PaX-i3D Green Premium™ (Model: PCT-90LH)
Product Data

(Detector: Xmaru 3104CF)

Version: v1.0.0

1. General Information

1.1. Main Features

PaX-i3D Green Premium™, a computed tomography x-ray system intended to produce diagnostic details of the maxillofacial areas for adults and pediatric patients by reconstructing two or three dimensional images for a dental and ENT treatment.

PaX-i3D Green Premium™ (PCT-90LH) is an advanced 4 in 1 digital X-ray imaging system that incorporates PANO, i-CEPH (Optional), 3D CT (Dental / ENT) and 3D Photo (Optional) imaging capabilities into a single system for Dental and ENT (Ear, Nose and Throat) diagnostics.

- Extensive Diagnosis with Large FOV (Maximum FOV 21x19 (cm))
- Multi FOV support: Selectable FOV from 8x8 (cm) to 21x19 (cm)
- Multi Imaging Solution for Accurate Diagnostics
- 3D and 2D (Auto Pano*, Auto Ceph**) image acquisition by single scan
- Conventional 2D(Pano, i-CEPH) image acquisition
- 3D for ENT Specialists: Optimized FOV for ENT Diagnosis
- Multi-purpose camera equipped for patient positioning and 3D Photo acquisition (Optional)
- Touch Screen implemented for easy use
- Digital Imaging Communication in Medicine (DICOM) format supported

* ***Auto Pano***

Auto Pano is a feature to acquire reconstructed 2D image during 3D CT scan without additional X-ray exposure. It has the same panoramic region as the one that conventional panoramic images offer.

- Available under DENTAL CT (FOV: 21x19, 17x15) and ENT CT (FOV: 21x19) modality.
- Provides images for Standard mode.

***** Auto Ceph***

Auto Ceph is a feature to acquire reconstructed 2D image during 3D CT scan without additional X-ray exposure. It has the same cephalometric region as the one that conventional cephalometric images offer.

- Available under DENTAL CT (FOV: 21x19) and ENT CT (FOV: 21x19) modality.
- Provides images for PA, Lateral, SMV and Waters View modes.

◆ When selected, Auto Pano and/or Auto Ceph image is automatically acquired and can be seen on the EzDent-i Viewer.

1.2. Available Modes

Equipment	Available Modes
PaX-i3D Green Premium™	PANO, i-CEPH (Optional), CT (Dental / ENT), 3D Photo (Optional)

2. Functional Specifications

2.1. PANO Mode

2.1.1. Overview

PANO imaging software is classified into two levels as below.

Level	Examination Option	Optional Status	
		Domestic	Overseas
Normal	PANO examination	Default	Default
	Special examination	Default	Default
Magic PAN	Applies to Standard, Right, Front and Left imaging program	Default	Optional

2.1.2. Scan Time

Examination	Arch Selection	Modes	Scan Time (s)	
			HD	Normal
PANO EXAMINATION	Narrow	Standard	13.5	13.5
		Right	6.8	6.8
		Front	11.2	11.2
		Left	6.8	6.8
	Normal	Standard	13.5	13.5
		Right	6.8	6.8
		Front	11.2	11.2
		Left	6.8	6.8
	Wide	Standard	13.5	13.5
		Right	6.8	6.8
		Front	11.2	11.2
		Left	6.8	6.8
	Child	Standard	11.9	11.9
		Right	6.0	6.0
		Front	9.5	9.5
		Left	6.0	6.0
	Orthogonal	Standard	13.5	13.5
		Right	6.8	6.8
		Front	11.2	11.2
		Left	6.8	6.8
		Bitewing	9.6	9.6
		Bitewing Right	4.8	4.8

Examination	Arch Selection	Modes	Scan Time (s)	
			HD	Normal
		Bitewing Left	4.8	4.8
SPECIAL EXAMINATION	-	TMJ LAT Open	6.0	N/A
		TMJ LAT Close		
		Sinus LAT	9.0	
		Sinus PA	11.2	

PANO sample image

[HD / Standard]

2.2. i-CEPH Mode (Optional)

2.2.1. Scan Time

Function	Scan Time (s)
Lateral	18.0
PA	18.0
Carpus	8.4

i-CEPH sample image

[Lateral] **[PA]**

2.3. CT (Dental / ENT) Mode

2.3.1. Scan Area

CT Type	FOV Size (mm)	VERTICAL POSITION	HORIZONTAL POSITION		
			Right	Center	Left
Dental CT	80 x 80	Occl.	O	O	O
	120 x 90	Occl.	X	O	X
	170 x 150	Occl.	X	O	X
	210 x 190	Occl.	X	O	X
ENT CT	170 x 110	TB&PNS	X	O	X
		Airway	X	O	X
	210 x 190	Occl.	X	O	X

2.3.2. Scan Time

FOV (mm) & Scan Area		Exposure time (Image Quality) (s)	
		Low Dose	Ultra Low Dose
FOV 210 x 190		18.0	18.0
FOV 170 x 150 (Dental CT)		16.0	16.0
FOV 170 x 110 (ENT CT)		16.0	16.0
FOV 120 x 90		13.6	13.6
FOV 80 x 80	Right	10.7	10.7
	Left	11.0	11.0
	Center	11.1	11.1

2.3.3. Image Reconstruction Time & File Size

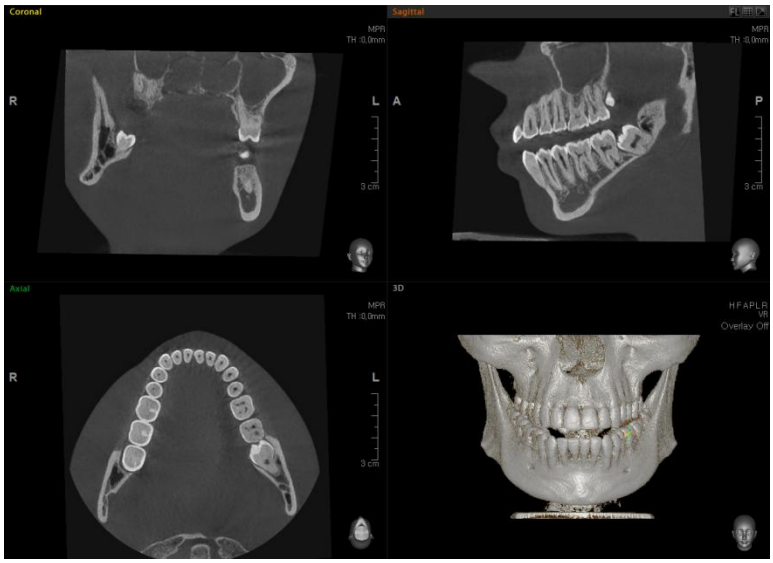
FOV(mm)	Voxel Size	Reconstruction Time (s)				File Size (MB)
		Low Dose (SCAN TIME: 18 s)		Ultra Low Dose (SCAN TIME: 18 s)		
		MAR SKIP	MAR APPLY	MAR SKIP	MAR APPLY	
80 x 80	0.2	144	158	144	158	123
	0.3	84	96	84	96	37
120 x 90	0.2	204	224	204	224	309
	0.3	132	150	132	150	92
170 x 110	0.3	276	303	276	303	225
	0.4	180	201	180	201	95
170 x 150	0.3	264	290	264	290	307
	0.4	192	213	192	213	130

FOV(mm)	Voxel Size	Reconstruction Time (s)				File Size (MB)
		Low Dose (SCAN TIME: 18 s)		Ultra Low Dose (SCAN TIME: 18 s)		
		MAR SKIP	MAR APPLY	MAR SKIP	MAR APPLY	
210 x 190	0.3	324	356	324	356	592
	0.4	228	249	228	249	250

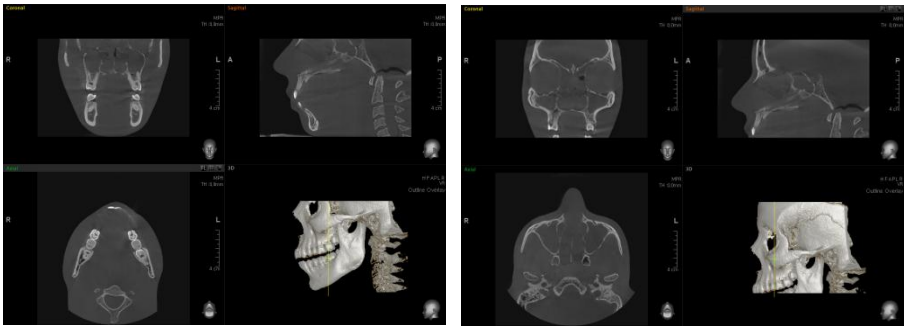
- *MAR: Metal Artifact Reduction*
- *Time for image reconstruction can be differentiated depends on computer specifications and operation environment.*
- *Measurement condition: HP Z440, Windows 7 pro 64bit OS: Intel Xeon E5-1620 3.5GHz, 32GB DDR4-2133 RAM, NVIDIA GEFORCE GTX980 Ti OC D5 6GB*

Computed Tomography(CT) sample image

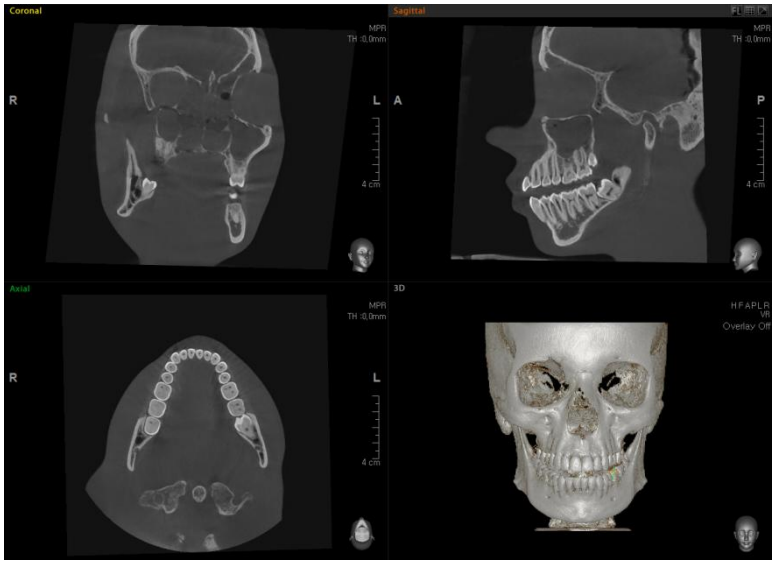
[Low dose: FOV 80x80 Left / Center / Right_0.2 voxel image]



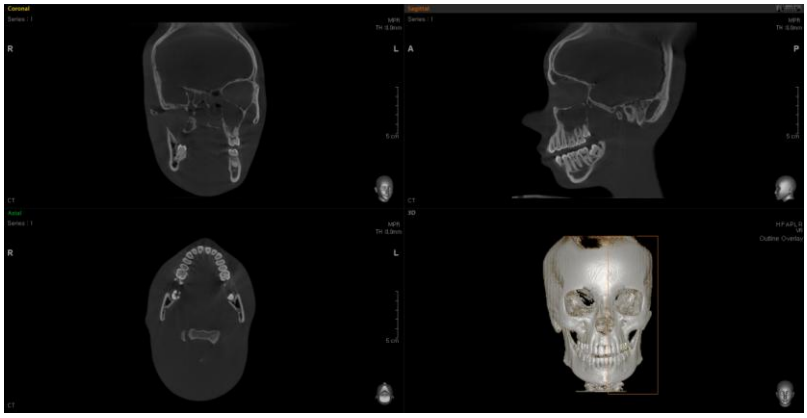
[Low dose: FOV 120x90_0.2 voxel image]



[Low dose: FOV 170x110_Airway / TB&Sinus_0.2 voxel image]



[Low dose: FOV 170x150_0.2 voxel image]



[Low dose: FOV 210x190_0.3 voxel image]

3. PC Specifications (Recommended)

Item	Specification (HP)
CPU	Intel Xeon E5-1620v3 3.5GHz 2133 10MB cache CPU
RAM	32GB DDR4-2133 ECC RAM
HDD	1TB SATA 1st HDD
Graphics board	NVIDIA GEFORCE GTX980 Ti OC D5 6GB or greater
Ethernet interface	Broadcom 5761 Gigabit PCIe NIC
Serial Port (RS232)	HP Serial Port Adapter Kit
Power Supply	≥ 700 Watts (90% Efficiency)
Slots	1 PCI Express Gen3 x 8 Slot 2 PCI Express Gen3 x 16 slot 1 PCI Express Gen2 x 8 Slot 1 PCI Express Gen2 x 4 Slot
	1 PCI Slot
CD/DVD Drive	DVD-ROM, DVD+/-RW, Blu-Ray
Monitor	19” 1280 x 1024 screen resolution
Operating System	Windows 8.1 Professional 64-Bit OS
Recommended system	HP Z440

- *Recommended specifications and system for PC can be changed without notice.*

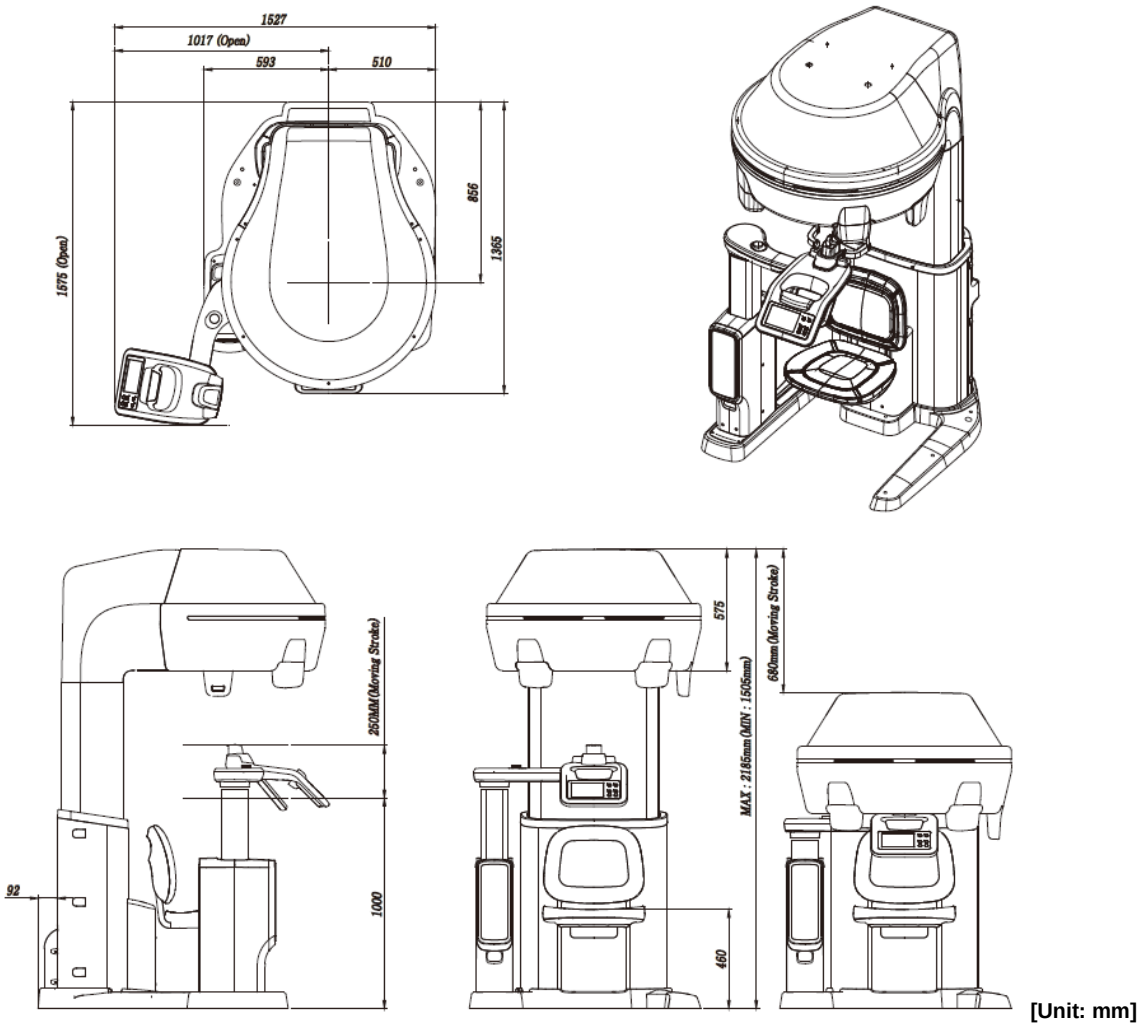
4. Mechanical Specifications

4.1. Image Magnification

Mode	FDD (mm)	FOD (mm)	ODD (mm)	Magnification
CT	672.72	384.12	288.60	1.75
PANO	672.72	446.13	226.59	1.51
i-CEPH (PA and Lateral)	672.72	384.12	288.60	1.75 (Virtual : 1)
i-CEPH (Carpus)	672.72	626.20	46.50	1.07

** FDD : Focal Spot to Detector Distance*
** FOD : Focal Spot to object Distance*
** ODD : Object to Detector Distance (ODD = FDD – FOD)*
** Magnification = FDD / FOD*

4.2. Equipment Scale



[Unit: mm]

Item	Description
Weight	321 kg (708 lbs. with the Base)
Total Height	Max. 2185 mm (86.0 inch)
Rotating Unit Vertical Movement	Max. 680 mm (26.8 inch)
Dimension (Length(L) x Width(W) x Height(H))	1575(L) x 1527(W) x 2185(H) mm (62.0(L) x 60.1(W) x 86.0(H) inch)
Installation type	Base stand

5. Technical Specifications

5.1. X-ray Generator

A-type

Item			Description
High Voltage Generator	Model		DG-08C22S1
	Rated output power		1.2 kW
	Type		Inverter
	Normal/ Pulse	kVp	60 ~ 120 kV (1 kV increment ±10 %)
		mA	4 ~ 10 mA (1 mA increment ±20 %) (PANO & i-CEPH: 1 mA Step, CT: 0.1 mA increment ±10 %)
	Cooling		Cooling Protect (Optional fan cooling, ≥ 60 ℃)
	Total filtration		Min. 2.5 mm Al
	Added filtration		2.0 mm Al
X-ray Tube	Manufacturer		Superior
	Model		SXR-130-15-0.5 (Stationary Anode type)
	Focal spot size		0.5 mm (IEC 60336)
	Target Angle		15 degree
	Inherent Filtration		At least 1.1 mm Al equivalent at 80kV
	Anode Heat Content		21 kJ
	Duty Cycle		1:20 or more (Exposure time : Interval time)

B-type

Item			Description
High Voltage Generator	Model		DG-08C22C2
	Rated output power		1.2 kW (0.1 sec)
	Type		Inverter
	Normal/ Pulse	kVp	60 ~ 120 kV (1 kV increment ±10 %)
		mA	4 ~ 10 mA (1 mA increment ±20 %) (PANO & i-CEPH: 1 mA increment, CT: 0.1 mA increment ±10 %)
	Cooling		Cooling Protect (Optional fan cooling, ≥ 60 ℃)
	Total filtration		Min. 2.5 mm Al
	Added filtration		2.0 mm Al
X-ray Tube	Manufacturer		CEI
	Model		OX/115-05 (Stationary Anode type)
	Focal spot size		0.5 mm (IEC 60336)
	Target Angle		15 degree
	Inherent Filtration		0.5mm Al
	Anode Heat Content		30 kJ
	Duty Cycle		1:60 or more (Exposure time : Interval time)

5.2. Detector Specifications

Item	Description(PANO, CT and i-CEPH)
Model	Xmaru3104CF
Detector Type	CMOS photodiode array
Pixel size	99 μm @ 2X2 Binning : PANO 198 μm @ 4X4 Binning : CT (Dental / ENT), i-CEPH
Active area	310.4 x 36.4 mm
Frame Rate	107 fps (2x2 Binning) : PANO 308 fps (4x4 Binning) : CT (Dental / ENT), i-CEPH
Analogue-Digital Conversion	14 bits
Operating condition	10 ~ 35 ℃ (Temperature) 10 ~ 75 % (Humidity)
Storage condition	-10 ~ 60 ℃ (Temperature) 10 ~ 75 % (Humidity)
Sensor size	350 mm x 300 mm
Converter	CsI:Ti
Energy Range	60 ~ 120 kVp
Readout	Charge amplifier array
Video Output	Optic

6. Technical Specifications

Item	Description
Power supply voltage	AC 100 - 240 V
Frequency	50 / 60 Hz
Power rating	1.3 - 1.6 kVA

* The input line voltage depends on the local electrical distribution system.

* Allowable input voltage fluctuation requirement*: ±10%*

7. Environmental Specifications

Item		Description
During operating	Temperature	10 ~ 35℃
	Relative humidity	30 ~ 75%
	Atmospheric pressure	860 ~ 1060 hPa
Transport and storage	Temperature	-10 ~ 60℃
	Relative humidity	10 ~ 75%
	Atmospheric pressure	860 ~ 1060 hPa

8. International Standards and Regulations

PaX-i3D Green Premium™ was designed and developed to comply with the following international standards and regulations:

IEC/EN 60601-1(3rd), UL 60601-1(1st), IEC/EN 60601-1-3, IEC 60601-2-63

21 CFR 1020.30, 31, 33

NEMA Standard publication PS 3.1-3.18, 2008

CE 0434	This is Class IIb equipment and obtained CE marking in April, 2007 for regulations compliance in accordance with the revised European Union's MDD (Medical Devices Directive) 93/42 EEC.
CLASSIFIED c UL us Medical equipment ⚠ UL 60601-1 / CAN/CSA C22.2 No. 601.1 E330656	This equipment received the UL certification mark in accordance with UL 60601-1/CAN/CSA C22.2 No.601.1 regulations.

9. Additional Information

For further information for PaX-i3D Green Premium™, please contact us at:

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※ Due to a constant technological improvement, the contents of this **Product Data** may not contain the most updated information, subjecting to change without prior notice to the persons concerned.