Product Data for Green X 21 (PHT-90CHO)

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I. Approval

Model / Project name	Green X 21PHT-90CHO)		
Creation date	2024.01.05	**Retention period**	Permanent
Storage place	R&D Center Muniment room	**Phase / Rev.**	Engineering Sample / 00

	Department	**Name**	**Date**	**Signature**
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Approved by	R&D Center	J.H. Lee	2025.09.19	

II. Revision History

No	Rev.	Case for revision	Author	Page
1	00	*Initial release*	H.R.Shin	75
2	01	*Updated Face Scan feature description in 1.3 Features.* *Updated the information in 3.4 PC due to changes in CPU and GPU.* *Updated 3.5 Face Scanner specification* *6. Voxel is updated (voxel sizes modified)*	H.R.Shin	76
3	02	**The following updates are made as in the user manual v1.05.* *Updated 3.1 X-ray Detector's MTF information.* *Added the face scan scan time (See 5.1.6)* *Updated the auto Ceph, auto Pano and*	H.R.Shin	77
4	04	*- From **Sec. 3.4**, the following information updated according to the latest recommended PC specifications for Green X 21: CPU, RAM, HDD, graphic board, serial port, ethernet interface, operating system, monitor, DVD drive, power supply, and slot information in 3.4 PC.* *- From **Sec. 5.1.1**, the scan time and exposure time of the Insight PAN mode has been corrected*	H.R.Shin	77

1. Product Overview

1.1. Names and Classifications

Item	Specifications
Brand Name	Green X 21
Model Name	PHT-90CHO
Product Name	Computed Tomography X-ray System
Product code No.	105
Classification	MFDS: A11010.03 (2) FDA: OAS CE MDR: Class IIb (EMDN code: Z11030601)

1.2. Intended Purpose (Indications for Use)

Green X 21 (Model: PHT-90CHO) is intended to produce panoramic, cephalometric, or 3D digital X-ray images. It provides diagnostic details of the dento-maxillofacial, sinus, TMJ, and ENT for adult and pediatric patients. The system also utilizes carpal images for orthodontic treatment. The device is to be operated by healthcare professionals.

It enables:

- Determination of the extent of lesions, tumors, cysts, etc. which cannot be adequately visualized on plain films.
- Diagnosis of foreign bodies or displaced roots involving the maxillary sinus
- Diagnosis of bone diseases, cysts, etc., affecting the temporomandibular joints
- Identifying the relationship of the inferior dental canal to a tooth/lesion that is to be removed.
- Assessment of fractures on facial bones, mandible, condylar neck, orbital floor, and fractures of teeth where plain film imaging is equivocal.
- Planning any craniofacial surgery where 3D models of the jaw/facial skeleton/skull are required.
- Visualization of the 3D anatomy of the alveolar clefts
- Diagnosis of un-erupted teeth impacted teeth and odontomas.
- Diagnosis of root resorption of teeth
- Assessment of cleft palate
- Instant diagnosis of CRS (chronic rhinosinusitis)
- Assessment of complex root canal anatomy
- Diagnosis of periapical pathology
- Diagnosis of vertical root fracture
- Examinations of the airways for measuring the volume and dimensions of air passages
- Planning any surgery where 3D analysis of the jaw is required.
- Storing Plaster Casts in 3D data
- Diagnosis of most malformations and dysplasia, traumatic lesions, and thin osseous labyrinthine wall erosion or dehiscence through CBCT inner ear imaging
- Visualization of eustachian tube obstruction
- Assisting the patient consultation with 3D photo scan data.

1.3. Features

- Various FOV(Field of View)s for the DENTAL CT mode: 21x19, 18x15, 12x9, 12x5, 8x8, 8x5, 5x5, 4x4 (Unit: cm)
- Various FOV(Field of View)s for ENT CT mode: 21x19, 18x15, 12x9, 8x8(Unit: cm)
- Various ROI designed for ENT(Ear, Nose Throat) diagnosis: Cochlear, Facial bone, Petrous bone, Single ear, and Airway.
- 2D panoramic and cephalometric imaging capabilities.
- Offers 2D and 3D dental capture modes that allow the user to acquire an image for a single tooth or selected area only.
- **Insight PAN**: the 2D capture mode that scans specifically the chosen area only. It produces multiple 2D images with various focal points in a single can, allowing the users to examine the regions difficult to access by conventional 2D panorama images.
- **Endo**: the 3D capture mode that scans a single tooth and delivers a 4x4 high-resolution image of the scanned tooth, revealing intricate details such as blood vessels and nerves.
- **Magic PAN**: a 2D image reconstruction algorithm designed to minimize differences between the actual arch shape and the reconstructed image.
- **Scout View**: an optional capture program provided with the FOV 12x5, 8x5, 5x5, or ENDO that allows the users to confirm the imaging area before actual image acquisition.
- **Face Scan**: an imaging mode that provides a 3D photograph of the patient's face. The face scan data can be acquired either independently or concurrently with the 21x19, 18x15, and 12x9 CT scan.

  **The face scan mode is provided for patient consultation purposes only. This mode is not intended for clinical diagnosis.
- **Full Arch**: a selectable feature in the smart focus mode that delivers a 3D 12x9 image of the patient's entire arch.
- **Auto Pano**: a selectable feature that creates a 2D panorama image from 3D CT scan data. (supported for FOV 21x19, 18x15, 12x9, and Smart Focus mode)
- **Auto Ceph**: a selectable feature that creates a 2D cephalometric image from 3D CT scan data (supported only for FOV 21x19).
- MAR (Metal Artifact Reduction)
- DICOM (Digital Imaging and Communications in Medicine) Format
- Easy-to-use and intuitive console software.

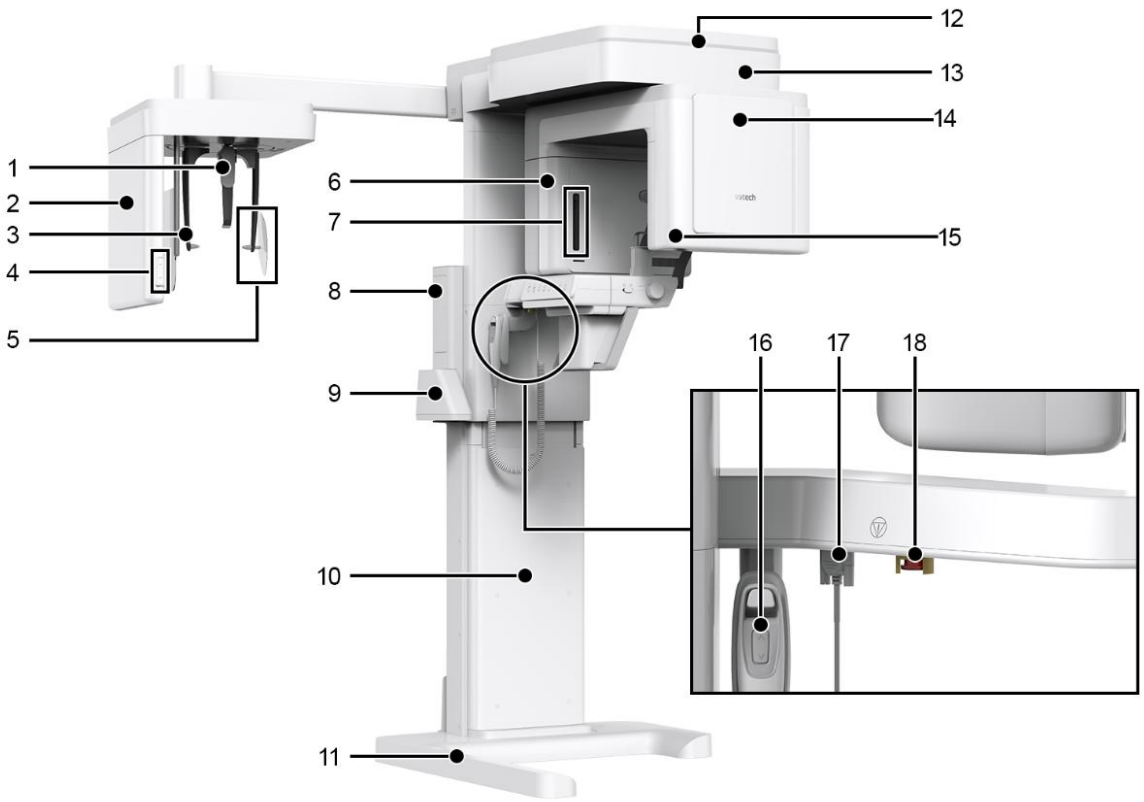
1.4. System Configuration Options

Model Name	Brand Name	Device Identifier	System Configuration (X-ray Detector)	
PHT-90CHO	Green X 21	Green X 21 SP	PANO / DENTAL / ENT CT	Jupi1012X
		Green X 21 OS	PANO / DENTAL / ENT CT	Jupi1012X
			CEPH	Venu1012VD

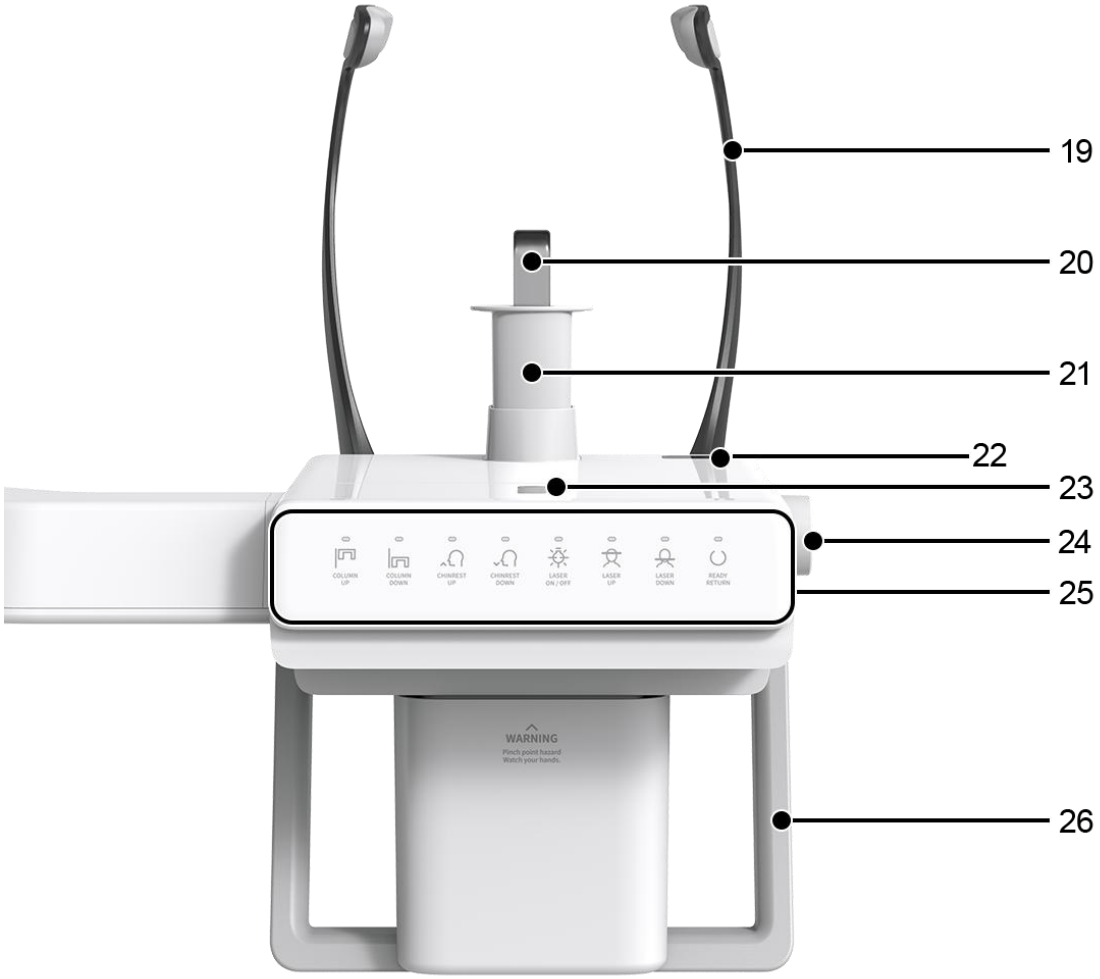
2. X-ray Unit Specification

2.1. Equipment Overview

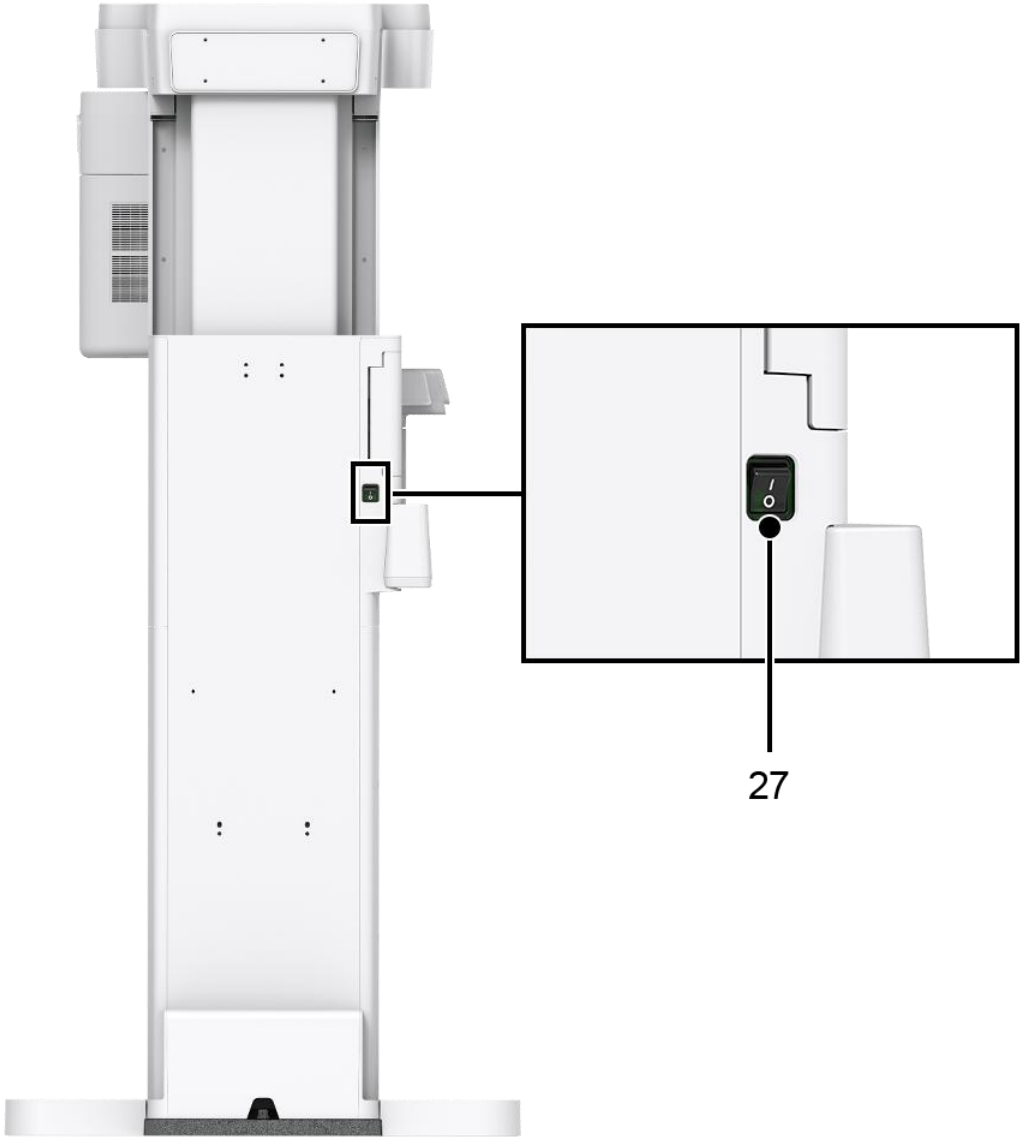
The X-ray unit consists of various parts designed to support accurate image acquisition and safety.



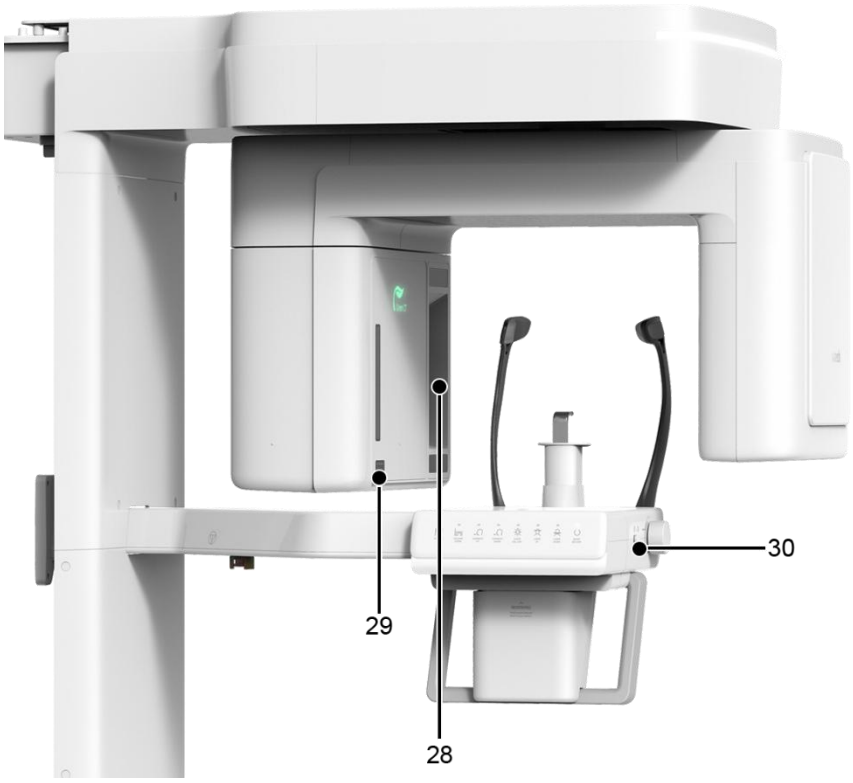
No.	Item	Description
1	Nasal Positioner	Secures the patient's forehead position.
2	CEPH Sensor (Optional)	Venu1012VD for CEPH image acquisition.
3	Ear Rods	Secures the patient's head.
4	Column up/down Button.	Adjusts the column height for the patient.
5	Protractor	Supports the patient's position alignment.
6	X-ray Generator	Generates X-ray source.
7	Horizontal Beam	Marks the patient's Frankfurt plane.
8	Accessory Storage	Stores accessories and toolkits.
9	Puddle Lamp	Marks the patient's standing place.
10	Column	Supports X-ray unit's weight and balance.
11	Base (Optional)	Supports X-ray unit's balance.
12	LED Lamp	Displays the equipment and the X-ray exposure statuses. • **White** : the equipment is in an idle state. • **Green** : the X-ray exposure is ready. (X-ray OFF) • **Yellow** : the X-ray is in operation. (X-ray ON)
13	Vertical Frame	Moves the rotating unit for image acquisition.
14	Rotating Unit	Rotates around the patient's head while the image is being acquired. (Its movement is different according to the scan mode.)
15	PANO / DENTAL CT / ENT CT Sensor	Jupi1012X for PANO, DENTAL CT, and ENT CT image acquisitions.
16	Column Up/Down Switch	Adjusts the column height for the patient.
17	D-Sub Connector	Serves as an input signal port for the column up/down switch.
18	Emergency Stop Switch	Halts the X-ray unit's operation in case of an emergency.



No.	Item	Description
19	Temple Support	Fixes the patient's head during the PANO, DENTAL CT, and ENT CT image acquisition.
20	Bite Block	Positions the patient's teeth for the PANO, DENTAL CT, and ENT CT image acquisition.
21	Chinrest	Places the patient's chin for image acquisition.
22	Canine Beam	Marks the patient's canine tooth location.
23	Vertical Beam	Marks the center line on the patient's face.
24	Temple Support Knob	Opens or closes the left and right temple supports.
25	Control Panel	Controls the column, chinrest, laser, and sensor's movements.
26	Handle	Allows the patient to stand securely during the PANO, DENTAL CT, ENT CT, and FACE SCAN image acquistion.



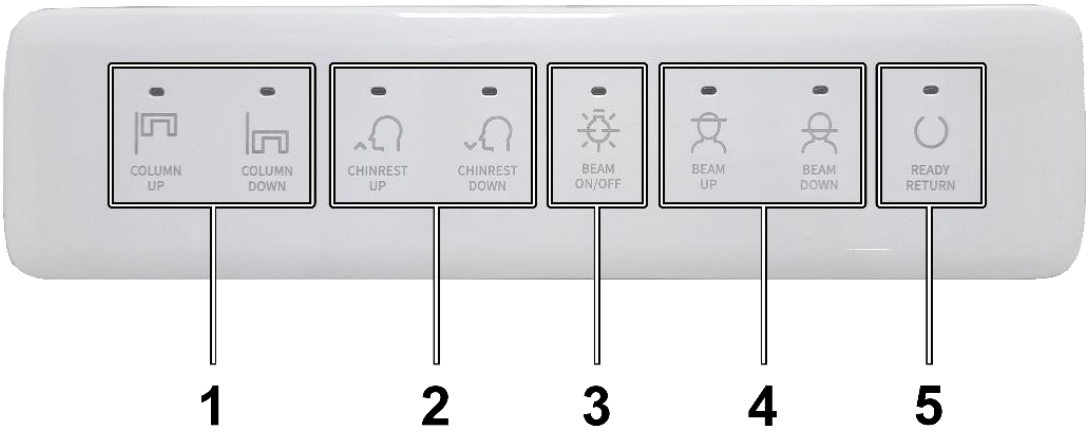
No.	Item	Description
27	Power switch	Turns on or off the power of the X-ray unit.



No	Item	Description
28	Face Scanner	Acquires face scan data of the patient.
29	Shoulder Beam	Indicates whether the rotating unit hits the patient’s shoulder.
30	Canine Beam Slider	Adjusts the canine beam location.

2.2. Control Panel

The control panel is consisted of buttons designed to control and adjust column, chinrest, laser beams and rotating unit. The table below outlines the function of each button featured in the control panel.



No.	Item	Description
1	Column up/down	Moves the column up or down.
2	Chinrest up/down	Moves the chinrest up or down.
3	Laser on/off	Turns laser beams on or off.
4	Laser up/down	The horizontal laser moves up or down.
5	Ready / Return	This button function as both the “Ready” and “Return” buttons. ■ **Ready**: prepares the X-ray system for image acquisition. ■ **Return**: moves the rotating unit back to its initial position

2.3. Accessories

Below is the list of accessories shipped with Green X 21. Some, like the chinrest, frequently contact patients and may require regular cleaning and disinfection. (Accessory Check List)

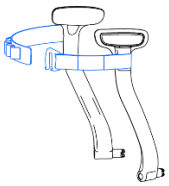
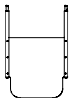
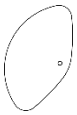
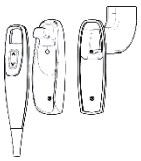
Image / Name	Function	Materials
 Normal Bite	For standard panorama, dental CT, and ENT image acquisition of dentate patients	PC (Polycarbonate)
 Special Bite A	For PANO TMJ and SINUS image acquisition of dentate and edentulous patient	PC (Polycarbonate)
 Special Bite B	For standard panorama, dental CT, and ENT image acquisition of edentulous patients	PC (Polycarbonate)
 Chinrest	For resting the patient's chin	ABS (Acrylonitrile butadiene styrene) copolymer
 Temple Supports (1 set)	For securing the patient's head during the image acquisition.	Temple Supports : PA(Polyamide) Temple Support Pad : Silicone
 Temple Supports for face scan (1 set)	For securing the patient's head during the face scan.	▪ Temple Supports :PA (Polyamide) ▪ Temple Support Pad :Silicone Straps: PVC
 Ear Rod Caps (1 set)	For covering ear rods to protect patient's ears.	Silicone

Image / Name	Function	Materials
 Nasal Positioner Cover	For covering nasal positioner to prevent contamination	Silicone
 Carpus Plate	For placing the patient's hand to acquire a carpus image.	PC (Polycarbonate)
 Sanitary Vinyl Cover (disposable)	For covering the normal bite to prevent contamination	PP+PE
 Protractor	To assist with a correct patient position.	PC (Polycarbonate)
 MODEL Jig	To store the model scan jig used for MODEL mode	ABS (Acrylonitrile butadiene styrene) copolymer
 Up/Down Switch and Holder	To adjust the column height	ABS (Acrylonitrile butadiene styrene) copolymer

2.4. Dimensions and Weight

Category	Option		Description
	Ceph	Base	
Weight	X	X	165.4 kg (364.64 lbs)
	X	O	220.7 kg (486.56 lbs)
	O	X	190.0 kg (418.88 lbs)
	O	O	245.3 kg (540.79 lbs)
Total Height	-	X	Max. 2317.4 mm (91.24")
	-	O	Max. 2345.4 mm (92.34")
Dimension (Length x Width x Height)	X	X	1085.0(L) x 1457.8(W) x 2317.4(H) (mm) 42.72(L) x 57.39(W) x 91.24(H) (")
	X	O	1085.0(L) x 1457.8(W) x 2345.4(H) (mm 42.72(L) x 57.39(W) x 92.34(H) (")
	O	X	1912.4(L) x 1457.8(W) x 2317.4(H) (mm) 75.29(L) x 57.39(W) x 91.24(H) (")
	O	O	1912.4(L) x 1457.8(W) x 2345.4 (H) (mm) 75.29(L) x 57.39(W) x 92.34(H) (")
Rotating Unit's Vertical Movement			Max. 800 mm (31.50")
Installation Type			Wall mount (Default) / Base stand (Optional)
Package Organization			Main box (Default), CEPH box (Optional), Base box (Optional)

3. Main Parts Specifications

3.1. X-ray Generator

Item			Specification
Generator	Model		LDG-07E22T2
	Rated output power		1.6 kW
	Inverter model name		INV-22
	Type		Inverter
	Normal / Pulse	kVp	60 kV~100kV (1 kV increment)
		mA	4 mA~16 mA DENTAL / ENT CT: 0.1 mA increment PANO and CEPH: 1.0 mA increment
	Cooling		Thermal protection
	Permanent filtration		Min. 1.0 mm Al
	Added filter		PANO and CEPH: 1.5 mm Al (fixed) DENTAL and ENT CT: 1.5 mm Al (fixed) + 3.0 mm Al (Automatically added)
	Total filtration		Min. 2.5 mm Al
Tube	Manufacturer		Canon Electron Tubes & Devices
	Model		D-052SB (Stationary Anode type)
	Focal spot size		0.5 mm (IEC 60336)
	Target Angle		5 degrees
	Permanent Filtration		At least 0.8 mm Al equivalent at 50 kV
	X- ray Coverage		95 mm x 380 mm at SID 550 mm
	Anode Heat Content		35 kJ
	Duty Cycle		1:60 or more (Exposure time: Interval time)

Test Condition

Mode	Image Option	Arch / FOV	Examination	Tube Voltage (kVp)	Tube Current (mA)	Exposure Time (s)
PANO	High Resolution	Standard	Standard	60~90	4~14	13.5
			Left	60~90	4~14	6.7
			Right	60~90	4~14	6.7
			Front	60~90	4~14	11.2
		Narrow	Standard	60~90	4~14	13.5
			Left	60~90	4~14	6.7
			Right	60~90	4~14	6.7
			Front	60~90	4~14	11.2
		Wide	Standard	60~90	4~14	13.5
			Left	60~90	4~14	6.7
			Right	60~90	4~14	6.7
			Front	60~90	4~14	11.2
		Orthogonal	Standard	60~90	4~14	13.5
			Left	60~90	4~14	6.7
			Right	60~90	4~14	6.7
			Front	60~90	4~14	11.2
		Bitewing	Bitewings	60~90	4~14	9.0
			Left	60~90	4~14	4.5
			Right	60~90	4~14	4.5
			Incisor	60~90	4~14	2.8
		Child	Standards	60~90	4~14	11.5
			Left	60~90	4~14	5.7
			Right	60~90	4~14	5.7

Mode	Image Option	Arch / FOV	Examination	Tube Voltage (kVp)	Tube Current (mA)	Exposure Time (s)
			Front	60~90	4~14	9.2
	Green	Standard	Standard	60~90	4~14	7.3
			Left	60~90	4~14	3.7
			Right	60~90	4~14	3.7
			Front	60~90	4~14	5.9
		Narrow	All	60~90	4~14	7.3
			Left	60~90	4~14	3.7
			Right	60~90	4~14	3.7
			Front	60~90	4~14	5.9
		Wide	Standard	60~90	4~14	7.3
			Left	60~90	4~14	3.7
			Right	60~90	4~14	3.7
			Front	60~90	4~14	5.9
		Orthogonal	Standard	60~90	4~14	7.3
			Left	60~90	4~14	3.7
			Right	60~90	4~14	3.7
			Front	60~90	4~14	5.9
		Bitewing	Bitewings	60~90	4~14	5.3
			Incisor	60~90	4~14	1.4
			Left	60~90	4~14	2.6
			Right	60~90	4~14	2.6
			Incisor	60~90	4~14	1.4
		Child	Standard	60~90	4~14	5.6
			Left	60~90	4~14	2.8

Mode	Image Option	Arch / FOV	Examination	Tube Voltage (kVp)	Tube Current (mA)	Exposure Time (s)
			Right	60~90	4~14	2.8
			Front	60~90	4~14	4.5
	-	Sinus LAT	-	60~90	4~14	3.7
		Sinus PA	-	60~90	4~14	8.0
		TMJ LAT	-	60~90	4~14	6.7
		TMJ PA	-	60~90	4~14	6.1
CEPH	High Resolution	Lateral		60~99	4~15	0.9
		PA		60~99	4~15	0.9
		SMV		60~99	4~15	0.9
		Water's View		60~99	4~15	0.9
		Carpus		60~99	4~15	0.9
	Green	Lateral		60~99	4~15	0.9
		PA		60~99	4~15	0.9
		SMV		60~99	4~15	0.9
		Water's View		60~99	4~15	0.9
		Carpus		60~99	4~15	0.9
DENTAL CT	High Resolution	21x19	-	60~99	4~12	15.2
		18x15	-	60~99	4~12	15.2
		12x9	-	60~99	4~12	7.0
		12x5	-	60~99	4~12	7.0
		8x8	-	60~99	4~12	7.0
		8x5	-	60~99	4~12	7.0
		5x5	-	60~99	4~12	7.0
		Smart Focus	-	60~99	4~12	18.0

Mode	Image Option	Arch / FOV	Examination	Tube Voltage (kVp)	Tube Current (mA)	Exposure Time (s)
		Endo (4x4)	-	60~99	4~12	18.0
	Green	21x19		60~99	4~12	15.2
		18x15		60~99	4~12	15.2
		12x9		60~99	4~12	7.0
		12x5		60~99	4~12	7.0
		8x8		60~99	4~12	7.0
		8x5		60~99	4~12	7.0
		5x5		60~99	4~12	7.0
		Smart Focus	-	60~99	4~12	18.0
		Endo	-	60~99	4~12	18.0
ENT CT	High Resolution	21x19	-	60~99	4~12	15.2
		18x15	-	60~99	4~12	15.2
		12x9	-	60~99	4~12	7.0
		8x8	-	60~99	4~12	7.0
	Green	21x19		60~99	4~12	15.2
		18x15		60~99	4~12	15.2
		12x9		60~99	4~12	7.0
		8x8		60~99	4~12	7.0

3.2. X-ray Detector

Item	Specification	
	PANO & DENTAL/ ENT CT	CEPH
Model	Jupi1012X	Venu1012VD
Detector Type	IGZO TFT	a-Si TFT
Pixel Size	100 μm (1x1 binning) 200 μm (2x2 binning)	125 μm
Active Area (W x H)	249.6 x 300.8 (mm)	250 x 300 (mm)
Frame Rate	30 fps @1x1 binning 10 GigE. 60 fps @ 2x2 binning 10 GigE. ≤ 300 fps (Panoramic, 3008x68)	Static detector for one shot application
Analogue-Digital Conversion	16-bit	16-bit
Operating Condition	10 ~ 40℃ (Temperature) 20 ~ 90% (Humidity)	5~35℃ (Temperature) 30~80% (Humidity)
Storage Condition	-10 ~ 55℃ (Temperature) 10 ~ 95% (Humidity)	-10~55℃ (Temperature) 10~90% (Humidity)
Sensor Size (L x W x H)	325 x 280 x 37 (mm)	285 x 340 x 15 (mm)
Sensor Weight	≤ 3.5kg	≤ 2.3kg (Including detector cable)
Conversion Material	CsI:Tl	CsI:Tl
Energy Range	40kV ~150kV	50kV ~100kV
Video Output	10-Gigabit Ethernet	2.5-Gigabit Ethernet
MTF	1.0 @ 0 LP/mm ＞0.5 @ 1.0 LP/mm ＞0.3 @ 2.0 LP/mm ＞0.2 @ 2.5 LP/mm	Typ.71% @ 1.0 LP/mm Typ.41% @ 2.0 LP/mm Typ. 23% @ 3.0 LP/mm Typ. 13% @ 4.0 LP/ mm
Dynamic Range	> 60 dB	≥ 66 dB

3.3. Primary Boards

Item	Model Name	Functions
Power	VT-PWR-014	Provides power to the equipment
LAN card	X550-T2 (Intel社 10G 2port LAN Card))	Allows PC to receive image information from detector.

3.4. PC

The PC used to operate imaging software applications must meet or exceed the following specifications listed below to ensure image quality.

Item	Specifications
CPU	Intel Core i7-14700 vPro Enterprise 5.40G
RAM	64GB (4x16GB) DDR5 4800 UDIMM NECC Memory
HDD	HP 512GB M.2 / HP 2TB 7200RPM SATA 3.5in
Graphics board	NVIDIA RTX 4070 Super 12 GB GDDR6X Graphics
Ethernet Interface	Integrated Intel® I219LM PCIe GbE Controller Intel® Ethernet Server Adapter I210-T1 Gb
Serial Port (RS232)	HP Z2 2nd serial port
Power Supply	700 W EPA92 Power Supply
Slots	Slot 1: PCIe Gen5 x16 Slot 2: PCIe Gen3 x1 - with x4 open end Connector Slot 3: PCIe Gen3 x4 - with x16 Connector Slot 4: PCIe Gen3 x4 with open end connector
CD/DVD drive	9.5mm SuperMulti DVDRW
Monitor	19” 1280x1024 screen resolution
Operating System	Windows 11 Professional 64-bit OS
Recommended System	HP Z2 Series

3.5. Face Scanner

Item	Description
Model	POP 2
Technology	Dual Camera Infrared Structured Light
Output Format	PLY, OBJ, STL
Wi-Fi	Wi-Fi 5

3.6. Image Magnification

The table below shows the FDD, FOD, ODD and magnification rates of each modality.

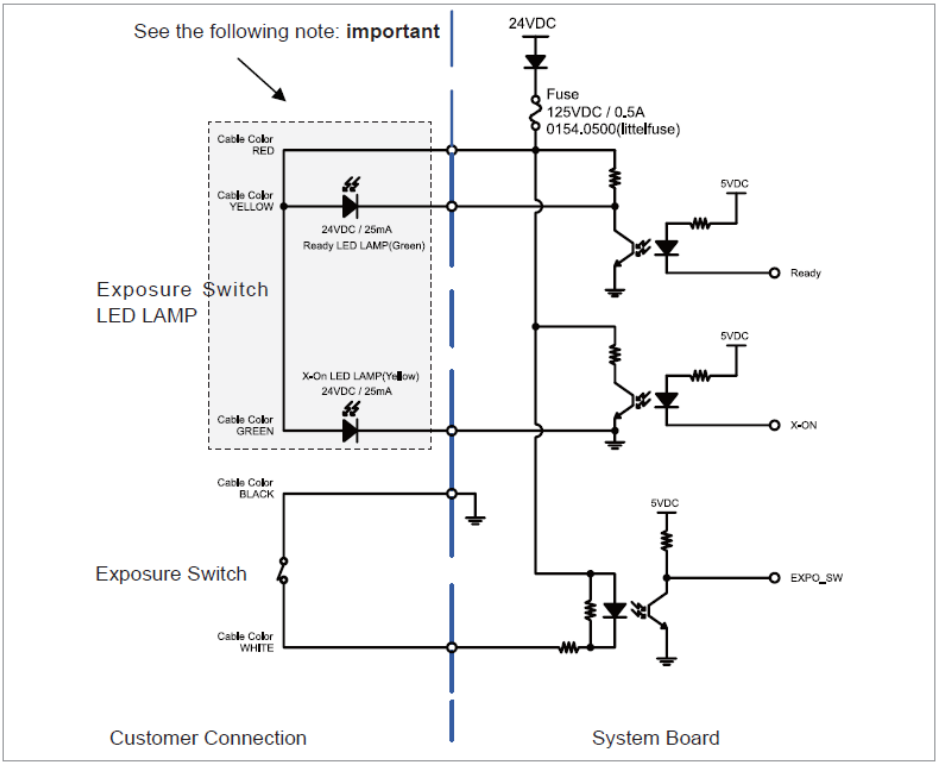
Mode	FDD (mm)	FOD (mm)	ODD (mm)	Magnification
PANO	560	350	210	1:1.60
CEPH	1745	1524	211	1:1.14
CBCT	560	350	210	1:1.60

4. Power and Environment Specifications

4.1. Rating Power

Item	Specification
Power supply voltage	100-240 V~
Frequency	50 / 60 Hz
Power rating	2.2 kVA
Accuracy	Tube Voltage (kVp) ≤ ± 10 %, Tube Current (mA) ≤ ± 20 %, Exposure Time (s) ≤ ± (5 % + 50 ms)

4.2. Exposure Switch Connection Diagram



4.3. Environmental Specifications

Item		Required Condition
During Operation	Temperature	10~35 ℃
	Relative humidity	30~75 %
	Atmospheric pressure	860~1060 hPa
During Transport and Storage	Temperature	-10~55℃
	Relative humidity	10~75 %
	Atmospheric pressure	860~1060 hPa

5. Dose Information

5.1. Recommended X-Ray Exposure Condition

- **Scan time(ST)**: the actual time that the equipment shoots the patient except for the initial acceleration and late deceleration stages.
- **Exposure time(ET)**: the actual time that the patient is exposed to the X-ray emission.

5.1.1. PANO

Scan Time(ST) / Exposure Time(ET)

PANO Option	Image Option	Arch	Examination Option	ST (s)	ET (s)
Normal Magic PAN	High Resolution	Narrow	Standard	14.1	13.5
			Right	14.1	6.7
			Left	14.1	6.7
			Front	14.1	11.2
		Normal	Standard	14.1	13.5
			Right	14.1	6.7
			Left	14.1	6.7
			Front	14.1	11.2
		Wide	Standard	14.1	13.5
			Right	14.1	6.7
			Left	14.1	6.7
			Front	14.1	11.2
		Child	Standard	12.0	11.5
			Right	12.0	5.7
			Left	12.0	5.7
			Front	12.0	9.2
		Orthogonal	Standard	14.1	13.5
			Right	14.1	6.7
			Left	14.1	6.7
			Front	14.1	11.2
			Bitewings	14.1	9.0
			Bitewing Left	14.1	4.5
			Bitewing Right	14.1	4.5
			Bitewing Incisor	14.1	2.8

PANO Option	Image Option	Arch	Examination Option	ST (s)	ET (s)
Normal	Green	Narrow	Standard	7.5	7.3
			Right	7.5	3.7
			Left	7.5	3.7
			Front	7.5	5.9
		Normal	Standard	7.5	7.3
			Right	7.5	3.7
			Left	7.5	3.7
			Front	7.5	5.9
		Wide	Standard	7.5	7.3
			Right	7.5	3.7
			Left	7.5	3.7
			Front	7.5	5.9
		Child	Standard	5.9	5.6
			Right	5.9	2.8
			Left	5.9	2.8
Normal	Green		Front	5.9	4.5
		Orthogonal	Standard	7.5	7.3
			Right	7.5	3.7
			Left	7.5	3.7
			Front	7.5	5.9
			Bitewings	7.5	5.2
			Bitewing Left	7.5	2.6
			Bitewing Right	7.5	2.6
			Bitewing Incisor	7.5	1.4
Insight PAN	-	Normal	-	14.1	7.5
	-	Child	-	14.1	7.5
Special	-	-	TMJ LAT Open	14.1	6.7
	-	-	TMJ LAT Close	14.1	6.7
	-	-	TMJ PA Open	10.0	6.1
	-	-	TMJ PA Close	10.0	6.1
	-	-	Sinus LAT	4.0	3.7
	-	-	Sinus PA	8.8	8.0

*Image option selection (high resolution or green) is not available in the PANO special mode.

Tube Voltage (kVp) / Current (mA)

PANO Option	Image Option	Arch Selection	Examine. Option	Patient	X-ray Intensity	Voltage (kVp)	Current (mA)
Normal Magic PANI	High Resolution	Narrow Normal Wide Orthogonal	Standard Right Left Front Bitewings Btw. Left Btw. Right Btw.Incisor	Man	Hard	75	10
					Normal	74	10
					Soft	73	10
				Woman	Hard	74	10
					Normal	73	10
					Soft	72	10
				Child	Hard	70	8
					Normal	69	8
					Soft	68	8
	Green			Man	Hard	76	9
					Normal	75	9
					Soft	74	9
				Woman	Hard	75	9
					Normal	74	9
					Soft	73	9
				Child	Hard	71	12
					Normal	70	12
					Soft	69	12
	High resolution	Child	Standard Right Left Front	Child	Hard	70	8
					Normal	68	8
					Soft	69	8
	Green			Child	Hard	71	12
					Normal	70	12
					Soft	69	12

PANO Option	Image Option	Arch Selection	Examine. Option	Patient	X-ray Intensity	Voltage (kVp)	Current (mA)
Insight PAN	High Resolution	Normal	-	Man	Hard	71	6
					Normal	70	6
					Soft	69	6
				Woman	Hard	70	6
					Normal	69	6
					Soft	68	6
	-			Child	Hard	68	6
					Normal	67	6
					Soft	66	6
		Child	-	Child	Hard	68	6
					Normal	67	6
					Soft	66	6
Special	-	TMJ LAT TMJ PA Sinus LAT Sinus PA Open/Close	-	Man	Hard	75	10
					Normal	74	10
					Soft	73	10
				Woman	Hard	74	10
					Normal	73	10
					Soft	72	10
				Child	Hard	70	8
					Normal	69	8
					Soft	68	8
	-			Man	Hard	75	10
					Normal	74	10
					Soft	73	10
				Woman	Hard	74	10

PANO Option	Image Option	Arch Selection	Examine. Option	Patient	X-ray Intensity	Voltage (kVp)	Current (mA)
					Normal	73	10
					Soft	72	10
				Child	Hard	70	8
					Normal	69	8
					Soft	68	8

*Image option selection (high resolution or green) is not available in the PANO special mode.

5.1.2. CEPH

Mode (FOV)	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
Lateral/ Full lateral	High Resolution	Man	Hard	91	10	0.9	0.9
			Normal	90	10	0.9	0.9
			Soft	89	10	0.9	0.9
		Woman	Hard	90	10	0.9	0.9
			Normal	89	10	0.9	0.9
			Soft	88	10	0.9	0.9
		Child	Hard	75	10	0.9	0.9
			Normal	74	10	0.9	0.9
			Soft	73	10	0.9	0.9
	Green	Man	Hard	73	5	0.9	0.9
			Normal	72	5	0.9	0.9
			Soft	71	5	0.9	0.9
		Woman	Hard	72	5	0.9	0.9
			Normal	71	5	0.9	0.9
			Soft	70	5	0.9	0.9
		Child	Hard	62	5	0.9	0.9
			Normal	61	5	0.9	0.9
			Soft	60	5	0.9	0.9
PA Water SMV	High Resolution	Man	Hard	91	10	0.9	0.9
			Normal	90	10	0.9	0.9
			Soft	89	10	0.9	0.9
		Woman	Hard	90	10	0.9	0.9
			Normal	89	10	0.9	0.9
			Soft	88	10	0.9	0.9
		Child	Hard	75	10	0.9	0.9
			Normal	74	10	0.9	0.9
			Soft	73	10	0.9	0.9
	Green	Man	Hard	73	5	0.9	0.9
			Normal	72	5	0.9	0.9
			Soft	71	5	0.9	0.9
		Woman	Hard	72	5	0.9	0.9
			Normal	71	5	0.9	0.9

Mode (FOV)	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
			Soft	70	5	0.9	0.9
		Child	Hard	62	5	0.9	0.9
			Normal	61	5	0.9	0.9
			Soft	60	5	0.9	0.9
Carpus	High Resolution	Man	Hard	89	10	0.9	0.9
			Normal	88	10	0.9	0.9
			Soft	87	10	0.9	0.9
		Woman	Hard	88	10	0.9	0.9
			Normal	87	10	0.9	0.9
			Soft	86	10	0.9	0.9
		Child	Hard	73	10	0.9	0.9
			Normal	72	10	0.9	0.9
			Soft	71	10	0.9	0.9
	Green	Man	Hard	71	5	0.9	0.9
			Normal	70	5	0.9	0.9
			Soft	69	5	0.9	0.9
		Woman	Hard	70	5	0.9	0.9
			Normal	69	5	0.9	0.9
			Soft	68	5	0.9	0.9
		Child	Hard	62	5	0.9	0.9
			Normal	61	5	0.9	0.9
			Soft	60	5	0.9	0.9

5.1.3. DENTAL CT

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
21x19	High Resolution	Man	Hard	91	5.6	18.3	15.2
			Normal	90	5.6	18.3	15.2
			Soft	89	5.6	18.3	15.2
		Woman	Hard	91	5.3	18.3	15.2
			Normal	90	5.3	18.3	15.2
			Soft	89	5.3	18.3	15.2
		Child	Hard	91	5.0	18.3	15.2
			Normal	90	5.0	18.3	15.2
			Soft	89	5.0	18.3	15.2
	Green	Man	Hard	75	5.6	18.3	15.2
			Normal	74	5.6	18.3	15.2
			Soft	73	5.6	18.3	15.2
		Woman	Hard	75	5.3	18.3	15.2
			Normal	74	5.3	18.3	15.2
			Soft	73	5.3	18.3	15.2
		Child	Hard	75	5.0	18.3	15.2
			Normal	74	5.0	18.3	15.2
			Soft	73	5.0	18.3	15.2
Smart Focus	High Resolution	Man	Hard	95	10.0	18.1	18.0
			Normal	94	10.0	18.1	18.0
			Soft	93	10.0	18.1	18.0
		Woman	Hard	95	9.7	18.1	18.0
			Normal	94	9.7	18.1	18.0
			Soft	93	9.7	18.1	18.0
		Child	Hard	95	9.4	18.1	18.0
			Normal	94	9.4	18.1	18.0
			Soft	93	9.4	18.1	18.0
	Green	Man	Hard	88	10.0	18.1	18.0
			Normal	87	10.0	18.1	18.0
			Soft	86	10.0	18.1	18.0
		Woman	Hard	88	9.7	18.1	18.0

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
			Normal	87	9.7	18.1	18.0
			Soft	86	9.7	18.1	18.0
		Child	Hard	88	9.4	18.1	18.0
			Normal	87	9.4	18.1	18.0
			Soft	86	9.4	18.1	18.0
18x15	Hight Resolution	Man	Hard	91	5.6	18.3	15.2
			Normal	90	5.6	18.3	15.2
			Soft	89	5.6	18.3	15.2
		Woman	Hard	91	5.3	18.3	15.2
			Normal	90	5.3	18.3	15.2
			Soft	89	5.3	18.3	15.2
		Child	Hard	91	5.0	18.3	15.2
			Normal	90	5.0	18.3	15.2
			Soft	89	5.0	18.3	15.2
	Green	Man	Hard	75	5.6	18.3	15.2
			Normal	74	5.6	18.3	15.2
			Soft	73	5.6	18.3	15.2
		Woman	Hard	75	5.3	18.3	15.2
			Normal	74	5.6	18.3	15.2
			Soft	73	5.3	18.3	15.2
		Child	Hard	75	5.0	18.3	15.2
			Normal	74	5.0	18.3	15.2
			Soft	73	5.0	18.3	15.2
12x9	High Resolution	Man	Hard	95	5.6	7.1	7.0
			Normal	94	5.6	7.1	7.0
			Soft	93	5.6	7.1	7.0
		Woman	Hard	95	5.3	7.1	7.0
			Normal	94	5.3	7.1	7.0
			Soft	93	5.3	7.1	7.0
		Child	Hard	95	5.0	7.1	7.0
			Normal	94	5.0	7.1	7.0
			Soft	93	5.0	7.1	7.0

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
	Green	Man	Hard	75	5.6	7.1	7.0
			Normal	74	5.6	7.1	7.0
			Soft	73	5.6	7.1	7.0
		Woman	Hard	75	5.3	7.1	7.0
			Normal	74	5.3	7.1	7.0
			Soft	73	5.3	7.1	7.0
		Child	Hard	67	5.0	7.1	7.0
			Normal	66	5.0	7.1	7.0
			Soft	65	5.0	7.1	7.0
12x5	High Resolution	Man	Hard	95	5.6	7.1	7.0
			Normal	94	5.6	7.1	7.0
			Soft	93	5.6	7.1	7.0
		Woman	Hard	95	5.3	7.1	7.0
			Normal	94	5.3	7.1	7.0
			Soft	93	5.3	7.1	7.0
		Child	Hard	95	5.0	7.1	7.0
			Normal	94	5.0	7.1	7.0
			Soft	93	5.0	7.1	7.0
	Green	Man	Hard	75	5.6	7.1	7.0
			Normal	74	5.6	7.1	7.0
			Soft	73	5.6	7.1	7.0
		Woman	Hard	75	5.3	7.1	7.0
			Normal	74	5.3	7.1	7.0
			Soft	73	5.3	7.1	7.0
		Child	Hard	67	5.0	7.1	7.0
			Normal	66	5.0	7.1	7.0
			Soft	65	5.0	7.1	7.0
8x8	High Resolution	Man	Hard	95	5.6	7.1	7.0
			Normal	94	5.6	7.1	7.0
			Soft	93	5.6	7.1	7.0
		Woman	Hard	95	5.3	7.1	7.0
			Normal	94	5.3	7.1	7.0

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
			Soft	93	5.3	7.1	7.0
		Child	Hard	95	5.0	7.1	7.0
			Normal	94	5.0	7.1	7.0
			Soft	93	5.0	7.1	7.0
	Green	Man	Hard	75	5.6	7.1	7.0
			Normal	74	5.6	7.1	7.0
			Soft	73	5.6	7.1	7.0
		Woman	Hard	75	5.3	7.1	7.0
			Normal	74	5.3	7.1	7.0
			Soft	73	5.3	7.1	7.0
		Child	Hard	67	5.0	7.1	7.0
			Normal	66	5.0	7.1	7.0
			Soft	65	5.0	7.1	7.0
8x5	High Resolution	Man	Hard	95	5.6	7.1	7.0
			Normal	94	5.6	7.1	7.0
			Soft	93	5.6	7.1	7.0
		Woman	Hard	95	5.3	7.1	7.0
			Normal	94	5.3	7.1	7.0
			Soft	93	5.3	7.1	7.0
		Child	Hard	95	5.0	7.1	7.0
			Normal	94	5.0	7.1	7.0
			Soft	93	5.0	7.1	7.0
	Green	Man	Hard	75	5.6	7.1	7.0
			Normal	74	5.6	7.1	7.0
			Soft	73	5.6	7.1	7.0
		Woman	Hard	75	5.3	7.1	7.0
			Normal	74	5.3	7.1	7.0
			Soft	73	5.3	7.1	7.0
		Child	Hard	67	5.0	7.1	7.0
			Normal	66	5.0	7.1	7.0
			Soft	65	5.0	7.1	7.0
5x5	High	Man	Hard	95	5.6	7.1	7.0

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
	Resolution		Normal	94	5.6	7.1	7.0
			Soft	93	5.6	7.1	7.0
		Woman	Hard	95	5.3	7.1	7.0
			Normal	94	5.3	7.1	7.0
			Soft	93	5.3	7.1	7.0
		Child	Hard	95	5.0	7.1	7.0
			Normal	94	5.0	7.1	7.0
			Soft	93	5.0	7.1	7.0
	Green	Man	Hard	75	5.6	7.1	7.0
			Normal	74	5.6	7.1	7.0
			Soft	73	5.6	7.1	7.0
		Woman	Hard	75	5.3	7.1	7.0
			Normal	74	5.3	7.1	7.0
			Soft	73	5.3	7.1	7.0
		Child	Hard	75	5.0	7.1	7.0
			Normal	74	5.0	7.1	7.0
			Soft	73	5.0	7.1	7.0
Endo	High Resolution	Man	Hard	95	10.0	18.1	18.0
			Normal	94	10.0	18.1	18.0
			Soft	93	10.0	18.1	18.0
		Woman	Hard	95	9.7	18.1	18.0
			Normal	94	9.7	18.1	18.0
			Soft	93	9.7	18.1	18.0
		Child	Hard	95	9.4	18.1	18.0
			Normal	94	9.4	18.1	18.0
			Soft	93	9.4	18.1	18.0
	Green	Man	Hard	88	10.0	18.1	18.0
			Normal	87	10.0	18.1	18.0
			Soft	86	10.0	18.1	18.0
		Woman	Hard	88	9.7	18.1	18.0
			Normal	87	9.7	18.1	18.0
			Soft	86	9.7	18.1	18.0

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
		Child	Hard	88	9.4	18.1	18.0
			Normal	87	9.4	18.1	18.0
			Soft	86	9.4	18.1	18.0
Scout (5x5 Endo)	-	Man	Hard	91	6.0	14.5	6.2
			Normal	90	6.0	14.5	6.2
			Soft	89	6.0	14.5	6.2
		Woman	Hard	91	5.7	14.5	6.2
			Normal	90	5.7	14.5	6.2
			Soft	89	5.7	14.5	6.2
		Child	Hard	91	5.4	14.5	6.2
			Normal	90	5.4	14.5	6.2
			Soft	89	5.4	14.5	6.2
Scout (12x5 8x5) t	-	Man	Hard	91	6.0	14.5	3.1
			Normal	90	6.0	14.5	3.1
			Soft	89	6.0	14.5	3.1
		Woman	Hard	91	5.7	14.5	3.1
			Normal	90	5.7	14.5	3.1
			Soft	89	5.7	14.5	3.1
		Child	Hard	91	5.4	14.5	3.1
			Normal	90	5.4	14.5	3.1
			Soft	89	5.4	14.5	3.1

- **The full arch** option does not affect the system's scan time and exposure time.
- In **scout mode**, the user can only select the 'high resolution' option.

5.1.4. ENT CT

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
21x19	High Resolution	Man	Hard	91	5.6	18.3	15.2
			Normal	90	5.6	18.3	15.2
			Soft	91	5.6	18.3	15.2
		Woman	Hard	90	5.3	18.3	15.2
			Normal	91	5.3	18.3	15.2
			Soft	90	5.3	18.3	15.2
		Child	Hard	91	5.0	18.3	15.2
			Normal	90	5.0	18.3	15.2
			Soft	91	5.0	18.3	15.2
	Green	Man	Hard	75	5.6	18.3	15.2
			Normal	74	5.6	18.3	15.2
			Soft	73	5.6	18.3	15.2
		Woman	Hard	75	5.3	18.3	15.2
			Normal	74	5.3	18.3	15.2
			Soft	73	5.3	18.3	15.2
		Child	Hard	75	5.0	18.3	15.2
			Normal	74	5.0	18.3	15.2
			Soft	73	5.0	18.3	15.2
18x15	High Resolution	Man	Hard	91	5.6	18.3	15.2
			Normal	90	5.6	18.3	15.2
			Soft	89	5.6	18.3	15.2
		Woman	Hard	91	5.3	18.3	15.2
			Normal	90	5.3	18.3	15.2
			Soft	89	5.3	18.3	15.2
		Child	Hard	91	5.0	18.3	15.2
			Normal	90	5.0	18.3	15.2
			Soft	89	5.0	18.3	15.2
	Green	Man	Hard	75	5.6	18.3	15.2
			Normal	74	5.6	18.3	15.2
			Soft	73	5.6	18.3	15.2
		Woman	Hard	75	5.3	18.3	15.2

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
			Normal	74	5.3	18.3	15.2
			Soft	73	5.3	18.3	15.2
		Child	Hard	75	5.0	18.3	15.2
			Normal	74	5.0	18.3	15.2
			Soft	73	5.0	18.3	15.2
12x9	High Resolution	Man	Hard	95	5.6	7.1	7.0
			Normal	94	5.6	7.1	7.0
			Soft	93	5.6	7.1	7.0
		Woman	Hard	95	5.3	7.1	7.0
			Normal	94	5.3	7.1	7.0
			Soft	93	5.3	7.1	7.0
		Child	Hard	95	5.0	7.1	7.0
			Normal	94	5.0	7.1	7.0
			Soft	93	5.0	7.1	7.0
	Green	Man	Hard	75	5.6	7.1	7.0
			Normal	74	5.6	7.1	7.0
			Soft	73	5.6	7.1	7.0
		Woman	Hard	75	5.3	7.1	7.0
			Normal	74	5.3	7.1	7.0
			Soft	73	5.3	7.1	7.0
		Child	Hard	67	5.0	7.1	7.0
			Normal	66	5.0	7.1	7.0
			Soft	65	5.0	7.1	7.0
8x8	High Resolution	Man	Hard	95	5.6	7.1	7.0
			Normal	94	5.6	7.1	7.0
			Soft	93	5.6	7.1	7.0
		Woman	Hard	95	5.3	7.1	7.0
			Normal	94	5.3	7.1	7.0
			Soft	93	5.3	7.1	7.0
		Child	Hard	95	5.0	7.1	7.0
			Normal	94	5.0	7.1	7.0
			Soft	93	5.0	7.1	7.0

Mode	Image Option	Patient	X-ray Intensity	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
	Green	Man	Hard	75	5.6	7.1	7.0
			Normal	74	5.6	7.1	7.0
			Soft	73	5.6	7.1	7.0
		Woman	Hard	75	5.3	7.1	7.0
			Normal	74	5.3	7.1	7.0
			Soft	73	5.3	7.1	7.0
		Child	Hard	67	5.0	7.1	7.0
			Normal	66	5.0	7.1	7.0
			Soft	65	5.0	7.1	7.0

5.1.5. MODEL

Mode	Image Option	Examination Option	Tube Voltage (kVp)	Tube Current (mA)	ST (S)	ET(S)
MODEL	-	Upper	94	5.6	7.1	7.0
		Lower	94	5.6	7.1	7.0

5.1.6. Face Scan

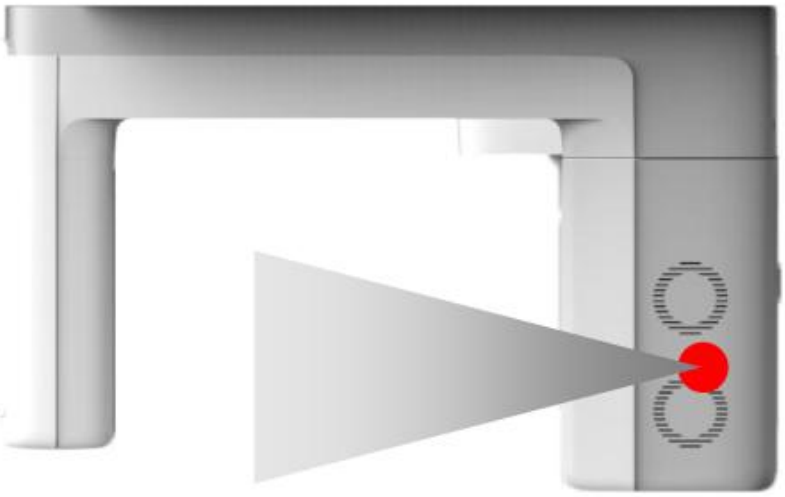
Mode	Image Option	Examination Option	Tube Voltage (kVp)	Tube Current (mA)	ST(s)	ET(s)
Face Scan	-	-	-	-	10.0	-

5.2. DAP (Dose Area Product)

DAP (Dose Area Product) is a quantity used in assessing the radiation risk from diagnostic X-ray examination procedures. It is defined as the absorbed dose multiplied by the area irradiated, expressed in gray square centimeters (mGy• cm^2). Despite the limitation, DAP is the best way to predict effective dose value and currently the most convenient method for patient dose monitoring.

Test Hardware	
Brand Name (Model)	**Green X 21 (PHT-90CHO)**
Sensor Type	PANO & DENTAL CT& ENT CT: Jupi1012X CEPH: Venu1012VD
X-ray Generator	LDG-07E22T2
Tube	D-052SB

[Measurement Overview]



[Test Results]

Modality	Option	Image Option	Patient	Exposure Condition (kVp / mA / s)	DAP
PANO	Normal	High Resolution	Man	74 kVp / 10.0 mA / 13.5 s	110.65
			Child	69 kVp / 8.0mA / 11.5 s	54.63
		Green	Man	75 kVp / 9.0 mA / 7.3 s	55.19
			Child	70 kVp / 12.0 mA / 5.6 s	40.76
	Insight PAN	High Resolution	Man	70 kVp / 6.0 mA / 7.5 s	112.42
			Child	67 kVp / 6.0 mA / 5.0 s	69.32
CEPH	Lateral	High Resolution	Man	90 kVp / 10.0 mA / 0.9 s	86.12
			Child	74 kVp / 10.0 mA / 0.9 s	61.19
		Green	Man	72 kVp / 5.0 mA / 0.9 s	28.53
			Child	61 kVp / 5.0 mA / 0.9 s	20.25
ENT / Dental CT	21x19	High Resolution	Man	90 kVp / 5.6 mA / 15.2 s	4719.64
			Child	90 kVp / 5.0 mA / 15.2s	4225.74
		Green	Man	74 kVp / 5.6 mA / 15.2 s	3016.32
			Child	74 kVp / 5.0 mA / 15.2 s	2700.67
	Smart Focus	High Resolution	Man	94 kVp / 10.0 mA / 18.0 s	3426.26
			Child	94 kVp / 9.4 mA / 18.0 s	3221.16
		Green	Man	87 kVp / 10.0 mA / 18.0 s	2714.49
			Child	87 kVp / 9.4mA / 18.0 s	2552
	18x15	High Resolution	Man	90 kVp / 5.6 mA / 15.2 s	3416.89
			Child	90 kVp / 5.0 mA /15.2 s	3059.32
		Green	Man	74 kVp / 5.6 mA /15.2 s	2183.73
			Child	74 kVp / 5.0 mA / 15.2 s	1955.21
	12x9	High Resolution	Man	94 kVp / 5.6 mA / 7.0 s	1372.80
			Child	94 kVp / 5.0 mA / 7.0 s	1229.27
		Green	Man	74 kVp / 5.6 mA / 7.0 s	752.41
			Child	66 kVp / 5.0 mA / 7.0 s	500.95
	12x5	High Resolution	Man	94 kVp / 5.6 mA / 7.0 s	931.29
			Child	94 kVp / 5.0 mA / 7.0 s	833.92
		Green	Man	74 kVp / 5.6 mA / 7.0 s	510.43
			Child	66 kVp / 5.0 mA / 7.0 s	339.84

	8x8	High Resolution	Man	94 kVp /5.6 mA / 7.0 s	929.95
			Child	94 kVp / 5.0 mA / 7.0 s	832.72
		Green	Man	74 kVp / 5.6 mA / 7.0 s	509.70
			Child	66 kVp / 5.0 mA / 7.0 s	339.35
	8x5	High Resolution	Man	94 kVp / 5.6 mA / 7.0 s	603.68
			Child	94 kVp / 5.0 mA / 7.0 s	540.56
		Green	Man	74 kVp / 5.6 mA / 7.0 s	330.87
			Child	66 kVp / 5.0 mA / 7.0 s	220.29
	5x5	High Resolution	Man	94 kVp / 5.6 mA / 7.0 s	375.13
			Child	94 kVp / 5.0 mA / 7.0 s	335.91
		Green	Man	74 kVp / 5.6 mA / 7.0 s	205.60
			Child	66 kVp / 5.0 mA / 7.0 s	136.89
	Endo	High Resolution	Man	94 kVp / 10.0 mA / 18.0 s	630
			Child	94 kVp / 9.4 mA / 18.0 s	592.28
		Green	Man	87 kVp / 10.0 mA / 18.0 s	499.12
			Child	87 kVp / 9.4 mA / 18.0 s	469.24
	Scout (5x5 / Endo)	High Resolution	Man	90 kVp / 6.0 mA / 6.2 s	98.07
			Child	90 kVp / 5.4 mA / 6.2 s	88.53
	Scout (12x5, 8x5)	High Resolution	Man	90 kVp / 6.0 mA / 3.1 s	49.04
			Child	90 kVp / 5.4 mA / 3.1 s	44.26

5.3. Leakage Dose

5.3.1. Standard

National Deviations	Terminology	Permissive Range
International Standard IEC 60601-1-3	Leakage	The leakage dose shall not exceed 1.0 mGy per hour at 100 cm from the X-ray source.

5.3.2. Test Information

Category	Description
Test Model	PHT-90CHO
Serial Number	E/S-09
Dental / ENT CT Sensor	Jupi1012X
PANO Sensor	Jupi1012X
CEPH Sensor	Venu1012VD
Tube Model	LDG-07E22T2

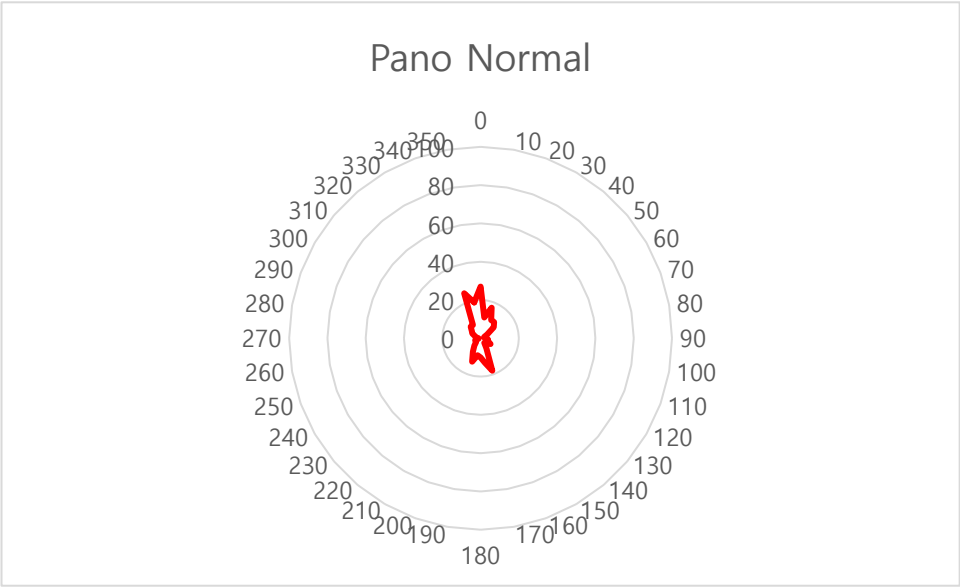
5.3.3. Test Result

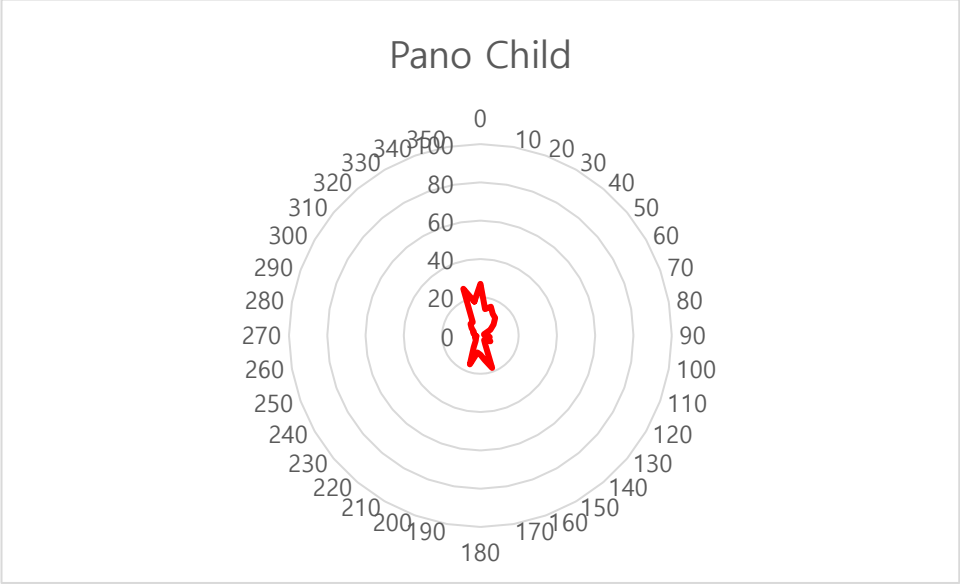
PANO (Normal)

Test Condition	
Tested Mode	**Test 1** - PANO option: Normal - Image option: High Resolution - Arch selection: Normal - PANO examination: Standard **Test 2** - PANO option: Normal - Image option: High Resolution - Arch selection: Child - PANO examination: Standard
Distance from focal point [m]	1
Tube Voltage Peak [kVp]	90
Tube Current [mA]	14
Exposure Time [s]	13.5 (Normal) , 11.5(Child)

Mode / Direction[°]	PANO(Normal)		PANO(Child)	
	mR/hr	mGy/hr	mR/hr	mGy/hr
0	27	0.237	27	0.237
10	11	0.096	14	0.123
20	17	0.149	16	0.140
30	11	0.096	13	0.114
40	11	0.096	12	0.105
50	9	0.079	9	0.079
60	4	0.035	6	0.053
70	2	0.018	2	0.018
80	2	0.018	2	0.018
90	3	0.026	4	0.035
100	4	0.035	5	0.044
110	4	0.035	4	0.035
120	6	0.053	6	0.053
130	4	0.035	4	0.035
140	3	0.026	3	0.026
150	6	0.053	5	0.044
160	18	0.158	18	0.158

170	13	0.114	13	0.114
180	10	0.088	10	0.088
190	9	0.079	9	0.079
200	13	0.114	16	0.140
210	8	0.070	7	0.061
220	5	0.044	4	0.035
230	3	0.026	3	0.026
240	3	0.026	3	0.026
250	3	0.026	3	0.026
260	1	0.009	2	0.018
270	1	0.009	3	0.026
280	2	0.018	3	0.026
290	3	0.026	4	0.035
300	5	0.044	4	0.035
310	6	0.053	6	0.053
320	8	0.070	8	0.070
330	8	0.070	8	0.070
340	25	0.219	26	0.228
350	19	0.167	18	0.158


Pano Normal
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350
100
80
60
40
20
0

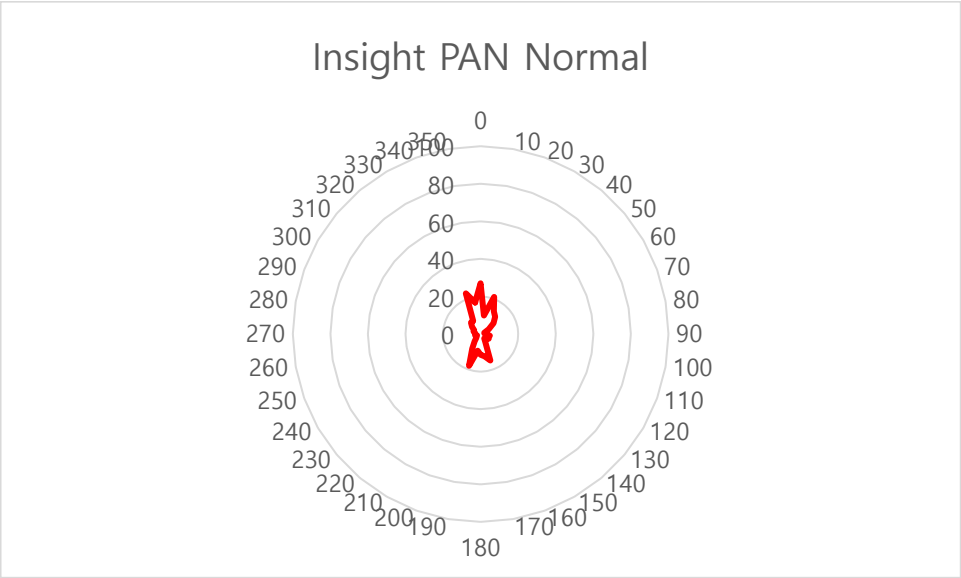

Pano Child
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350
100
80
60
40
20
0

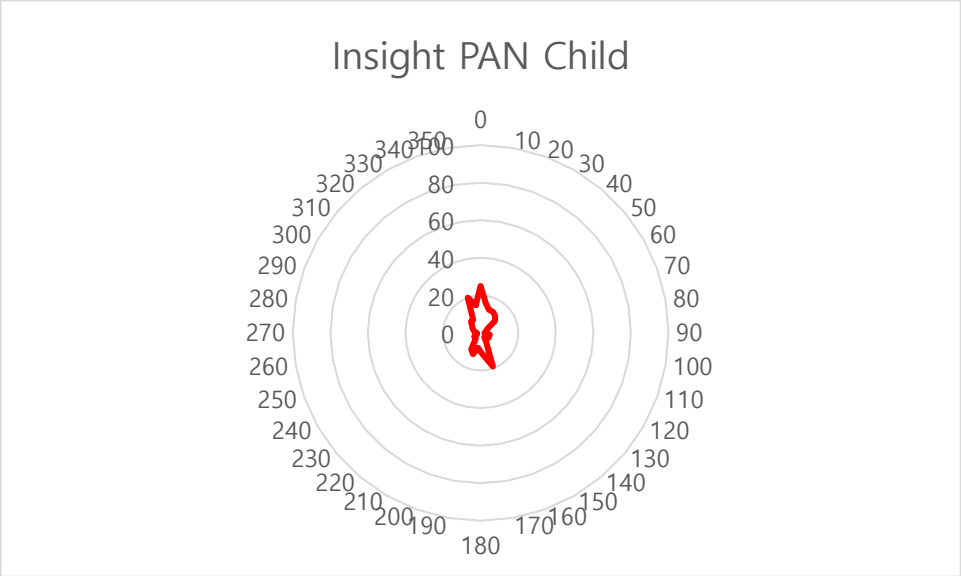
PANO (Insight PAN)

Test Condition	
Tested Mode	**Test 1** - PANO option: Insight PAN - Arch selection: Normal **Test 2** - PANO option: Insight PAN - Arch selection: Child
Distance from focal point [m]	1
Tube Voltage Peak [kVp]	90
Tube Current [mA]	14
Exposure Time [s]	10.9 (Normal), 8.2(Child)

Mode / Direction[°]	PANO (Normal)		PANO (Child)	
	mR/hr	mGy/hr	mR/hr	mGy/hr
0	27	0.237	25	0.219
10	10	0.088	16	0.140
20	21	0.184	13	0.114
30	14	0.123	13	0.114
40	12	0.105	12	0.105
50	9	0.079	10	0.088
60	5	0.044	4	0.035
70	2	0.018	3	0.026
80	2	0.018	3	0.026
90	3	0.026	2	0.018
100	5	0.044	5	0.044
110	4	0.035	4	0.035
120	5	0.044	5	0.044
130	4	0.035	4	0.035
140	3	0.026	3	0.026
150	5	0.044	6	0.053
160	15	0.132	19	0.167
170	12	0.105	13	0.114
180	11	0.096	10	0.088
190	9	0.079	8	0.070

200	18	0.158	12	0.105
210	9	0.079	10	0.088
220	5	0.044	4	0.035
230	3	0.026	4	0.035
240	3	0.026	4	0.035
250	2	0.018	2	0.018
260	3	0.026	3	0.026
270	3	0.026	2	0.018
280	3	0.026	3	0.026
290	4	0.035	4	0.035
300	4	0.035	5	0.044
310	6	0.053	6	0.053
320	8	0.070	8	0.070
330	8	0.070	8	0.070
340	23	0.202	20	0.175
350	17	0.149	15	0.132


Insight PAN Normal
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350
0
20
40
60
80
100

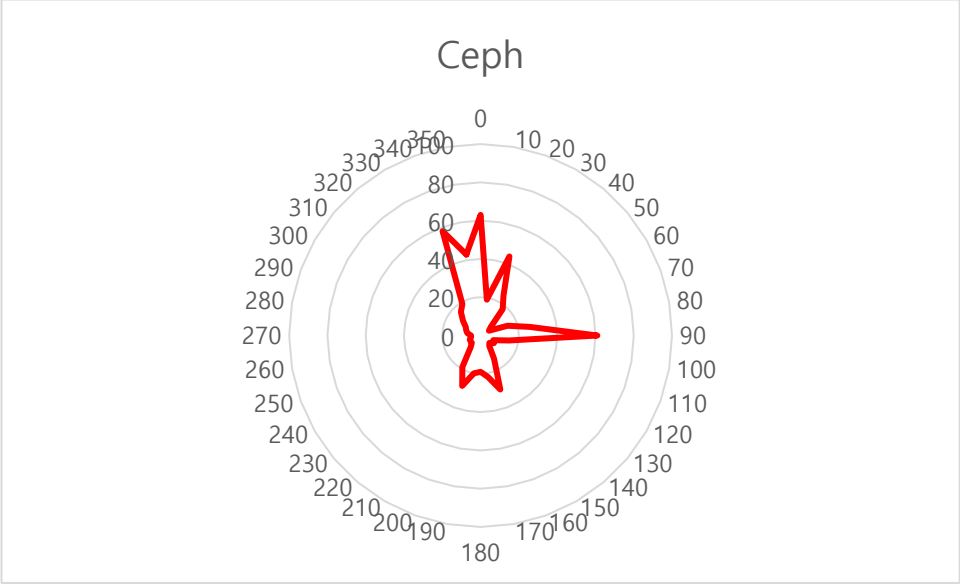

Insight PAN Child
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350
0
20
40
60
80
100

CEPH

Test Condition	
Tested Mode	- Image option: High Resolution - CEPH examination: Lateral - FOV option: Large
Distance from focal point [m]	1
Tube Voltage Peak [kVp]	99
Tube Current [mA]	15
Exposure Time [s]	0.9

Mode / Direction[°]	CEPH (Lateral)	
	mR/hr	mGy/hr
0	63	0.553
10	19	0.167
20	44	0.386
30	24	0.211
40	18	0.158
50	7	0.061
60	5	0.044
70	15	0.132
80	26	0.228
90	61	0.535
100	15	0.132
110	7	0.061
120	8	0.070
130	6	0.053
140	7	0.061
150	14	0.123
160	30	0.263
170	22	0.193
180	19	0.167
190	20	0.175
200	28	0.246
210	19	0.167
220	8	0.070
230	6	0.053
240	6	0.053
250	6	0.053

260	5	0.044
270	5	0.044
280	7	0.061
290	8	0.070
300	9	0.079
310	12	0.105
320	16	0.140
330	19	0.167
340	58	0.509
350	43	0.377

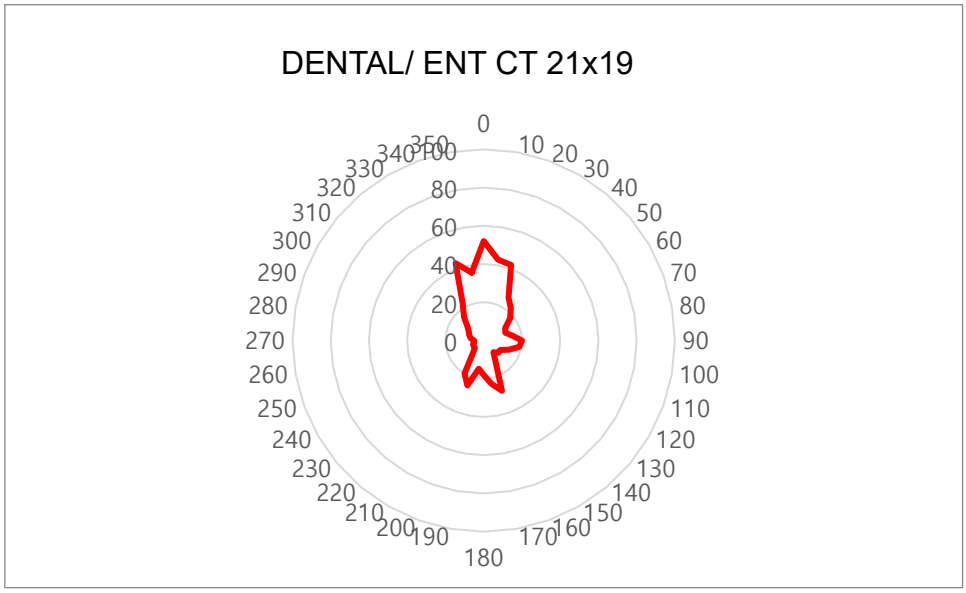


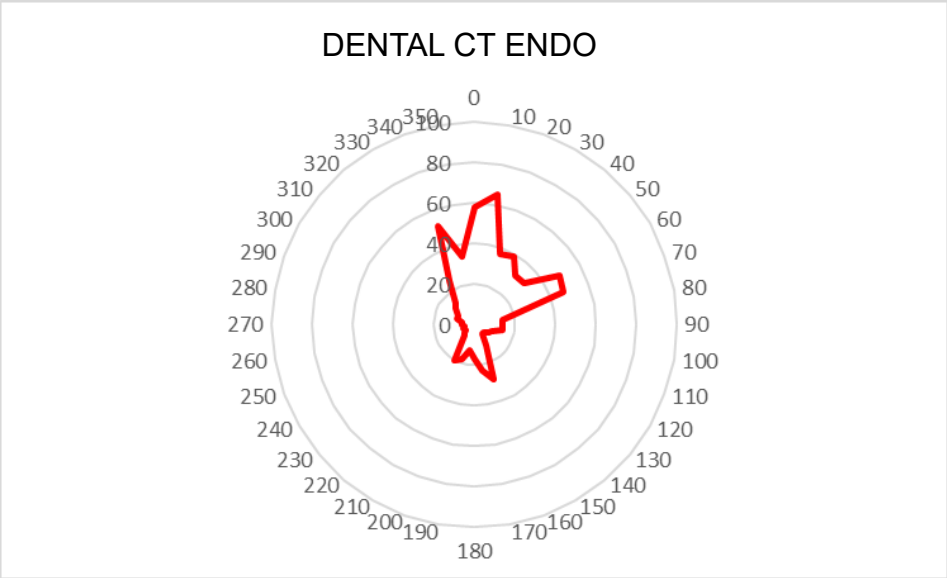
DENTAL / ENT CT

Test Condition	
Tested Mode	**Test 1** - FOV: 21x19 - Vertical option: Occlusion - Horizontal option: Center - Image option: High Resolution - Voxel Size: Application **Test 2** - FOV: ENDO - Image option: High Resolution - Voxel Size: Application - Tooth option: 41
Distance from focal point [m]	1
Tube Voltage Peak [kVp]	99
Tube Current [mA]	12
Exposure Time [s]	15.2 (21x19) , 18(ENDO)

FOV / Direction[°]	21x19 (DENTAL / ENT CT)		ENDO (Dental CT only)	
	mR/hr	mGy/hr	mR/hr	mGy/hr
0	52	0.456	50	0.439
10	43	0.377	22	0.193
20	42	0.368	32	0.281
30	26	0.228	22	0.193
40	22	0.193	18	0.158
50	18	0.158	13	0.114
60	13	0.114	7	0.061
70	12	0.105	5	0.044
80	15	0.132	5	0.044
90	20	0.175	10	0.088
100	19	0.167	7	0.061
110	14	0.123	8	0.070
120	10	0.088	12	0.105
130	10	0.088	6	0.053
140	8	0.070	5	0.044
150	12	0.105	8	0.070
160	28	0.246	26	0.228
170	23	0.202	19	0.167
180	18	0.158	15	0.132

190	15	0.132	16	0.140
200	25	0.219	23	0.202
210	20	0.175	13	0.114
220	9	0.079	8	0.070
230	6	0.053	5	0.044
240	6	0.053	5	0.044
250	6	0.053	5	0.044
260	5	0.044	4	0.035
270	5	0.044	5	0.044
280	7	0.061	5	0.044
290	8	0.070	7	0.061
300	9	0.079	7	0.061
310	11	0.096	10	0.088
320	16	0.140	14	0.123
330	22	0.193	16	0.140
340	43	0.377	47	0.412
350	36	0.316	34	0.298

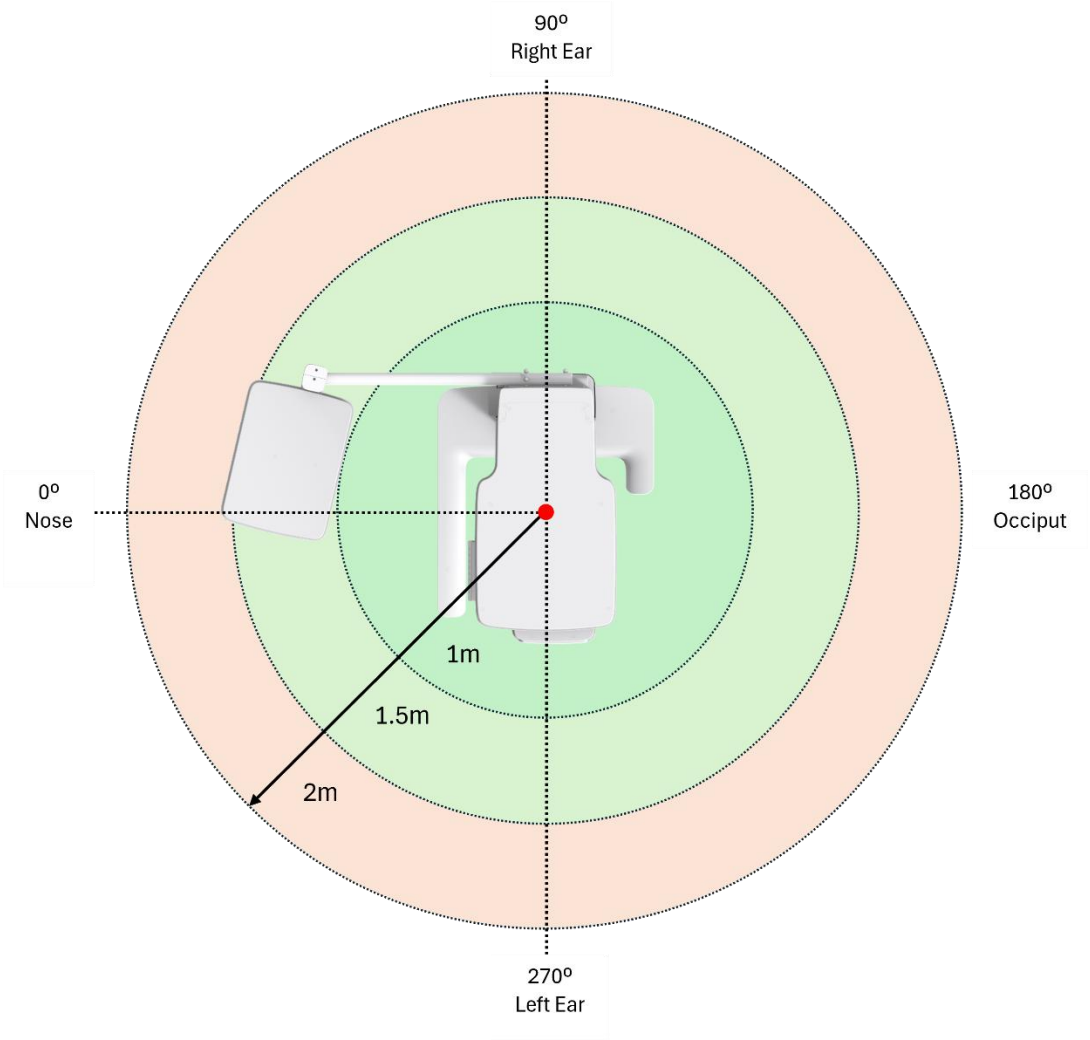



DENTAL CT ENDO
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350
100
80
60
40
20
0

5.4. Scattered Dose

5.4.1. Test Area

The tested plane of radiation areas is defined within a circle of the radius at 1 m, 1.5 m, and 2 m from the phantom as the figure below.

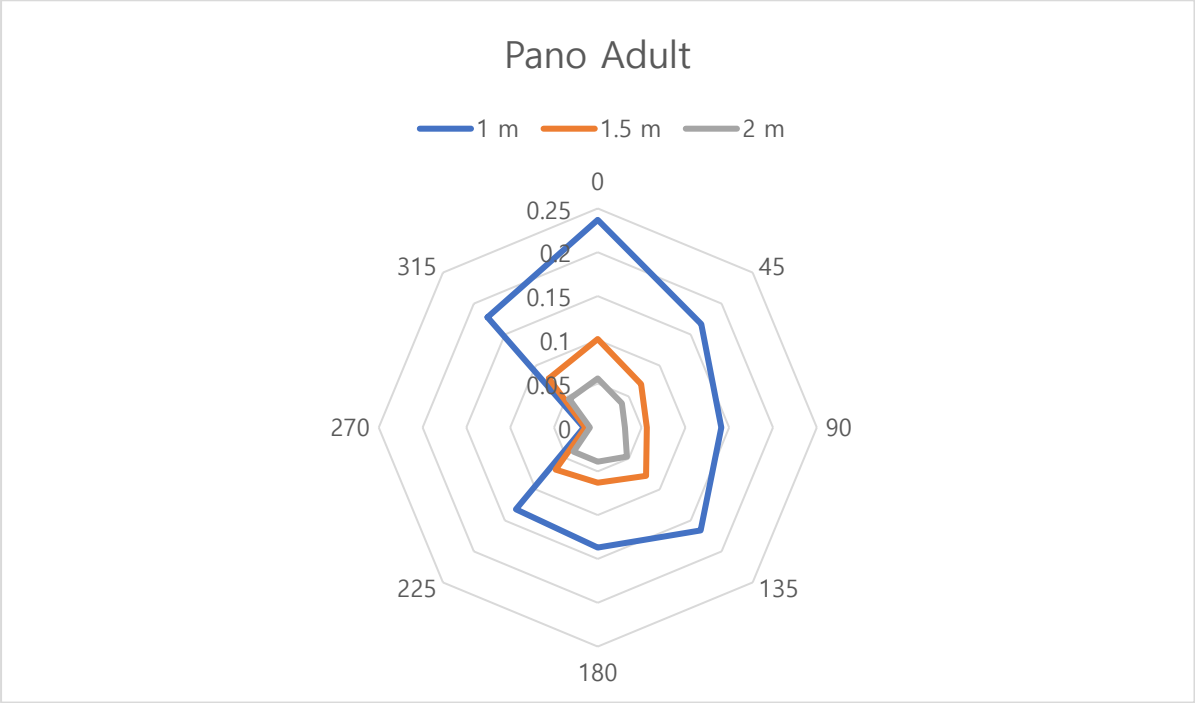


5.4.2. Test Result

PANO(Adult)

Test Condition	
Tested Mode	- PANO option: Normal - Image option: High resolution - Arch selection: Normal - PANO examination: Standard - Patient: Adult
Distance from focal point [m]	1~2
Tube Voltage Peak [kVp]	90
Tube Current [mA]	14
Exposure Time [s]	13.5

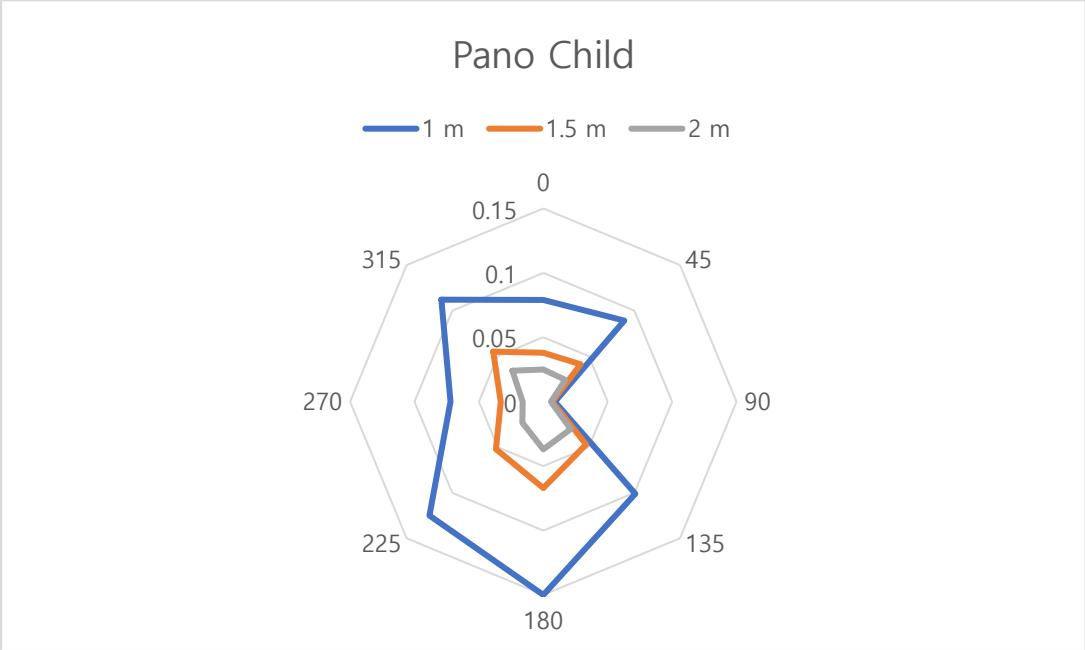
Mode / Direction[°]		PANO (Adult) (mR)		
		1m (3.3ft)	1.5m (4.9ft)	2m (6.6ft)
0	Nose	0.101	0.050	0.032
45		0.12	0.056	0.033
90	Right Ear	0.011	0.010	0.009
135		0.156	0.073	0.043
180	Occiput	0.218	0.100	0.055
225		0.166	0.071	0.033
270	Left Ear	0.103	0.052	0.021
315		0.124	0.063	0.040


Pano Adult
1 m
1.5 m
2 m
0
45
90
135
180
225
270
315
0.25
0.2
0.15
0.1
0.05
0

PANO(Child)

Test Condition	
Tested Mode	- PANO option: Normal - Image option: High resolution - Arch selection: Child - PANO examination: Standard - Patient: Child
Distance from focal point [m]	1~2
Tube Voltage Peak [kVp]	90
Tube Current [mA]	14
Exposure Time [s]	11.5

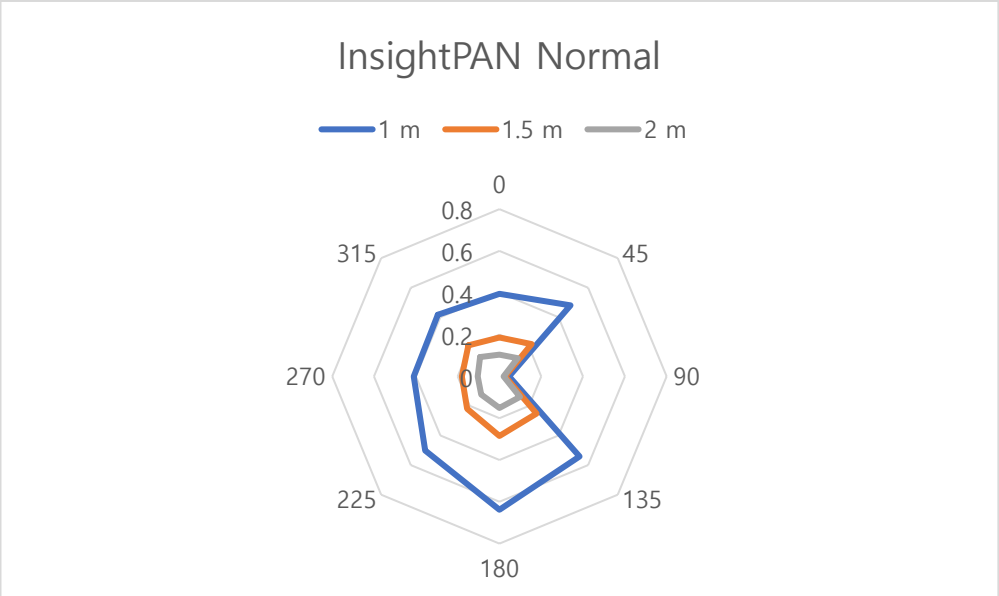
Direction[°] / Mode		PANO (Child) (mR)		
		1m (3.3ft)	1.5m (4.9ft)	2m (6.6ft)
0	Nose	0.079	0.038	0.025
45		0.089	0.041	0.024
90	Right Ear	0.009	0.007	0.006
135		0.101	0.047	0.030
180	Occiput	0.15	0.067	0.037
225		0.125	0.052	0.023
270	Left Ear	0.072	0.033	0.016
315		0.112	0.055	0.034


Pano Child
1 m
1.5 m
2 m
0
0.15
0.1
0.05
0
45
90
135
180
225
270
315

Insight PAN (Normal)

Test Condition	
Tested Mode	- PANO option: Insight PAN - Arch selection: Normal
Distance from focal point [m]	1~2
Tube Voltage Peak [kVp]	90
Tube Current [mA]	14
Exposure Time [s]	10.9

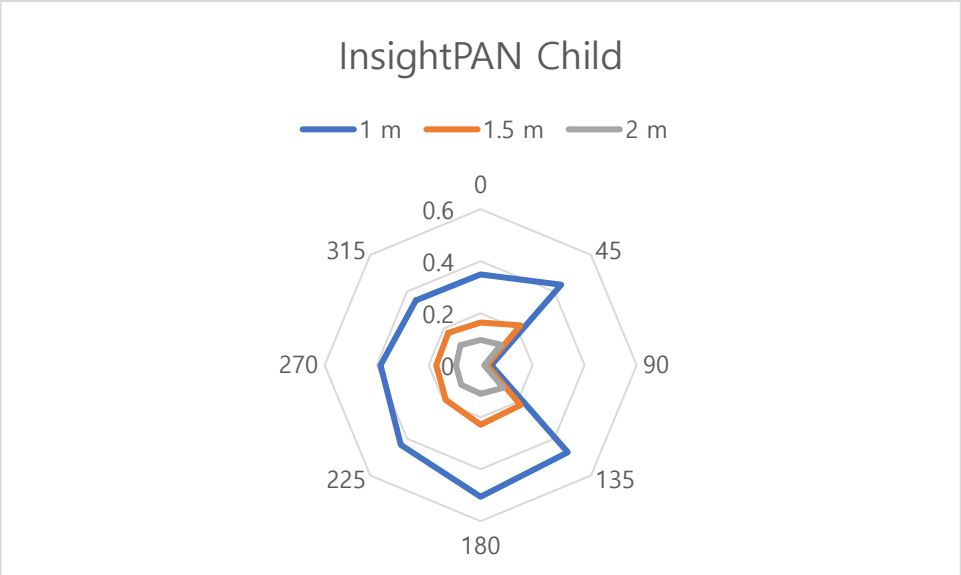
Direction[°] \ Mode		Insight PAN (Normal) (mR)		
		1m (3.3ft)	1.5m (4.9ft)	2m (6.6ft)
0	Nose	0.395	0.186	0.104
45		0.481	0.218	0.123
90	Right Ear	0.046	0.027	0.020
135		0.542	0.251	0.139
180	Occiput	0.638	0.285	0.151
225		0.502	0.219	0.123
270	Left Ear	0.41	0.180	0.104
315		0.417	0.210	0.131



Insight PAN (Child)

Test Condition	
Tested Mode	- PANO option: Insight PAN - Arch selection: Child
Distance from focal point [m]	1~2
Tube Voltage Peak [kVp]	90
Tube Current [mA]	14
Exposure Time [s]	8.2

Direction[°] \ Mode		Insight PAN (Child) (mR)		
		1m (3.3ft)	1.5m (4.9ft)	2m (6.6ft)
0	Nose	0.349	0.164	0.097
45		0.438	0.217	0.111
90	Right Ear	0.041	0.025	0.014
135		0.474	0.217	0.123
180	Occiput	0.506	0.229	0.110
225		0.434	0.189	0.106
270	Left Ear	0.385	0.171	0.095
315		0.352	0.176	0.109

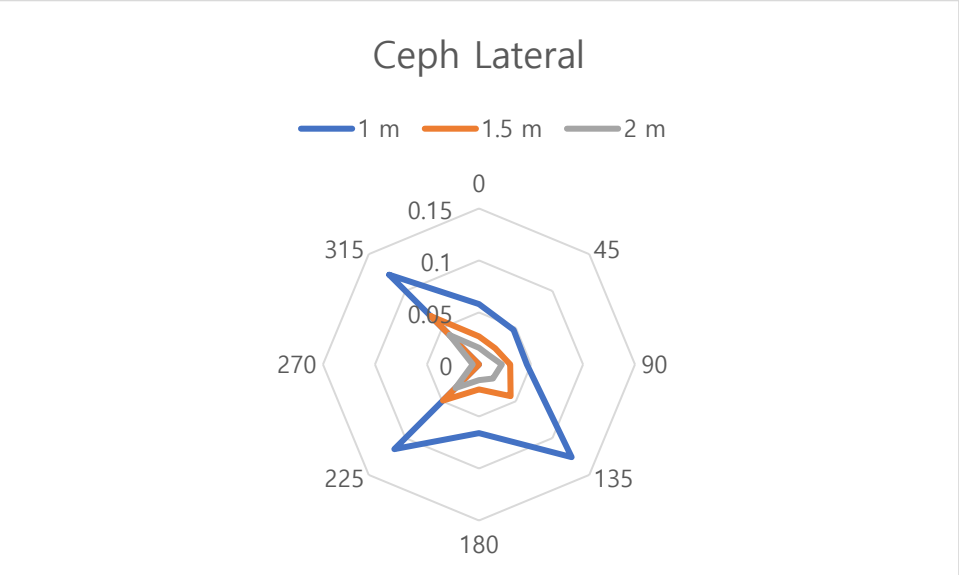


CEPH(Lateral)

Test Condition	
Tested Mode	- Image option: High resolution - CEPH examination: Lateral - FOV option: Large
Distance from focal point [m]	1~2
Tube Voltage Peak [kVp]	99
Tube Current [mA]	15
Exposure Time [s]	0.9

**Since the Ion chamber is located between the generator and the object, Data of 1 m and 1.5 m at 270 ° are not measured.*

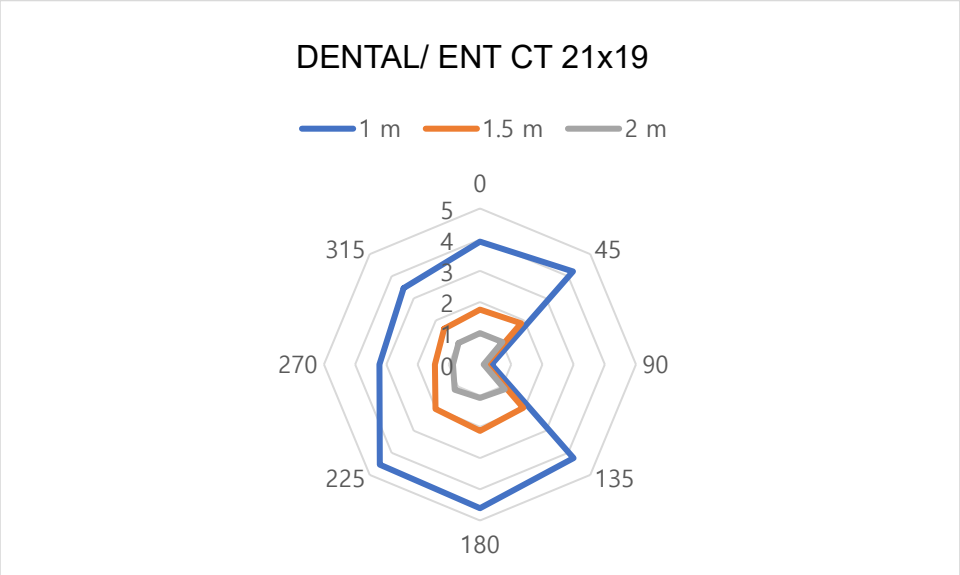
Mode / Direction[º]		CEPH (Lateral) (mR)		
		1m (3.3ft)	1.5m (4.9ft)	2m (6.6ft)
0	Nose	0.058	0.027	0.016
45		0.047	0.022	0.013
90	Right Ear	0.046	0.03	0.022
135		0.126	0.043	0.019
180	Occiput	0.066	0.024	0.015
225		0.115	0.049	0.032
270	Left Ear	-	-	0.006
315		0.122	0.066	0.040


Ceph Lateral
1 m
1.5 m
2 m
0
45
90
135
180
225
270
315
0.15
0.1
0.05
0

DENTAL / ENT CT (21x19)

Test Condition	
Tested Mode	- FOV: 21x19 - Vertical option: Occlusion - Horizontal option: Center - Image option: High Resolution - Voxel Size: Application
Distance from focal point [m]	1~2
Tube Voltage Peak [kVp]	99
Tube Current [mA]	12
Exposure Time [s]	15.2

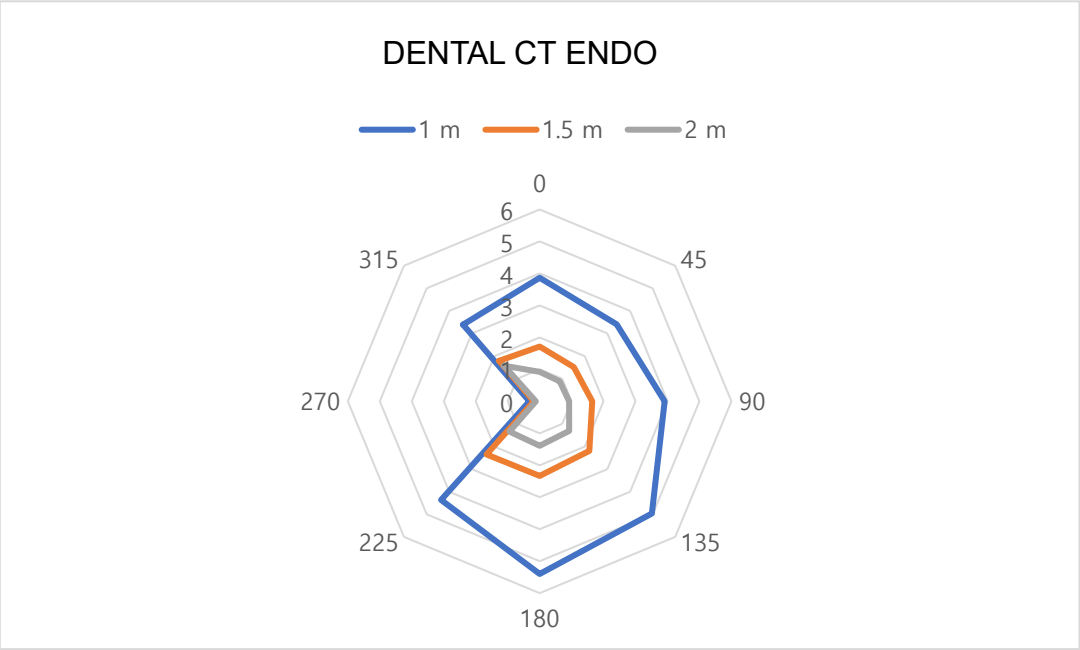
FOV / Direction[º]		21x19 (mR)		
		1m (3.3ft)	1.5m (4.9ft)	2m (6.6ft)
0	Nose	3.937	1.758	1.005
45		4.215	1.863	1.018
90	Right Ear	0.369	0.183	0.121
135		4.242	1.961	1.124
180	Occiput	4.606	2.127	1.072
225		4.542	2.017	1.147
270	Left Ear	3.222	1.444	0.865
315		3.462	1.623	0.974


DENTAL/ ENT CT 21x19
1 m
1.5 m
2 m
0
45
90
135
180
225
270
315
5
4
3
2
1
0

DENTAL CT (ENDO)

Test Condition	
Tested Mode	- FOV: ENDO - Image option: High Resolution - Voxel Size: Application - Tooth option: 41
Distance from focal point [m]	1~2
Tube Voltage Peak [kVp]	99
Tube Current [mA]	12
Exposure Time [s]	18

FOV / Direction[°]		ENDO (mR)		
		1m (3.3ft)	1.5m (4.9ft)	2m (6.6ft)
0	Nose	0.795	0.363	0.211
45		0.805	0.366	0.204
90	Right Ear	0.098	0.053	0.039
135		0.485	0.221	0.128
180	Occiput	0.474	0.221	0.115
225		0.476	0.209	0.119
270	Left Ear	0.593	0.293	0.181
315		0.739	0.354	0.221

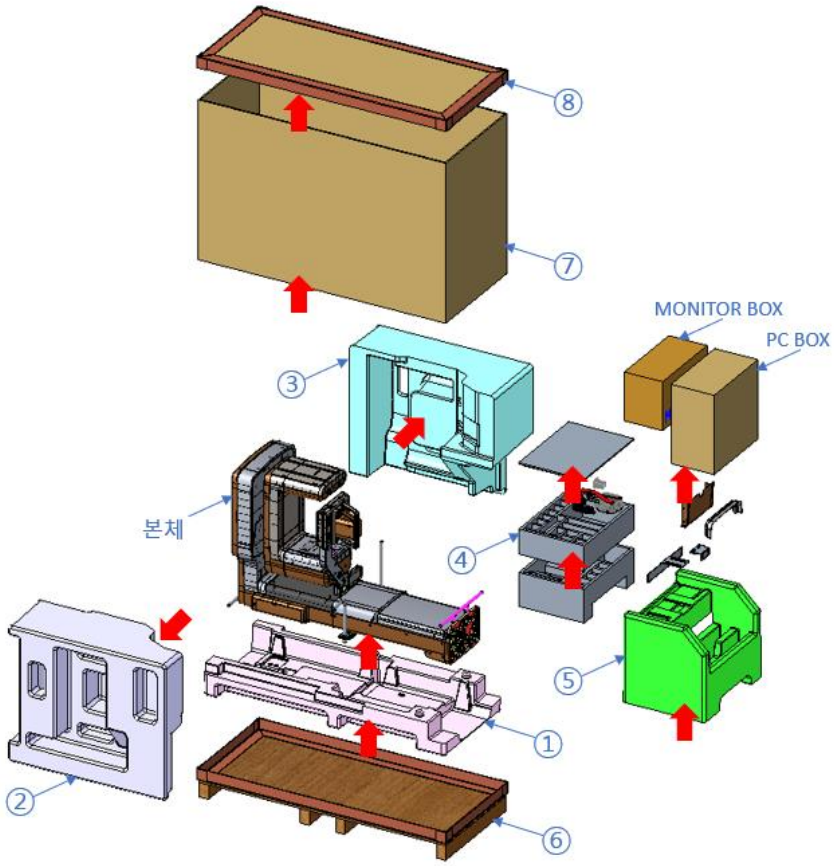

DENTAL CT ENDO
1 m
1.5 m
2 m
0
45
90
135
180
225
270
315
6
5
4
3
2
1
0

6. Voxel Size

FOV	Voxel Option	
	Standard	Application
21x19	0.2	0.3
18x15	0.2	0.3
12x9	0.12 / 0.2 / 0.3	0.12 / 0.2 / 0.3
Smart Focus (12x9)	0.2	0.3
12x5	0.12 / 0.2 / 0.3	0.12 / 0.2 / 0.3
8x8	0.12	0.2
8x5	0.12	0.2
5x5	0.08	0.12
4x4	0.05	0.05

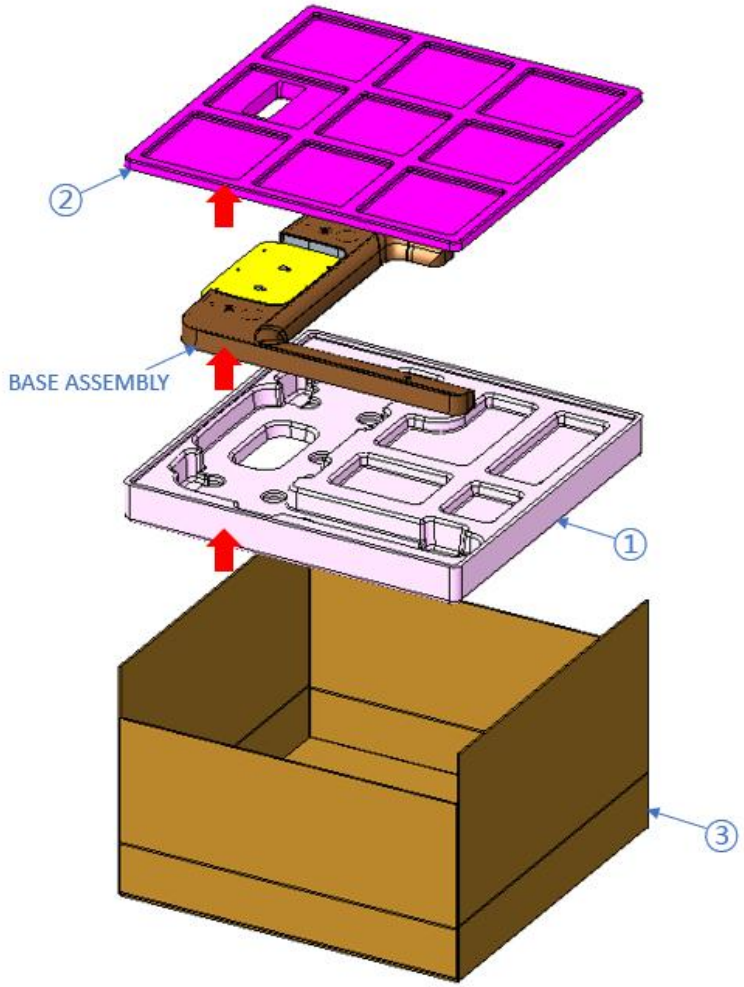
7. Package Configuration and Materials

7.1. Main (X-ray Unit) Box



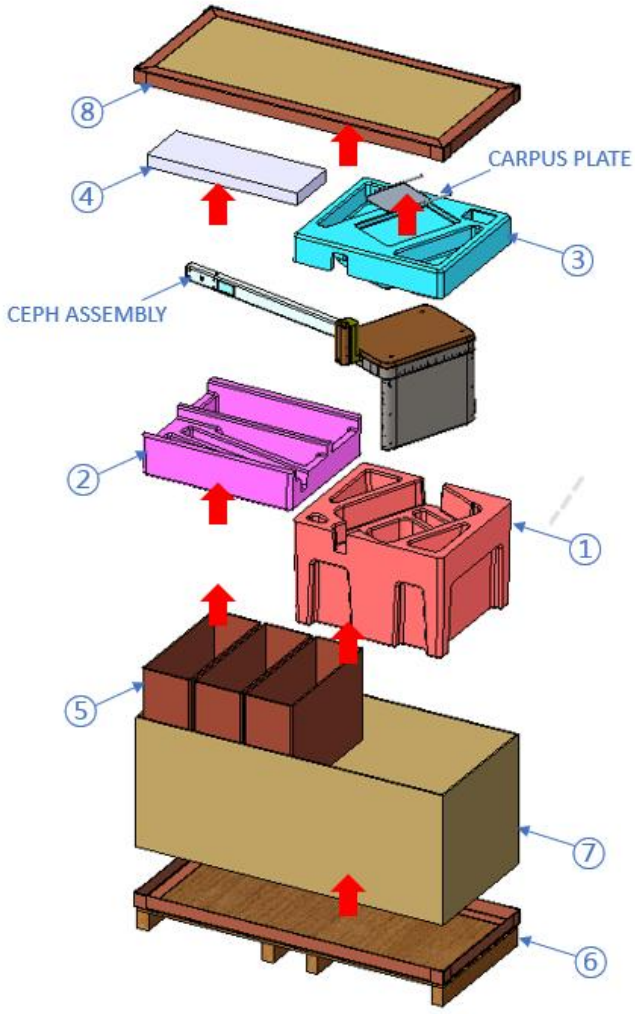
No	Part Name	Material
1	Main Bottom	EPS
2	Main Left	EPS
3	Main Right	EPS
4	Accessory Box	EPS
5	Main Middle	EPS
6	Pallet	Paper/ Wood
7	Sleeve	Paper
8	Box Cover	Paper

7.2. Base Unit Box (Optional)



No	Part Name	Material
1	Main Bottom	EPS
2	Main Left	EPS
3	Main Right	EPS
4	Accessory Box	EPS
5	Main Middle	EPS
6	Pallet	Paper/ Wood
7	Sleeve	Paper
8	Box Cover	Paper

7.3. CEPH Unit Box (Optional)



No	Part Name	Material
1	CEPH Bottom	EPS
2	CEPH Arm Bottom	EPS
3	CEPH Top	EPS
4	CEPH Arm Top	PE Foam
5	CEPH Dummy	Paper
6	Pallet	Paper/ Wood
7	Sleeve	Paper