ARCOMA

ARCOMA Intuition i3

Designed for Patient Centric Care

Light weighted versatile system with auto-tracking. Unique combination of proven technology and Scandinavian design creating an elite, yet cost-effective, DR/CR/Film solution.

Features supporting high work flow

- **Predefined anatomical programs**
  With one touch exposure parameters and collimation (option) is defined.
- **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.
- **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.

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 (option)**
  Monitoring of the patient dose; Dose Area Product Meter.
- **Exposure Index**
  Exposure index indicates if the correct amount of dose were used or not. This value is shown together with the image.

General information

Classification of installation and use:	Fixed / permanently installed
Device type (component/sub-assembly/ equipment/ system):	System
Intended use (Including type of patient, application location):	Radiography
Mode of operation:	Continuous standby with non-continuous loading
Supply connection:	Permanently installed

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

X-ray Generator

Generator name/type number	High Frequency Generator
Switching Frequency	100 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
Generator name/type number	High Frequency Generator
Switching Frequency	100 kHz
Nominal kW output of generator	50 kW Option: 65 kW, 80kW
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

Overhead Tube Crane

General

Rotation range ceiling (beta)	$-180° (\pm5°) \sim +163° (\pm10°)$
Rotation range tube arm (alpha)	$+180° (\pm5°) \sim +163° (\pm10°)$
Column (Z stroke)	1 750 mm, 1 450 mm
Longitidunal movement (X)	3 352 mm (X-rail 4 000 mm)
Transverse movement (Y)	4 113 mm (Y-rail 5 000 mm), Special Resus solutions with up to ~24m available.
Live camera	OTC display and manoeuvre room monitor

Electrical Characteristics

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

Classification

Class	Class Ib 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 min. 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	40 mm/s – 150 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.

X-ray Tube Unit

Max kVp rating	150kV
Min kVp rating	40 kV
mA range:	: 0.1 to 630 mAs (50 kW), : 0.1 to 800 mAs (65 kW) (option) : 0.1 to 1 000 mAs (80 kW) (option)
mAs range:	0.4 – 1 000 mAs
Exposure time:	0.0001 - 6.3 sec
Focal spot input power	40/100kW
Focal spot sizes	0.6/1.2mm
Anode heat storage	400 kHU, 600 kHu (option)
Housing heat storage	1 300 kHU (50 kW) or 2 000 kHU (65 kW, 80kW)
Anode angle	12°

Collimation (standard)

Filtration	0.1 mm Al + (0.1 mm Cu, 0.2 mm Cu, 2 mm Al) Manual selection
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:	Manual (adjusted by the user)

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Wall stand

General

Vertical stroke (tilt option)	~1400 mm (+40 mm/ -10 mm)
Vertical stroke (non-tilt option)	1470 mm (+40 mm/ -10 mm)
Brake:	Electromagnetic
Rotation range of imaigng unit	-20° - +90°
Distance detector – front cover	40 mm

Configuration

Operating method:	Manual and Motorized (option)
Balancing mechanism:	Counterweight

Table (standard – closed)

General

Movement	6-Way
Operating method:	Motorized
Brake:	Electromagnetic
Patient load (Dynamic load center):	295 kg

Table top height

Lowest table top position (from floor to table top surface)	540 mm (+20 mm / -10 mm)
Vertical stroke	310 mm (+40 mm / -20 mm)

Table top

Al eqv.	0,9 mm
Table top dimension	2424 mm x 808 mm
Table top transparent area	2360 mm x 601 mm
Table top thickness	21 mm
Length of stroke, X direction	$\pm$ 500 mm
Length of stroke, Y direction	$\pm$ 150 mm

Table (option – Two-column)

General

Movement	6-Way
Operating method:	Motorized and vertical
Patient load (Dynamic load center):	300 kg
Distance detector - table top	85 mm

Table top height

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

Specifications subject to change without notice

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	$\pm$ 600 mm
Length of stroke, Y direction	$\pm$ 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	TBD (decided by detector specification)
Grid ratio:	8:1, 10:1, 12:1 available (To be discussed)
Focusing distance:	110, 115, 140, 150, 180 available (To be discussed)
	Stationary
	Detachable
Portable W/Holder with grid	Light weight detector holder with integrated grid. Grid specification: Carbon fiber cover + fiber interspaced Focal distance: 110 cm.

X-ray transparent stretcher

General

Movement	Four pivoting wheels. Fixed table top.
Operating method:	Mobile
Patient load (Dynamic load center):	180 kg

Table top

Al eqv.	0.9 mm Al
Table top dimension	1990 x 680 mm

Table top X-ray transparent area	1990 x 500 mm
Table top thickness	70 mm

Flat Panel Detectors - Wireless

CXDI-Elite	CXDI-720C Wireless	CXDI-820C Wireless	CXDI-420C Wireless
Method	Flat panel detector: scintillator & amorphous silicion (a-Si)		
Scintillator	Cesium Iodide		
Fluid Resistance	IP57		
On-board image storage	99		
Pixel size	125 µm		
Surface load	310kg		
Grayscale	A/D: 16 bit		
Limiting Resolution:	4.0 lp/mm		
DQE:	Typical 74% (0 lp/mm), 67% (0.5 lp/mm)		
MTF	Typical 45% (2 lp/mm)		
Time for ready	3 seconds		
Preview Image time:	1 second		
Cycle Time:	4 seconds		
Wireless channel/band	2.4 GHz, 5 GHz		
Surface load	310 kg		
Optional function compatibility	Built-in AEC Assistance[1], Intelligent NR, Scatter Correction *1) Exposure termination is controlled by the x-ray generator. As with any AEC operation appropriate exposure factors with a reasonable backup time should be set.*		
CXDI-Elite	**CXDI-720C Wireless**	**CXDI-820C Wireless**	**CXDI-420C Wireless**
External Dimensions	384 x 460 x 15 mm (15 x 18 x 0.6 in)	307.5 x 384 x 15 mm (12 x 15 x 0.6 in)	460 x 360 x 15 mm (18 x 17 x 0.6 in)
Effective imaging area:	350 x 426 mm (14 x 17 in)	274 x 350 mm (11 x14 in)	426 x 426 mm (17 x 17 in)
Image matrix size:	2800 x 3408 pixels	2192 x 2800 pixels	3408 x 3408 pixels
Weight	2.3 kg (5.1 lb.)	1.8 kg (4.0 lb.)	2.8 kg (6.0 lb.)

CXDI-Pro	CXDI-703C Wireless	CXDI-403C Wireless	CXDI-803C Wireless
Method	Flat panel detector: scintillator & amorphous silicion (a-Si)		
Scintillator	Cesium Iodide		
Fluid Resistance	IP55		
Pixel size	140 µm		
Load capacity	Uniform load 310kg (over the whole area of the detector surface)		
Grayscale	A/D: 16 bit		
Limiting Resolution:	3.5 lp/mm		
DQE:	Typical 65% (0 lp/mm), 58% (0.5 lp/mm)		
MTF	Typical 55% (2 lp/mm)		
Preview Image time:	1 second (dependent on acquisition mode)		
Cycle Time:	<5 seconds (dependent on acquisition mode)		
Wireless channel/band	2.4 GHz, 5 GHz		
CXDI-Elite	**CXDI-703C Wireless**	**CXDI-803C Wireless**	**CXDI-403C Wireless**
External Dimensions	384 x 460 x 15 mm (15 x 18 x 0.6 in)	307.5 x 384 x 15 mm (12 x 15 x 0.6 in)	460 x 460 x 15 mm (18 x 18 x 0.6 in)

Effective imaging area:	349 x 426 mm (14 x 17 in)	273 x 349 mm (11 x14 in)	426 x 426 mm (17 x 17 in)
Image matrix size:	2496 x 3040 pixels	1952 x 2496 pixels	3040 x 3040 pixels
Weight	2.9 kg (6.4 lb.)	2.1 kg (4.6 lb.)	3.5 kg (7.7 lb.)

Flat Panel Detectors - Fixed

CXDI-420C Fixed	
Scintillator	Cesium Iodide
External dimensions	460 x 460 mm
Effective Imaging area:	430 x 430 mm
Resolution:	4.0 lp/mm
Gray scale:	A/D: 16 bit
Pixel size:	125 µm
Image matrix size:	3408 x 3408 pixels
DQE	Typical 74% (0 lp/mm), 67% (0.5 lp/mm)
Preview image time	1 sec (dependent on acquisition mode)
Cycle Time	4 sec (dependent on acquisition mode)

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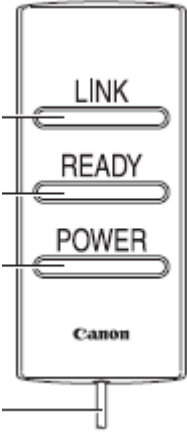
DICOM Conformance (3.0)	
DICOM Storage SCU/SCP, Query/Retrieve SCU, Modality work list SCU, Storage Commitment SCU, Basic grayscale Print SCU, MPPS Print Conduction Off-line examinations	Supported *See DICOM Conformance statement for details.*

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. Preprogramed 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.
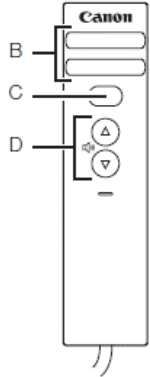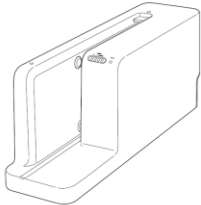
	Media Storage Application Profile supported by the Control software: Compact Disk –Recordable, General Purpose CD-R.
	SOP classes (SCU – Yes, SCP – No)
	<u>Transfer</u>
	Digital X-Ray Image Storage – For Presentation
	Computed Radiography Image Storage
	Grayscale Softcopy Presentation State
	X-Ray Radiation Dose SR
	<u>Workflow Management</u>
	Modality Worklist
	Storage Commitment Push Model
	Modality Performed Procedure Step
	<u>Print Management</u>
	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	<u>Basic Processing:</u>
	Free image rotation, Flip, Inversion (Negative/positive), Panning, Zoom, Brightness/Contrast, laterality mkarkers (L/R marking), Brightness adjustment based on Region of Interest, Crop, Mask, Reset/Undo
	Measure in image: Distance, angle
	Image histogram can be shown after exposure
	<u>Advanced Image processing</u>
	Intelligent Noise Reduction (option)
	Scatter Correction (option)
	Advanced Edge Enhancement (option)
	Anatomic Part (Category and Anatomical Part, Direction)
	LUT adjustments
	Enhancement
	Dynamic Range Adjustment
	Noise Reduction
	Grid Suppression
	Sharpness Adjustment
	Peripheral Mask
PC Specification	Windows 10
	CPU: Intel Xenon 8.25M Cache, 2.90 GHz, 4 cores
	RAM: 8 GB
	HDD: 2x500 GB, 7200 RPM
	Stored images: ~25 000 images
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

Detector configuration

The system can be configured with up to four detectors. When the wireless detectors (except CXI-803C Wireless and CXDI-820C Wireless detectors) are positioned in the detector holder battery is automatic charged and the image transferred via wire. The detector can be loaded both from the left and right side of the Wall stand to suit the specific room layout in the best way.

	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**
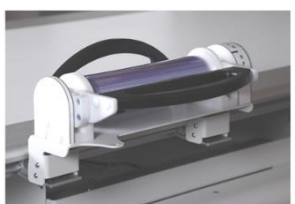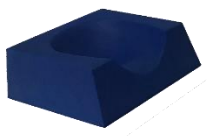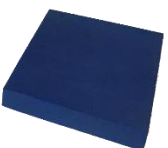
FEATURES		
Scatter correction Option (Software)	**Option**	
Edge Enhancement (Software)	**Option**	
Automatic Stitching for Wall stand	**Option**	
Integrated DAP	**Option**	

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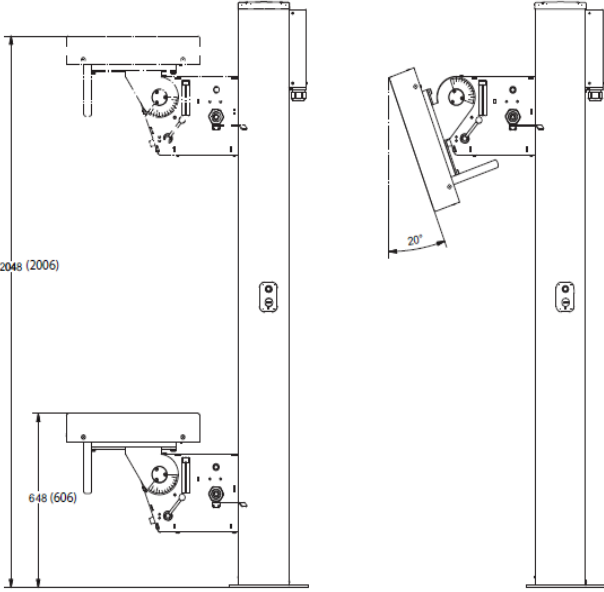
X-RAY GRID

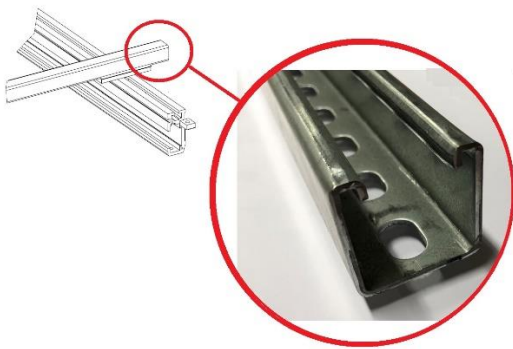| Interspace material	Al	
Cover material:	Al or Carbon	
Grid density	40 lp/cm or 52 lp/cm *) *) required for CXI-401C Compact	
Grid ratio:	10:1	
Focusing distance:	110, 115, 140, 150, 180	
	Stationary	
	Detachable	
	Light weight detector holder with integrated grid. Carbon fiber cover + fiber interspaced 52 lines/cm, ratio 8:1 Focal distance: 110 cm 401/410 701/710 801/810 Focal distance: 140 cm 401/410	
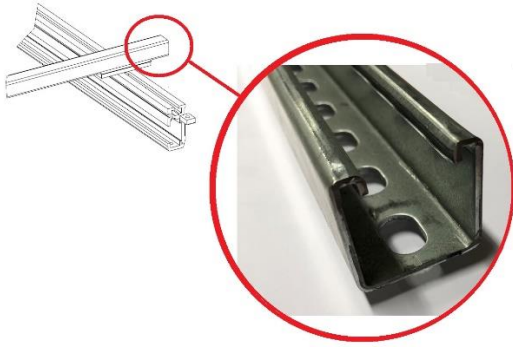
TABLE (TWO-COLUMN)		
FLEXIBILITY - USER INTERFACES		
	Vertical collision protection	**Option**
	Hand control for automatic collimator (1 pcs)	
	Foot Hand control for automatic collimator (1 pcs)control strip type X/Y	
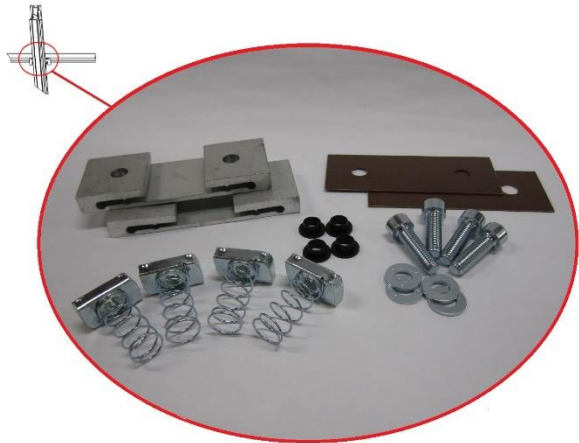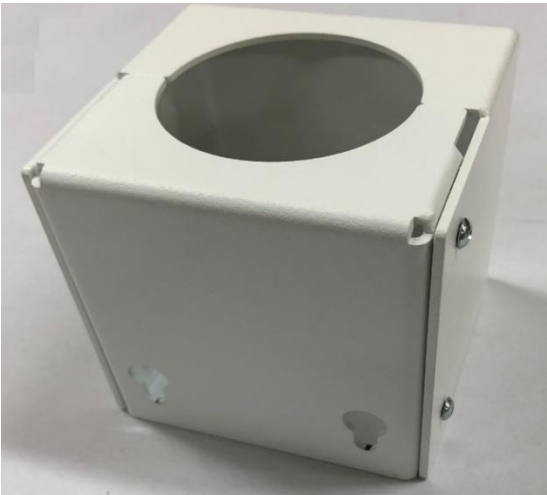
		Foot control X/Y/Z *(pedals, colour: blue)*	Accessories
PATIENT COMFORT			
		Mattress, Basic	Accessories
		Mattress, Comfort	Accessories
		Patient handgridp *(colour: blue)*	Accessories

| 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		
	Foot control Release of brake for manual vertical movement and control of motorized vertical movement	**Accessories**
	Patient Lateral Armrest	**Option**
	Wall stand tilt -20°, 0°, 90°	**Option**

Installation related options		
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.**	**Option**
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.**	**Option**
	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*	**Option**
	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*	**Option**

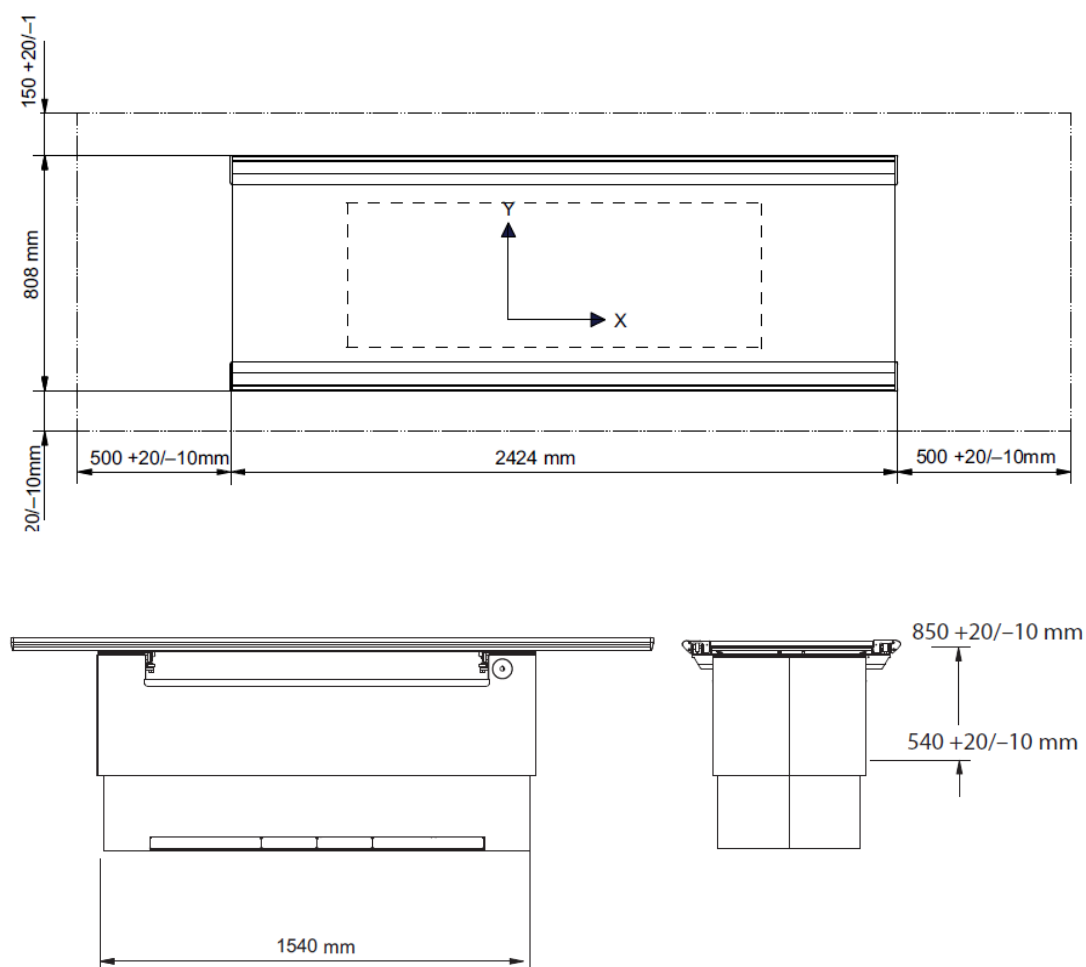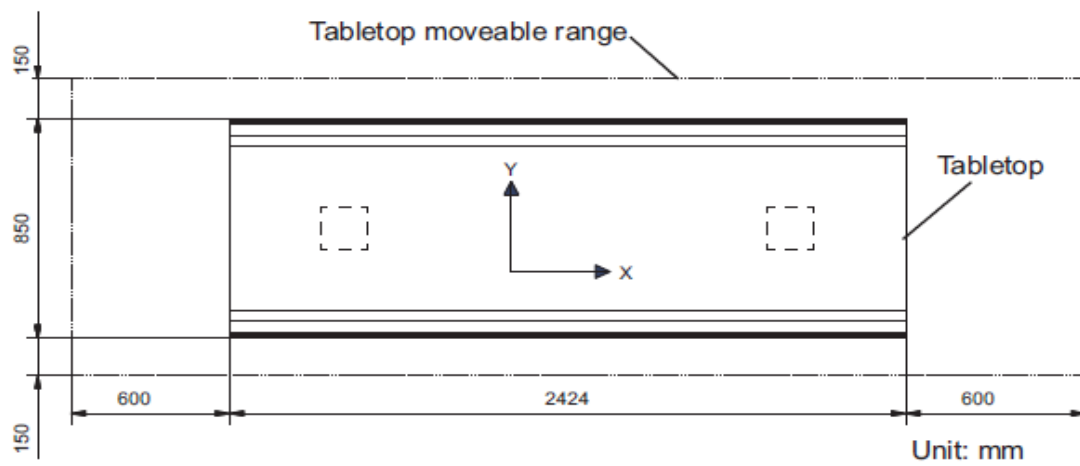|		
	Transverse Y kit *0170-810-020* Kit for attaching Y-rails to Unistrut rails in ceiling. 10 kits are included in a standard delivery (4x4 m). If more attachment points are needed, this is the kit to buy! 1 kit = 2 attachment points.	**Option**
	Cable outlet for 0170 CS *0170-099-002* For attachment of Wallstands cable hose to hospitals wall (for cable routing above inner ceiling and/or cable ducts on wall).	**Option**

Rail (Y) and Traverse (X) lengths
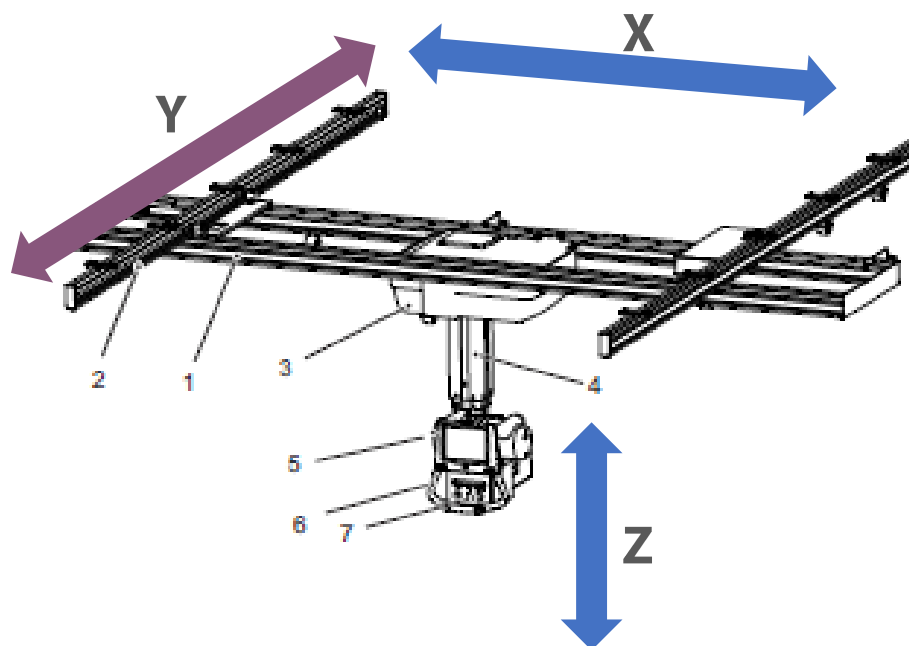
	Ceiling height	Vertical column stroke	Rails
0170-925-032			3x4m
0170-925-033			4x4m
0540-925-025	2.7 to 2.85m	1450mm	3x5m
0540-925-026			4x5m
0170-925-034			Special order: X(<4m)= 0 Y(<4m)= 0
---------------			3x4m
0170-925-030			4x4m
0540-925-023	Over 2.85m	1700mm	3x5m
0540-925-024			4x5m
0170-925-031			Special order: X(<4m)= 0 Y(<4m)= 0
0170-925-003	> 2.5 - 2.8m	1450mm	Installation cube low ceiling 3x4m
0170-925-016	> 2.8 m	1700mm	Installation cube low ceiling 3x4m

Configuration 1   Configuration 2   Configuration 3
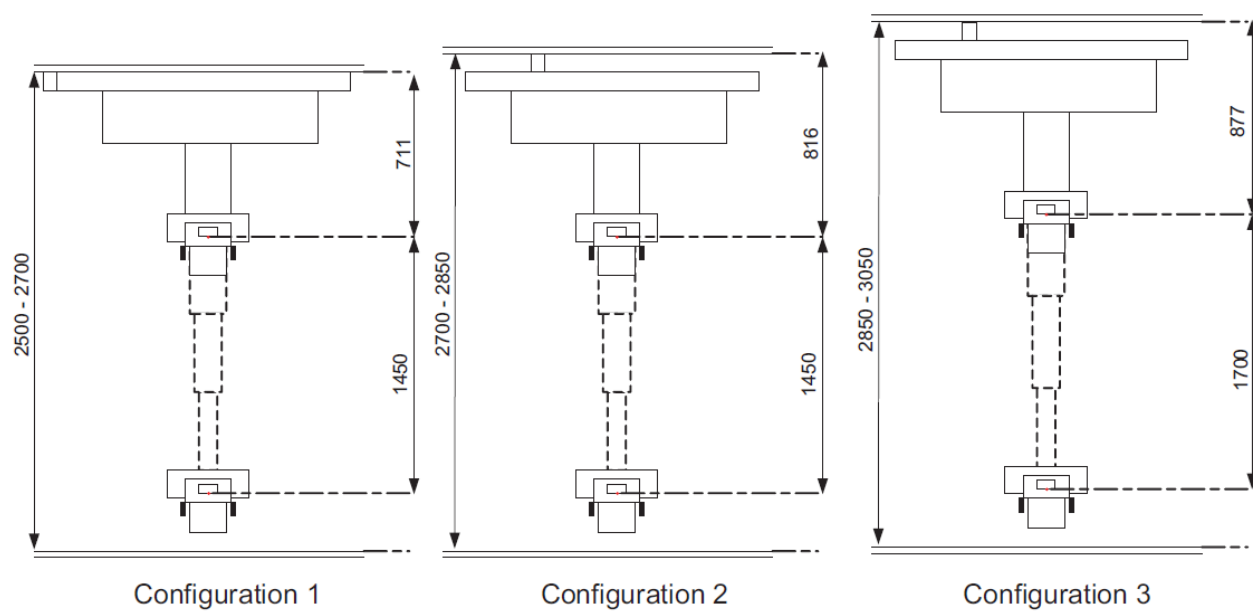
Table *0181* (standard) :

Table *0055* (optional) :

Figure 4-6

1785

315

1715

315

2048 (2006)

648 (606)

20°

Specifications subject to change without notice