Datasheet

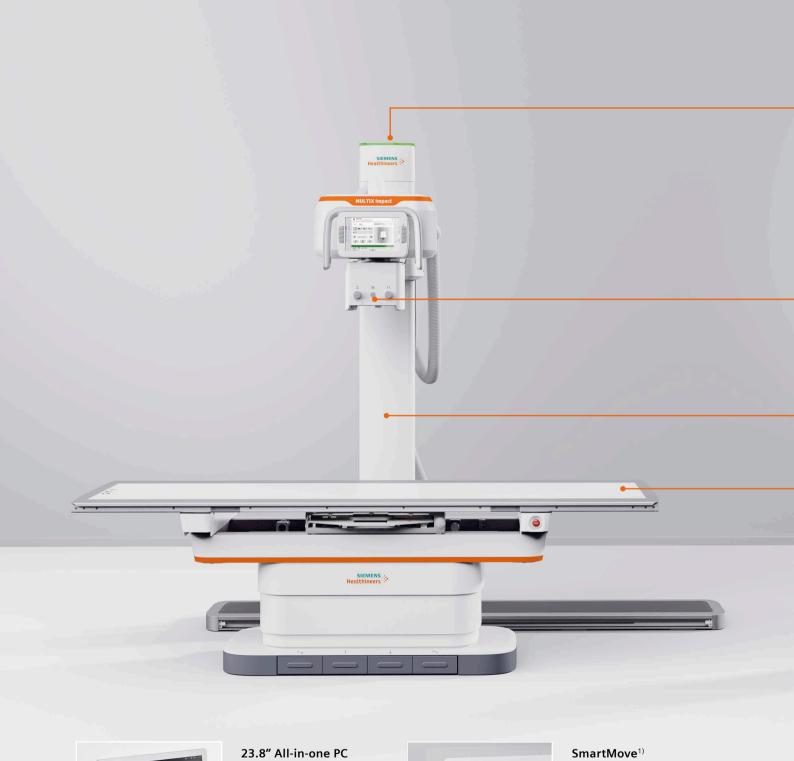
MULTIX Impact

Strengthen your Image

siemens-healthineers.com/multix-impact







Intuitive imaging systemFast image flavor setting

• Touchscreen user

 $interface^{\scriptscriptstyle 1}$

Virtually unlimited positions

can be used for table

examinations

and Bucky wall stand¹⁾

Technical specifications: MULTIX Impact



Impact Illuminate1)

Indicates the system status

Bucky wall stand (BWS)

- Automatic tube tracking¹⁾
- Vertical travel range: up to 143.5 cm
- Low central beam height: 31.5 cm
- Fixed detector Core static1)

myExam 2D Camera¹⁾

Enables myExam Collimate for:

- Smart Virtual Ortho¹⁾
- Auto Long-Leg/Full-Spine Collimation¹⁾ for standing examinations at the BWS
- Live camera image

Floor-mounted tube

- Motorized collimator1)
- SmartMove¹⁾

Table¹⁾

- Automatic tube tracking¹⁾
- Adjustable height¹⁾: from 51.5 to 90 cm
- High weight capacity: 300 kg
- Comfortable patient positioning with flat table-top





Remote Interface1)

- Tablet-based workflow
- Access major imaging system functions on-the-go

1) Option

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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 height	Elevating table ¹⁾ : 51.5 cm to 90.0 cm; total lift 38.5 cm (tabletop) Fixed table: 70 cm			
X-ray absorption	\leq 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			
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 1)	Yes, detector follows tube movement; centering maintained			
Auto tracking for tube rotation ¹⁾	Yes, detector follows tube rotation; centering maintained			

¹⁾ Option

Bucky wall stand	
The Bucky wall stand can be equipped with a M	IAX wi-D, Core XL, or a Core static.
Travel range (central beam – floor)	From 31.5 cm to 175 cm, manual or motorized
Detector cover – detector distance	MAX wi-D: \leq 42 mm Core XL: \leq 42 mm Core static: \leq 45 mm
X-ray absorption	\leq 0.6 mm Al (at 100 kV/3.6 mm Al HVL; IEC 60601-2-54)
Auto tracking of X-ray tube and detector 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, manual 145 cm, motorized
Lowest central beam height	33 cm, manual 35 cm, motorized
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	\pm 140°, detents at 0°, \pm 90°
Tracking for horizontal tube travel ¹⁾	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

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 tube housing	1,000,000 J (1,3	350,000 HU)
Anode drive	150/180 Hz (9,0	00/10,800 rpm)
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	

Additional applications				
SmartOrtho 1)	Yes, on Bucky wall stand 2) and table			
Smart Virtual Ortho ¹⁾ Auto Long-Leg/Full-Spine Collimation ¹⁾	Yes, on Bucky wall stand ²⁾ and table Yes, on Bucky wall stand ²⁾			
Automatic exposures possible on imaging sy	•			

Collimator	
Collimator	
Inherent filtration	Collimator AL04 II-D/ML03: 1 mm Al at 70 kV Collimator RFU: 1 mm Al at 75 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. 100,000 h ¹⁾ ; timer functionality; laser line light localizer (coverable)
Copper prefilter	Without filter, 0.1 mm, 0.2 mm, 0.3 mm; manual or motorized1)
Rotation	± 45° manually
Collimation control	Manual or motorized ¹⁾ (preset via organ programs)

¹⁾ Option

²⁾ Ortho stand required

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

Digital detectors

A total of th	hree differe	nt detectors ar	e avallable: MA)	x 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 it2)

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, $f_0 = 180$ cm and $f_0 = 300$ 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

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 equipme Healthineers representative for optimal set-u	nt in your working environment, please onsult your Siemens
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

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

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
f there is a WLAN or other wireless equipme Healthineers representative for optimal set-u	nt in your working environment, please onsult your Siemens up of the wireless connection
•	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

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

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, 2 x 500 G SATA HDD, 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/m ²
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)

¹⁾ Option

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

²⁾ Automatic collimator only

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
Smart Virtual Ortho ¹⁾	Enables acquisition of long leg and full spine images Tilting acquisition of up to three images on the patient table Max. ROI field coverage: 90 cm x 43/35 cm with only 5 cm overlap depending on different detector size Tilting acquisition of up to four images with Bucky wall stand/Ortho stand required Max. ROI field coverage: 150 cm x 43/35 cm with only 5cm overlap depending on different detector size Composing into a full length image is performed automatically by the imaging system The live myExam 2D Camera image enables accurate collimation and helps users see if they can perform an exam with fewer images

¹⁾ Option

²⁾ Automatic collimator only

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

Smart Remote Services¹⁾

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

Emergency power supply¹⁾

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

Accessories

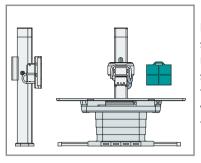
Accessories The following accessories expand the capabilities of your MULTIX Impact system: Hand grips for patient table and Bucky wall stand¹⁾ Patient stretch grip¹⁾ Patient positioning mattress¹⁾ Footswitch for elevating table height adjustment and tabletop float release¹⁾ Accessory filters (including holder) for collimator¹⁾ Compensation filter¹⁾ Compression belt (suitable for table)1) BABIX holder¹⁾ Mobile detector holder¹⁾ Lateral detector holder for use on patient table¹⁾ Clip-on grid 1) FD cover for Core XL¹⁾ Examination bed with integrated detector tray 1) UPS for imaging system1) Table paper holder1) Intercom¹⁾ Remote interface1) Multipurpose / Ortho stand1) Cassette holder without retainer¹⁾ Cassette holder¹⁾ Wall holder for grids1) Wireless Remote Control Console¹⁾ Wall charger for MAX wi-D1) Barcode Reader for patient ID scanning¹⁾

Mobile Patient Table for Core XL1)

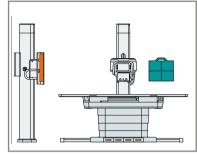
¹⁾ Option

System configuration

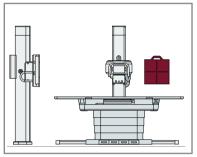
System solutions



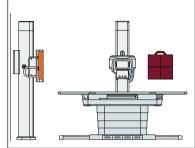
Floor-mounted solution with motorized Bucky wall stand and elevating table equipped with MAX wi-D for free exams



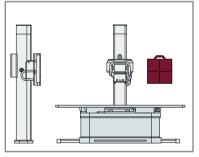
Floor-mounted solution with motorized Bucky wall stand with Core static and elevating table equipped with MAX wi-D for free exams



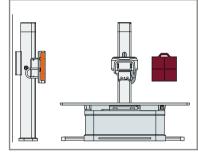
Floor-mounted solution with motorized Bucky wall stand and elevating table equipped with Core XL for free exams



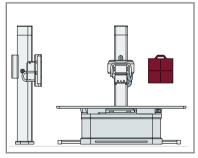
Floor-mounted solution with motorized Bucky wall stand with Core static and elevating table equipped with Core XL for free exams



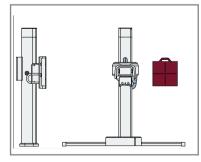
Floor-mounted solution with motorized Bucky wall stand and fixed table equipped with Core XL for free exams



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

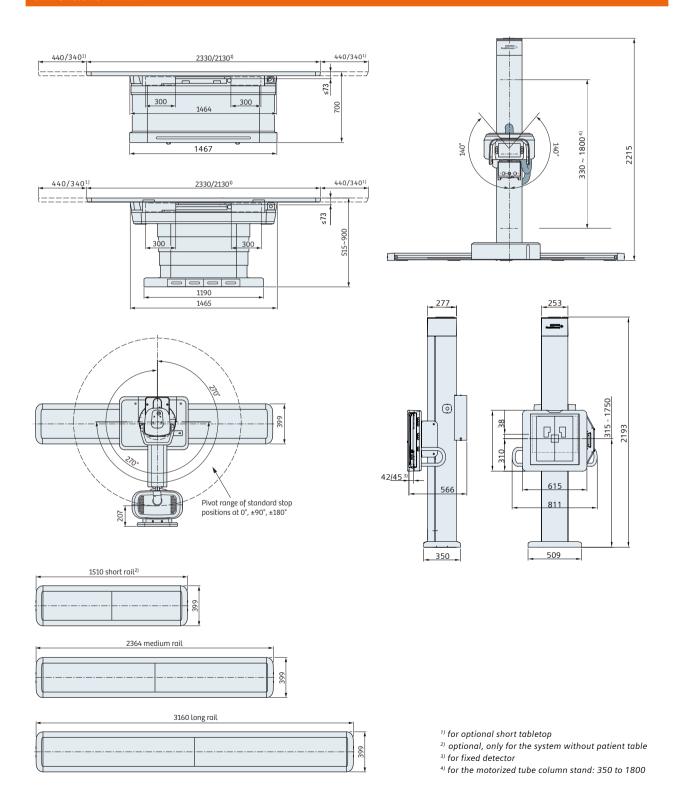




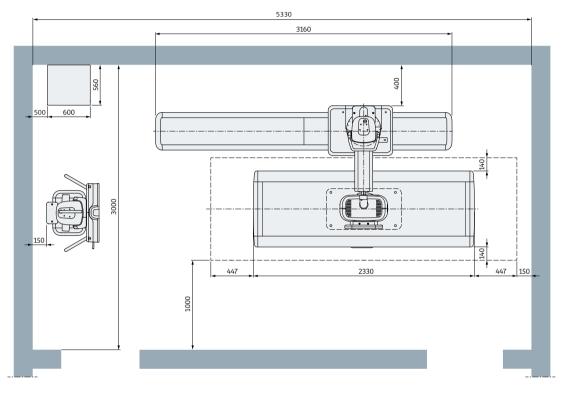


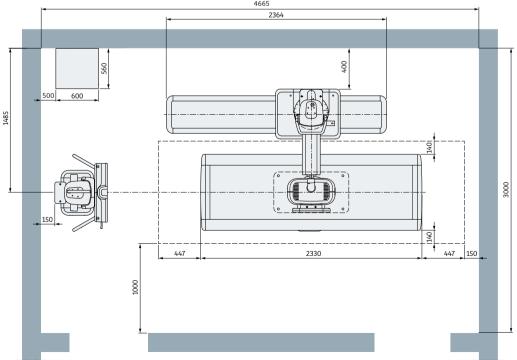
Installation data				
The entire system is powered via a three phase	e voltage connection			
Power connection	3-phase, 380 V, 400 V, 440 V (50/60 Hz), 480 V (60 Hz) \pm 10 $\%$			
Power consumption	Max. 127 kVA (80 kW)			
Environmental conditions (operation)				
Examination room				
Temperature range	+ 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			

Dimensions in mm

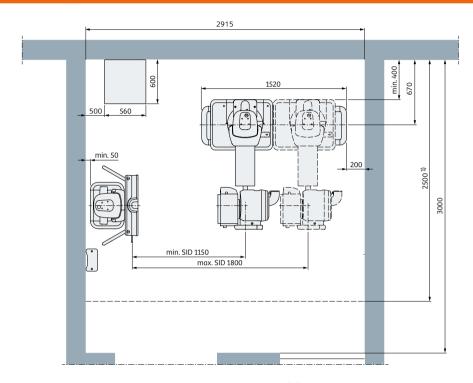


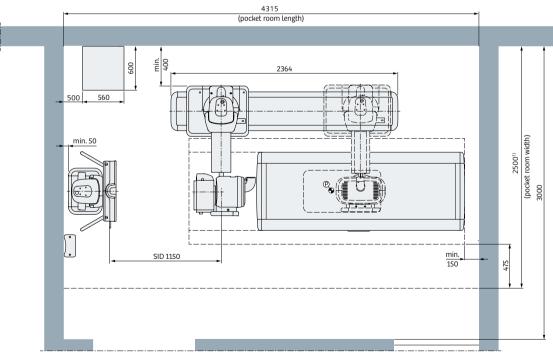
Room examples





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 kind of patients: Only patients without wheelchair because of the small space in front of the 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.

On account of certain regional limitations of sales rights and service availability, we cannot guarantee that all products/services/features included in this brochure are available through the Siemens Healthineers sales organization worldwide. Availability and packaging may vary by country and are subject to change without prior notice. For USA, federal law stipulates that this system may only be sold to a physician or by order of a physician.

The information in this document contains general descriptions of the technical options available and may not always apply in individual cases.

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Please contact your local Siemens Healthineers sales representative for the most current information.

In the interest of complying with legal requirements concerning the environmental compatibility of our products (protection of natural resources and waste conservation), we may recycle certain components where legally permissible.

For recycled components we use the same extensive quality assurance measures as for factory-new components.

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