0.5 mAs to
1,000 mAs
for 80 kW

Datasheet

MULTIX Impact

Strengthen your Image

siemens-healthineers.com/multix-impact

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SIEMENS Healthineers

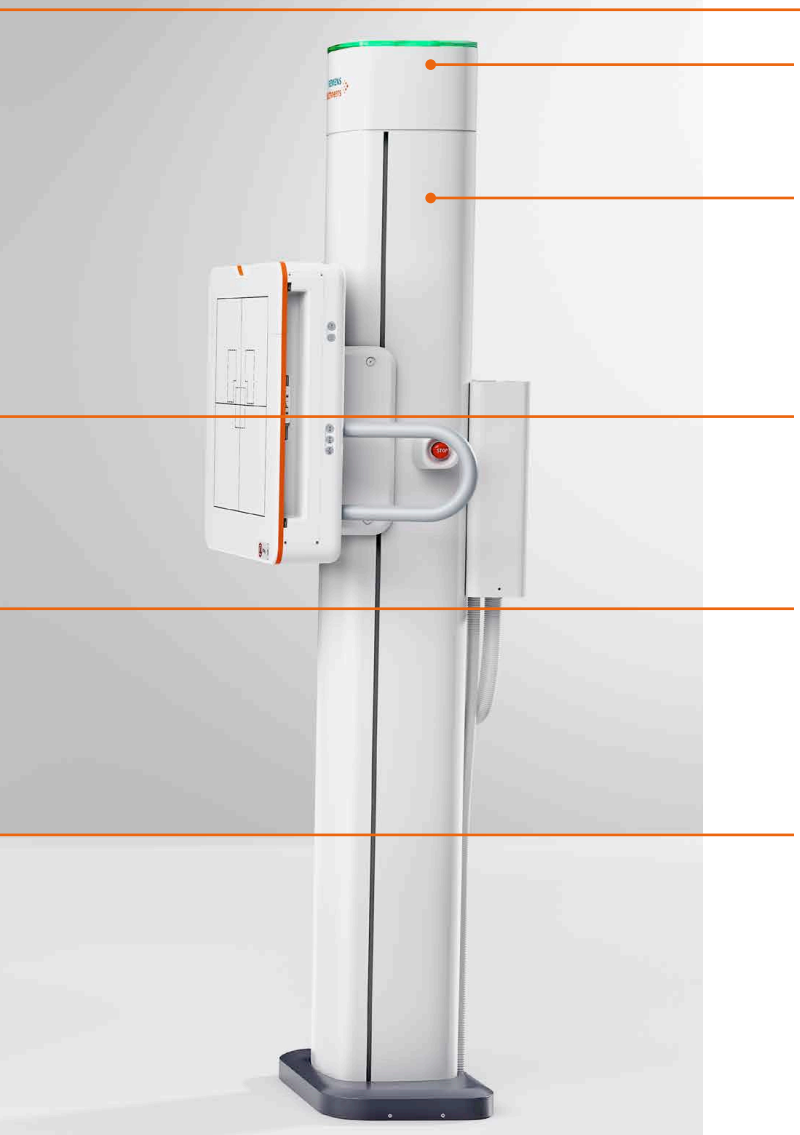
23.8” All-in-one PC

- Intuitive imaging system
- Fast image flavor setting
- Positioning Guide
- Touchscreen user interface[1]

Wireless remote control[1]

- Collimation field size
- Pre-configured BWS positions
- BWS vertical movements
- BWS and tube height tracking

Technical specifications



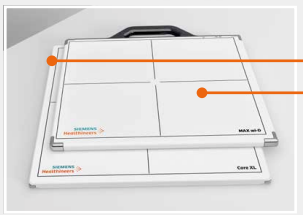
Impact Illuminate[1]
Indicates the system status

Bucky wall stand (BWS)
- Vertical travel range: up to 147 cm
- Low central beam height: 33 cm
- Motorized vertical movements[1]
- Fixed detector Core static[1]

Motorized collimator[1]
- Automatic Collimation Size Sensing
- Patient positioning camera[1] to monitor patients in real time

Floor-mounted tube
- 10" touchscreen for complete control at the patient's side and access to the Positioning Guide
- Automatic bucky wall stand height tracking

Table
- Adjustable height[1]: from 51.5 cm to 90 cm
- High weight capacity: 300 kg
- Comfortable patient positioning with flat table top
- Automatic tube tracking vertically,[1] longitudinally, and when tilting[1]



Wireless detectors
- Core XL in-tray charging
- MAX wi-D[1] (in-tray charging and advanced detector sharing)

Remote interface[1]
- Tablet-based workflow
- Access all major imaging system functions on the go

[1] *Option*

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System specifications

Patient table	
The table can be equipped with a MAX wi-D or a Core XL.	
Tabletop width	80 cm
Tabletop length	Standard tabletop: 233 cm Short tabletop[1)]: 213 cm
Tabletop heigth	Elevating table[1)]: 51.5 cm to 90.0 cm; total lift 38.5 cm (tabletop) Fixed table: 70 cm
X-ray absorption	≤ 0.7 mm Al (at 100 kV/3.6 mm Al HVL; IEC 60601-2-54)
Tabletop travel	Longitudinal: Standard tabletop ± 44 cm Short tabletop[1)]: ± 34 cm Transverse: ± 14 cm
Tabletop material	Composite material
Max. patient weight	300 kg
Longitudinal detector cover range (edge to edge)	≥ 100 cm
Grid[1)]	Stationary, Pb 13/92, f_0 = 115 cm Stationary, Pb 13/40, f_0 = 115 cm
Max. patient coverage (without patient repositioning)	Approx. 190 cm with standard tabletop
Tabletop – detector distance	≤ 73 mm
Front kick switches	Table control switches for table height[1)] and tabletop float adjustments
Auto tracking for table height adjustment[1)]	Yes , X-ray tube follows table height adjustment; source-image distance is maintained
Auto tracking for longitudinal tube travel	Yes, detector follows tube movement; centering maintained
Auto tracking for tube rotation[1)]	Yes, detector follows tube rotation; centering maintained

[1)] Option

System specifications

Bucky wall stand	
The Bucky wall stand can be equipped with a MAX wi-D, Core XL, or a Core static.	
Travel range (central beam – floor)	From 33 cm to 180 cm, manual or motorized
Anti-scatter grid[1)]	Universal grid, Pb 13/92, from f_0 = 115 cm to f_0 = 180 cm; Stationary grid, Pb 13/92, f_0 = 115 cm and f_0 = 180 cm; Universal grid, Pb 13/40, from f_0 = 115 cm to f_0 = 180 cm; Stationary grid, Pb 13/40, f_0 = 115 cm and f_0 = 180 cm
Detector cover – detector distance	≤ 42 mm
X-ray absorption	≤ 0.6 mm Al (at 100 kV/3.6 mm Al HVL; IEC 60601-2-54)
Auto tracking of X-ray tube anddetector during height adjustments,detector in 0° position	Yes
Automatic exposure control	Yes

Column stand	
Longitudinal travel range	Long rail: 231 cm Medium rail: 152 cm Short rail: 66 cm
Vertical travel range	147 cm
Lowest central beam height	33 cm
Max. source-image distance (SID) at table	Elevating table[1)]: 135 cm Fixed table: 115 cm
Column stand rotation	± 180°, detents 0°, ± 90°, + 180°
X-ray tube rotation range	± 140°, detents at 0°, ± 90°
Tracking for horizontal tube travel	Yes
Oblique tracking[1)]	Yes

Generator	
Generator	
Output	55 kW (550 mA at 100 kV)(Upgrade kit to 65 kW[1)]) 65 kW (650 mA at 100 kV) 80 kW (800 mA at 100 kV)
Exposure voltage	40 kV to 150 kV
Generator frequency	≥ 100 kHz
mAs range	0.5 mAs to 800 mAs for 55 kW/65 kW 0.5 mAs to 1,000 mAs for 80 kW

[1)] Option

System specifications

X-ray tube		
RAY-14S_3F		
Max. exposure voltage (IEC 60613)	150 kV	
Focal spot nominal value (IEC 60336)	0,6	1.2
Radiographic anode input power (IEC 60613)	34 kW	80 kW[1)]
Optical anode angle (IEC 60788)	12°	
Anode heat dissipation rate	72,000 J/min. (97,000 HU/min.)	
Anode heat storage capacity	260,000 J (350,000 HU)	
Max. heat storage capacity of the	1,000,000 J (1,350,000 HU)	
Anode operating frequency	50/60 Hz 150/180 Hz	
Leakage radiation (IEC 60601-1-3) (at 150 kV at 1 m distance)	≤ 0.8 mGy/h	
Total filtration (IEC 60601-1-3)	≥ 2.5 mm Al/75 kV	
Weight	18 kg	

Collimator	
Collimator	
Inherent filtration	1 mm Al at 70 kV
Full-field light localizer	Very efficient high power LED technology[1)]; high energy efficiency enabling low-noise design without external cooling system[1)]; Long lifetime approx. 10 years[1)]; timer functionality; laser line light localizer (coverable)
Copper prefilter	Without filter, 0.1 mm, 0.2 mm, 0.3 mm; manual or motorized[1)]
Rotation	± 45° manually
Collimation control	Manual or motorized[1)] (preset via organ programs)

Touchscreen user interface	
Size	Approx. 10.1 inches
Resolution	1280 x 800 pixels
Function	Exposure control (generator data) Mechanic movement control (manual/automatic) Patient information Organ program selection

1) Option

System specifications

Digital detectors	
A total of three different detectors are available: MAX wi-D, Core XL, and Core static.	
MAX wi-D as well as Core XL can be used in the table, Bucky wall stand, and for free exposures	
Detector configurations	Motorized Bucky wall stand with Core XL Motorized Bucky wall stand and fixed patient table with Core XL Motorized Bucky wall stand with Core static and fixed patient table with Core XL Motorized Bucky wall stand and elevating patient table with Core XL or MAX wi-D Motorized Bucky wall stand with Core static and elevating patient table with Core XL or MAX wi-D Manual Bucky wall stand and fixed patient table with Core XL
MAXcharge	Charging in the detector tray for MAX wi-D
Charge in tray	Charging in the detector tray for Core XL
Detector sharing	Detector sharing is the right way to share, allowing you to swap the MAX wi-D between multiple systems so you always have the right detector when and where you need it[2)]

Anti-scatter grid[1)]	
Grid for patient table	Stationary grid, Pb 13/92, f_0 = 115 cm; Stationary grid, Pb 13/40, f_0 = 115 cm; Pb with aluminum interspacing
Grids for Bucky wall stand	Universal grid, Pb 13/92, from f_0 = 115 cm to f_0 = 180 cm; Stationary grid, Pb 13/92, f_0 = 115 cm and f_0 = 180 cm; Universal grid, Pb 13/40, from f_0 = 115 cm to f_0 = 180 cm; Stationary grid, Pb 13/40, f_0 = 115 cm and f_0 = 180 cm; Pb with aluminum interspacing
Clip-on grids for MAX wi-D	Grid, Pb 5/85, f_0 = 115 cm; Pb with aluminum interspacing Grid, Pb 15/80, f_0 = 115 cm; Pb with paper interspacing
Clip-on grid for Core XL	Grid, Pb 5/85, f_0 = 115 cm; Pb with aluminum interspacing

1) Option
2) System configuration dependent

System specifications

MAX wi-D	
Detector technology	Cesium iodide scintillator coupled to TFT matrix with amorphous silicon technology
Dimensions (active area)	34.8 cm x 42.4 cm Can be inserted in the detector tray in landscape and portrait format
Active detector matrix	2,350 x 2,866
Dimensions with detector housing	44.0 cm x 46.1 cm x 1.9 cm
Pixel size	148 µm
Semiconductor material	Amorphous silicon (a-Si)
Scintillator	Cesium iodide (CsI)
Digitization depth	16 bits
Spatial resolution	3.4 lp/mm
DQE in %; 2 µGy (RQA5) (IEC 62220)	70 % at 0.05 lp/mm 51 % at 1 lp/mm 42 % at 2 lp/mm 29 % at 3 lp/mm 19 % at Nyquist
MTF in % (RQA5) (IEC 62220)	63 % at 1 lp/mm 35 % at 2 lp/mm 19 % at 3 lp/mm 12 % at Nyquist
Data transmission	WLAN[2] < 2 s preview; < 4 s full image
Thickness	19 mm
Weight	3.3 kg
Max. load capacity	300 kg with patient recumbent [3] 100 kg with patient standing
Battery	Lithium-ion, rechargeable, exchangeable
Charging time	3 h
Battery operation time	Up to 1,050 images Up to 6.5 hours during regular utilization
Charging location	Table detector tray, Bucky wall stand detector tray and battery charger[1]
WLAN Standard	IEEE 802.11b/g/n, 2 x 2 mimo, WPA2/AES Encryption, EAP/TLS support
If there is a WLAN or other wireless equipment in your working environment, please onsult your Siemens Healthineers representative for optimal set-up of the wireless connection	
IEC Regulations	Electromagnetic compatibility: compliance with IEC 60601-1-2
Detector sharing	Safe, quick and easy one-click registration to swap wireless detectors between multiple systems of the MAX family and MULTIX Impact systems with the same detector type

[1] Option
[2] The preview/full image transmission time depends on the quality of the WiFi link and the selected processing parameters
[3] 300 kg is only for functional availability rather than full performance

System specifications

Core XL	
Detector technology	Cesium iodide scintillator coupled to TFT matrix with amorphous silicon technology
Dimensions (active area)	42.6 cm x 42.6 cm
Active detector matrix	3,070 x 3,070
Dimensions with detector housing	46.1 cm x 46.1 cm x 1.57 cm
Pixel size	139 µm
Semiconductor material	Amorphous silicon (a-Si)
Scintillator	Cesium iodide (CsI)
Digitization depth	16 bits
Spatial resolution (Nyquist frequency)	3.6 lp/mm
DQE in %; 2 µGy (RQA5) (IEC 62220)	80 % at 0.05 lp/mm 65 % at 1 lp/mm 53 % at 2 lp/mm 34 % at 3 lp/mm 21 % at Nyquist
MTF in % (RQA5) (IEC 62220)	64 % at 1 lp/mm 34 % at 2 lp/mm 18 % at 3 lp/mm 13 % at Nyquist
Data transmission	WLAN[2] < 3 s preview; < 7 s full image
Thickness	15.7 mm
Weight	4.2 kg
Max. load capacity	150 kg with patient recumbent 100 kg with patient standing
Battery	Lithium-ion, rechargeable, exchangeable
Charging time	4 h
Battery operation time	Up to 950 images Up to 7.5 hours during regular utilization
Charging location	Table detector tray, Bucky wall stand detector tray and battery charger[1]
WLAN Standard	IEEE 802.11b/g/n, 2 x 2 mimo, WPA2/AES Encryption, EAP/TLS support
If there is a WLAN or other wireless equipment in your working environment, please onsult your Siemens Healthineers representative for optimal set-up of the wireless connection	
IEC Regulations	Electromagnetic compatibility: compliance with IEC 60601-1-2

[1] *Option*
[2] *The preview/full image transmission time depends on the quality of the WiFi link and the selected processing parameters*

System specifications

Core static	
Detector technology	Cesium iodide scintillator coupled to TFT matrix with amorphous silicon technology
Dimensions (active area)	42.6 cm x 42.6 cm
Active detector matrix	3,070 x 3,070
Pixel size	139 µm
Semiconductor material	Amorphous silicon (a-Si)
Scintillator	Cesium iodide (CsI)
Digitization depth	16 bits
Spatial resolution (Nyquist frequency)	3.6 lp/mm
DQE in %; 2µGy (RQA5) (IEC 62220)	80% at 0.05 lp/mm 65% at 1 lp/mm 53% at 2 lp/mm 34% at 3 lp/mm 21% at Nyquist
MTF in % (RQA5) (IEC 62220)	64% at 1 lp/mm 34% at 2 lp/mm 18% at 3 lp/mm 13% at Nyquist
Data transmission	< 3 s preview; < 5 s full image

[1] *Option*

System specifications

Imaging system hardware

The imaging system is specially designed for diagnostic radiology and delivers excellent image quality with a fast and seamless workflow.

Digital radiography system with DICOM network connection for image processing and image display on a preview monitor

Computer	Intel CoreTM i5-6500TE Processor, 6 M Cache, up to 3.30 GHz, 1 x DDR4 8 GB memory, 1 x 500 G SATA HDD, 1 x 512 G SSD (First hard disk), 4 x USB 2.0, 2 x USB 3.0
Operating system	Windows 10 Enterprise LTSB 2016 (64 Bit)
Accessories	Keyboard, mouse
Image storage	10,000 RAD image

Display

23.8" Color display	
Display area (W x H)	52.7 cm x 29.6 cm
Screen size	23.8" (60 cm)
Pixel number	1920 x 1080
Typical brightness	400 cd/m²
Typical contrast ratio	1000:1
Power consumption	45 W
Weight	With normal screen: 14.5 kg With touch screen[1)]: 15.4 kg
Dimensions (W x H x D)	59.2 cm x 37.2 cm x 6.4 cm
Horizontal viewing area	178° (H and V)
19" Color high contrast display[1)]	
19" TFT high-contrast color display for flicker-free, distortion-free live image and reference image display for X-ray diagnostics	
Display area (W x H)	37.6 cm x 30.1 cm
Screen size	19" (48 cm)
Pixel number	1280 x 1024
Typical brightness	700 cd/m²
Typical contrast ratio	900:1
Power consumption	< 58 W; in power save mode: < 8 W
Weight	5.8 kg
Dimensions (W x H x D)	42.2 cm x 34.8 cm x 9.5 cm
Horizontal viewing area	178° (H and V)

[1)] Option

Clinical workflow

Patient data administration	
Patient registration	Retrieval of patient list and examination data from the hospital/radiology information system (HIS/RIS) Emergency patient registration Patient, study and image data administration Configurable patient registration page Password protected access Cyber security

Examination preparation	
Exam manager	Selection of exams; adding, deleting or replacing organ programs Automatic acquisition mode/workstation selection
Organ program and exam set editor	Organ programs combined of multiple imaging and workflow parameters for particular body parts and imaging exposure and postprocessing Up to 3,000 organ programs can be stored, customized, and arranged in exam sets using the advanced organ program and exam set editor Exam sets consist of one or more organ programs. The system automatically selects the next organ program in the chosen exam set as each exam step is completed
Organ programs	The following parameters can be configured for each organ program allowing a one-click examination set up: **X-ray parameters:** E.g., acquisition mode, exposure technique, tube voltage, dose, focus, tube load **Image processing parameters:** E.g., window values, positive/negative image display, post-processing, rotation, mirroring, cropping **Automatic functions[2]:** Set default as on or off for automatic functions such as auto Cu filter

[1] *Option*
[2] *Automatic collimator only*

Clinical workflow

CARE Program (Combined Applications to Reduce Exposure)	
CAREFILTER	Adaptive Cu pre-filtration at 0.1, 0.2 and 0.3 mm Cu to reduce patient dose Filter selection via the organ program (auto filter)[2)]
Dose area product acquisition by CAREMAX Virtual	CAREMAX Virtual provides the dose area product (two digits after the decimal)
CAREMAX	An integrated measurement chamber in the collimator housing measures the dose area product in µGym² (or mGycm²) and/or standardized patient entrance dose, which are displayed on the generator display and imaging system display in accordance with IEC (CAREWATCH)

Image acquisition/display/processing	
Acquisition and preprocessing	Selection of generator parameters
Image display	Fit to window view of full image
Image processing functions	Rotation, vertical and horizontal reversal, zoom, windowing for contrast/brightness, black/white image inversion
Post-processing	Specially developed image processing method (multispatial filtering) that optimizes the image display specifically for different organ regions Structures of different frequency ranges are weighted differently, allowing precise detail visualization even with large differences in absorption, such as in bone and soft tissue
Graphic functions	Quantification with angle/distance measurement
Text functions	Marking, annotation, image comments, R/L markers
Gridless Acquisition	Gridless acquisition of free exposures (esp. thorax) using post-processing functionalities for superior contrast and easier handling For extremities, grid is not necessary to be applied.
Flavor setting	Simplifies setting of preconfigured image flavor settings based on regional preferences

[1)] Option
[2)] Automatic collimator only

Clinical workflow

Data transfer and documentation	
DICOM network interfaces	
DICOM Send/StC	Transmission of images to a DICOM network for viewing and archiving Confirmation from the image archive (StC = Storage Commitment)
DICOM Print	Printing of images to a DICOM laser camera via virtual film sheet
DICOM Query/Retrieve	Retrieval of images from a picture archival system (PACS)
DICOM Worklist/MPPS	Get Worklist function for importing patient data from a data management system (RIS/HIS). CR and DX worklist entries supported, configurable Modality Performed Procedure Step (MPPS) function for sending examination statistics and dose information to a data management system
DICOM Dose Structured Report	Sending of dose values for each study to an archiving system
Documentation	Transmission of images to a network
Image data management	Automatic and selective printing with virtual film sheet
	Available layout formats for printing: 2 x 1; 3 x 1; 3 x 2; 1 x 1; 1 x 2; 1 x 3; 2 x 2; 2 x 3; etc, maximum layout format: 8 x 9 Up to 3 network nodes at the same time and one laser camera configurable Export of image data (12 bit) to CD/DVD recorder in DICOM or TIFF format Export and import to USB device in DICOM or TIFF format USB hard disk available as optional accessory
Recycle bin	This feature can be enabled or disabled Stores rejected and deleted images that are not archived/printed in a separate folder
Clinical Assurance Program (CAP)	Provides statistics of rejected images
Printer connection[1)]	For paper printing to a Level 2 PostScript printer

[1)] *Option*

Clinical workflow

Smart Remote Services[1)]	
Preparation for Smart Remote Services (SRS): Allows hardware and software remote diagnosis Allows remote system configuration, e.g., adding a DICOM node	

Emergency power supply[1)]	
Provides emergency power to the imaging system (50/60 Hz) until line voltage is restored	
In case of power failures lasting more than 90 seconds the imaging system will shut down automatically	
Nominal power	850 VA

Cyber security	
Secure Product Lifecycle	Threat and Risk Analysis, Secure Architecture & Design, Secure Configuration and Hardening, Secure Coding & Testing with Vulnerability Scanning, Penetration Testing
Whitelisting	Malware protection based on Microsoft Device Guard
IPv4	It is possible to configure IP adressess in IPv4 format
High frequency hotfix delivery	Providing hotfixes for 3rd party components (e.g. Microsoft) every 90 days
Advanced security package	Advanced user management: Active directory integration, Individual password management and user authorization Audit trail management: Detailed tracking of user and system actions and centralized automated logging

1) Option

Clinical workflow

Installation data	
The entire system is powered via a three phase voltage connection	
Power connection	3-phase, 380 V, 400 V, 440 V (50/60 Hz), 480 V (60 Hz) ± 10 %
Power consumption	Max. 127 kVA (80 kW)

Environmental conditions (operation)	
Examination room	
Temperature range	+ 10°C to + 35°C
Relative humidity	20 % to 75 %
Barometric pressure	700 hPa to 1,060 hPa
Imaging system	
Temperature range	0°C to + 35°C
Relative humidity	20 % to 75 %
Barometric pressure	700 hPa to 1,060 hPa

Weight	
Bucky wall stand	Approx. 190 kg
X-ray tube stand	Approx. 300 kg
Generator cabinet	Approx. 190 kg
Patient table	Elevating table[1)]: approx. 320 kg Fixed table: approx. 300 kg

[1)] *Option*

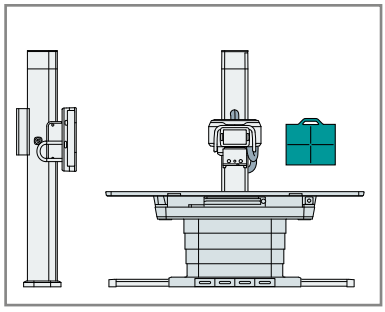
Accessories

Accessories
The following accessories expand the capabilities of your MULTIX Impact system:
Hand grips for patient table and Bucky wall stand[1)]
Patient stretch grip[1)]
Patient positioning mattress[1)]
Footswitch for elevating table height adjustment and tabletop float release[1)]
Accessory filters (including holder) for collimator[1)]
Compensation filter[1)]
Compression belt (suitable for table)[1)]
BABIX retainer[1)]
Mobile detector holder[1)]
Lateral detector holder for use on patient table[1)]
Clip-on grid[1)]
FD cover[1)]
Examination bed with integrated detector tray[1)]
UPS for imaging system[1)]
Table paper holder[1)]
Intercom[1)]
Remote interface[1)]

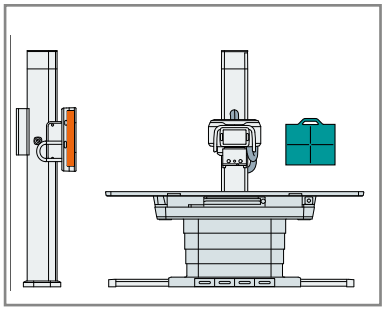
[1)] *Option*

Room planning

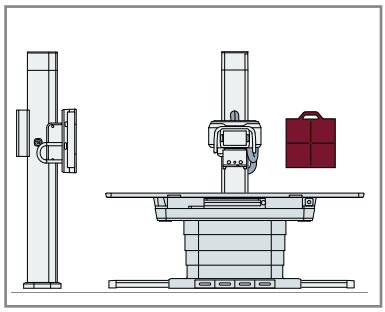
System solutions



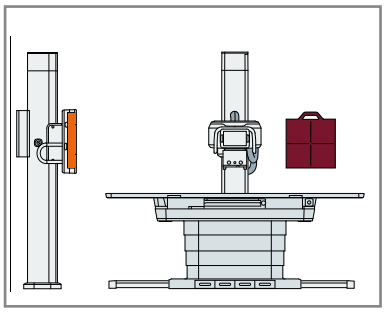
Floor-mounted solution with motorized Bucky wall stand and elevating table equipped with MAX wi-D for free exams



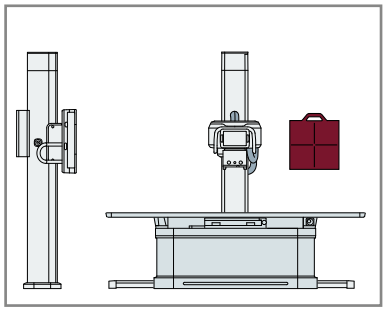
Floor-mounted solution with motorized Bucky wall stand with Core static and elevating table equipped with MAX wi-D for free exams



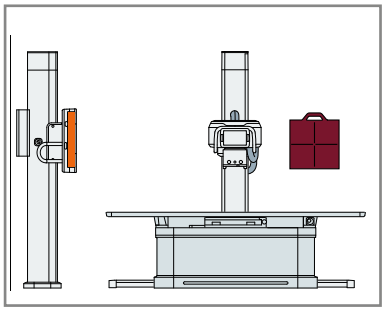
Floor-mounted solution with motorized Bucky wall stand and elevating table equipped with Core XL for free exams



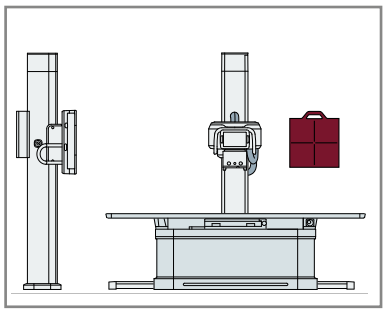
Floor-mounted solution with motorized Bucky wall stand with Core static and elevating table equipped with Core XL for free exams



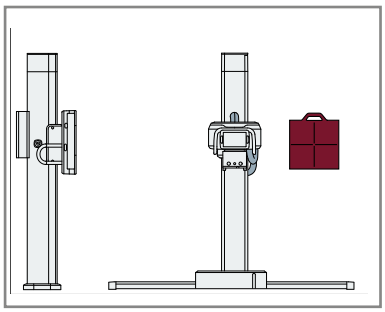
Floor-mounted solution with motorized Bucky wall stand and fixed table equipped with Core XL for free exams



Floor-mounted solution with motorized Bucky wall stand with Core static and fixed table equipped with Core XL for free exams



Floor-mounted solution with manual Bucky wall stand and fixed table equipped with Core XL for free exams



Floor-mounted solution with motorized Bucky wall stand equipped with Core XL for free exams

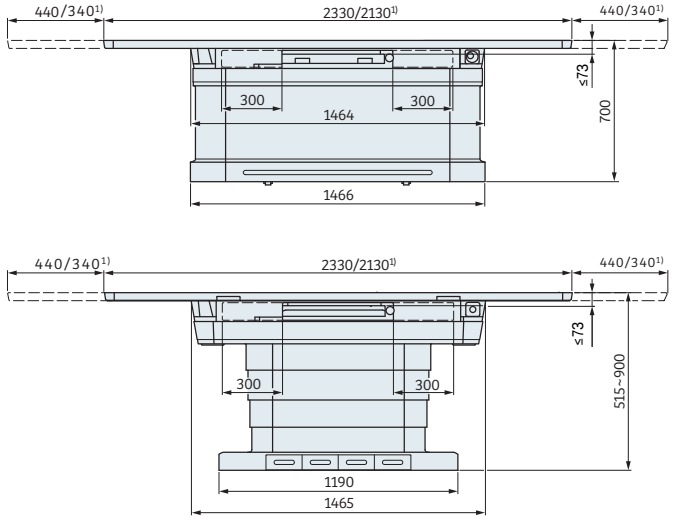
MAX wi-D

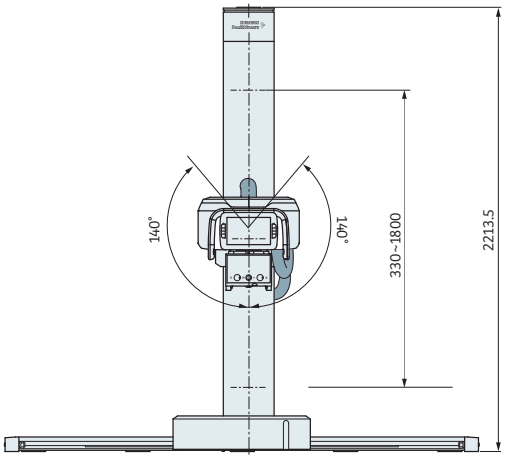
Core XL

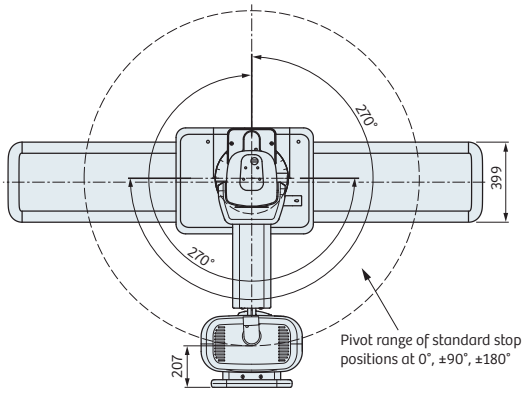
Core static

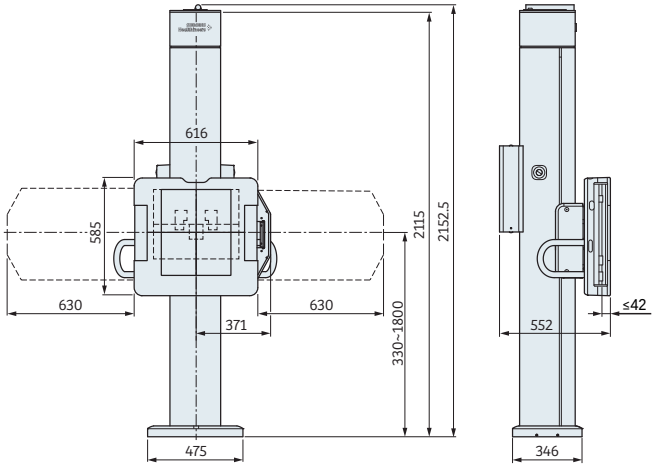
Room planning

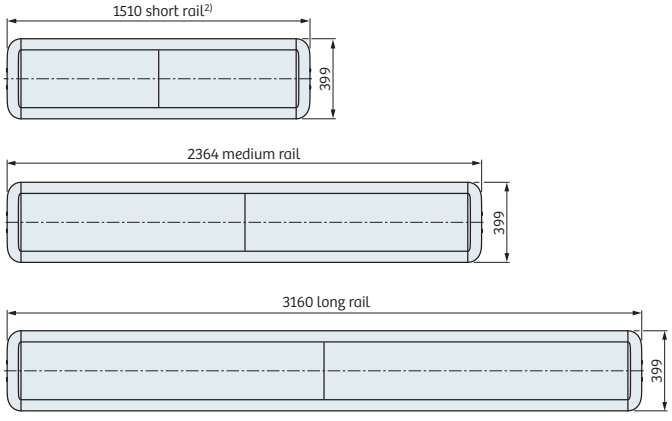
Dimensions in mm







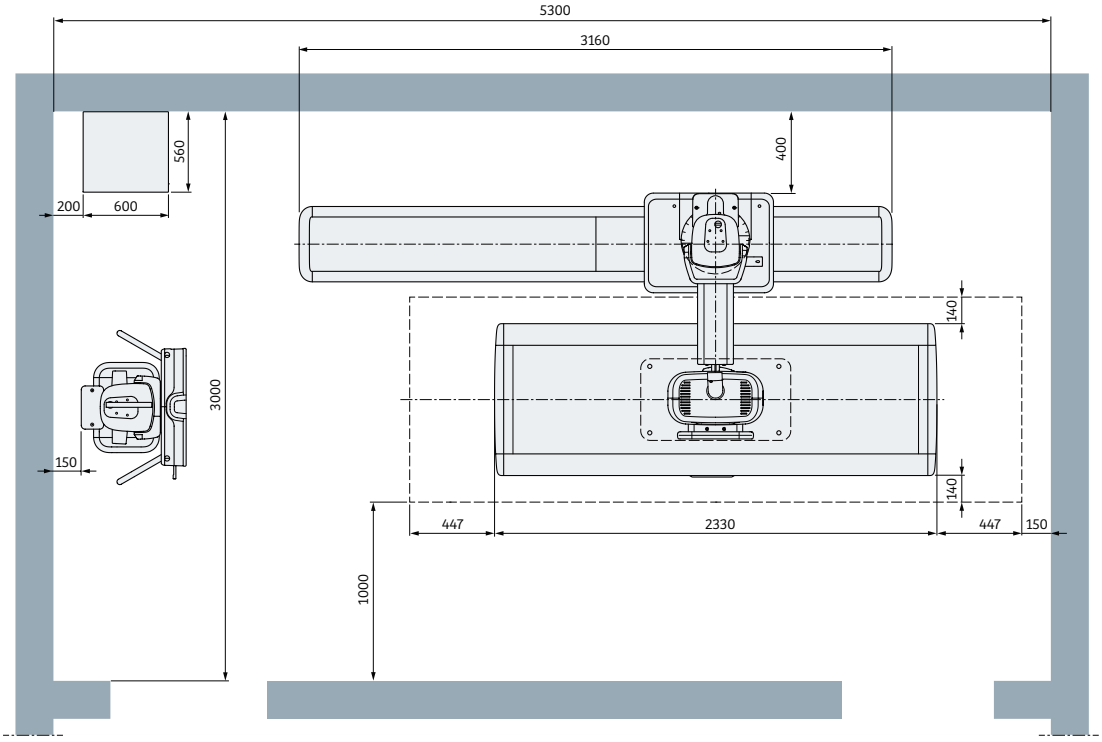


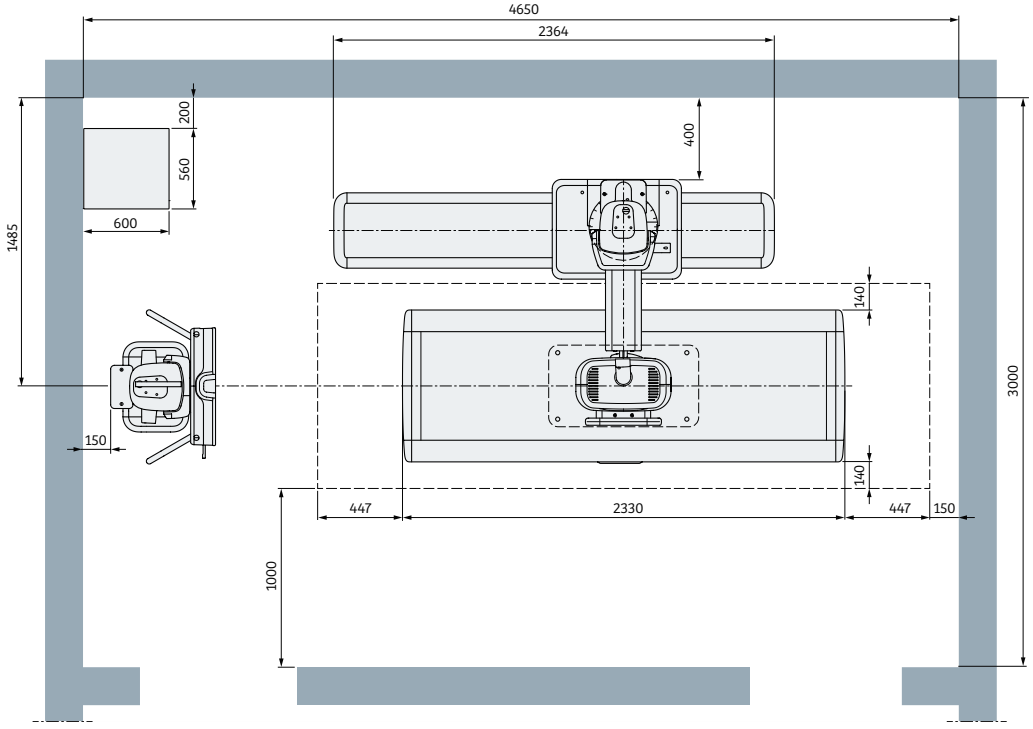


[1)] for optional short tabletop
[2)] optional, only for the system without patient table

Room planning

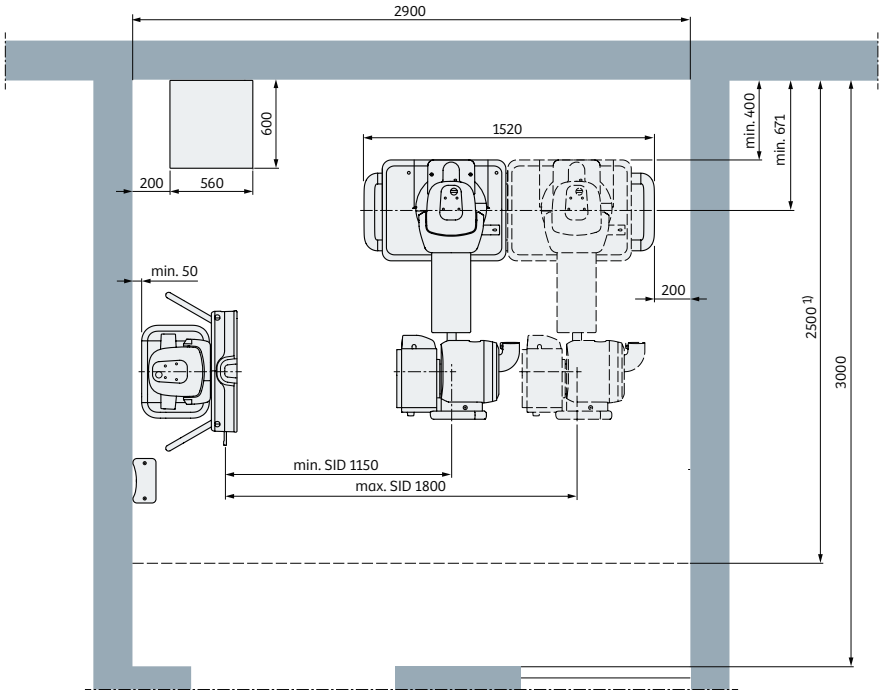
Room examples

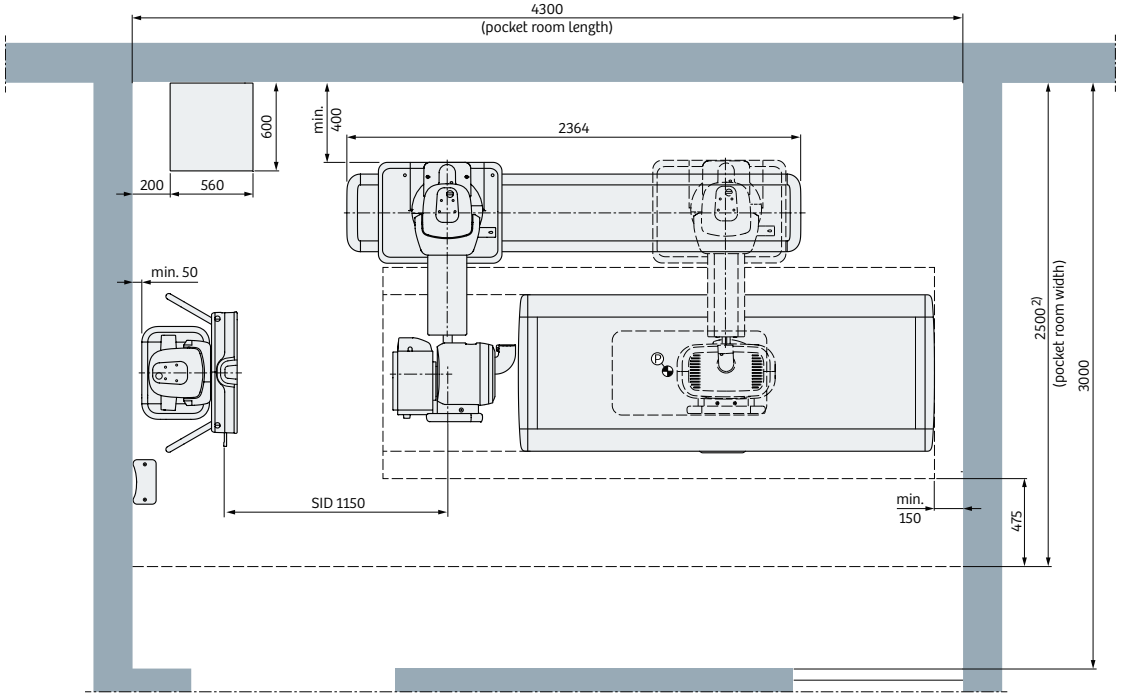




Room planning

Room examples





[1)] *Min. room width for pocket room size: Can be reduced down to 2500 mm considering restrictions for access:*
Only sliding doors possible restrictions for patients: Only patients without wheelchair because of small space before tube stand.

Notes

MULTIX Impact is not commercially available in all countries.
Due to regulatory reasons its future availability cannot be guaranteed. Please contact your local Siemens Healthineers organization for further details.

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