


Let there be light...
And there is CIT

**Manufacturer's of World's Most Advanced Digital
Computed Radiography Imaging Technology**



Computerised
Information
Technology Ltd.

PRODUCT SHEET




Industrial NDT X-ray Radiography Equipment

The x-ray sets provided by CIT are apt for carrying out field radiography in petrochemical plants, oil and gas sector, weld inspection of boilers, pipe work, etc. They consist of ceramic tubehead, which are better suited for industrial usage rather than their glass counterparts. They have a very efficient cooling mechanism and are heavy duty. The x-ray tubes are designed to regulate power supply efficiently using the most advanced technology. They are capable of accepting wide variations on the input without affecting the output. Care is also taken to make them compact and portable to operate with generator whenever required. The accompanying control units identify the equipment connected and best adapt themselves to drive the generator.

High Frequency Pulsed Wave X-ray Sources

Pulsed Wave x-ray sources have the ability to drive higher current at full power, while still maintaining a broad spectrum to guarantee the presence of soft x-rays even at full kV; thus giving the right contrast. The PW series contains both directional and panoramic x-ray sources. They are designed to be light-weight and portable for field radiography.

TECHNICAL SPECIFICATIONS




Part Code	CIT/PW-P-300	CIT/PW-D-300	CIT/PW-DB-300
			
Electrical			
High voltage range	140-300 kV	100-300 kV	300 kV (max.)
Tube current range	1 – 5 mA	0.1 – 5 mA	-
Duty cycle	100%	100%	200 pulses every 4 minutes (300/hr) [Max.]
Insulation	SF6 gas	SF6 gas	-
Power supply	180 – 260 V Mains	180 – 260 V Mains	14.4 V battery Ni-Cd De-Watt
Recharge Time	NA	NA	1 hr
X-ray Tube			
Beam angle	360° x 40°	40°	-
Focal spot size	0.5 x 1.3 mm	2.5 x 2.5 mm	3 mm
Inherent filtration	6 mm Al, 1.2 mm Cu	1 mm Be	-
Anode cooling type	Air	Air	-
Weight	35 kg without rings	29 kg without rings	7.5 kg
Environmental			
Operating temperatures	Max. 70°C	Max. 70°C	-

Standard Equipments		
	Internal pressure gauge, heavy duty lock type connector, 20m connecting cable, quick release SF6 valve, heavy duty rubber coated hard rings	Generator, carrying case, remote trigger cable, 2 rechargeable batteries, battery charger (220V), tripod mount
	Bag for accessories	Holder for centering device filter and diaphragm
Optional Accessories		
	Warning light, warning light repeater, transport case, cradle, support stand, hydraulic stand, 100-260V adapter	-
	Ring lead screen allowing directional slot, telescopic centering rods	Lead shutter, bag for accessories

Constant Potential Directional X-ray Sources

The CPD series is a high frequency constant potential directional and portable x-ray generator. The constant potential nature lends itself to the flexibility of setting the kV precisely, from a very low to a higher value. The tubes are equipped with internal shielding and low radiation leakage of 1R/hr @ 1m. The Beryllium window allows for the presence of soft x-rays for inspections requiring low power. CPD 320 and 450 kV x-ray tubes are designed to be bipolar – a unique feature that expands the inspection capability to radiograph thick walled to medium walled components. While one pole provides high power, the other is designed to provide high definition images.

TECHNICAL SPECIFICATIONS

	CIT/CPD 320	CIT/CPD 450	CIT/CPD 160		
					
Electrical					
Max. voltage	320 kV	450 kV	160 kV		
Tube type	Metal-ceramic	Metal-ceramic	Metal-ceramic		
Beam angle	40°	40°	40°		
Cooling Mode	Oil	Oil	Air		
HV connector	R24	R28	NA		
Nominal power	1500/4000 W	900/4000 W	600 W (max.)		
Inherent filtration	3 mm Be	~4 mm Fe	1 mm Be		
Target angle	20°	30°	-		
Radiation leakage	5 mSv/h@1m	10 mSv/h@1m	-		
Cooling flow rate	14 l/min	14 l/min	NA		
Weight	40 kg	95 kg	20 kg without cradle and rings		
Bipolar	Small focal		Large focal	Monopolar	
Max. Current@kV Max.	4.6 mA	9 mA	2 mA	10 mA	-
Focal spot mm(IEC336)	1.5 x 1.5	3 x 3	1.2 x 1.2	3 x 3	0.4 x 0.4
Max. current	15 mA	30 mA	9 mA	20 mA	12 mA

Standard Equipment	Oil hose connector ½” , oil quick connector	Internal pressure gauge, heavy duty lock type connector, 20m connecting cable, quick release SF6 valve, heavy duty rubber coated hard rings, holder for centering device filter and diaphragm
Optional Accessories	Quick flanges with key, lead shutter, CIT trolley, tube collimator	Lead shutter, warning light, warning light repeater, bag for accessories, transport case, cradle, support stand, hydraulic stand, 100-260V adapter

Constant Potential Mobile X-ray Generators

These are high frequency constant potential mobile x-ray generators capable of operating any constant potential x-ray tubes (monopolar) that fulfill the operating specifications of the generator unit. Thus, the flexibility of a mobile unit and power of a stationary unit makes it indispensable for field radiography.

The system resides on a sturdy trolley, equipped with well balanced wheels. It is designed to carry the tube, generator unit, cooling unit, computer controlled unit as well as other accessories. It is loaded with handy features such as automatic preheating process, different tubeheads management, exposure curves and tools, exposure modes, etc.

Safety has been given a prime importance while designing the system. It is equipped with different security and safety features like overheating warning, HV arc counting, status messages on control panel, etc.



TECHNICAL SPECIFICATIONS

	MXGen-160	MXGen-225
Electrical		
High voltage range	5 – 160 kV	5 – 225 kV
Tube current range	0.1 – 4.0 mA	0.1 – 4.0 mA
Max. output power	3000 W	3000 W
HV frequency	25 KHz	25 KHz
Insulation	Encapsulated	Encapsulated
Ripple	0.1% PP	0.1% PP
Voltage	230 V (-15% + 10%)	230 V (-15% + 10%)
Frequency	47-63 Hz	47-63 Hz
Current	18 A	18 A
X-ray Tube		
Type	Directional or panoramic	Directional or panoramic
Focal spot (IEC336)	0.2 x 0.2 mm to 3.0 x 3.0 mm	0.2 x 0.2 mm to 3.0 x 3.0 mm
Cables		
Power supply	10 m	10 m
Interconnection	20 m	20 m
HV cable	5 to 25 m	5 to 25 m
HV connection	Standard R24/R28	Standard R24/R28

6 configurable and programmable I/O	Sub-D9	Sub-D9
Environmental		
Storage temperature	-20 to +85°C	-20 to +85°C
Operating temperature	0 to +45°C	0 to +45°C
Dimensions (H x W x D)mm / Weight	1350 x 600 x 1010 / 185 kg	1350 x 600 x 1225 / 250 kg
Optional Accessories	Warning flash light with 20m cable, closed circuit type water cooling unit, water security box	Warning flash light with 20m cable, closed circuit type oil/air cooling unit, closed circuit type oil/water cooling unit with chiller, water security box

Control Unit

The microprocessor control unit enables remote operation of the x-ray generator with its intelligent software. The software is capable of carrying out pre-warning, pre-heating, diagnostics, and operation. The unit has a foldable TFT display that gives the latest status of the x-ray unit. It consists of a central ball navigator for easy selection and activation operation.



It comes as a part of PW, CPD, and MXGen series.

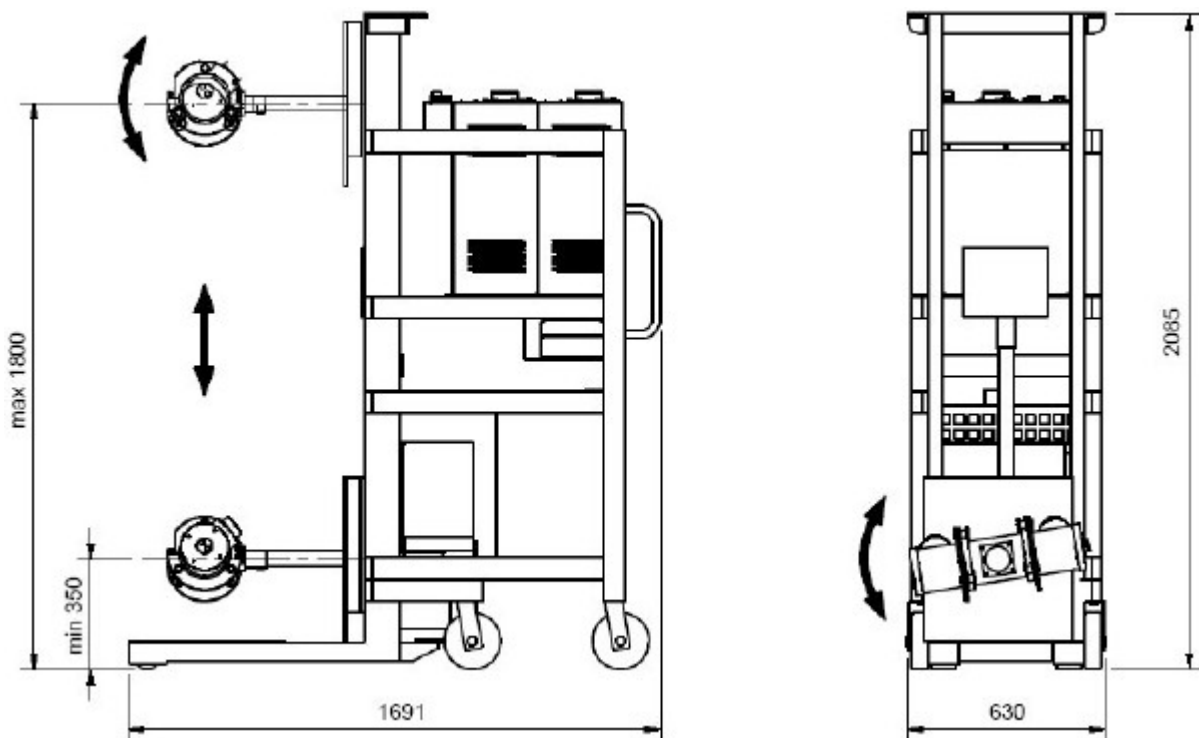
Part Code	CIT/CPU
Electrical	
Mains	90 – 245 V
Frequency	45 – 66 Hz
Measure of kV and mA	True measure
LED display safety device	3 positions key switch, mains ON, x-ray ON, pre-warning, emergency stop, buzzer for audible warning
Embedded Software	
Main screen	Selection mode, settings and controls
kV step	1 – 2 – 5
mA step	0.1 – 0.2 – 0.5
Memories	10,000 with users directories
Modes	Standard user, supervisor, SAV maintenance and service
Miscellaneous	Multiple tubeheads database management, built-in help, operating manual, exposure curves, database option, intelligent pre-heating
Connections	
Generator connection	Sub-D26
Device connection	1 x USB
4 configurable & programmable I/O	Sub-D9
Environmental	
Operating temperature	+5 to +50°C
Protection	IP54
Optional Accessories	USB storage device, USB mouse

Suggested Accompaniment – 450 kV Trolley Unit

The innovative trolley unit not only acts as a mobile unit for your entire x-ray equipment including generator, tube, control unit, and cooling unit, but also provides mechanism for accurately positioning the tube at correct height and angle.

It has a sturdy and stable steel structure with swiveling wheels for perfect balance even with full load and tube height. The tube is handled by a steel handling circle that comes around the tube guides which allows it to move on its own axis. The tube can be moved up and down by a motor and can also be tilted left and right.

It is also equipped with an irradiation surface under the tube to make exposures of small components then and there itself.



Optional extra – Centering and diaphragm holding device