ARCOMA

Precision

Designed for Patient Centric Care

Precision incorporates decades of imaging performance and reliability. The auto-positioning technology combined with focus on patient centric care maximizes your patient throughput while creating a first class working environment.

Features supporting high work flow

- **Predefined anatomical programs**
  With one touch exposure parameters, position and collimation is defined.
- **Auto positioning**
  When anatomical program is selected system goes to pre-defined position.
- **Light weight OTC**
  Allows easy and smooth fine-tuning of the tube position.
- **Auto tracking Wall stand**
  The tube tracks the vertical movements of the detector.
- **Auto tracking Table**
  When the table top height is adjusted up/down the tube will automatically move in order to keep the SID constant.
  SID = Source image distance, tube focus to detector surface.
- **Automatic stitching**
  Scoliosis and long legs examinations are performed fast and easy by automatic stitching functionality. Area of interest is easily defined with collimator light field.
- **OTC Display information**
  Patient information and information about the selected examination is shown on the tube display. Exposure parameters as for example patient size or selected AEC chamber can be changed from the tube display.
- **Remote control**
  Positioning can be performed with a Remote control (optional) for more flexible work flow.
- **Ergonomic and light-weight detectors**
  Light weight and with ergonomic interfaces for secure and efficient handling.

Dose awareness

- **Detector with high DQE**
  Detector with high DQE (Detective Quantum Efficiency) is used securing good images to low patient dose.
- **Automatic Exposure Control (AEC)**
  AEC can be used for examinations performed at the Table and Wall stand. The use of AEC secures that the correct amount of dose is used in order to create a diagnostic image.
- **DAP**
  Monitoring of the patient dose; Dose Area Product Meter. The value is shown with the image and included in the DICOM header.
- **Exposure Index**
  Exposure index indicates if the correct amount of dose were used or not. This value is shown together with the image.

X-ray Generator

Generator name/type number	High Frequency Generator
Switching Frequency	100 kHz - 220 kHz
Nominal kW output of generator	65 kW Option: 80kW
kVp range	40 – 150 kV
mA range	10 to 630 mA (50 kW) 10 to 800 mA (65 kW) 10 to 1000 mA (80 kW)
mAs range	0.1 to 630 mAs (50 kW) 0.1 to 800 mAs (65 kW) 0.1 to 1000 mAs (80 kW)
Exposure time	0.001 – 6.3 s
System Cabinet (L x W x H) mm	750 x 600 x 1125 mm

Electrical characteristics

Mains voltage for the systm	380 V 3~ 400 V 3N 400 V 3~ 480 V 3~ Long-time (positioning) 2A 50/60 Hz- Momentary (exposure): 150 A, 50/60 Hz (Short term peak value), (recommended fuse 63 A thermal breaker) Class 1, Type B
Heat dissipation	1713 BTU/H

Generator Series and Mains Voltage	Generator Momentary Line Current	Apparent Mains Resistance	Minimum Recommended			
			Mains Disconnected to Generator (15 ft/5m max)	Generator Service Rating	Distribution Transformer Rating	Ground Wire Size
50 kW 400 VAC, 3p.	100 A	0.17 Ω	13.3 mm^2	100 A	65 kVa	13.3 mm^2
65 kW 400 VAC, 3p.	125 A	0.13 Ω	13.3 mm^2	100 A	85 kVa	13.3 mm^2
80 kW 400 VAC, 3p.	155 A	0.10 Ω	13.3 mm^2	100 A	105 kVa	13.3 mm^2

Environmental Requirements

Ambient transport and storage temperature	-40 °C - +70 °C
Ambient operating temperature	+10 °C - +40 °C
Transport and storage humidity (relative)	10-90%, non-condensing
Operating humidity (relative)	30-75% RH, non-condensing
Maximum transport and storage altitude	500-1060 hPa
Maximum operating altitude	700-1060 hPa

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Overhead Tube Crane

General

Rotation range ceiling (beta)	>340°
Rotation range tube arm (alpha)	>±135°
Column (Z stroke)	1750 mm
Longitudinal movement (X stroke)	3190 mm (X-rail 4 000 mm)
Transverse movement (Y stroke)	4160 mm (Y-rail 5 000 mm) *(if cable carraige is used, the stroke is reduced 105 mm for each wagon)*

Electrical Characteristics

Mains voltage	230 VAC, 50/60 Hz center tapped single phase 4A

Classification (according to IEC 60601-1)

Class	Class I equipment. All dead metal parts of the equipment are electrical connected to protective earth.
Applied part	Type B
Protection against ingress of water	IPXO
Mode of operation	Intermittens operation: 20%, maximum 1 min. ON/4 nin. OFF
Use of anaesthetic mixtures	The equipment is not suitable for use in the presence of flammable anasthetic mixtrues with air or with oxigen of with nitrous oxide.

Speed

	Low speed – Maximum speed
Z movement	60 mm/s
X movement	250 mm/s – 500 mm/s
Y movement	250 mm/s – 500 mm/s
α movement	16°/s
β movement	16°/s
Image receptor holder movement (with 50 kg mass)	166 mm/s – 350 mm/s

OTC Display

Information:	Patient name, ID, Birth date, age, gender Beta and alpha angle. SID or height above table. Active mode; Table – Wall stand – Free or Stitching modes.
Information and changeable parameters:	Technique, X-ray tube voltage, X-ray tube current, radiography time, density, AEC (Automatic Exposure Control), beam hardening filter, patients size setting selection etc.

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X-ray Tube Unit

Max kVp rating	150kV
Focal spot input power	40/100kW
Focal spot sizes	0.6/1.2mm
Anode heat storage	400kHU, 600 kHu (option)
Anode angle	12°
Housing heat storage	2.000kHU
Anode cooling rate	125kHU/min
Anode rotation speed	180 Hz

Collimation

Filtration	0.1 mmAl, 0.2 mmAl, 0.3 mmAl
Shape of the radiation field	Rectangular
Lamp:	LED
Rotation angle:	±45°
Center marker:	Center if the radiation field is indicated by a cross.
Bucky light:	Radiation field center is indicated by a laser beam for positioning.
Beam limiting method:	Automatic (adjusted to detector size and location in detector holder) Manual (adjusted by the user)

Wall stand

General

Vertical stroke	~1550 mm (1700 mm with tilted detector)
Rotation range of imaigng unit	-20° - +90°

Configuration

Operating method:	Motorized and manual
Balancing mechanism:	Counterweight

Table

General

Movement	6-Way
Operating method:	Motorized vertical and floating table top
Patient load (Dynamic load center):	300 kg

Table top height

Lowest table top position (from floor to table top surface)	550 mm
Vertical stroke	380 mm

Table top

Al eqv.	0,9 mm
Table top dimension	2424 mm x 850 mm

Table top transparent area	2400 mm x 613 mm
Table top thickness	21,5 mm
Length of stroke, X direction	± 600 mm
Length of stroke, Y direction	± 150 mm
Movement ragne of the imaging unit	>650 mm

Electrical Characteristics

Maximum power without external electronics	500 W

External Electrical Characteristics

The external electronics must be approved according to IEC60601-1. If any external electronics is installed the end product must be tested according to IEC60601-1.

Power output to external	110-240 VAC 50-60 Hz Single phase 10A
Power output external 24 VDC	24 VDC 3A

X-ray grids

Interspace material	Al
Cover material:	Al or Carbon
Grid density	40 lp/cm or 52 lp/cm
Grid ratio:	10:1
Focusing distance:	110, 115, 140, 150, 180
	Stationary
	Detachable
701/710 Portable W/Holder with grid	Light weight detector holder with integrated grid. Portrait version Grid specification: Carbon fiber cover + fiber interspaced 52 lines/cm, ratio 8:1, Focal distance: 110 cm.
801/810 Portable W/Holder with grid	Light weight detector holder with integrated grid. Grid specification: Carbon fiber cover + fiber interspaced 52 lines/cm, ratio 8:1, Focal distance: 110 cm. Portrait version
401/410 Portable W/Holder with grid	Light weight detector holder with integrated grid. Grid specification: Carbon fiber cover + fiber interspaced 52 lines/cm, ratio 8:1, Focal distance: 110 cm. Portrait version
401/410 Portable W/Holder with grid	Light weight detector holder with integrated grid. Grid specification: Carbon fiber cover + fiber interspaced 52 lines/cm, ratio 8:1, Focal distance: 140 cm Portrait version

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Flat Panel Detector

Wireless	
Scintillator	CsI
Fluid Resistance	IPX7
On-board image storage	Up to 99 images
Pixel size:	125 µm
A/D conversion:	16 bit
Resolution:	4.0 lp/mm
DQE:	0.74 @4.3µGy, Spatial frequency 0 lp/mm
Preview Image time:	1 sec.
Cycle Time:	7 sec.
Wireless channel/band	2.4 GHz, 5 GHz (W52, W53*, W56*, W58) **) W53, W56 supports only in Module receiver mode*
Local storage	Able to store 99 images
Load capacity:	Uniform load (over the whole area of the detector surface): 310 kg or less Uniform load (effective imaging area): 150 kg or less Local load (On an area 40 mm in diameter): 100 kg or less
CXDI-710C Wireless	
Size	35.0x42.6 cm
Effective imaging area:	350 x 426 mm
Image matrix size:	2800 x 3408 pixels
Weight	2.3 kg
CXDI-810C	
Size	35.0x27.4 cm
Effective imaging area:	350 x 274 mm
Image matrix size:	2800 x 2192 mm
Weight	1.8 kg
CXDI-410C	
Size	42.6x41.5 cm
Effective imaging area:	426 x 415 mm
Image matrix size:	3320 x 3408 mm
Weight	2.8 kg
Fix	
CXDI-401C Compact	
Scintillator	CsI
Effective Imaging area:	415x426 mm
Resolution:	4.0 lp/mm
Gray scale:	4096 gray scale
Pixel size:	125 x 125 µm
Image matrix size:	3320 x 3408 pixels
Attenuation of the detector front panel:	Max 0.37 mmAl
Environmental requirements Operation Temperature:	+5°C to +35°C

Humidity: Atmospheric pressure:	30 to 85% RH (without condensation) 700 to 1060 hPa
Operation Temperature: Humidity: Atmospheric pressure:	 -305°C to +50°C 10 to 95% RH (without condensation) 700 to 1060 hPa
Dimensions	Approx. 460 (W) x 490 (H) x 15 (D) mm
Weight:	Approx. 7 kg (including cable)

Workstation / Control Software

DICOM Conformance (3.0)	
DICOM Storage SCU/SCP, Query/Retrieve SCU, Modality work list SCU, Storage Commitment SCU, Basic grayscale Print SCU, MPPS Print Conduction Off-line examinations	Supported *See DICOM Conformance statement for details.*

Control Software	Provide a steady and efficient workflow in the field of digital radiography when linked to an RIS/HIS network. Connect Flat panel detectors. Automatically processing of captured images to achieve diagnostic image quality. Advanced image processing features. Preprogrammed anatomical programs are available and can be selected and adjusted. Exposure parameter can be selected and adjusted: kV, mA and mAs, focus size and AEC/manual exposure. New patient entry, generator parameters adjustments and post processing operations can be done by single console and monitor.
DICOM Conformance Statement Overview	The Control software implements necessary DICOM services to download work lists from an information system, save acquired DX images, CR images and associated Presentation States to a network storage device or Storage Medium, print to a networked hardcopy device and inform the information system about the work actually done. Media Storage Application Profile supported by the Control software: Compact Disk –Recordable, General Purpose CD-R. **SOP classes (SCU – Yes, SCP – No)** <u>Transfer</u> Digital X-Ray Image Storage – For Presentation Computed Radiography Image Storage Grayscale Softcopy Presentation State X-Ray Radiation Dose SR <u>Workflow Management</u> Modality Worklist Storage Commitment Push Model Modality Performed Procedure Step

	Print Management Basic Grayscale Print Management Multiple images can be print on a single paper with different formats like 1:1 and 2:1 etc. Presentation LUT
Digital Image Processing	Basic Processing: Rotation, Flip, Inversion, Panning, Zoom, Brightness/Contrast, laterality mkarkers (L/R marking), Brightness adjustment based on Region of Interest, Crop Mask, Reset/Undo Advanced Image processing Anatomic Part (Category and Anatomical Part, Direction) LUT adjustments Enhancement Dynamic Range Adjustment Noise Reduction Grid Suppression Sharpness Adjustment Peripheral Mask Scatter Correction (option) Advanced Edge Enhancement (option)
PC Specification	CPU: Intel Xenon 8.25M Cache, 2.90 GHz, 4 cores RAM: 8 GB HDD: 2x500 GB, 7200 RPM
Monitor	2MP, Monitor size: 23 " Monitor resolution: 1920 x 1080 Brightness: 260 cd/m2 2nd monitor (option): High Brightness Review monitor 2MP, Monitor size: 21,3" Monitor resolution: 1200 x 1600 Brightness: 800 cd/m2

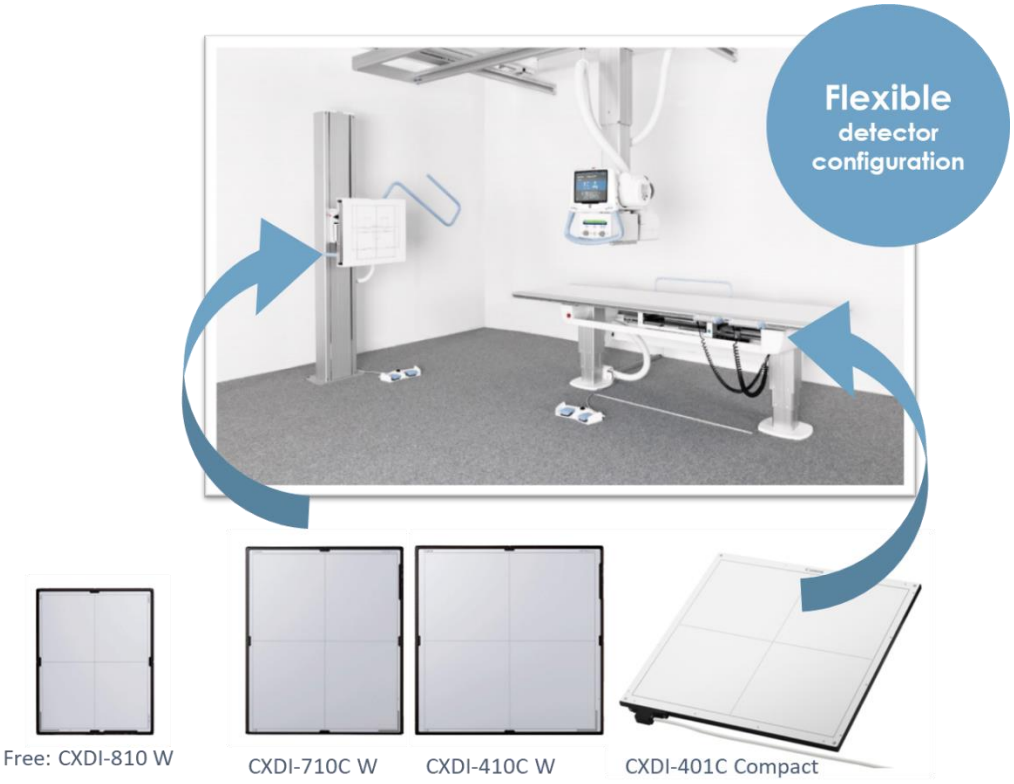
Weights

Overhead Tube Crane (OTC)	~ 240 kg
Tube and collimator	40 kg
Ceiling wagon	95 kg
Column	40 kg
Ceiling rail Y (4 m standard)	28 kg
System Cabinet	134 kg
Table	~150 kg
Detector holder	~ 21 kg
Table top	~ 47 kg
Wall stand	~145 kg
Detector holder	~ 21 kg
Flat Panel Detectors	
CXDI-710C Wireless	2.3 kg
CXDI-410C Wireless	2.8 kg
CXDI-810C Wireless	1.8 kg

CXDI-401C Compact	~7 kg

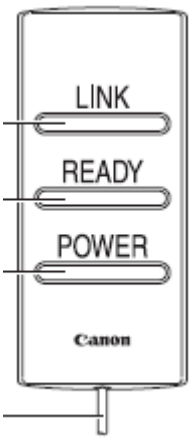
Options and Accessories

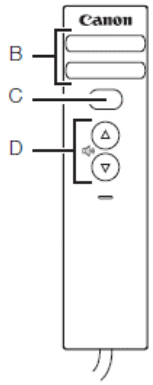
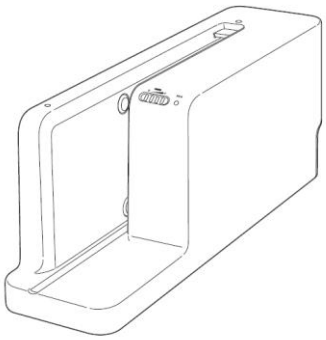
Detector configuration



The Wall stand and the Table can hold either the CXI-710W, CXDI-401W or the CXDI-401C Compact. For the CXDI-710 W and CXDI-410 W automatic charging of battery and image transfer can be performed when the detector is placed in the detector holder.

	Wall stand	Table	Free	
CXDI-410C	•	•	•	Wireless 42.6x41.5 cm 2.8 kg
	□ Status indicator	□ Status indicator		
	□ Charging in the holder	□ Charging in the holder		
CXDI-710C	•	•	•	Wireless 35.0x42.6 cm 2.3 kg
	□ Status indicator	□ Status indicator		
	□ Charging in the holder	□ Charging in the holder		
CXDI-810C	N/A	N/A	•	Wireless 35.0x27.4 cm 1.8 kg
CXDI-401C Compact	•	•	N/A	Fix 46 x 49 cm
Other Options:	Left/Right hand loading of grid and Wireless detector	N/A	N/A	

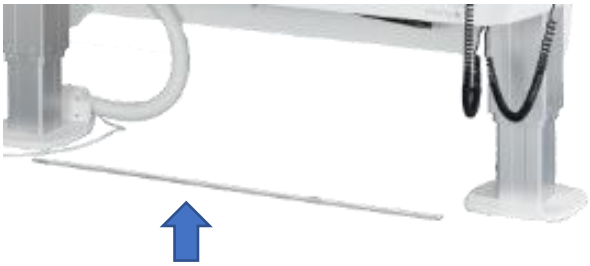
	**Status Indicator** *Option when CXDI-710C Wireless or CXI-410C Wireless selected.* When the detector is set in the Wall stand or Table detector the LED lamps on the detector are no longer visible. The status indicator can be used to display the power and ready status indicated on the detector´s LED lamps. You can turn on the detector on and off by pressing the POWER switch on the status indicator, or switch the detector to ready status by pressing and holding the READY switch on the status indicator. The status indicator can be in a place where it can be easily checked during examination.	**Option**
	**Status Indicator** *CXDI-401C Compact (included when Compact detector is selected)*	**Included for fix detector**

	**Ready Indicator** (B) The LED status indicator lights up or flashes to indicate detector status, detector registration and connection status. C) IR data port, communication port for the detector link. D) Sound level up/down. Sound signals indicating when the X-rays are received by the detector.	**Accessories**
	**FPD Docking station**	**Accessories**
	**Battery Charger**	**Accessories**
	**Battery Pack**	**Accessories**

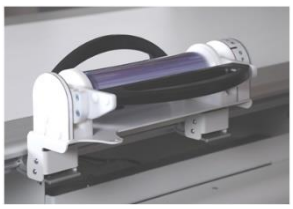
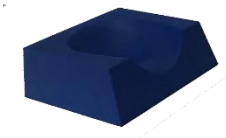
FEATURES	
Scatter correction Option (Software)	Option
Edge Enhancement (Software)	Option
Automatic Stitching, Wall stand and table	Option
Integrated DAP	Option
	**Remote control** Servo button: Activating auto positioning. Overhead tube crane up. Collimator light on/off.

X-RAY GRID	
	
Interspace material	Al
Cover material:	Al or Carbon
Grid density	40 lp/cm or 52 lp/cm *) *) required for CXI-401C Compact*
Grid ratio:	10:1
Focusing distance:	110, 115, 140, 150, 180
	Stationary
	Detachable

	**Light weight detector holder with integrated grid.** Carbon fiber cover + fiber interspaced 52 lines/cm, ratio 8:1 Focal distance: 110 cm 401/410 701/710 801/810 Focal distance: 140 cm 401/410	

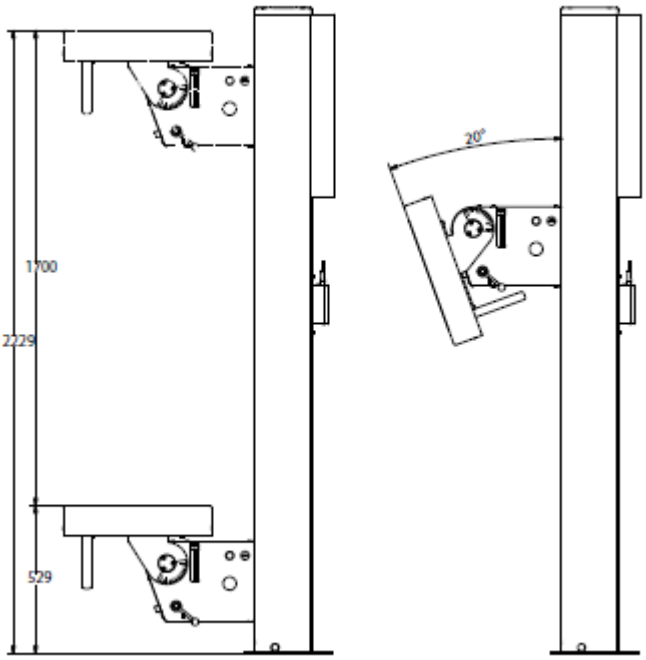
TABLE		
FLEXIBILITY - USER INTERFACES		
	Vertical collision protection	**Option**
	**Hand control for automatic collimator (1 pcs)**	
	**Foot Hand control for automatic collimator (1 pcs)control strip type X/Y**	

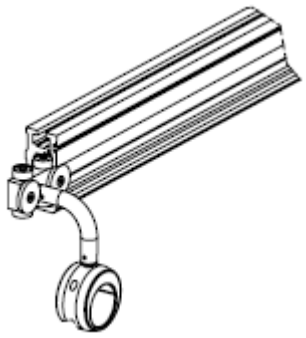
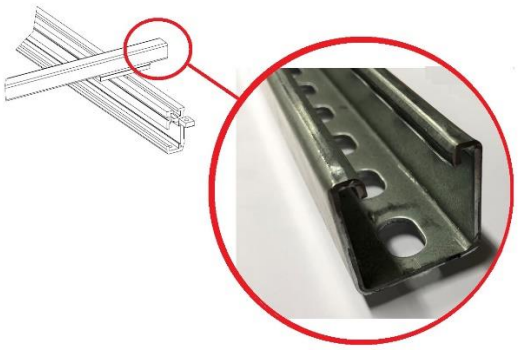
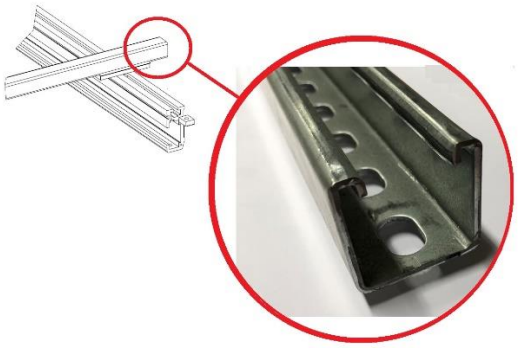
	**Foot control X/Y/Z** *(pedals, colour: blue)*	**Accessories**
	**Wireless foot control.** *Up/down of table top and release of brake for floating table top.*	**Option**
PATIENT COMFORT		
	**Mattress, Basic**	**Accessories**
	**Mattress, Comfort**	**Accessories**

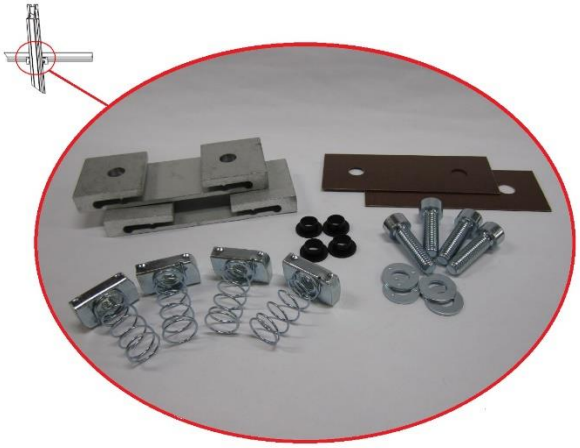
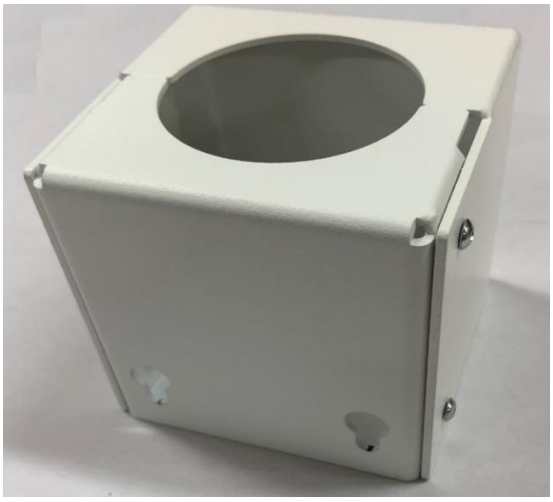
	**Patient handgridp** *(colour: blue)*	**Accessories**
WORKFLOW		
	**Lateral cassette holder**	**Accessories**
DOSE REDUCTION & IMAGE IMPROVEMENT		
	**Compression belt cost effective**	**Accessories**
	**Compression belt high-end**	**Accessories**
	**Form pad large – head** (25x24.5x9 cm)	**Accessories**

	**Form pad medium** – **wedge** (50x28x10/1 cm)	**Accessories**
	**Form pad small - rectangle** (25x24.5x9 cm)	**Accessories**

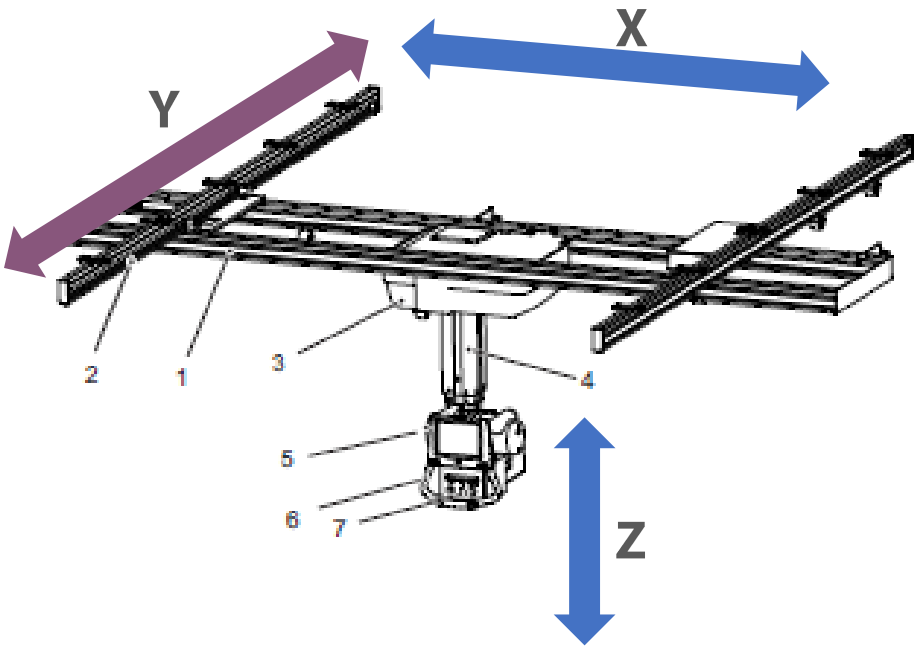
WALL STAND		
	**Wireless foot control.** *Up/down of table top and release of brake for floating table top.*	**Option**
	**Lateral armrest**	**Accessories**

	**Wall stand tilt** -20°, 0°, 90°	**Option**

INSTALLATION RELATED OPTIONS		
	**Cable carriage**	**Accessories**
 **x 5**	**Unistrut rails,** ***for 4 x 4 meter installation*** ***0512-099-001*** **Used for rail attachment to ceiling. Needed if no other attachment possibility is present in the room where the installation is carried out.**	**Accessories**
 **x 7**	**Unistrut rails,** ***for 4 x 5 installation*** ***0512-099-002*** **Used for rail attachment to ceiling. Needed if no other attachment possibility is present in the room where the installation is carried out.**	**Accessories**
	**Mounting kit for Unistruts rails 4 x 4** ***0512-099-003*** ***Bolts, nuts and washers to prepare Unistrut rails for a 4x4 meter rail installation***	**Accessories**

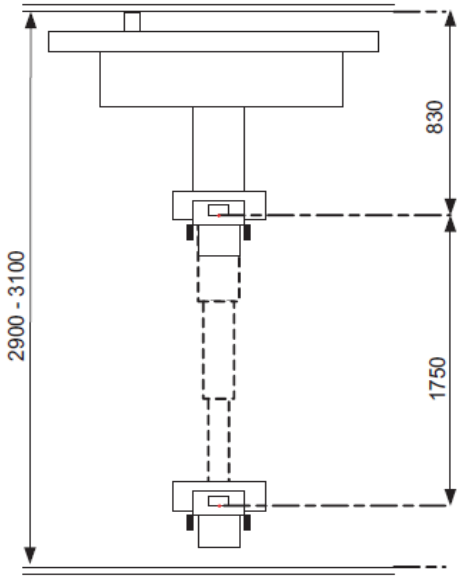
	**Mounting kit for Unistruts rails 4 x 5** ***0512-099-004*** ***Bolts, nuts and washers to prepare Unistrut rails for a 4x5 meter rail installation***	**Accessories**
	**Transverse Y kit** ***0170-810-020*** Kit for attaching Y-rails to Unistrut rails in ceiling. 10 kits are included in a standard delivery (4x4 m). If more attachment points are needed, this is the kit to buy! 1 kit = 2 attachment points.	**Accessories**
	**Cable outlet for 0170 CS** ***0170-099-002*** For attachment of Wallstands cable hose to hospitals wall (for cable routing above inner ceiling and/or cable ducts on wall).	**Accessories**

Rail (Y) and Traverse (X) lengths



4x4m Ceiling rails (XxY)
4x5m Ceiling rails (XxY)
4x6m Ceiling rails (XxY)
5x4m Ceiling rails (XxY)
5x5m Ceiling rails (XxY)
5x6m Ceiling rails (XxY)

Lengths can also be adapted for customer requirements; X < 5m and Y < 6 m (option).


830
2900 - 3100
1750

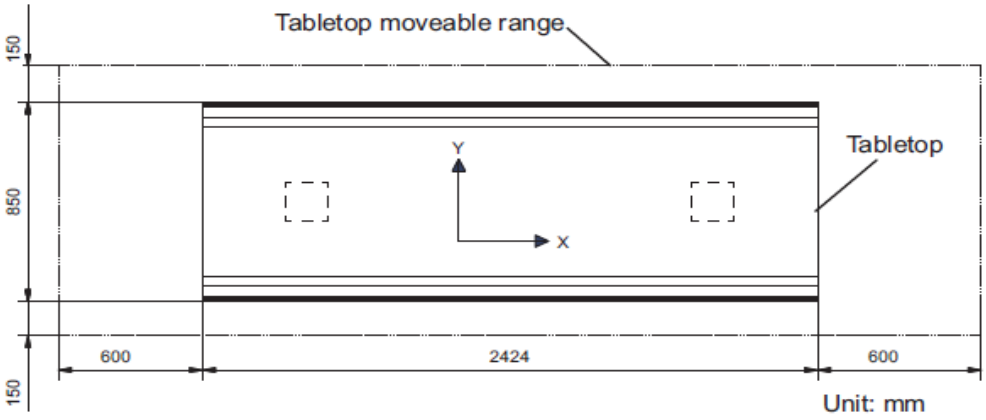
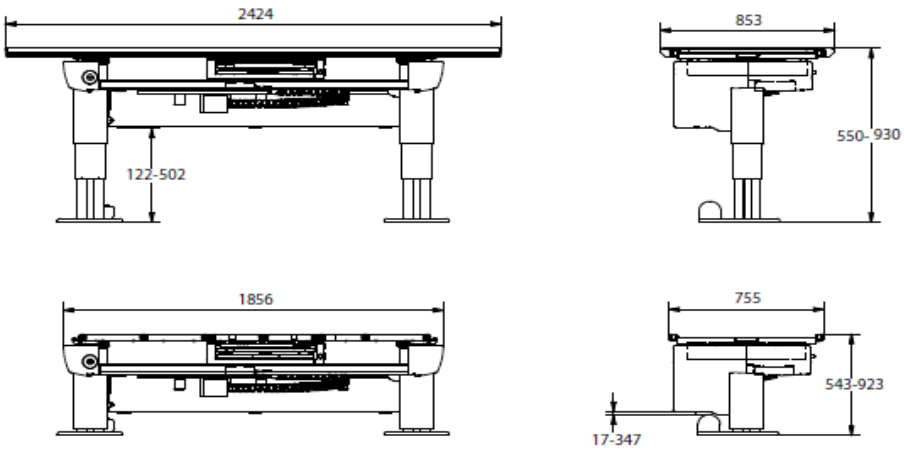
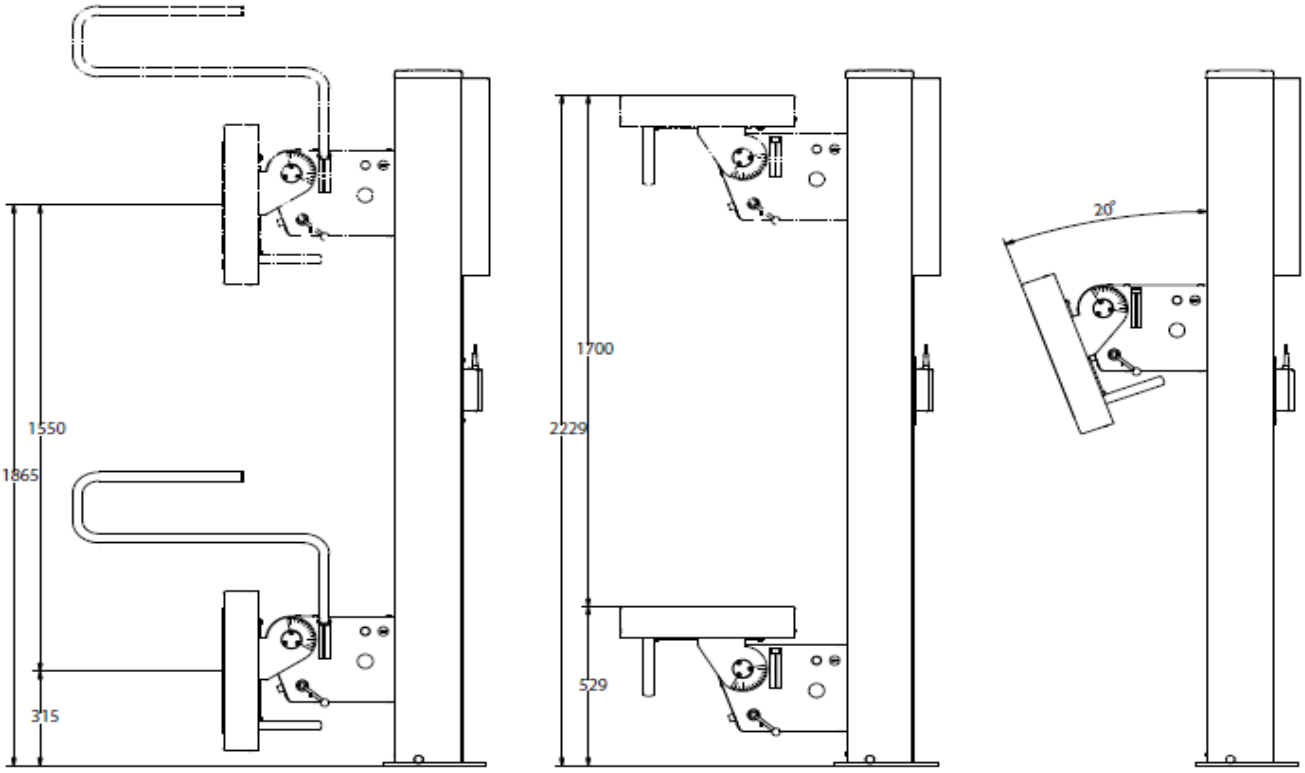

Tabletop moveable range
150
850
150
Y
X
Tabletop
600
2424
600
Unit: mm

Figure 4-6


2424
122-502
853
550-930
1856
755
543-923
17-347


1550
1865
315
1700
2229
529
20°

Detector options selection guide