / 100mm	
Minimum total Filtration		1.7mm Al / 75kV (including added filter)	
Permanent Filtration		1.0mm Al / 75kV	
X-ray radiation field		350 x 350mm at SID 0.65m	
Mass (w/o Support ring and Fan)		21kg	

**0.6/1.2P38DE-85 & 0.6/1.2P18DE-85**

Item		Specifications	
Nominal X-ray tube voltage	Long-time	125kV	
	Short-time	150kV	
X-ray tube assembly	Max. heat content	1100kJ (1600kHU)	
	Nominal continuous input power	235W (330HU/s) (without fan)	
X-ray tube	Max. anode heat content	140kJ (200kHU)	
	Max. anode heat dissipation rate	640W (900HU/s)	
	Max. continuous heat dissipation rate	210W (300HU/s)	
Nominal focal spot		0.6mm	1.2mm
Nominal anode input power (0.1sec)	50Hz (18DE)	18kW	48kW
	60Hz (18DE)	21kW	53kW
	180Hz (38DE)	37kW	85kW
Anode Target	Material	Rhenium-tungsten faced molybdenum	
	Angle/diameter	12° / 100mm	
Minimum total Filtration		1.7mm Al / 75kV (including added filter)	
Permanent Filtration		1.0mm Al / 75kV	
X-ray radiation field		350 x 350mm at SID 1m	
Mass (w/o Support ring and Fan)		21kg	

**PRODUCT DATA** RADspeed Pro

XF type

**0.6/1.2P33DK-85 & 0.6/1.2P38DK-85**

Item		Specifications	
Nominal X-ray tube voltage	Long-time	125kV	
	Short-time	150kV	
X-ray tube assembly	Max. heat content	1100kJ (1600kHU)	
	Nominal continuous input power	235W (330HU/s) (without fan)	
X-ray tube	Max. anode heat content	140kJ (200kHU)	
	Max. anode heat dissipation rate	640W (900HU/s)	
	Max. continuous heat dissipation rate	210W (300HU/s)	
Nominal focal spot		0.6mm	1.2mm
Nominal anode input power (0.1sec)	50Hz (13DK)	12.5kW	34.5kW
	60Hz (13DK)	14kW	37.5W
	180Hz (33DK)	24kW	65kW
Anode Target	Material	Rhenium-tungsten faced molybdenum	
	Angle/diameter	16° / 100mm	
Minimum total Filtration		1.7mm Al / 75kV (including added filter)	
Permanent Filtration		1.0mm Al / 75kV	
X-ray radiation field		350 x 350mm at SID 0.65m	
Mass (w/o Support ring and Fan)		21kg	

**1/2P18DK-85**

Item		Specifications	
Nominal X-ray tube voltage	Long-time	125kV	
	Short-time	150kV	
X-ray tube assembly	Max. heat content	1100kJ (1600kHU)	
	Nominal continuous input power	235W (330HU/s) (without fan)	
X-ray tube	Max. anode heat content	140kJ (200kHU)	
	Max. anode heat dissipation rate	640W (900HU/s)	
	Max. continuous heat dissipation rate	210W (300HU/s)	
Nominal focal spot		1mm	2mm
Nominal anode input power (0.1sec)	50Hz	35kW	68.5kW
	60Hz	39kW	75kW
Anode Target	Material	Rhenium-tungsten faced molybdenum	
	Angle/diameter	12° / 100mm	
Minimum total Filtration		1.7mm Al / 75kV (including added filter)	
Permanent Filtration		1.0mm Al / 75kV	
X-ray radiation field		350 x 350mm at SID 1m	
Mass (w/o Support ring and Fan)		21kg	

**1/2P13DK-85**

Item		Specifications	
Nominal X-ray tube voltage	Long-time	125kV	
	Short-time	150kV	
X-ray tube assembly	Max. heat content	1100kJ (1600kHU)	
	Nominal continuous input power	235W (330HU/s) (without fan)	
X-ray tube	Max. anode heat content	140kJ (200kHU)	
	Max. anode heat dissipation rate	640W (900HU/s)	
	Max. continuous heat dissipation rate	210W (300HU/s)	
Nominal focal spot		1mm	2mm
Nominal anode input power (0.1sec)	50Hz	27.5kW	64kW
	60Hz	30kW	70W
Anode Target	Material	Rhenium-tungsten faced molybdenum	
	Angle/diameter	16° / 100mm	
Minimum total Filtration		1.7mm Al / 75kV (including added filter)	
Permanent Filtration		1.0mm Al / 75kV	
X-ray radiation field		350 x 350mm at SID 0.65m	
Mass (w/o Support ring and Fan)		21kg	

**Collimator**

**R-20J**

Item		Specifications
Max. voltage used for applicable X-ray tube		150kV
Radiation field	Shape	Rectangular
	Maximum field	43 x 43cm @SID 100cm
	Minimum field	0 x 0cm
Radiation field indication	Average brightness	160lx @SID 100cm
	Accuracy	Less than 2% of SID
	Light source	LED
	Period of indication	30 sec (timer-controlled)
Opening indication	SID	1, 1.5, 2m
	Field size indication	20,23,25,28,30,36,43cm 8,9,10,11,12,14,17inch
Drive of leaves		Manual
Lead equivalent of leaves	Shielding leaves(H and V-leaves)	3mm Pb eq.
	Middle leaves	2mm Pb eq.
Filtration	Inherent filtration	1.0 mm Al eq. / 75kV
	Additional filter	0.5mm Al. plate
Turning mechanism		+/- 45°
External dimensions		224(W) x 271(D) x 221(H)mm
Mass		6kg
Power supply		AC 12V : 50/60Hz : 100VA or DC24V 100VA

**Options**

Item	Description
Line marker	Used to align the center positions of the Bucky device and the equipment, and to set the radiography position for long view radiography
Detent	Fitted at the home position of the turning mechanism and serves to confirm the home position when the collimator is turned.
DAP adapter for VACUTEC	This is an adapter kit for DAP meter manufactured by VACUTEC. DAP can be displayed on the console of DAP meter.

**PRODUCT DATA** RADspeed Pro  
XF type

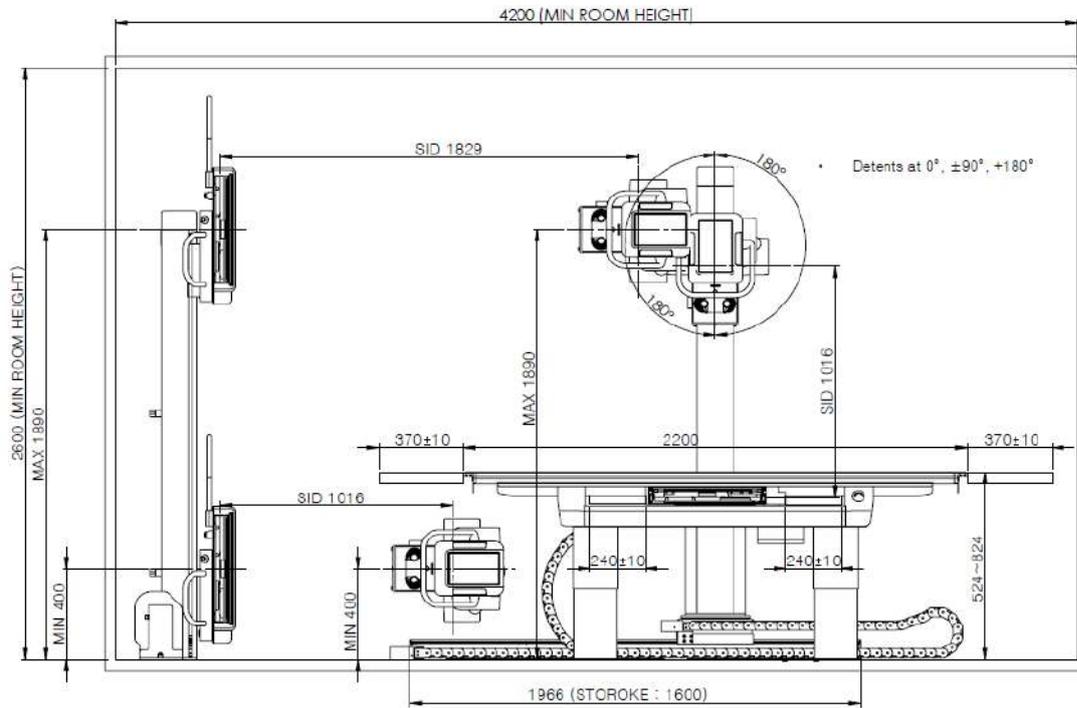
**SST-4100S**

**Overall**

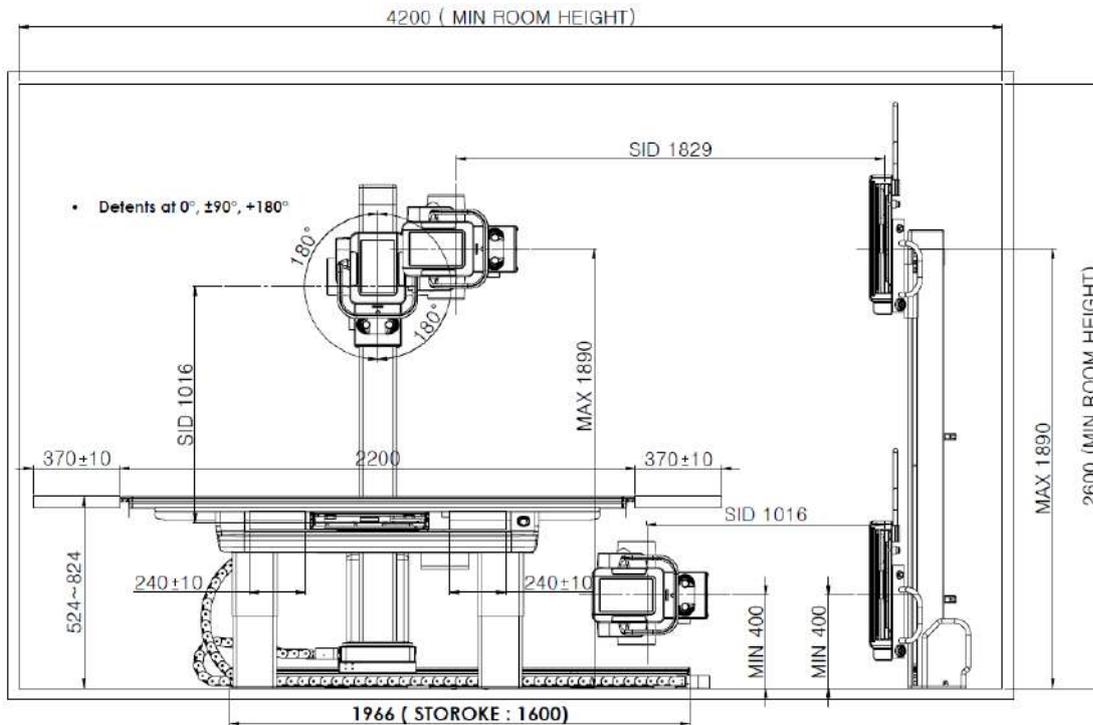
Item		Specifications	
Required space for installation	Guide rail length: 1,900mm	4,200(W) x 2,200(L) mm	
	Guide rail length: 3,000mm	5,000(W) x 2,600(L) mm	
Required ceiling height		2,600mm	
Mass	X-ray tube support	Guide rail length: 1,900mm	172kg (excluding X-ray tube assembly and collimator)
		Guide rail length: 3,000mm	200kg (excluding X-ray tube assembly and collimator)
	X-ray radiography table		250kg
	X-ray radiography stand		71kg
Power source		Single phase, 120V or 220-240V, 50/60Hz, 500VA Impedance 2.8Ω or less (120V) 9.5Ω or less (220-2400V)	

Item	Specifications
------	----------------

- Guide rail length: 1,900mm  
Left Hand-Load

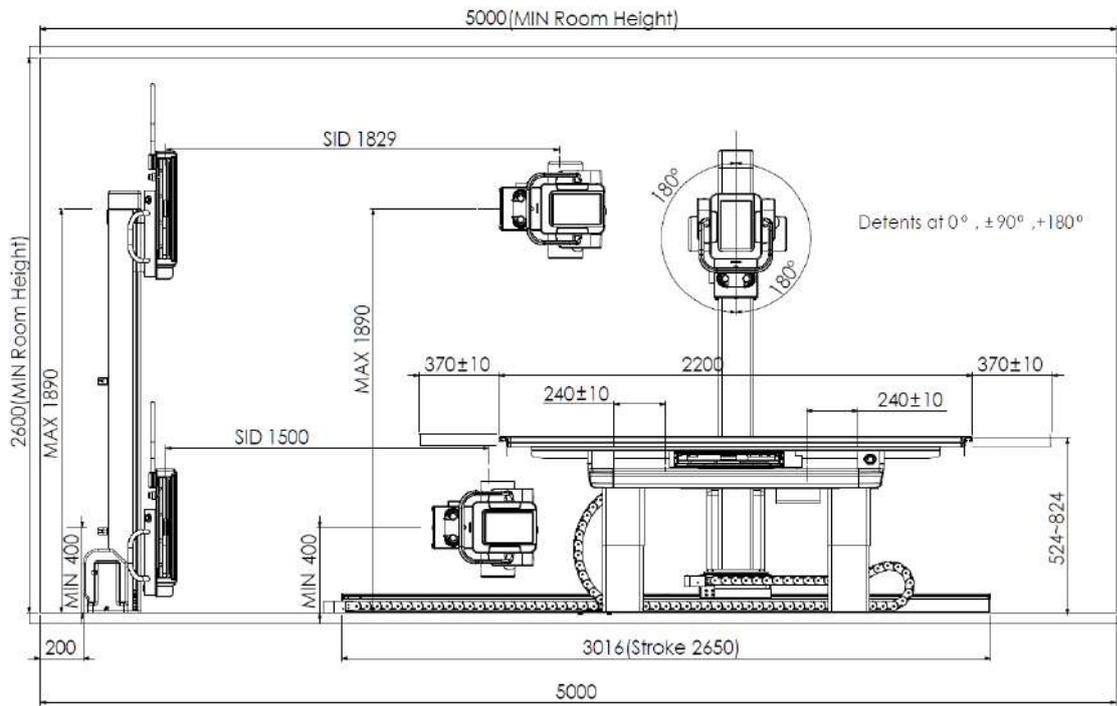


**Right Hand-Load**

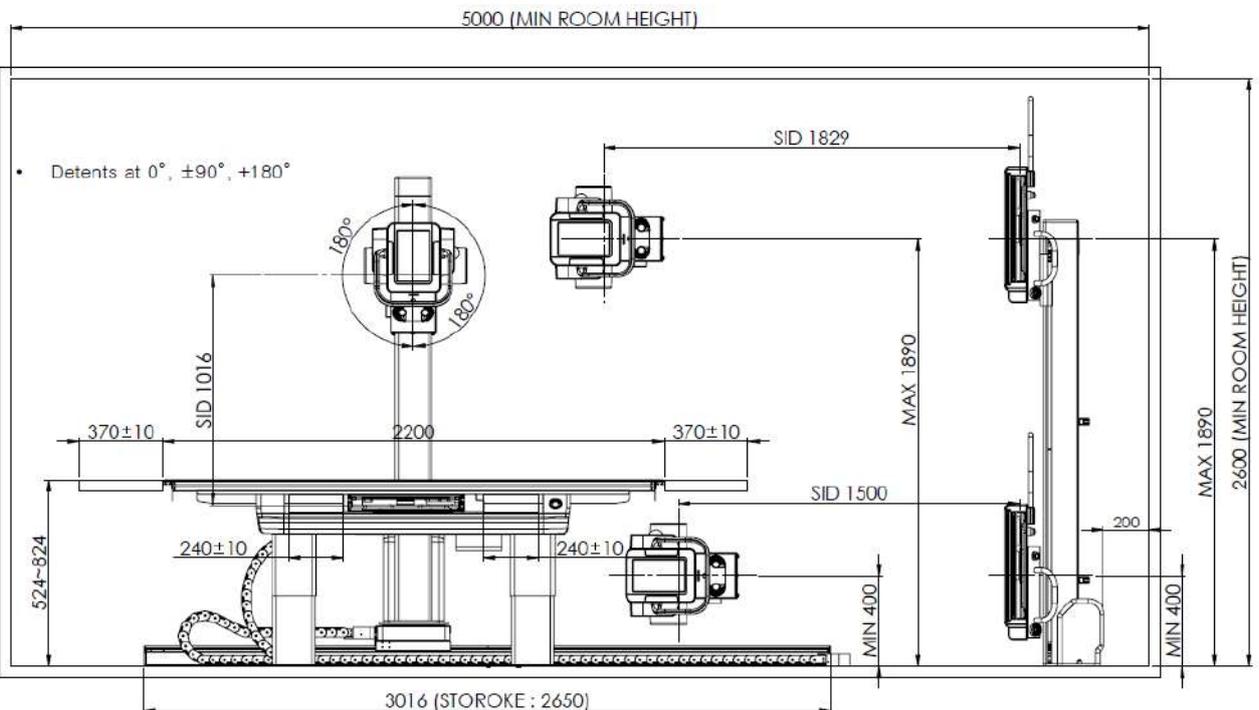


Item	Specifications
------	----------------

- Guide rail length: 3,000mm
- Left Hand-Load



Right Hand Load



**PRODUCT DATA** RADspeed Pro  
XF type

**X-Ray Tube Support**

Item		Specifications
		
Maximum supportable weight		30kg
Balancing system		Spring-balanced type
Vertical travel		400 – 1,890mm (floor to focus)
Longitudinal travel	Guide rail length: 1,900mm	1,600mm
	Guide rail length: 3,000mm	2,650mm
Transverse travel		250mm
Rotation around horizontal axis		±180°, continuous (click stops at 90° intervals)
Rotation around vertical axis		stop at three points -90°, 0°, +90°
Operation		Manual, electromagnetic lock(off lock)
Touch panel size		10.1 inch
Indication on the display		SID, X-ray tube angle, Sync button (start the tracking movement)

**X-Ray Radiography Table**

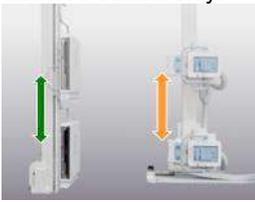
Item		Specifications		
				
Main Body	Size of Tabletop	805(Width) x 2,200(Length)mm		
	Material of tabletop	Melamine		
	Attenuation equivalent for table	1.3mmAl. or less		
	Longitudinal movement	740mm (+/- 370mm) Manual operation		
	Lateral movement	182mm (+/- 91mm) Manual operation		
	Tabletop Lock	Electromagnetic lock (off-lock) By infrared wireless foot switch (Wired available)		
	Vertical moving range	300mm Motor drive		
	Distance between tabletop and floor	524 to 824mm		
	Distance between tabletop and detector plane	112mm		
	Maximum allowable load	350kg (uniform load on tabletop)		
Bucky Device	Applicable FPD size	14 x 17 in / 35 x 43 cm sized FPD 17 x 17 in / 43 x 43 cm sized FPD		
	Cassette fixing position	Center position		
	Bucky device moving stroke	480mm (+/- 240mm)		
	X-ray grid (Moving grid)	Dimensions	438mm x 479mm	
		Interspacer material	Al	
		Density, ratio Note) Select one of the listed Grids	40lines/cm 8:1 40 lines/cm 10:1 40 lines/cm 12:1	
Mounting/removing grid		Possible		
Standard feature	Auto-tracking	Bucky tracking to the X-ray tube. 		
		X-ray tube support tracking to the height of the X-ray radiography table. 		

**Options**

Item	Description
Lateral Detector Holder	Mounted to the side of the tabletop to hold FPD during lateral radiography. Can hold both 17 x 17 and 14 x 17 in. FPD. 
Grip Switch	Mounted to the side of the tabletop to operate the floating tabletop and the vertical movement without using the foot switch. 
Tabletop Handle Bar	Mounted to the side of the tabletop for the operator to move the floating table. Requires foot switch operation. 

**X-Ray Radiography Stand**

Item	Specifications	
 <p>Bucky Device</p>	Distance between FPD center and floor	400 – 1,890mm
	Operation	Manual Electromagnetic lock (off lock)
	Distance between Bucky device front face and FPD tray	67mm
	FPD reference position	Center position / Upper position
Bucky Device	Dimensions	438mm x 479mm
	Interspacer material	Al
	Density, ratio (Note) Select one of the listed Grids	40 lines/cm 8:1 40 lines/cm 10:1 40 lines/cm 12:1
	Mounting/re moving	Possible
	Attenuation equivalent for front panel	1.0mm Al or less

Standard features	Hand grip	<p>This handle supports the attitude of the patient at lateral position.</p> 
	Front radiography handle	<p>This handle supports the attitude of the patient at frontal position.</p> 
	Auto-tracking	<p>X-ray tube support vertically tracks to the bucky. Center Position only.</p> 
	Both side operation	<p>Vertical movement of the bucky can be controlled from both right and left sides of the bucky.</p>
	Wall mounting	<p>This fixes the upper part of the column to the wall. Use this when it is difficult to secure the equipment only by fixing it to the floor.</p>

**PRODUCT DATA** RADspeed Pro  
XF type

**Operation Environment**

Item	Specifications
Ambient temperature	10 to 40 degree C
Relative humidity	30 to 75% (non condensing)
Atmospheric pressure	860 to 1060hPa

**Power Supply except SST-4100S**

Item	Specifications
Phase	3-phase, single-phase
Frequency	50/60Hz
Standard voltages	3-phase 200/220/240/380/400/415/440/480V Single-phase 200/220/230/240V
Permitted voltage range	+/- 10% of standard voltage
Supply capacity (Digital Radiography system is not included.)	80kW / 65kW type: 3-phase 120kVA Single-phase 8.5kVA 50kW type: 3-phase 80kVA Single-phase 8.5kVA or Single-phase 95kVA

**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.

**LABEL Description: RADspeed Pro**

Founded in 1875, Shimadzu corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. We maintain a global network of sales, service, technical support and applications centers on six continents, and have established long-term relationships with a host of highly trained distributors located in over 100 countries. For information about Shimadzu, and to contact your local office, please visit our Web site at [www.shimadzu.com](http://www.shimadzu.com)



Shimadzu Corporation

**Headquarters**  
1-3 Kanda Nishiki-cho, Chiyoda-ku, Tokyo 101-8448, Japan  
<https://www.shimadzu.com/med/>



Shimadzu Corporation Medical Systems Division has been certified by TÜV Rheinland as a manufacturer of medical systems in compliance with ISO9001:2015 Quality Management Systems and ISO13485:2016 Medical Devices Quality Management Systems.

**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.