Instructions for Use

seethrough MAX

XRE-100

XRE-100 - ENG - Rev02

Table of contents

Conformity 4
Symbols and messages 6
Introduction **11**
About this manual 11
Use restrictions 12
Abbreviation used in this manual 15
Safety information **16**
Safety Warnings 16
Cyber security 18
Responsibility 23
Connection to an IT-network 23
Getting started **24**
Requirements 24
Product description 28
Operating the unit 46
seethrough studio 46
Operation **47**
Exam preparation 48
Preparing the device 63
Patient positioning 63
X-ray exposure 74
Exam evaluation 83
Power the unit OFF 84
Maintenance **85**
Cautions for maintenance operations 85
Ordinary maintenance 85
User maintenance 86
Disposal 90
Diagnostics **91**
Messages 92
Technical data **95**
List of available exams 96
Technical data 114
Dosimetry 119
Components, spare parts, consumables 145
Authorized W&H service partners 147

Conformity

The seethrough^{MAX} device conforms with the following Regulations, Directives and Standards:

CONFORMITY TO EUROPEAN AND AMERICAN REGULATIONS, STANDARDS AND DIRECTIVES

Risk management

ISO 14971	Application of risk management to medical devices

Safety

IEC 60601-1	General requirements for basic safety and essential performance for medical electrical equipment
IEC 60601-1-2	Requirements and tests for electromagnetic disturbances
IEC 60601-1-3	Radiation protection in diagnostic X-ray equipment
IEC 60601-2-63	Particular requirements for the basic safety and essential performance of dental extra-oral X-ray equipment
ISO 10993-1	Biological evaluation of medical devices: evaluation and testing within a risk management process
Directive 2013/59/EURATOM	Basic safety standards for protection against the dangers arising from exposure to ionising radiation

CONFORMITY TO REGULATIONS, STANDARDS AND DIRECTIVES ONLY FOR CE MARKET

Regulations for medical devices

CE 0051	Medical Device Regulation (MDR). Regulation (UE) n. 2017/745 for medical devices. Class IIb devices, in accordance with the Rule 10 – ANNEX VIII of the above Regulation.

Note: Every new seethrough^{MAX} device is delivered with a Declaration of Conformity and a Warranty Card.

CLASSIFICATION IN ACCORDANCE WITH IEC 60601-1

Equipment class	IP20
Type of protection against electric shock	Class 1 equipment
Degree of protection against electric shock **Applied part**	Type B 
Operation mode	Continuous operation with intermittent loading
Flammable anesthetics	Not suitable for use in presence of flammable aesthetics or a mixture of flammable anesthetics with air or oxygen or nitrous oxide
List of applied parts	■ Temple supports ■ Bitewing ■ Edentulous/TMJ support ■ Chinrest ■ Patient handle

ELECTROMAGNETIC COMPATIBILITY (EMC)

The seethrough^{MAX} device conforms with IEC 60601-1-2 standard.

The device is suitable for the use in home healthcare facilities environments.

CAUTION:

- The device shall be used in an environment compliant to the standard. Otherwise, the user can expect a misbehavior of the device or the production of images not suitable for diagnosis.
- Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.
- Use of components, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.
- Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the seethrough^{MAX}, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

List of replaceable cables

Cable	Lenght (m)
Detector Ethernet cable	10
Workstation Ethernet cable	10
Coil cord extension lead	10
Door safety cable (optional)	10
System ON white lamp cable (optional)	10
X-ray emission red lamp cable (optional)	10

CAUTION: To guarantee the performance of the seethrough^{MAX}, maintenance instructions explained in the "Repair & Spare parts" guide shall be followed.

Symbols and messages

SAFETY SYMBOLS USED IN THIS MANUAL

CAUTION: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Risk of crushing of hands.

PROPERTY DAMAGE MESSAGES

Notice: Indicates information considered important, but not hazard-related. Typically to avoid damage to the product.

LEDS

LEDs indicate the machine status. The user shall be aware that when LEDs are not green, the machine is not ready to perform any exams (see "LEDs panel" on page 31)

SYMBOLS ON LABELS (DEVICE AND SHIPPING BOX)

The following symbols are reported on external labels and on the shipping box of the device. To check the position of labels, see "Labels on the unit" on page 9.

MD	Medical Device
#	seethrough MAX device type or model
REF	Catalogue number
SN	Serial Number
PN	Part Number
UDI	Unique Device Identification
HIBC	Health industry bar code in accordance with HIBC Standard

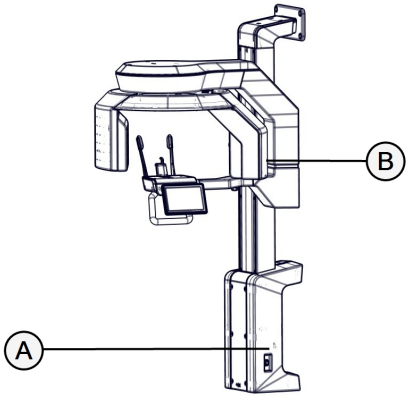
GS1 Logistic	GS1 datamatrix for logistic purpose
ITA	Country of manufacture, followed by manufacturing date (YYYY-MM-DD)
CE 0051	CE mark
	Manufacturer
	This side up
	Fragile, handle with care
	Keep dry
	The seethrough MAX device must be transported by two authorized technicians due to its heavy weight
	Temperature (between XX °C and XX °C - values reported on the symbol)

	Humidity (between XX % and XX % - values reported on the symbol)
	Atmospheric pressure limitation (between XX hPa and XX hPa - values reported on the symbol)
STORAGE	Storage
TRANSPORTATION	Transportation
	Packaging unit (1/2, 2/2)
	Caution: danger
	Caution: ionizing radiation
	Caution: laser beam
LASER RADIATION DO NOT EXPOSE USERS OF TELESCOPIC OPTICS CLASS 1M LASER PRODUCT	Class 1M laser

	Consult instructions for use
	Consult electronic instructions for use
	Obligation to read the Instructions for Use before operating the device
	Waste for electrical and electronic equipment
	X-ray source assembly
	X-ray tube
	Inherent radiation filtration
	Total radiation filtration
	Intermediate focal spot

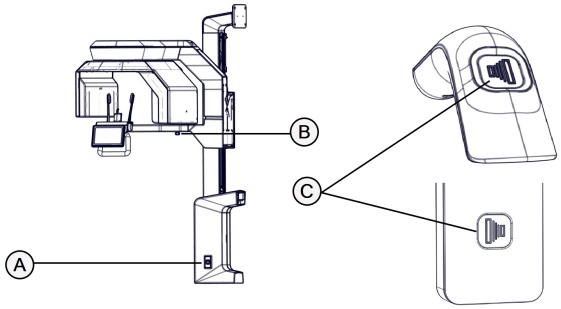
	Large focal spot
V	Nominal voltage
Hz	Frequency range
A	Absorbed current
kVA	Power
	Class I appliance class - protective earth
	Type B applied part
IP	Equipment class

LABELS ON THE UNIT



Label	Position
seethrough^{MAX} label	A
X-ray tube and laser label	B

IDENTIFICATION TAGS ON THE DEVICE



Symbol	Description	Position
	ON (supply) IEC 60417-5007	A
	OFF (supply) IEC 60417-5008	

Symbol	Description	Position
	Emergency Stop Command (IEC 60417 Ref. 5638)	B
	Caution: risk of crushing hands	
	Type B applied part	
	X-ray command (IEC 60417)	C

Introduction

CONTENTS

This section deals with the following subjects:

About this manual 11
Use restrictions 12
Abbreviation used in this manual 15

About this manual

INTRODUCTION

This manual contains the Instructions for Use of the W&H seethrough^{MAX}.

FOR YOUR SAFETY AND THE SAFETY OF YOUR PATIENTS

The purpose of this manual is to provide information about seethrough^{MAX} to ensure:

- optimal use;
- safe and reliable operation;
- compliance with regular maintenance and servicing requirements.

Please read carefully the safety information (see "Safety Warnings" on page 16).

It is recommended to keep a copy of this manual nearby as a reference guide during the use of the device.

OBLIGATIONS WITH REGARD TO THIS MANUAL

This manual is an integral part of the product and accompanies it for its entire working life. It must be consulted in all situations related to the life cycle of the product, from its delivery through to decommissioning. For this reason, it should always be accessible to operators both online and offline.

Contact customer service in the event the manual is unavailable. If the device is transferred, always attach the manual for the new owner.

MANUAL CONTENT

This manual contains the Instructions for Use and for maintenance of the following device :

- seethrough^{MAX}, XRE-100

Two variants of the device are available:

- equipped with a touchscreen
- equipped with a capacitive keyboard

The device consists of the acquisition unit seethrough^{MAX} and the software used for analysis and elaboration of images (DID-200 seethrough studio).

For an easier configuration, the manufacturer provides the seethrough^{MAX} together with a PC with the seethrough studio software already installed. Refer to the seethrough studioInstructions for Use.

INSTRUCTIONS FOR USE

The complete manual (Instructions for Use) is available at the www.wh.com website. See back cover of this manual.

SERVICE LITERATURE

Technical information related to:

- Installation
- Product description
- Repair and Spare Parts
- Errors and Troubleshooting

are available in the Service literature. Only trained technician can access the Service literature. Contact the manufacturer for further information.

DISCLAIMER

All pictures, graphics and illustrations provided in this manual are for the comprehension of the text. They are not meant to be an accurate representation of product details. Thus, they should be taken as indicative only, and may differ from the actual product.

For any suggestions or remarks please send an email to office.sterilization@wh.com.

For any suggestions or remarks please contact W&H or an authorized service partner.

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Use restrictions

INTENDED USE

The seethrough^{MAX} device is a dental X-ray device with an extraoral source intended to perform 2D, 3D, panoramic and tomographic exams through the generation of digital diagnostic images of:

- dento-maxillo-facial region;
- cervical spine region;
- ENT (Ear, Nose and Throat) region;

at the direction of dental healthcare professionals.

TARGET USERS

seethrough^{MAX} is intended to be used by dentists, radiologists and any other legally qualified health care professionals with suitable experience in radiation protection or knowledge of radiation protection, trained in the operation of X-ray equipment.

TARGET PATIENTS

The device is intended to be used on patients. For the intended purpose of this device, seethrough^{MAX} can be used on:

- children,
- adults,
- adult patients in wheelchairs.

LIMITATIONS

Since the device emits ionizing radiations, the use on patients should be carried out only when the healthcare professional deems the diagnostic benefits associated with the use of the device to be superior to the potential risks associated with radiation exposure of the patient.

CAUTION: The device offers radiological exams specifically designed for the pediatric population. These exams are characterized by lower radiation doses compared to standard protocols. However, the decision to perform the exams and select the appropriate program must always be evaluated by the competent physician, taking into account the specific risk-benefit for each patient.

CAUTION: Before performing an X-ray exams, medical professionals must confirm whether women of reproductive age are currently pregnant, could potentially be pregnant, or are breastfeeding. In such cases, it is the responsibility of the physician to carefully assess the risks and benefits of proceeding with the X-ray exams. The decision should take into account the patient's condition and the potential impact of radiation exposure.

Radiation protection cautions

Radiation protection regulations shall be observed while using the system. Respect the national guidelines when exposing patients, especially with pediatrics patients.

The place where the device is installed shall be compliant with the regulations for protecting against radiation.

The use of equipment, such as lead shields or aprons, are strictly recommended, especially with pediatric patients.

In Europe, the Directive 2013/59/Euratom represents the most recent regulatory framework of radiation protection which is of high relevance across all European countries, and therefore, medical/dental professionals prescribing X-ray images are urged to follow its recommendations.

If not strictly necessary, avoid the exposure of pregnant and/or breastfeeding to radiation.

During the exposure, the operator shall move as far away as the X-ray button cable/the remote controller connectivity permits. It is recommended for the operator to protect themselves behind radiation shielding screenings. The operator shall not lose the visual contact with the patient during the exam.

No third person are allowed to stay in the room during the exposure.

CAUTION: In case of malfunctioning, release immediately the X-ray exposure button.

INDICATIONS AND CONTRAINDICATIONS

Indications

seethrough^{MAX} can be used in the following fields:

- Endodontics.
- Periodontology.
- Dental prosthesis.
- Functional diagnosis and therapy of craniomandibular dysfunctions.
- Dental surgery.
- Dental implants.
- Oral and Maxillofacial surgery.
- Orthodontics.
- Otorhinolaryngologist - ENT (middle and inner ear, paranasal sinuses, main nasal cavity, maxillary sinus, ethmoidal cells, sphenoidal sinus, frontal base of the skull, frontal sinus.

Known contraindications

Compared with a Medical Computed Tomography Scanner, in CBCT there is lower contrast resolution, which means less discrimination between different tissue types (*i.e.*, bone, teeth, and soft tissue)

Selection criteria for the use of radiology in dental implantology with emphasis on CBCT:

- CBCT should not be used as an initial diagnostic imaging examination
- CBCT should be avoided to obtain data that can be provided by alternate nonionizing modalities (i.e., to produce virtual orthodontic study models)
- CBCT should not be used for the periodic review of clinically asymptomatic implants

Abbreviation used in this manual

2D	Two-dimensional
3D	Three-dimensional
CBCT	Cone-Beam Computed Tomography
IB	Interface board
MB	Master board
NIC	Network Interface Card
PANO	Panoramic exam
PMS	Practice Management System
ROI	Region Of Interest
SB	Slave board
TMJ	Temporomandibular junction

Safety information

CONTENTS

This section deals with the following subjects:

Safety Warnings 16
Cyber security 18
Responsibility 23
Connection to an IT-network 23

Safety Warnings

Follow these safeguards and properly use the equipment to prevent injury and damage to any equipment/data.

ELECTRICAL RISKS

- To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
- The machine is installed with a dedicated circuit.
- Do not pour water or any other liquids over the seethrough^{MAX} device (risk of electrical short circuits).
- The use of any type of liquids is forbidden near the seethrough^{MAX} device.
- Before inspecting, carrying out maintenance or servicing the seethrough^{MAX} device, switch off the device and wait 3 minutes.
- Switch off the device and open the thermal-magnetic residual-current circuit breaker before inspecting, carrying out maintenance or servicing the seethrough^{MAX} device.

EMERGENCY STOP

- If any parts of the unit touch the patient during the exposure, immediately release the X-ray button or stop the unit by actuating the emergency stop button.
- In case of any emergency, activate the emergency stop button (located under the patient support arm, see "General view" on page 28).

ENVIRONMENTAL CONDITIONS

- To avoid damages to the device and to people in contact with the device, do not exceed the maximum environmental temperature as specified in this manual (see "Environmental requirements" on page 117).

LASER USE

- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure".

IMPROPER USE OF THE SEETHROUGH^{MAX} DEVICE

- The use of the seethrough^{MAX} device is limited to professional users. The use from not qualified personnel can lead to patient overexposure.
- The seethrough^{MAX} shall be used only in a controlled environment

TAMPERING

- Do not remove the name plate or labels from the seethrough^{MAX} device
- Repairs, maintenance or service must be carried out by authorized service providers always using genuine spare parts

REQUIREMENTS

- Use only components authorized by the manufacturer
- In case of malfunction of the seethrough^{MAX} device, contact an authorized technician or the manufacturer

AFTER TRANSPORT

During unit transport and other installation maneuvers, dirt on the X-ray detector can lead to image artifacts and consequent patient overexposure due to exam repetition

- Before using the unit, make sure that the installation was controlled by a qualified technician

IN CASE OF INCIDENT

- Serious incidents that have occurred in relation to this medical device should be reported to the manufacturer and competent authority in the country where the incident occurred

Cyber security

Cybersecurity has been implemented according to the “MDCG 2019-16 - Guidance on Cybersecurity for medical devices”.

Cyber security is the process of preventing unauthorized access, modification, misuse, denial of use or the unauthorized use of information that is stored, accessed or transferred from a medical device to an external recipient. A local administrator, or service provider, is a user who is authorized by the owner to perform security relevant functions that ordinary users are not authorized to perform.

Cyber security risk management is a shared responsibility among stakeholders including W&H, the user, and the healthcare facility. Failure to maintain cyber security can result in compromised device functionality, loss of data availability, loss of data integrity or expose other connected devices or networks to security threats. These threats cab be:

- re-purposing of the system computing capability if a malware can access the operating system;
- re-purposing of the system computing capability if operators can access the operating system;
- exposition to unauthorized use or alteration of the device by malware;
- exposition to unauthorized use or alteration by unauthorized access.

A cyber security event can be detected in several ways:

- operation and/or network connection slower than normal;
- suspicious pop-ups or home page changes in internet browser;
- no passwords working at a certain point;
- unidentified programs in start menu or system tray;
- missing, corrupted or altered data.

W&H seeks to protect the security of your data while also providing measures to strengthen the resiliency of the products from external cyber security attackers. W&H complies with applicable security and privacy regulations.

W&H communications policy strives for coordinated disclosure. W&H works in this way with our customers and other parties, when appropriate, in response to potential vulnerabilities and incidents involving our medical devices, no matter the source.

W&H maintains a set of cyber security controls to assure the cyber security of its units and to maintain their functionality and safety.

DEVICE CONNECTIVITY

The following interfaces are critical for cyber security:

- LAN port for interoperability with:
  - clinical server;
  - DICOM modality worklist;
  - W&H Remote Service (ioDent);
  - DICOM/PACS for image storage;
  - connection to acquisition devices;
- USB ports of the PC, for connection to various USB-storage devices.

RECOMMENDATION FOR CYBERSECURITY

W&H recommends always to follow network security best practices, such as maintaining software, segmenting via firewalls, closing unused ports, restricting user permissions, limiting third party access and monitoring network activity. This device is designed to be used either as a standalone unit or connected to the facility's internal PACS or other closed- loop networks. It is not intended to be connected to the Internet, unless:

- the facility is specifically instructed to do so by W&H;
- the facility takes adequate precautions to ensure the cyber security of the unit from threats related to its Internet connection.

In addition, seethrough studio software is password protected; therefore, only authorized users can access to the software and its data, while other users can get to the operating system without being able to access the software.

W&H will develop updates or patches for the seethrough studio software, in order to continuously ensure the product safety, as needed throughout the life-cycle of the unit.

CLINICAL SERVER DATA STORAGE

The clinical server stores clinical image files in the OS filesystem, in order to optimize and simplify data backups. This requires careful selection of the storage location as recommended in this IFU, in the following chapters. Clinical server keeps other patient data (personal identification) in a database, not accessible directly by users.

CLOUD SECURE COMMUNICATION

A secure communication (with authentication and authorization) can be established between the application and the cloud server for the following functionalities:

- remote software update;
- setting management;
- device monitoring;
- clinical image sharing.

The user and authorized technicians can interact with the cloud server by means of a generic device (e.g.: PC, tablet, smartphone) with a web browser and proper authorization and authentication.

INFRASTRUCTURE REQUIREMENTS

In order to minimize the possibility of cyberattacks, it is user responsibility to apply the following measures:

- software update/install shall be done by authorized and trained personnel only;

- it is recommended to activate a firewall on the router/modem used for the Internet connection.

In addition, the definition and maintenance of the local IT network configuration, including firewall rules, routing policies, VLAN segmentation, Group Policy Objects (GPOs), access control lists, and any network-level authorization or blocking mechanisms, are under the full responsibility of the customer or the healthcare facility's IT administrator.

W&H provides the necessary technical information for interoperability but does not manage or validate customer network configurations. The customer must ensure that such configurations are compliant with applicable cybersecurity standards and do not interfere with the intended use of the medical device.

Note: further security information is mentioned in the MDS2 document, which is available on request.

SOFTWARE BILL OF MATERIAL (SBOM)

The device provides the possibility to access the SBOM.

EVENTS POSSIBLY CAUSED BY A CYBERATTACK DETECTABLE BY THE USER

The following situations, visible by the user, could be caused by cybersecurity events:

- frozen screen;
- corrupted or inaccessible clinical image files;
- significant slowdown when navigating the menus;
- malfunctioning or blocked network services (such as: remote data storage and access, cloud server access, etc.).

EVENTS POSSIBLY CAUSED BY A CYBERATTACK DETECTABLE BY THE USER

If a cybersecurity event or incident occurred, or in case of a suspect, the following indication shall be followed to minimize the impact and prevent further damage:

- disconnect the customer server and the customer PC from the network (Ethernet cable and/or WiFi dongle) to prevent spreading the damage to other devices and protect the stored data;
- disconnect the USB storage media to reduce the possibility to corrupt stored data;
- inform the IT department and an authorized technician (or device manufacturer) and follow the indications they would provide to secure the affected device.

USER RESPONSIBILITIES

Authentication of OS users

The operating system itself allows the end user to establish and configure "User Accounts". The authentication shall be performed with a password and/or with more secure approaches e.g. 2FA (two factor authentication).

In order to minimize the possibility of cyber-attacks, the following protection measures are strongly recommended:

- protect with personal password every user account on the Windows login. Passwords shall be:
  - strong (made at least of 8 alphanumeric characters),
  - safely managed by every user,
  - periodically changed.

Authentication of Application users

The seethrough STUDIO system allows the end user to establish and configure “Application User Accounts” . The authentication shall be performed with a password.

In order to minimize the possibility of cyber-attacks, the following protection measures are strongly recommended:

- Passwords shall be:
  - strong (made at least of 8 alphanumeric characters),
  - safely managed by every user,
  - periodically changed.

Auto-logoff/Screen Lock

The operating system can prevent access and misuse by unauthorized users if the device is left idle for a period of time. The following precautions are recommended:

- the length of inactivity time before auto-logoff/screen lock is customizable by the user/administrator,
- the auto-logoff/screen lock should be always enabled,
- the local supervisor should prevent unauthorized user from accessing the dedicate laptop or PC, in order to preserve system and data confidentiality, integrity and availability,
- the local supervisor must set the logon screen saver timeout time to reduce accidental view of data.

Malware, virus, and network threat protection

Due to the risk of viruses and other malware, users are required to install and configure appropriate antivirus software (such as Windows Defender or XProtect) to protect their device. Please ensure that your system is properly secured before use.

It is recommended also to:

- make sure that all the other PCs in the network are protected by an anti-virus,
- implement policies for periodic scan of the entire system and third party software updates by the local administrator,
- keep the OS up to date by installing all the security patches;
- activate the OS firewall on the customer PC and customer server,
- activate a firewall on the WAN router/modem used for internet connection, if present,
- avoid installation of any unknown or untrusted software since it may undermine performance and safety of the PC and the equipment.

Application installation and updates

In order to avoid unintended installation of malicious software, all application installers are signed by the manufacturer. It is required for users and technicians to verify the signature of the installers upon new installations or upgrades. Users and technicians shall not proceed with installation if the signature is not verified.

As periodic updates for seethrough studio software become available, the local administrator should evaluate these against the site needs and determine whether the update is suitable and/or applicable to their usage. The local administrator should only use updates/installation materials from the manufacturer as provided by the manufacturer or a representative service provider.

Data storage configuration

The clinical server application requires the selection of the clinical image file path upon installation. The path must be selected by users and technicians, considering the strictest safety and security approaches in cooperation with the local IT and network system

administrator. The customer server PC and the PC containing the clinical image path shall be installed in a secure location, not accessible by unintended users, as disassembling the customer server PC or the PC containing the clinical image path might result in confidential data exposure.

Data backup

To avoid the loss of patient data due to damage to the storage device of the user's PC, it is recommended to regularly backup the data.

The application provides features to create snapshots of data. This feature is compatible with an intense and continuous use of the application and does not require the normal operations to be paused or stopped. This data snapshot is not to be considered as a long term backup solution; it is under the responsibility of the users to keep this data snapshots copied in a secure location, for long term backup.

To this end, it is recommended to:

- store the data in multiple different and independent storage media to disperse the risk of data loss or damage to the storage device,
- make regular copies (backup) of all your valuable data and store them in a safe place, separately from the host PC,
- make a virus scan of USB sticks or CD/DVD media before using them to check they are free from viruses, malware or any dangerous software.

W&H RECOMMENDATIONS

Elements of our product and solution security program are included in this list:

- the initial software installation and system setup shall be done by authorized and trained personnel only and using the software provided with the machine,
- any software or firmware upgrade of the seethrough^{MAX} device should be done by authorized and trained personnel only,
- after any software or firmware upgrade or any other maintenance operation, image quality checks shall be performed to ensure the system is working as expected,
- W&H provide information in the Instructions for Use to facilitate secure configuration and use of our medical devices in your IT environment.

seethrough^{MAX} device settings may be compromised in the event of a cyber security attack or other configuration error. To restore device settings to their previous state, power cycle the unit and select NO when prompted on the New Patient screen. Device settings can be restored manually with patient discharge and re- admit at the seethrough^{MAX} device. In the event of a cyber security attack, if the device enters a fail state (sustained alarm tone sound), power cycle the unit. If a device experiences multiple resets and/or fail state behavior, assign each patient to a bedside monitor, isolate the affected devices and immediately contact your hospital's biomedical department and IT department for support. Do not place devices back into service until the situation is solved.

Responsibility

USER RESPONSIBILITY

- The user is responsible for the correct use and maintenance of the device in accordance with these Instructions for Use.
- The safety devices of the seethrough^{MAX} device are impaired when the product itself is not used and serviced in accordance with these Instructions for Use.
- The Instructions for Use updated to the latest version is always available at www.wh.com
- Keep these Instructions for Use for future reference.

MANUFACTURER RESPONSIBILITY

- The manufacturer can only accept responsibility for the proper installation, safety, reliability and performance of the product when the product itself is installed, used and serviced in accordance with the Instructions for Use.
- Servicing by unauthorized persons invalidates all claims under warranty and any other claims.

Connection to an IT-network

CAUTION: When connecting the seethrough^{MAX} to an IT-Network, always respect cyber security recommendations reported in "Cyber security" on page 18.

The seethrough^{MAX} can be connected to an IT-Network with the scope of transferring or storing data. USB storage devices and the PACS/DICOM network (www.dicomstandard.org) can be used for this aim. The person in charge of IT security in the dental practice is responsible for providing methods for preventing cyber attacks, such as the use and the update of an anti-virus, the use of a firewall and the access protection. For the list of recommended measures to implement, see "Cyber security" on page 18.

In order to guarantee a proper data storage to ensure their availability, it is recommended to save them periodically to an external storage.

Getting started

CONTENTS

This section deals with the following subjects:

Requirements 24
Product description 28
Operating the unit 46
seethrough studio 46

Requirements

Notice: the installation procedure is detailed into the Service Literature (Installation book). Refer to the manufacturer for the installation.

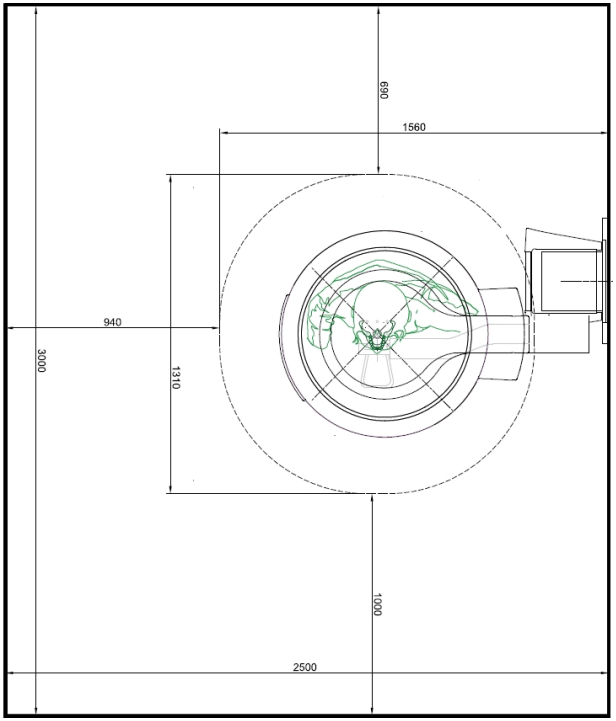
ROOM REQUIREMENTS

CAUTION: The seethrough^{MAX} device shall be positioned in the room to ease the disconnection in case of necessity. Avoid any collisions with room objects during the exams (or when the device is moving).
Installation is performed by trained technician taking into account the room configuration for guaranteeing safety: do not change the seethrough^{MAX} device position after the installation.

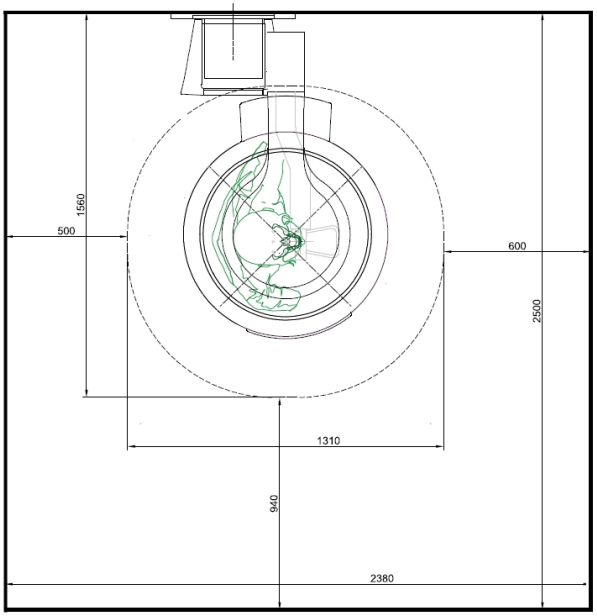
CAUTION: Verify that there are no external voltage sources that could come into contact with the device.

Room height (recommended minimum ceiling height)	mm	2400 If the room height is less than237,0 cm (93,31 in) the maximum travel must be limited at the installation

Room size (recommended dimensions)	mm	2500 x 3000



Room size (minimum dimensions)	mm	2500 x 2380



Floor shall bear the device weight, taking into account the following data:

Device weight	kg	200
Footprint	m^2	1.35
Base area	mm	220x330

Note: floor shall be solid, flat and suitable for bearing without deformation localized load. The technician in charge for installation shall evaluate the conditions of the floor and all the loads resting on the floor of the installation site.

WORKSTATION – NETWORK CONNECTION

Notice: All connectivity aspects are under the sole responsibility of the practice's IT management. W&H technicians are not authorized to access, modify, or configure workstations, PCs, or networks other than those provided by W&H. If intervention is required, contact the IT management.

- The practice must have a stable Internet connection. The acquisition workstation shall be connected to the practice network.
- The recommended network connection is a 1Gbit Ethernet (Cat6A minimum, Cat7 preferred). Wi-Fi connections are not permitted.
- The communication interface of the acquisition workstation is RJ45 for LAN cables.
- Verify the IP address of the practice network. If the IP address falls within the classes 172.30.30.0/24 or 172.30.40.0/24, contact IT management to change it.

WORKSTATION – MONITOR CONNECTION

W&H does not provide the monitor, nor the HDMI / DisplayPort cable.

- The minimum monitor size suggested is 15", the recommended is 24".
- The minimum resolution is 1920 x 1080, the recommended is 2560 x 1440.
- The monitor minimum recommended interface is HDMI 1.4 or DisplayPort1.2.

INSTALLATION SCENARIOS

It is possible to install seethrough studio alone, seethrough studio with Clinical Server, or All in One: seethrough studio and Clinical server together.

Additionally, there are two installation scenarios:

- First scenario: everything is installed in one workstation, both seethrough studio and Clinical Server. This means that it must be installed on Windows PRO (therefore considering the clinical server requirements to be more restrictive).
- Second scenario: seethrough studio and Clinical Servers are installed on two separate PCs and therefore have different requirements. For the client requirements see the tables below.

CLIENT REQUIREMENTS

Windows	Studio	Clinical Server	Studio + Clinical Server
OS Version	Windows 10/11 HOME 64-bit	Windows 10/11 PRO 64-bit	Windows 10/11 PRO 64-bit
CPU	Intel Core i7	Intel Core i5	Intel Core i7
Hard Drive	512 Tb	1 Tb	1 Tb
RAM	8 Gb (*)	16 Gb	16 Gb (*)
GPU	Integrated	Integrated	Integrated
GPU with AI	NVIDIA 4060 (6RTX Gb) (*)	N/A	NVIDIA 4060 (6RTX Gb) (*)
Ethernet interface	1x Gigabps Ethernet, 1x 100 Mbps Ethernet	1x Gigabps Ethernet, 1x 100 Mbps Ethernet	1x Gigabps Ethernet, 1x 100 Mbps Ethernet

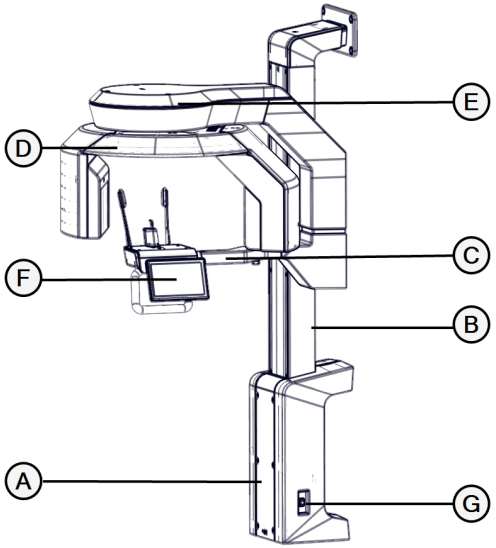
An Internet connection is required for license activation.

(*) For a faster and better performance of the AI functionality, a NVIDIA 5060 Ti (16gb) GPU and 32gb RAM are recommended.

Product description

The seethrough^{MAX} device is a radiographic medical device. X-rays are generated by an high voltage generator in a radiological tube located in a X-ray tube head. The region of interest (ROI) is scanned through a single rotation around the vertical axis of the patient head. Information are acquired from different angles. The software, then, processes information such as density and shape to construct tomographic images.

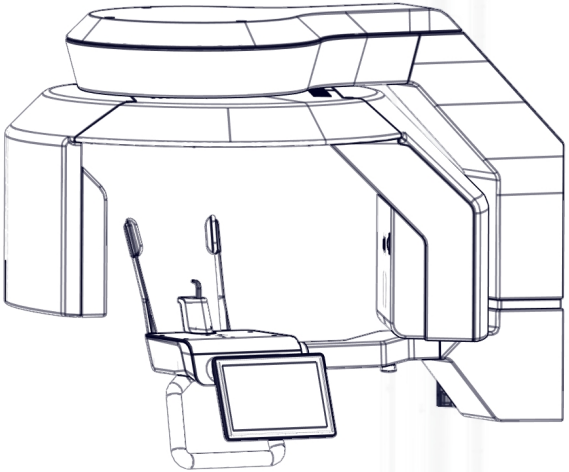
GENERAL VIEW



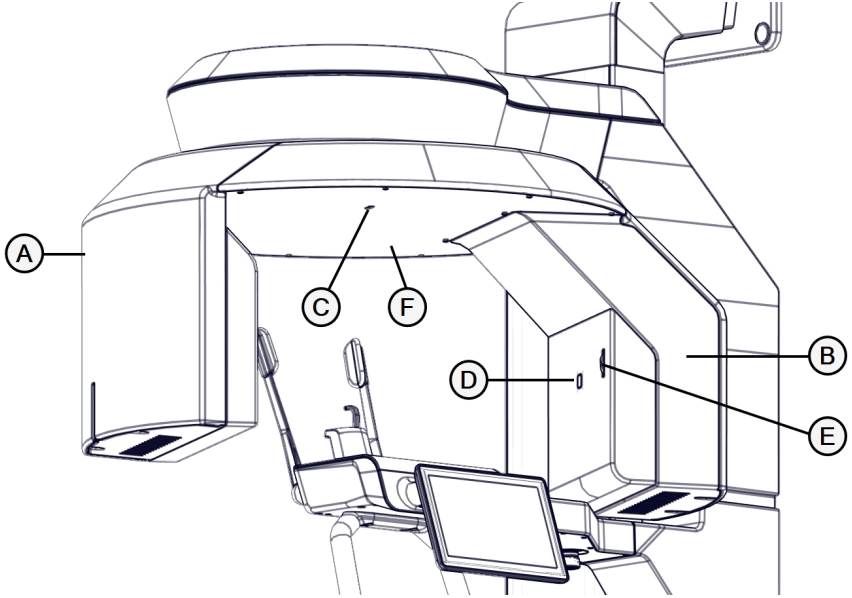
Part	Description
A	Base
B	Column
C	Patient support arm
D	Rotating core
E	Fix arm
F	On-board control panel
G	Power switch

Stand

The stand consists of the subgroup made by the patient support arm, the rotating core and the fix arm.



ROTATING CORE



Part	Description
A	X-ray detector side
B	X-ray tube head side
C	Medio-sagittal laser
D	Frankfurt laser
E	Frankfurt laser rotary knob
F	LEDs panel, see "LEDs panel" on the next page

Notice: medio-sagittal and Frankfurt lasers are class 1M lasers.

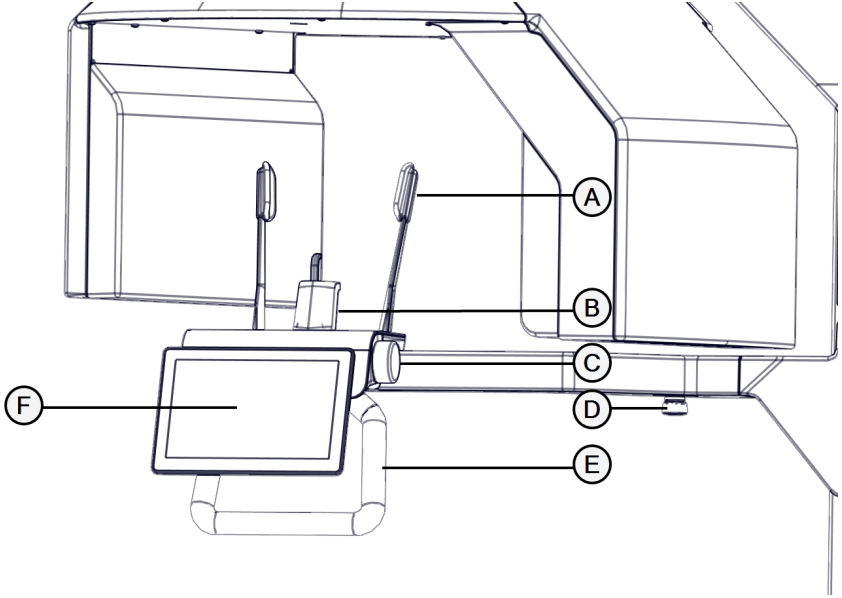
LEDS PANEL

LEDs indicate the seethrough^{MAX} status:

Color	Status
Blue	Idle
Green	Ready for use
Yellow	Caution

For more information about the device status, see "Diagnostics" on page 91.

PATIENT SUPPORT ARM



Part	Description
A	Temple supports
B	Chinrest (with specific components)
C	Temple supports knob
D	Emergency stop button*
E	Patient handle
F	On-board control panel: ■ Touchscreen ■ Capacitive keyboard See "On-board control panel" on the next page.

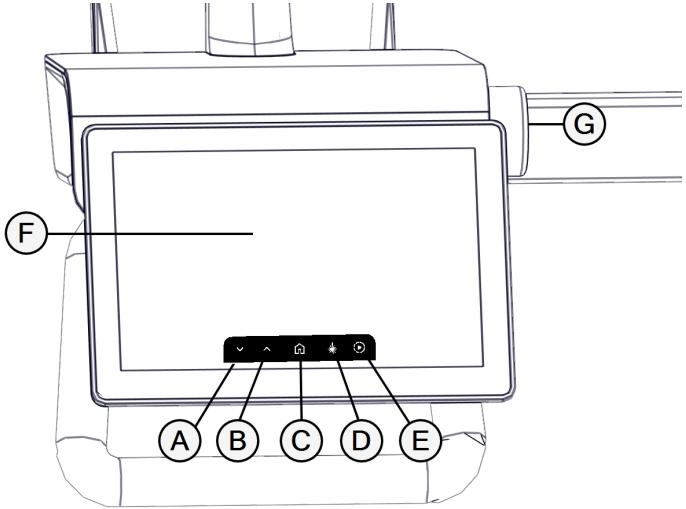
Notice *: When the emergency stop button is pressed:

- all the movements are interrupted,
- X-ray emission is interrupted,
- motor power circuits in the device are switched off,
- LEDs get yellow (see "LEDs panel" on the previous page and "LEDs panel" on the previous page),
- a message pops up on the workstation to advice the user (see "Messages" on page 92).

ON-BOARD CONTROL PANEL

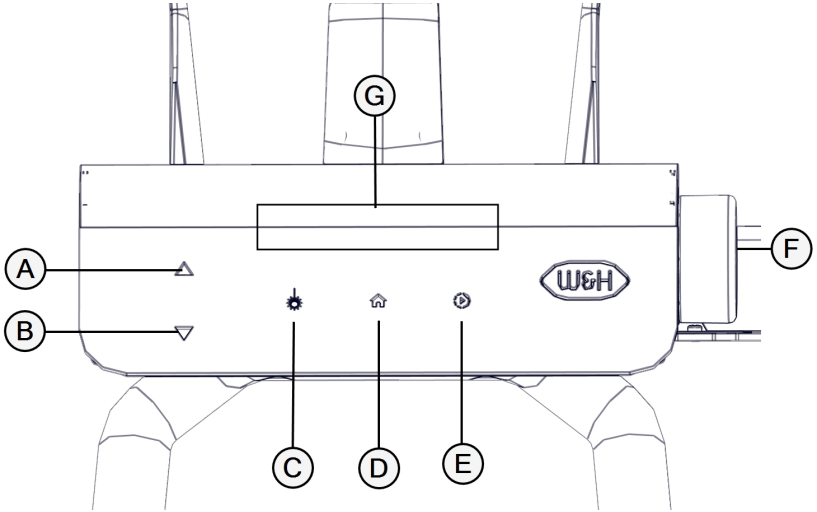
The seethrough^{MAX} device is equipped either with a touchscreen or a capacitive keyboard for handling the machine.

Touchscreen



Part	Description
A	Stand movement upward
B	Stand movement downward
C	HOME button
D	Laser button
E	DEMO TEST button
F	Extra-oral acquisition module
G	Temple supports knob

Capacitive keyboard



Part	Description
A	Stand movement upward
B	Stand movement downward
C	LASER button
D	HOME button
E	DEMO TEST button
F	Temple supports knob
G	LEDs

Note: Icon colors change consistently to the seethrough^{MAX} device status (refer to "LEDs panel" on page 31).

Capacitive keyboard LEDs

LEDs indicate the seethrough^{MAX} status:

Color	Status
Blue	Idle
Green	Ready for use
Yellow	Caution
White	Power up or exam running

For more information about the device status, see "Diagnostics" on page 91.

Stand movement upward/downward

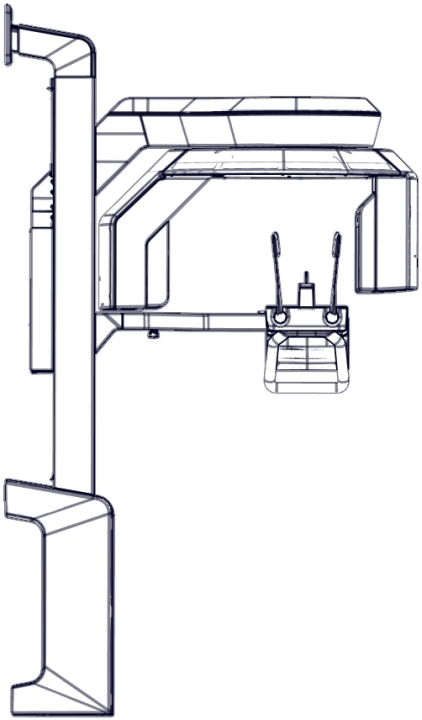
Adapt the stand height to the patient size using the two buttons; the patient has to lean his chin on the chinrest during the exam.

LASER button

The **LASER** button is a toogle to activate the seethrough^{MAX} device lasers. Click the button to switch lasers on and click it again to switch them off. After 30 seconds the lasers will turn automatically off.

HOME button

The **HOME** button brings the seethrough^{MAX} device in the PATIENT ENTRY POSITION:



PATIENT ENTRY POSITION is reached when the C-shaped rotating arm is perpendicular to the stand with the X-ray tube head close to the stand and the X-ray detector away from it

DEMO TEST button

The **DEMO TEST** button starts a simulation of the exam. The seethrough^{MAX} device will execute all the movements necessary for performing the selected exam, but without emitting any X-ray. This modality can be used with particularly frightened patients, to reassure them and avoid any movements due to fear that can invalidate the exam.

Temple supports knob

Use the Temple supports knob to open and close the Temple supports to guarantee the right positioning of the patient. Turn the knob forward to close the temple supports. Turn it backward to open the temple supports. The rotation direction of the knob is indicated on it.

The system is set to stop when it encounters resistance. An automatic mechanism will adjust the clamping force. The system is calibrated to guarantee the correct positioning and the comfort of the patient at the same time.

At the end of the exam, the temple supports will automatically open releasing the patient from the exam position.

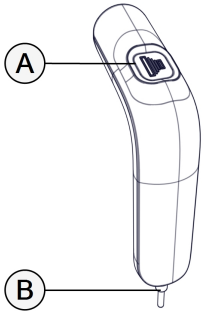
X-RAY COMMAND

The wall-mounted X-ray command is the standard option and is provided by default with each seethrough^{MAX} device. This version is designed for fixed wall installation (not mobile) and integrates a dedicated set of LED indicators.

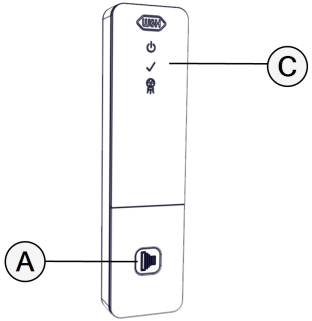
Alternatively, a mobile X-ray command (code 19740025) is available, supplied with a dedicated wall-mounted support equipped with LED indicators that display the system status.

Press the **X-Ray** button to start the exposure.

Note: a buzzer sound will be emitted as long as the X-ray emission is ON.



Mobile X-ray command



Wall-mounted X-ray command (Standard option)

Part	Description
A	**X-Ray** button
B	Coil cord
C	LED panel

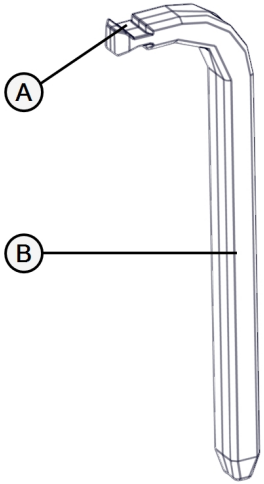
Wall-mounted X-ray command LEDs

The LEDs indicate the device status:

LED	Color	Status
	White	seethrough^{MAX} powered ON
	Green	seethrough^{MAX} ready for X-ray emission
	Yellow	X-ray emission ongoing

COMPONENTS

Bite block



Part	Description
A	Groove for bite
B	Sliding part

Bite block installation

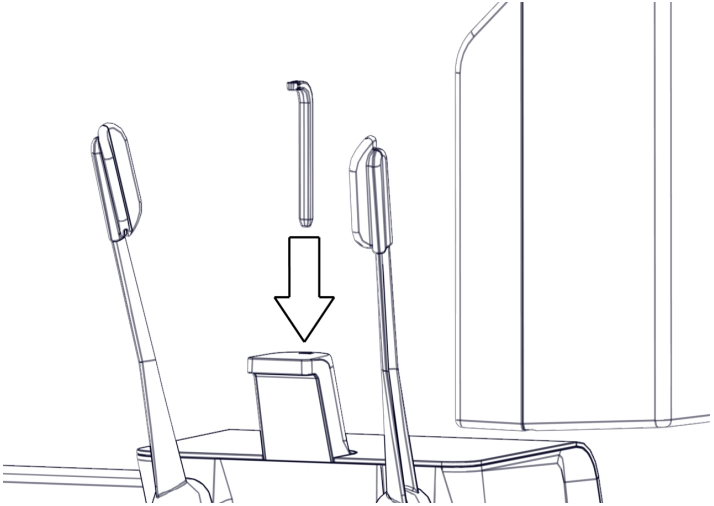
CAUTION! The bite is autoclavable for up to 100 sterilization cycles at 121°C and must be sterilized after each use. Alternatively, disposable protective covers must be used.

As an alternative to sterilization, before each exam, the bite shall be covered with a new sterile disposable sheath. After each use, the sheath shall be disposed and the bite washed to remove any organic residue. Consult "User maintenance" on page 86 section for further information.

For installing the bite block:

Insert the bite block in the adapter slot.

Adjust the height of the bite block by sliding it up or down in the adapter slot.



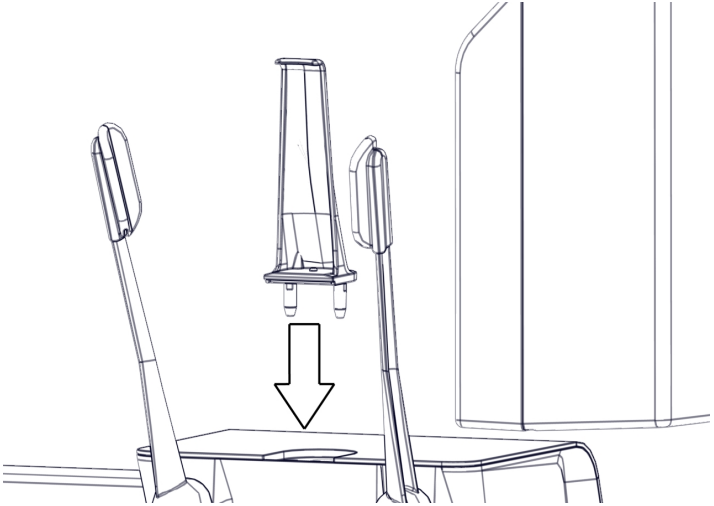
Edentulous/TMJ support

Part	Description
A	Pro-labium leaning space

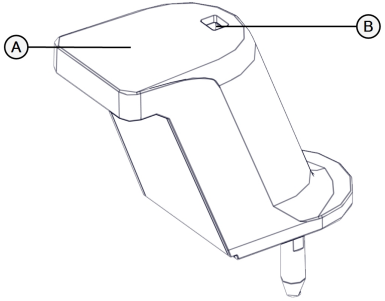
Edentulous/TMJ support installation

For installing the Edentulous/TMJ support:

Insert the Edentulous/TMJ support in the adapter. Make sure it is firmly locked.



Chinrest

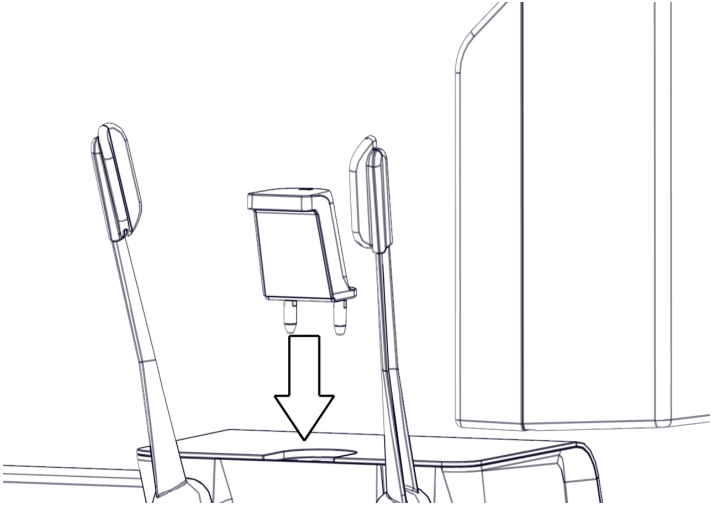


Part	Description
A	Flat surface for leaning the chin
B	Adapter slot for Bite block

Chinrest installation

For installing the chinrest, whatever the size is:

Insert the chinrest in the adapter. Make sure it is firmly locked.



WORKSTATION

The Workstation supplied with the seethrough^{MAX} device consists of a computer that interacts with the device.

The software seethrough studio is already installed in the provided Workstation. It acquires images from the X-ray detectors and processes all the data into 2D and 3D images.

For further information about seethrough^{MAX}, refer to seethrough studio Instructions for Use.

Operating the unit

BEFORE SWITCHING THE SEETHROUGH^{MAX} DEVICE ON

Check the device to confirm its integrity and ensure there are no visible signs of damage or malfunction.

Cables and covers shall be intact. The seethrough^{MAX} device shall not have visible signs of tampering. The rotating arm shall be firmly attached to the fixed arm, with no dangling parts.

POWER THE SEETHROUGH^{MAX} DEVICE ON

Press the power switch located in the base of the seethrough^{MAX} device (see "General view" on page 28). Once switched **ON**, the on-board control panel will turn on and the LEDs will turn:

- Blue: if Homing is required.
- Green: if the device is ready to be used.
- Yellow: in case of warning.

Notice: Before entering the idle status, the device performs movements initialization and status checks.

POWER THE WORKSTATION ON

1. Press the power switch located in the Workstation.
2. Open the software seethrough studio.
3. Follow the instructions explained in the seethrough studio Instructions of Use to access the User profiles.

seethrough studio

seethrough^{MAX} shall be used together with the seethrough studio software.

Access the software with the personal profile, create a new patient or access an existing one.

To perform a new exam use the **Acquisition module**.

To analyze a document use the **Analysis module**.

Create a report with the **Report module**.

Finally, export information with the **Export module**.

Refer to the seethrough studio Instructions of Use for information related to the software.

Operation

CONTENTS

This section deals with the following subjects:

Exam preparation 48
Preparing the device 63
Patient positioning 63
X-ray exposure 74
Exam evaluation 83
Power the unit OFF 84

Exam preparation

After choosing the exam to perform, a window pops up from the **Acquisition module** (refer to seethrough studio Instructions of Use).

CAUTION: Respect all the safety indications reported in the section "Radiation protection cautions" on page 13 to avoid patient/user overexposure to X-ray.

Notice: Radiological parameters, such as exam kV, mA and dose are always reported in the exam screen both in the upper black bar and in the central area of the screen.

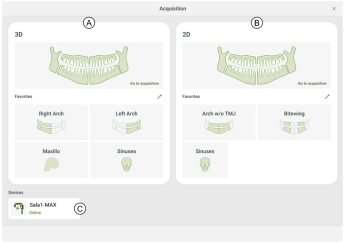
For each exam, the specific procedure is reported.

Follow this workflow:

Phase	Description	Settings
1	Prepare the system	■ If required, clean the system ■ If OFF, turn ON the device ■ If OFF, turn ON the workstation ■ Choose and mount the accessories
2	Choose the exam	■ **Panoramic exam** ■ **3D Exam**
3	Set the exam parameters	■ **Patient size** ■ **Anatomic area** ■ **Dose refinement** ■ **Advanced parameters**
4	Patient positioning	■ Position the patient ■ Adjust stand height ■ Accessories configuration ■ Use the laser for the proper patient placement

EXAM SELECTION

Whichever exam chosen, the user interface on the workstation is divided into areas to help in configuring the exam:



Part	Description
A	3D Exams
B	2D Exams
C	Device status

3D Exams

Select the 3D Exam. Go back to previous menu by clicking on **Cancel**.

2D Exams

Select the 2D Exam. Go back to previous menu by clicking on **Cancel**.

Device status

Select the W&H Device to connect (XRE-100). The device status is reported to know the status of the machine (Online, Busy, Offline). If Online, select the XRE-100 to connect.

3D EXAM ACQUISITION MODULE AND EXAM PARAMETERS

Part	Description
A	Exam recap
B	Patient Details and date
C	Device Status
D	Patient dimension
E	Exam anatomical area
F	Image quality
G	Anatomical area window
H	Anatomical areas shortcuts
I	**Scout**Exam
L	Start Acquisition button
M	Manual settings

Exam Recap

In the upper bar, a summary of the exam parameter is reported. The information is dynamic (varies according to the user selection) and it includes:

- The acquisition type (3D)
- The radiological parameters currently selected (kV, mA, time)
- The current dose
- The additional filter used (if any)

Device Status

The device status is reported to know the status of the machine and whether is necessary to undertake any action.

Patient Dimension

Four different sizes are available:

- **Child**
- **Small-sized adult**
- **Medium-sized adult**
- **Large-Sized adult**

CAUTION It is important to choose the real patient size. Possibly, dose can be adjusted by tuning advanced parameters.

Exam anatomical area

The exam anatomical area tab permits to easily switch among different exams, corresponding to different anatomical macroareas.

Image Quality

Select the image quality, choosing among:

- **Low Dose**
- **Normal Dose**
- **High Dose**

This selection influences: mA, time, resolution.

Anatomical area window

In this section there is a scheme with the anatomical district interested by the specific exam. Select the part to investigate, that turns green. Only sensible combinations are available.

Select the 2D Exam. Go back to previous menu by clicking on **Cancel**.

Anatomical areas shortcuts

In this section is possible to directly select standard anatomical presets. Once the preset is selected, the corresponding anatomical district turns green.

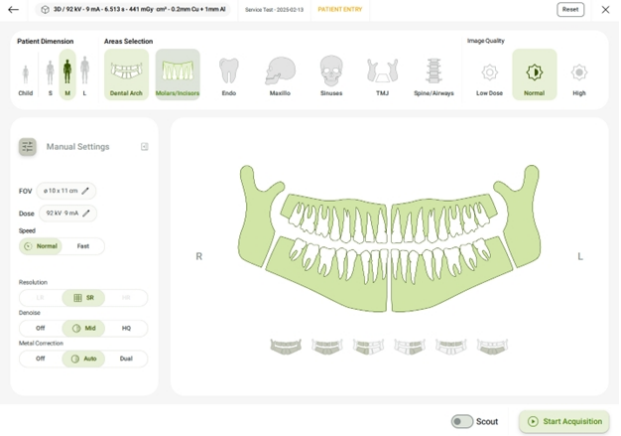
Scout Exam

CAUTION The **Scout** option is not available for the following 3D Exams: Maxillo, Sinuses, Spine/Airways.

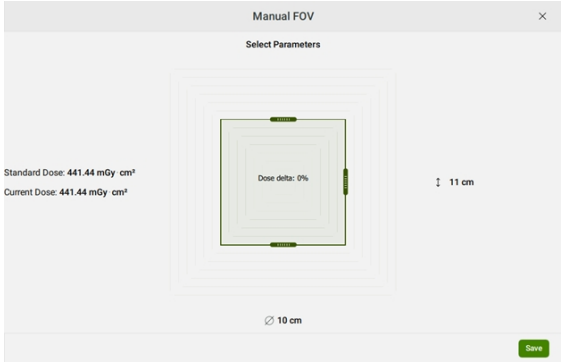
Manual settings

This section allows expert users to fine-tune advanced settings. These settings enable further adjustments to radiological and geometrical parameters.

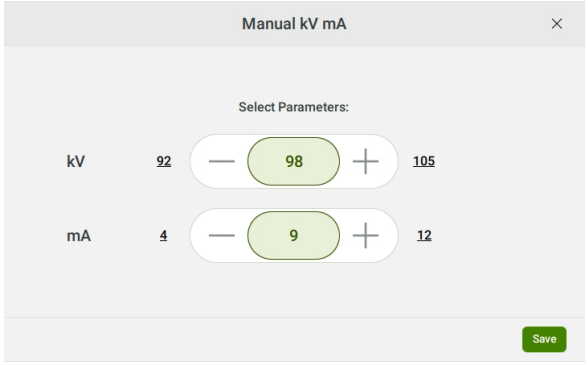
- Click on the **Manual Setting** icon to open it.



- **FOV**: In this section is possible to modify the FOV of the exam. The new FOV dimensions, as well as the related dose, are automatically updated:



- **Dose**(only for expert users): In this section is possible to manually modify the kV and mA.
- Once clicked, a dedicated window ('Manual kV mA') pops up:

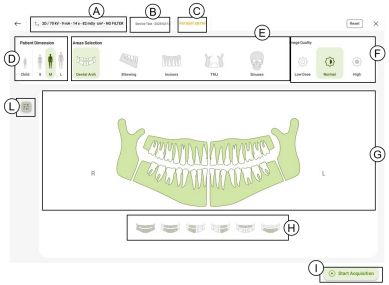


- In this section the user can increase or reduce both kV and mA by clicking on the buttons + or – respectively. A preview of the DAP is shown in the background window.

CAUTION! The choice of the manual settings is confirmed only after clicking on **Save**. Otherwise, the choice switches automatically on the default parameters.

- **Resolution**: in this section is possible to select the exam resolution.
- **Denoise**: in this section is possible to select denoise level (or remove it).
- **Metal correction**: in this section is possible to select MAR level (or remove it).

2D EXAM ACQUISITION MODULE AND EXAM PARAMETERS



Part	Description
A	Exam recap
B	Patient Details and date
C	Device Status
D	Patient dimension
E	Exam anatomical area
F	Image quality
G	Anatomical area window
H	Anatomical areas shortcuts
I	Start Acquisition button
L	Manual settings

Exam Recap

In the upper bar, a summary of the exam parameter is reported. The information is dynamic (varies according to the user selection) and it includes:

- The acquisition type (2D)
- The radiological parameters currently selected (kV, mA, time)
- The current dose
- The information that no additional filter is used

Device Status

The device status is reported to know the status of the machine and whether is necessary to undertake any action.

Patient Dimension

Four different sizes are available:

- **Child**
- **Small-sized adult**
- **Medium-sized adult**
- **Large-Sized adult**

CAUTION It is important to choose the real patient size. Possibly, dose can be adjusted by tuning advanced parameters.

Exam anatomical area

The exam anatomical area tab permits to easily switch among different exams, corresponding to different anatomical macroareas.

Image Quality

Select the image quality, choosing among:

- **Low Dose**
- **Normal Dose**
- **High Dose**

This selection influences: mA, time, dose.

Anatomical area window

In this section there is a scheme with the anatomical district interested by the specific exam. Select the part to investigate, that turns green. Only sensible combinations are available.

Select the 2D Exam. Go back to previous menu by clicking on **Cancel**.

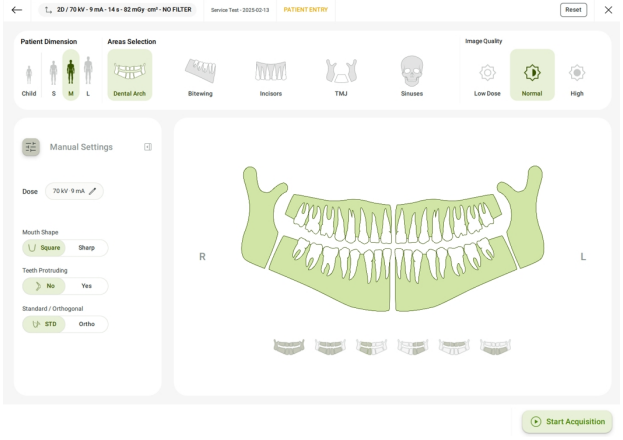
Anatomical areas shortcuts

In this section is possible to directly select standard anatomical presets. Once the preset is selected, the corresponding anatomical district turns green.

Manual settings

This section allows expert users to fine-tune advanced settings. These settings enable further adjustments to radiological and geometrical parameters.

- Click on the **Manual Setting** icon to open it.



- **Mouth Shape** – only for expert users: in this section, it is possible to fine-tune the exam settings to calibrate them according to the patient's specific anatomical classification:
  - **Square**: broader, well-defined lips with less tapering at the corners. The oral commissures (corners of the mouth) appear more horizontal, and the dental arch may present with a wider form.
  - **Sharp**: more tapered lip corners and a narrower oral aperture.
- **Teeth protruding** – only for expert users: In this section, it is possible to modify the exam settings to adjust for patients with protruding teeth (forward positioning of the anterior teeth beyond their ideal alignment in relation to the supporting bone and lips).
- **Standard/Orthogonal** – only for expert users: in this section is possible to adjust the exam's trajectory:
  - **orthogonal**: to better distinguish even adjacent teeth, but producing more ghosting artifacts.
  - **standard**.

EXAM TYPES

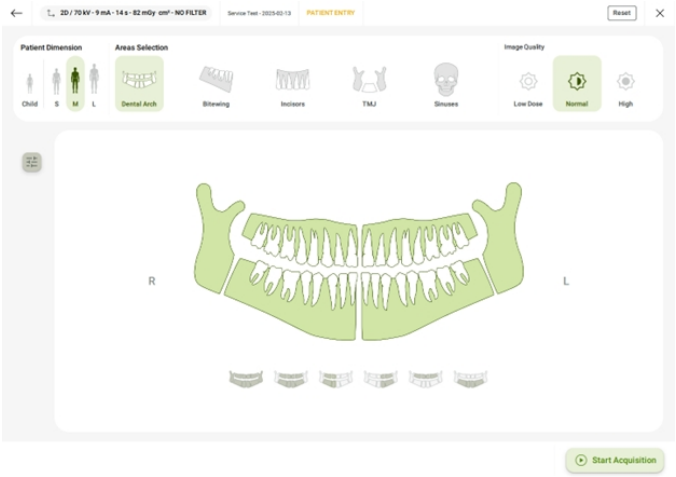
Panoramic Dental arch

Exam description

Dental arch exam is a partial or complete exam of patient's teeth.

It is performed as a general screening or to investigate abscesses, cysts, periodontitis, bone resorption, interproximal caries, bone resorption or teeth growth in children.

Exam parameters



When a child size is chosen, a child mouth appears on the screen.

Use fast selections for pre-set specific areas of the dental arch. Alternatively, select directly on the mouth representation the target area by clicking on it.

In case the selection is not correct (*e.g.*, not adjacent areas or not available combinations of areas have been chosen), the **Start Acquisition** button deactivates and the exam cannot be completed.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

Among the advanced parameters settable parameters are:

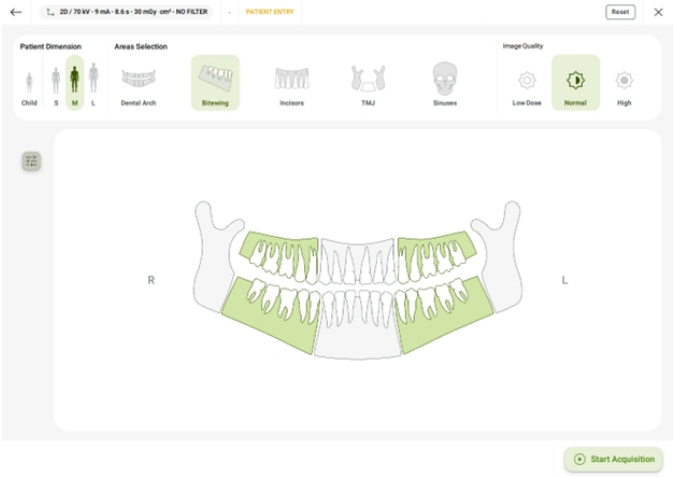
- quality-related dose,
- mouth shape,
- tooth protruding,
- trajectory adjustment,

Bitewing

Exam description

Bitewing exam is a 2D image of a specific region of patient's teeth (*i.e.*, the molars teeth). It can be used for specific clinical purposes, such as examination of inter-proximal caries.

Exam parameters



When a child size is chosen, a child mouth appears on the screen.

Select directly on the mouth representation the target area by clicking on it.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

Among the advanced parameters settable parameters are:

- quality-related dose,
- mouth shape,
- tooth protruding,

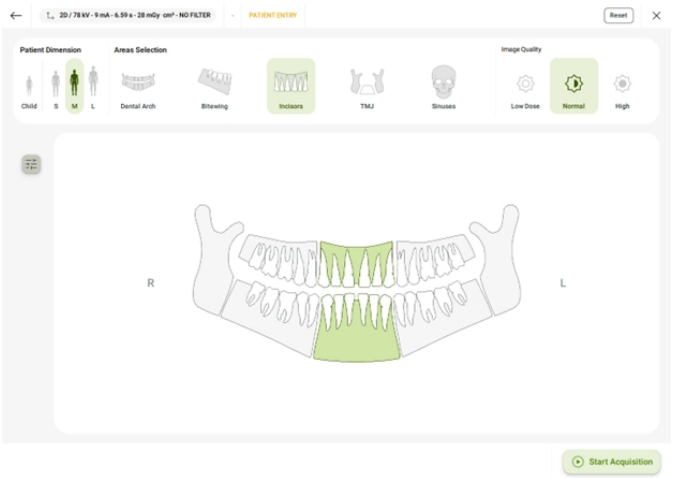
Panoramic Incisors

Panoramic TMJ

Exam description

Incisor exam is a 2D image of a specific region of patient's teeth (*i.e.*, incisive and canine teeth). It can be used for specific clinical purposes related to this area of the dental arch.

Exam parameters



When a child size is chosen, a child mouth appears on the screen.

Select directly on the mouth representation the target area by clicking on it.

Select both the upper incisive and the lower incisive areas or only one part at a time.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

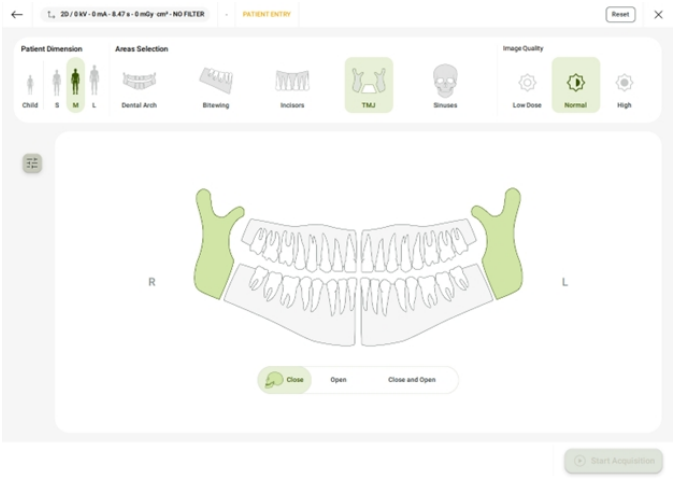
Among the advanced parameters settable parameters are:

- quality-related dose,
- mouth shape,
- tooth protruding,

Exam description

Temporomandibular junction exam (TMJ) targets mandibular joint. The aim of the exam is to investigate temporomandibular joint dysfunction.

Exam parameters



When a child size is chosen, a child mouth appears on the screen.

Below the anatomical area window, three mouth positions are available:

- only close mouth: the patient's mouth is closed in a normal occlusion position.
- only open mouth: the patient's mouth is fully open to assess the condylar translation.
- both open and close mouth: two exams are taken: one with the mouth closed and one with the mouth open, to compare condylar positions.

Among the advanced parameters settable parameters are:

- quality-related dose,

Panoramic Sinuses

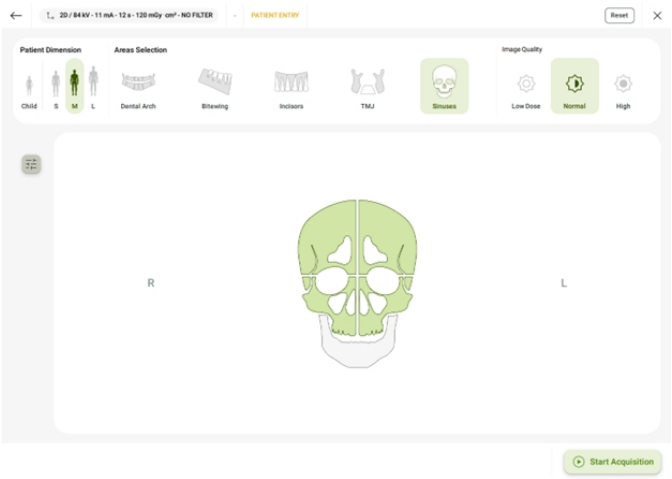
Exam description

Sinus exam does not interest the area of teeth, but it is related to:

- maxillary sinuses,
- frontal sinuses.

The aim of the study is investigating any sinusitis or upper airway infections.

Exam parameters



In case the selection is not correct (*e.g.*, not adjacent areas or not available combinations of areas have been chosen), the **Start Acquisition** button deactivates and the exam cannot be completed.

Select on the head representation the target area by clicking on it.

Multiple selections are available:

- only maxillary sinuses,
- only frontal sinuses,
- only left sinuses (both maxillary and frontal),
- only right sinuses (both maxillary and frontal),
- the whole paranasal sinuses area,
- one specific sinus.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

Among the advanced parameters settable parameters are:

- quality-related dose,

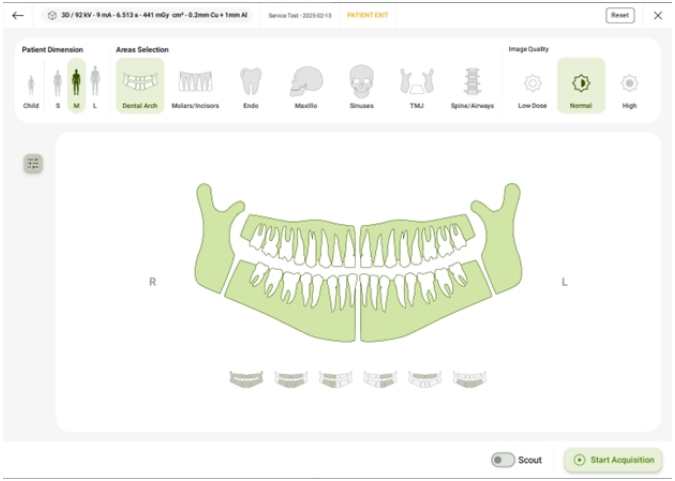
3D Dental arch

Exam description

Dental arch exam is a partial or complete exam of patient's teeth.

It is performed to plan any dental implant surgery or tooth extraction.

Exam parameters



When a child size is chosen, a child mouth appears on the screen.

Use fast selections for pre-set specific areas of the dental arch. Alternatively, select directly on the mouth representation the target area by clicking on it.

In case the selection is not correct (*e.g.*, not adjacent areas or not available combinations of areas have been chosen), the **Start Acquisition** button deactivates and the exam cannot be completed.

Increase the volume of interest to extend the scanned volume.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

Among the advanced parameters settable parameters are:

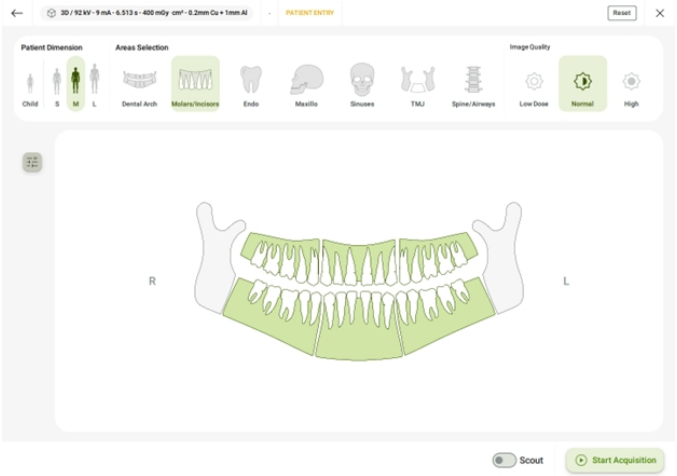
- quality-related dose,
- denoise,
- metal artifact reduction (MAR).

3D Molar/Incisors

Exam description

Molar/Incisor exam permits to reconstruct a 3D image of a specific region of patient's teeth (*i.e.*, molar region or incisive and canine teeth). It can be used to plan any dental implant surgery or tooth extraction in this specific area.

Exam parameters



When a child size is chosen, a child mouth appears on the screen.

Select on the head representation the target area by clicking on it.

Select only molars or incisors or both molars and incisors together. Otherwise choose only upper molars or/and incisors or lower molars or/and incisors.

Increase the volume of interest to extend the scanned volume.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

Among the advanced parameters settable parameters are:

- quality-related dose,
- denoise,
- metal artifact reduction (MAR).

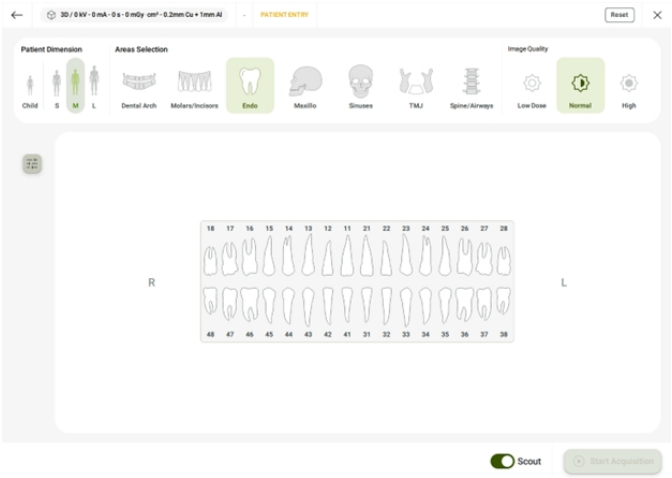
3D Individual Teeth – ENDO

Exam description

Individual tooth exam permits to acquire a small specific volume around one patient's tooth or a few adjacent teeth.

This exam is used in endodontics and root canal therapy.

Exam parameters



When a child size is chosen, a child mouth appears on the screen.

Select directly on the mouth representation the target area by clicking on it.

Select groups of maximum three adjacent teeth belonging to the same arch or groups of maximum six teeth (three per arch).
A fast selection can be done by clicking teeth not adjacent: if the combination is sensitive, teeth between get automatically selected. Likewise, deselection is guided.

Increase the volume of interest to extend the scanned volume.

Select at least one tooth to perform the exam.

Among the advanced parameters settable parameters are:

- quality-related dose,
- denoise,
- metal artifact reduction (MAR).

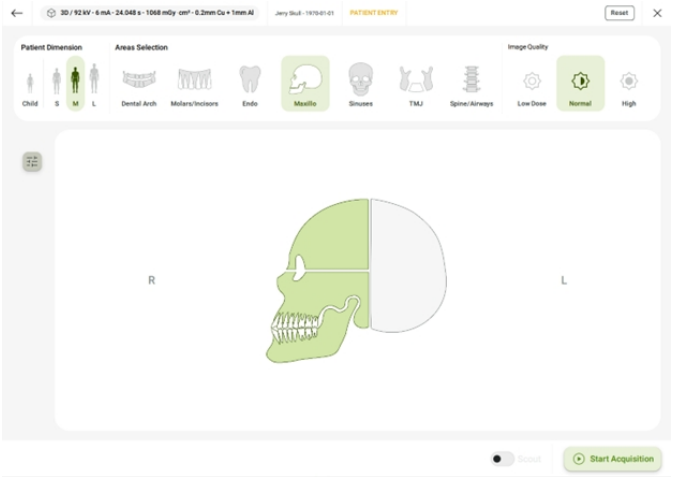
3D Full Head

Exam description

The full head exam targets the volume of the head.

Its scope is maxillofacial surgery.

Exam parameters



Select on the head representation the target area by clicking on it.

Once set, the **READY** button is activated. If the **READY** button is deactivated, it is missing the selection of the anatomical area; in this case the execution of the exam is not allowed.

Among the advanced parameters settable parameters are:

- quality-related dose,
- denoise,
- metal artifact reduction (MAR).

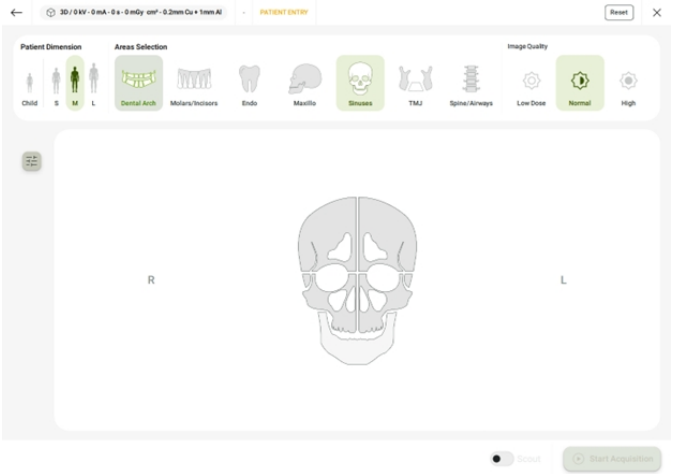
3D Sinuses

Exam description

Sinus exam does not interest the area of teeth, but it is related to:

- maxillary sinuses,
- frontal sinuses.

Exam parameters



Select on the head representation the target area by clicking on it.

Multiple selections are available:

- only maxillary sinuses,
- only frontal sinuses,

- only left sinuses (both maxillary and frontal),
- only right sinuses (both maxillary and frontal),
- the whole paranasal sinuses area,
- one specific sinus.

Increase the volume of interest to extend the scanned volume.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

Among the advanced parameters settable parameters are:

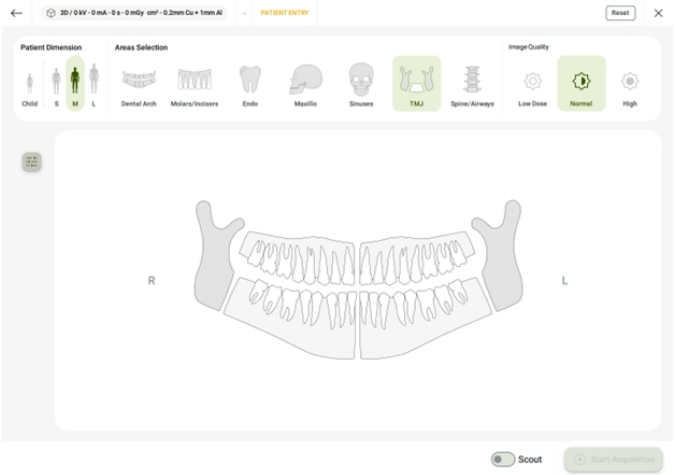
- quality-related dose,
- denoise,
- metal artifact reduction (MAR).

3D TMJ

Exam description

Temporomandibular junction exam (TMJ) targets mandibular joint. The aim of the exam is to investigate temporomandibular joint dysfunction.

Exam parameters



When a child size is chosen, a child mouth appears on the screen.

Select on the head representation the target area by clicking on it.

Increase the volume of interest to extend the scanned volume.

Select only one side at one time.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

Among the advanced parameters settable parameters are:

- quality-related dose,
- denoise,
- metal artifact reduction (MAR).

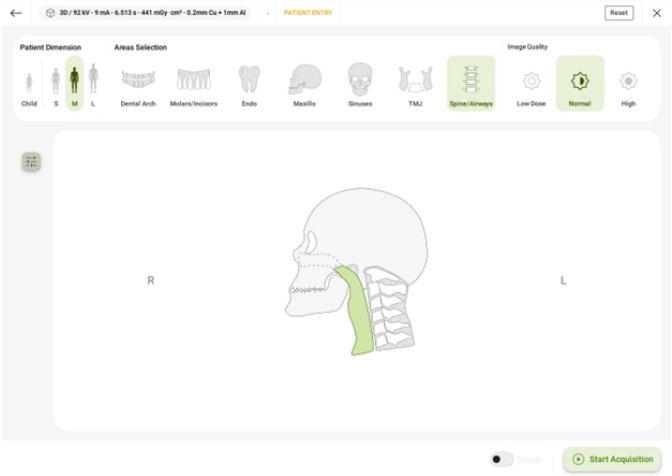
3D Airways and Spine

Exam description

The airway or spine exam focuses on a specific volume of the head.

The scope is investigating upper airways diameters and analyzing cervical vertebrae.

Exam parameters



Select on the head representation the target area by clicking on it.

Increase the volume of interest to extend the scanned volume.

Select airways or spine one at one time.

Select at least one anatomical area to perform the exam, otherwise the **Start Acquisition** button is deactivated and the execution of exam is not allowed.

Among the advanced parameters settable parameters are:

- quality-related dose,
- denoise,
- metal artifact reduction (MAR).

START ACQUISITION BUTTON

Once confident about all the exam settings, click on **Start Acquisition** button.

A new window pops up with a recap of the parameters set in the previous phase. Anatomical, radiological and any advanced parameters are shown.

In case homing is required, the **device status** ("Exam preparation" on page 48) could be **HOMING REQUIRED** or **PATIENT EXIT** and after clicking the **Start Acquisition** button a message pops up:

Go to the device and click the **HOME**button on the On-board control panel ("On-board control panel" on page 33). Therefore, in the "device status" windows it is visible the message**MOVING**. The device will automatically move to the patient entry position. Once ready, in the “device status” window it is visible the message **PATIENT ENTRY**.

Before X-ray emission, it is necessary to prepare the device and accompany the patient to the device.

Preparing the device

CAUTION: Before starting the exam, make sure that the device is cleaned, as reported in "Cleaning and disinfection by the user " on page 86

Panoramic exam: Dental arch and Bitewing

To properly perform the exam, mount the Bite block.

Note For mounting instructions, see "Product description" on page 28.

Panoramic exam: TMJ and Sinuses

To properly perform the exam, mount the Edentulous/TMJ support.

Note For mounting instructions, see "Product description" on page 28.

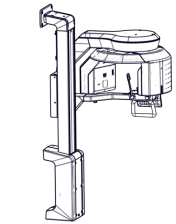
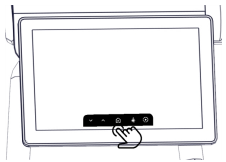
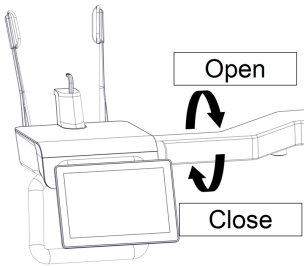
3D exams

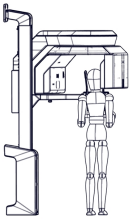
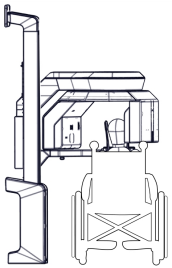
No components are mandatory for properly performing the exam, but the use of the bite block may help in avoiding unwanted movements from the patient.

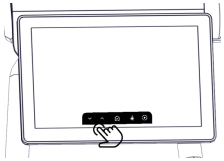
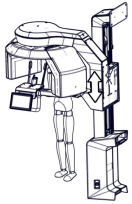
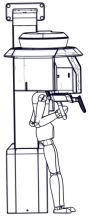
Patient positioning

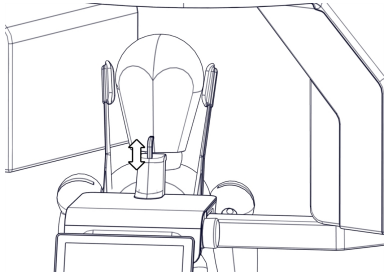
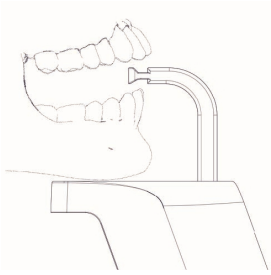
CAUTION: This phase requires the use of a laser to help positioning the patient. Avoid to direct laser to anyone's eyes.
Before accompany the patient to the seethrough^{MAX} device, ask them to remove glasses and any earrings or jewelry.

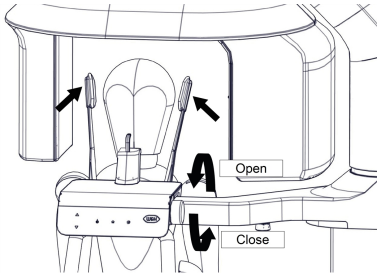
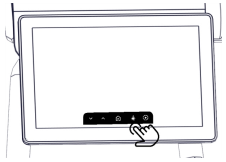
PANORAMIC EXAM: DENTAL ARCH AND BITEWING

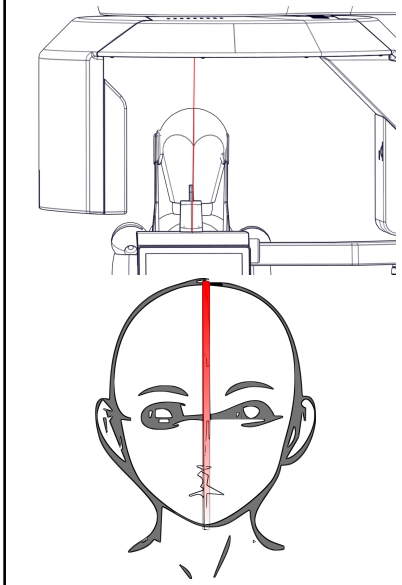
Reference	Description
 	seethrough[MAX] shall be in the PATIENT ENTRY POSITION, if not, click the HOME button on the On-board control panel. CAUTION: Do not let the patient get closer to the device before HOME button has been pressed.
	Temple supports shall be open to help the patient positioning in the seethrough[MAX] device. If not, rotate the knob to automatically open them.

Reference	Description
 	Help the patient reaching the device, where they grabs the handle and leans the chin on the chinrest. Be careful nobody crushes their hands into the device during the positioning. If the the patient has a disability, uses a wheelchair, or has mobility difficulties, they can be positioned while seated.

Reference	Description
 	Adjust the stand height through the On-board control panel buttons to fit the patient size.
	The patient shall steps forward, relax the shoulders and stretch the neck back.

Reference	Description
 	The patient shall bite the bite block. Bite height is adjustable. Move the bite block to fit patient mouth. Use the chinrest to support the chin.

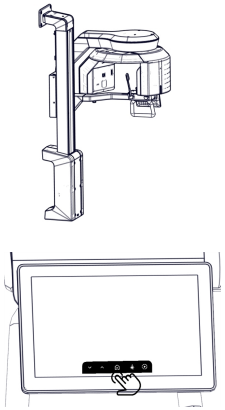
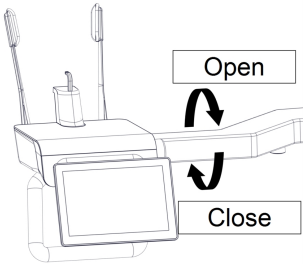
Reference	Description
	Close the temple supports. Rotate the knob to automatically close the temple supports. The system is set to stop when it encounters resistance. The system is calibrated to guarantee the correct positioning and the comfort of the patient at the same time.
	Light the lasers on.

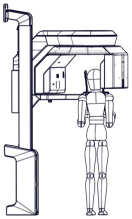
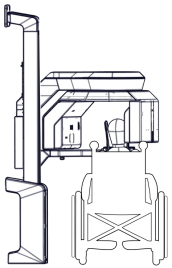
Reference	Description
	*Mediosagittal laser* shall be positioned in the patient face centerline. If not, gently rotate the patient head from left to right or vice-versa (refer toseethrough studio Instructions of Use).

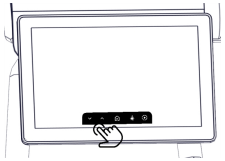
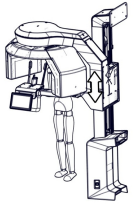
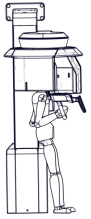
To limit artifacts in the images, ask the collaboration of the patient who should keep the tongue on the palate and avoid any movements

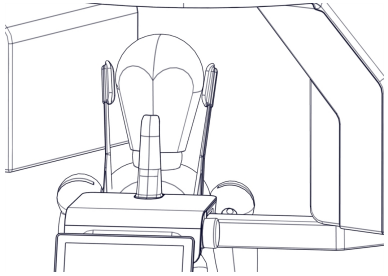
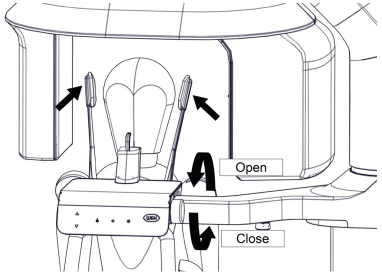
Notice: in case of particularly frightened patients, start a demo exam, without X-ray emission, clicking the **DEMO TEST** button.

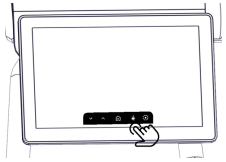
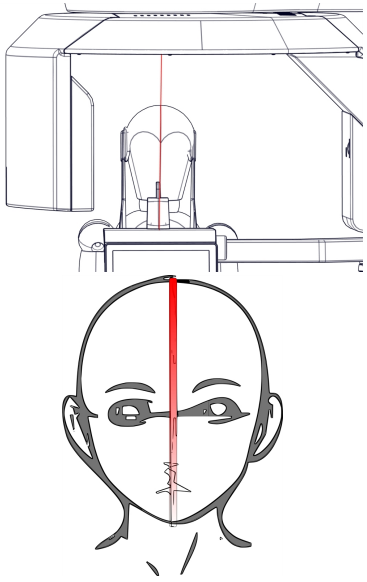
PANORAMIC EXAM: TMJ AND SINUSES

Reference	Description
	seethrough[MAX] shall be in the PATIENT ENTRY POSITION, if not, click the HOME button on the On-board control panel. CAUTION: Do not let the patient get closer to the device before HOME button has been pressed.
	Temple supports shall be open to help the patient positioning in the seethrough[MAX] device. If not, rotate the knob to automatically open them.

Reference	Description
 	Help the patient reaching the device, where they grabs the handle and leans the chin on the chinrest. Be careful nobody crushes their hands into the device during the positioning. If the the patient has a disability, uses a wheelchair, or has mobility difficulties, they can be positioned while seated.

Reference	Description
 	Adjust the stand height through the On-board control panel buttons to fit the patient size.
	The patient shall steps forward, relax the shoulders and stretch the neck back.

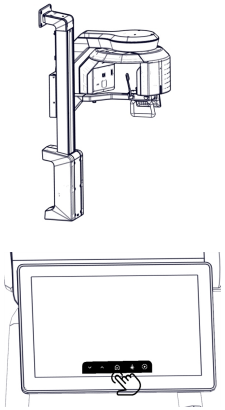
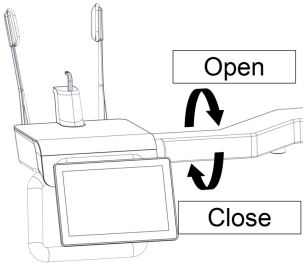
Reference	Description
	The patient shall lean the pro-labium on the edentulous/TMJ support. Its height is adjustable. Move the tool until the correct position is reached.
	Close the temple supports. Rotate the knob to automatically close the temple supports. The system is set to stop when it encounters resistance. The system is calibrated to guarantee the correct positioning and the comfort of the patient at the same time.

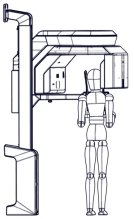
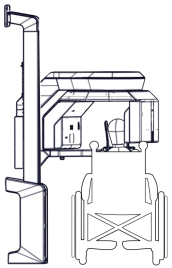
Reference	Description
	Light the lasers on.
	*Mediosagittal laser* shall be positioned in the patient face centerline. If not, gently rotate the patient head from left to right or vice-versa (refer toseethrough studio Instructions of Use).

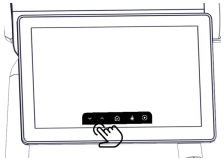
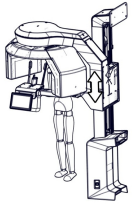
To limit artifacts in the images, ask the collaboration of the patient who should keep the tongue on the palate and avoid any movements

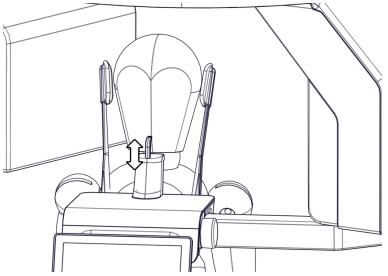
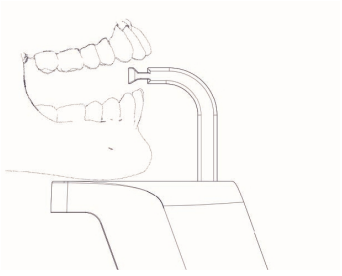
Notice: in case of particularly frightened patients, start a demo exam, without X-ray emission, clicking the **DEMO TEST** button.

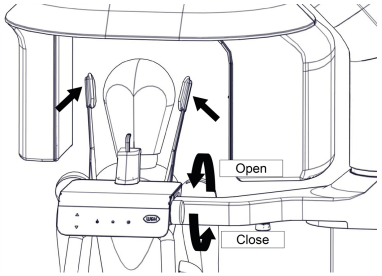
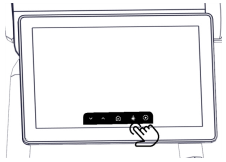
3D EXAMS

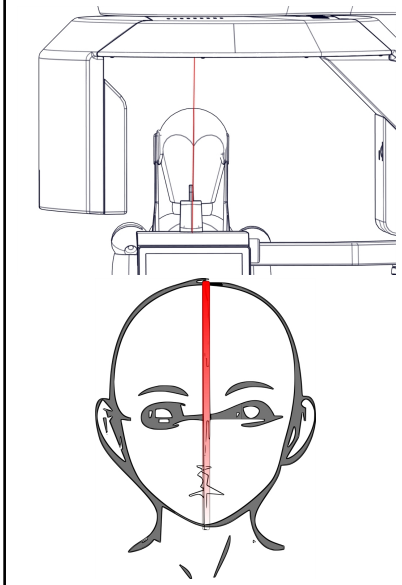
Reference	Description
	seethrough[MAX] shall be in the PATIENT ENTRY POSITION, if not, click the HOME button on the On-board control panel. CAUTION: Do not let the patient get closer to the device before HOME button has been pressed.
	Temple supports shall be open to help the patient positioning in the seethrough[MAX] device. If not, rotate the knob to automatically open them.

Reference	Description
 	Help the patient reaching the device, where they grabs the handle and leans the chin on the chinrest. Be careful nobody crushes their hands into the device during the positioning. If the the patient has a disability, uses a wheelchair, or has mobility difficulties, they can be positioned while seated.

Reference	Description
 	Adjust the stand height through the On-board control panel buttons to fit the patient size.

Reference	Description
 	OPTIONAL: the patient can bite the bite block. Bite height is adjustable. Move the bite block until the correct position is reached. This is not mandatory, but it will help in avoiding unwanted movements.

Reference	Description
	Close the temple supports. Rotate the knob to automatically close the temple supports. The system is set to stop when it encounters resistance. The system is calibrated to guarantee the correct positioning and the comfort of the patient at the same time.
	Light the lasers on.

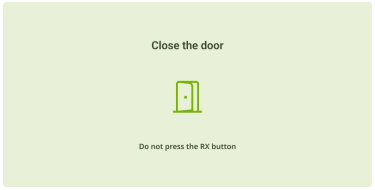
Reference	Description
	*Mediosagittal laser* shall be positioned in the patient face centerline. If not, gently rotate the patient head from left to right or vice-versa (refer toseethrough studio Instructions of Use).

To limit artifacts in the images, ask the collaboration of the patient who should keep the tongue on the palate and avoid any movements

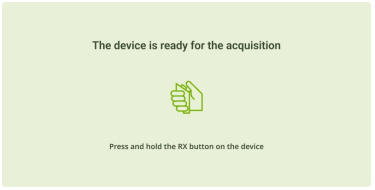
Notice: in case of particularly frightened patients, start a demo exam, without X-ray emission, clicking the **DEMO TEST** button.

If not previously done, before starting the X-ray emission, press the Homing button. If the Homing was not performed, the following pop up will inform the user to do it

If not already closed, before starting the X-ray emission, close the door. If the door is open, the following pop up will inform the user to close it



Finally, a new window pops up for preparing to X-ray emission:



CHINREST USE

Chinrest Type	Chinrest Type	3D Exams (CBCT)
Low Chinrest	**Panoramic X-ray (2D Pano)**	■ Full Bitewing ■ Posterior mandibular regions ■ Mandibular implant planning ■ Inferior alveolar nerve canal ■ Impacted lower third molars ■ TMJ – mouth open
High Chinrest	**Not typically used in standard 2D exams**	■ Maxillo ■ Maxillary implant planning ■ Maxillary sinuses ■ Anterior region (incisors/canines) ■ Airway analysis ■ TMJ – mouth closed

X-ray exposure

Ask the patient not to move.

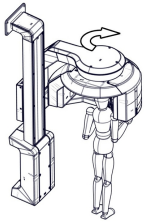
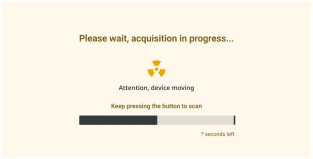
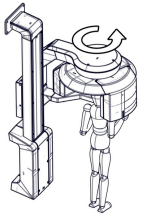
Stay into the radiation-protected area, where there is the X-ray button. The determination of the radiation-protected area falls exclusively under the responsibility of the user's designated qualified expert and may be subjected to variation in accordance with applicable regulations

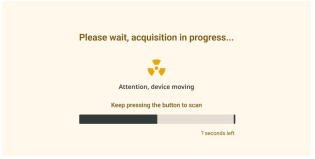
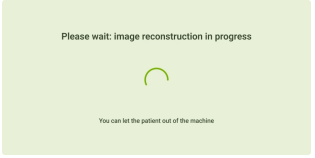
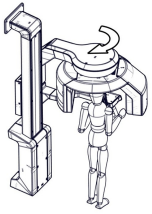
CAUTION! The X-ray button is a dead-man equipment. In case of any problems, release immediately the button and the device will arrest the X-ray emisson. A buzzer sound will be emitted as long as the button is pressed.
In case the X-ray button is released earlier, the exam could be repeated from the beginning.
During X-ray emission, never lose the visual contact with the patient (see "Radiation protection cautions" on page 13).

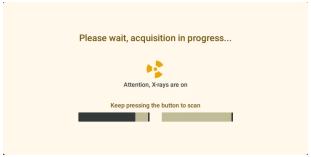
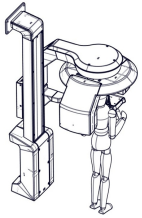
NOTE: During exposure, both the workstation and the on-board control panel are synchronized in real-time, ensuring that the same screens are available on both monitors.

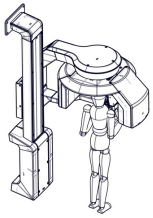
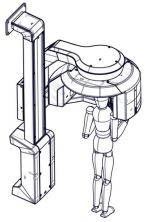
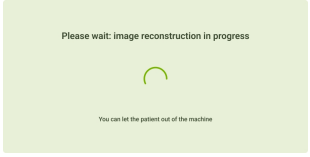
DENTAL ARCH, BITEWING AND SINUSES EXAMS

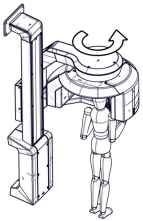
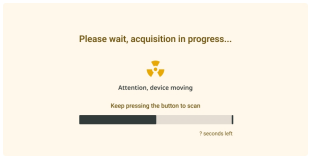
The exam starts right after pressing the X-ray button. Do not release it until the exposure is complete. In case of early release, an error message will appear: "Error: X-ray button was released too early!"

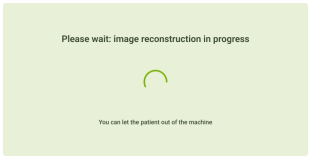
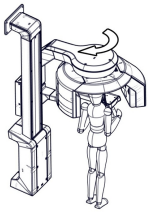
	The rotating arm starts rotates clockwise to reach the START POSITION.
	The X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. Do not release the button. A summary of exam parameters is always shown on the screen. The device status is **EXAM**.
-	Press the X-Ray button and keep it pressed as long as the exam is finished.
	The exam starts: the rotating arm rotates counterclockwise.

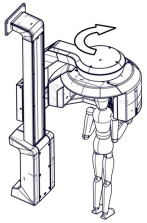
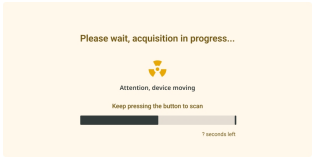
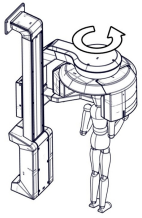
	On the workstation the X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. Do not release the button. A summary of exam parameters is always shown on the screen.
	A message will let you know when the acquisition is complete.
	At the end of X-ray emission a new window shows the image reconstruction progress.
	After the emission, hold the X-Ray button and the rotating arm rotates clockwise to reach the PATIENT EXIT POSITION (X-ray tube head and detector are in a symmetrical position if compared to PATIENT ENTRY POSITION). **Notice**: In case the X-Ray button is released after the emission but before reaching the EXIT POSITION, a pop-up reminds to press the HOME button again to go the ENTRY POSITION.

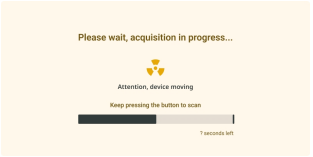
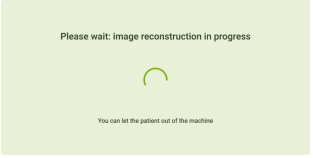
	*With scout images mode selected:* on the workstation, the X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. Do not release the button. A summary of exam parameters is always shown on the screen.	Scout
	The seethrough MAX / seethrough FLEX acquires two scout images: 1. X-ray detector perpendicular to patient nose (direction A-P)	Scout

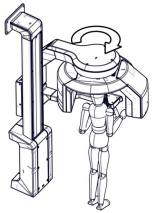
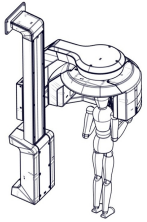
	2. X-ray detector perpendicular to patient ear (direction L-R)	Scout
	At the end of X-ray emission the device gets to the PATIENT ENTRY POSITION.	Scout
	A new window shows the image reconstruction progress.	Scout

	The scout images are shown on the screen. Select the ROI on the scout image: ■ move the center of ROI, ■ adjust the borders, by dragging and dropping them both in the coronal and in the sagittal planes. If necessary retake the scout images by clicking on the specific button.	
	The exam starts: the rotating arm rotates counterclockwise.	
	On the workstation the X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. Do not release the button. A summary of exam parameters is always shown on the screen.	

	A message will let you know when the acquisition is complete.
	At the end of X-ray emission a new window shows the image reconstruction progress.
	After the emission, hold the X-Ray button and the rotating arm rotates clockwise to reach the PATIENT EXIT POSITION (X-ray tube head and detector are in a symmetrical position if compared to PATIENT ENTRY POSITION). **Notice**: In case the X-Ray button is released after the emission but before reaching the EXIT POSITION, a pop-up reminds the user to press the HOME button to go the ENTRY POSITION.

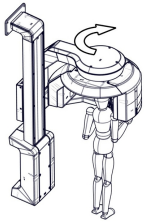
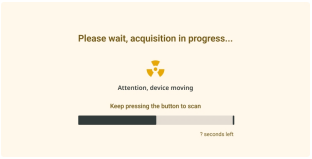
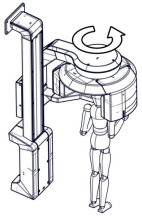
	The rotating arm starts rotates clockwise to reach the START POSITION.
	The X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. The user shall not release the button A summary of exam parameters is always shown on the screen
-	Press the X-Ray button and keep it pressed as long as the exam is finished.
	The exam starts: the rotating arm rotates counterclockwise and the LED light turns yellow.

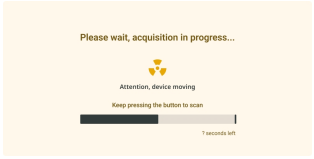
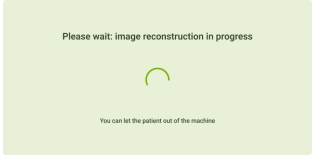
	On the workstation the X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. Do not release the button. A summary of exam parameters is always shown on the screen.
	A message will let you know when the acquisition is complete.
	At the end of X-ray emission a new window shows the image reconstruction progress.

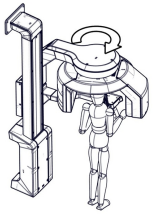
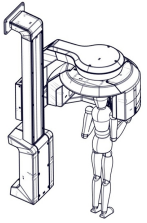
	Ask the patient to be still and, in case, to open/close their mouth and push again the X-ray button. The machine rotates clockwise to perform a second acquisition.
	After the emission, the machine is back in the PATIENT ENTRY POSITION.

TMJ EXAM

The exam starts right after pressing the X-ray button. Do not release it until the exposure is complete. In case of early release, an error message will appear: "Error: X-ray button was released too early!"

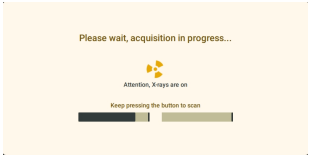
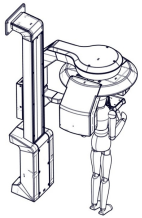
	The rotating arm starts rotates clockwise to reach the START POSITION.
	The X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. The user shall not release the button A summary of exam parameters is always shown on the screen
-	Press the X-Ray button and keep it pressed as long as the exam is finished.
	The exam starts: the rotating arm rotates counterclockwise and the LED light turns yellow.

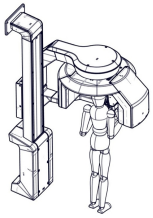
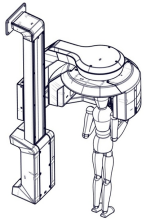
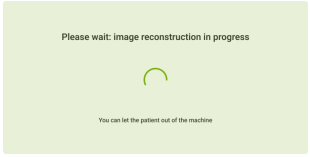
	On the workstation the X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. Do not release the button. A summary of exam parameters is always shown on the screen.
	A message will let you know when the acquisition is complete.
	At the end of X-ray emission a new window shows the image reconstruction progress.

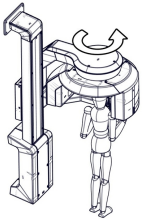
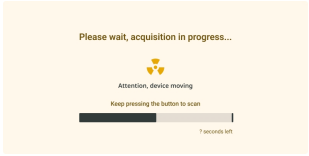
	Ask the patient to be still and, in case, to open/close their mouth and push again the X-ray button. The machine rotates clockwise to perform a second acquisition.
	After the emission, the machine is back in the PATIENT ENTRY POSITION.

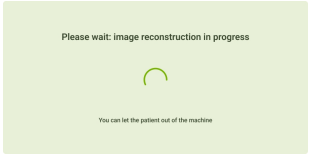
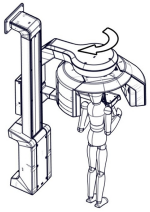
3D EXAMS

The exam starts right after pressing the X-ray button. Do not release it until the exposure is complete. In case of early release, an error message will appear: "Error: X-ray button was released too early!"

	*With scout images mode selected:* on the workstation, the X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. Do not release the button. A summary of exam parameters is always shown on the screen.	Scout
	The seethrough ^{MAX}seethrough^{FLEX} acquires two scout images: 1. X-ray detector perpendicular to patient nose (direction A-P)	Scout

	2. X-ray detector perpendicular to patient ear (direction L-R)	Scout
	At the end of X-ray emission the device gets to the PATIENT ENTRY POSITION.	Scout
	A new window shows the image reconstruction progress.	Scout

	The scout images are shown on the screen. Select the ROI on the scout image: ■ move the center of ROI, ■ adjust the borders, by dragging and dropping them both in the coronal and in the sagittal planes. If necessary retake the scout images by clicking on the specific button.	
	The exam starts: the rotating arm rotates counterclockwise.	
	On the workstation the X-ray window pops up with the symbol of radiation and a bar with the percentage of completion. An acoustic signal indicates that X-ray emission is in progress. Do not release the button. A summary of exam parameters is always shown on the screen.	

	A message will let you know when the acquisition is complete.
	At the end of X-ray emission a new window shows the image reconstruction progress.
	After the emission, hold the X-Ray button and the rotating arm rotates clockwise to reach the PATIENT EXIT POSITION (X-ray tube head and detector are in a symmetrical position if compared to PATIENT ENTRY POSITION). **Notice**: In case the X-Ray button is released after the emission but before reaching the EXIT POSITION, a pop-up reminds the user to press the HOME button to go the ENTRY POSITION.

Exam evaluation

Part	Description
A	Parameter recap
B	Patient name
C	Device status
D	Document pre-view
E	Confirm button
F	Rejecting button

Document pre-view

Examine the quality of the image to decide whether to keep it or to reject it and re-do the exam.

Save menu

If the quality is fine, save the document.

In case the document is saved, the exam can be concluded.

At the end of the exam, temple support will automatically open. Assist the patient in stepping back/moving back from the device and leaving the examination area.

Rejecting menu

In case the quality is not good enough, reject it. It is mandatory to add a reason for rejecting, choosing among a list or adding a specific comment.

CAUTION: In case an exam is rejected, it shall be repeated (with resultant exposure of the patient).

Power the unit OFF

POWER THE WORKSTATION OFF

1. Save all the necessary data.
2. Close the program.
3. Switch OFF the workstation.

POWER THE DEVICE OFF

1. Press the power switch located in the base.

Maintenance

CONTENTS

This section deals with the following subjects:

Cautions for maintenance operations 85
Ordinary maintenance 85
User maintenance 86
Disposal 90

Cautions for maintenance operations

CAUTIONS FOR CLEANING

CAUTION: To avoid harm to patients, all the parts in contact with the patient shall be cleaned, disinfected or prepared according to the following indications.
Use only the disinfectants approved by the manufacturer, to avoid damages to the patient consequent to seethrough^{MAX} device deterioration.
During cleaning or disinfecting, liquid can enter the unit.
Always avoid spraying any liquids directly on the machine, especially close to ventilation slots or other parts in contact with electrical components.

CAUTIONS FOR MAINTENANCE

CAUTION: Turn the seethrough^{MAX} device OFF and open the thermal-magnetic residual-current circuit breaker before beginning any maintenance.
Follow all health, safety, cross-infection and cross-contamination protocols.
Maintenance operation shall be done at illumination level of 215 lx (±15 lx) to 1500 lx (±15 lx).
Before making any operation, ward off unauthorized personnel from the working area.
Laser maintenance shall be carried out only by trained technicians.

CAUTION: Before touching any surfaces of components where X rays are produced, be sure the seethrough^{MAX} device component is cold.

Notice: Follow the instructions in this chapter when carrying out any maintenance on the seethrough^{MAX} device.

Ordinary maintenance

CAUTION: The user is responsible for addressing to technicians for periodic maintenance.

User maintenance

CLEANING AND DISINFECTION BY THE USER

CAUTION: Do not sprays, liquids or foams directly onto any surface.

<table>
<tr><th>Device part</th><th>Operation</th><th colspan="2">Instructions</th></tr>
<tr><td>Bite block</td><td>Preparation</td><td colspan="2">Before each exam, the bite shall be covered with a new CE-marked* disposable sheaths. After each use, the sheath shall be disposed and the bite washed to remove any organic residue.
Note*: If sold in other countries, the disposable sheaths must comply with local regulations.
CAUTION! The bite is autoclavable for up to 100 sterilization cycles at 121°C and must be sterilized after each use. Alternatively, disposable protective covers must be used.</td></tr>
<tr><td rowspan="3">Parts in contact with the patient</td><td rowspan="3">Cleaning and Disinfection</td><td colspan="2">After each exam, parts in contact with the patient shall be disinfected using approved chemical disinfectant.</td></tr>
<tr><td>For the Bite Block and the Chinrest:</td><td></td></tr>
<tr><td>✓</td><td>■ BePro disinfectant spray,
■ BePro disinfectant wipes,
■ BePro disinfectant concentrate.</td></tr>
<tr><td></td><td>✗</td><td>■ BePro disinfectant I,
■ BePro disinfectant R.</td></tr>
</table>

Device part	Operation	Instructions	
Parts in contact with the patient	Cleaning and Disinfection	*For the Edentulous/TMJ support and the Temple supports*	
		✓	■ BePro disinfectant spray, ■ BePro disinfectant wipes, ■ BePro disinfectant concentrate.
		✗	■ BePro disinfectant I, ■ BePro disinfectant R.
Parts in contact with the patient	Cleaning and Disinfection	*For the patient handle*	
		✓	■ BePro disinfectant spray, ■ BePro disinfectant wipes, ■ BePro disinfectant concentrate.
		✗	■ BePro disinfectant I, ■ BePro disinfectant R.

Device part	Operation	Instructions	
External surfaces	Cleaning	External surfaces shall be regularly cleaned to remove dirt and disinfectant residue.	
		✓	■ BePro disinfectant spray ■ BePro disinfectant wipes ■ BePro disinfectant concentrate ■ BePro disinfectant I
		✗	■ BePro disinfectant R
External surfaces	Cleaning	*For the knob and the keyboard*	
		✓	■ BePro disinfectant R, ■ BePro disinfectant concentrate, ■ BePro disinfectant I
		✗	■ BePro disinfectant spray, ■ BePro disinfectant wipes.

CAUTION: Be aware that all the components shall be cleaned or disinfected, according to the table above, even during the first use of the device.

MAINTENANCE BY THE USER

The user is responsible for daily maintenance of the seethrough^{MAX} device. In case of anomalies, contact the technician for fixing the issue.

Frequency	Operation
Daily	Visual inspection of the integrity of the device and workstation connecting cables.
	Visual inspection of the integrity of the covers and of all the parts of the device.
	Visual inspection of the status of the on-board control panel ("On-board control panel" on page 33).
	Visual inspection of the workstation functionality.
	Visual inspection of the movement fluidity of: ■ Rotation (see "Rotating core" on page 30). ■ Stand up/down (see "Visual inspection of movement fluidity " below). ■ X and Y axes (see "Visual inspection of movement fluidity " below).
When necessary	Call the technicians for periodic maintenance.

DAILY MAINTENANCE

Visual inspection of movement fluidity

Stand up/down

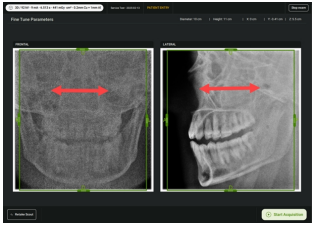
To check the movement upwards and downwards of the stand (see "Stand" on page 29), use the buttons on the on-board control panel (see "On-board control panel" on page 33).

Rotation and X and Y axes

1. Open the software seethrough studio and click on Start Acquisition (refer to seethrough studio Instructions of Use).
2. Select the **Scout** option.

3. Check that the rotation is performed without any problem.

4 When the scout images are shown on the screen, move the center of ROI both in the coronal and in the sagittal planes to force the movements of X and Y axes.



5 Before the exam starts, check that the center of rotation of the rotating core actually moved in the two directions.

7 After the check, cancel the current exam.

Disposal

DISPOSAL RESPONSIBILITY

- Separate the various components according to the materials they are made of.
- Drop the seethrough^{MAX} device with a company that specializes on the recycling of related products.
- Do not abandon the seethrough^{MAX} device in unsecured places.
- Always refer to current/applicable laws and rules in the country of use.

Apply the same instructions to disposal of all used consumable parts.

MATERIALS

The seethrough^{MAX} device contains mainly the following materials to check all with technical documentation:

- Tube-head > dielectric oil, lead, copper, iron, aluminum, glass, tungsten and integrated electronic components.
- Column, rotating arm , extensions and covers> steel, lead, aluminum, polyurethane nonbiodegradable plastic material, collimation sheets, plastic loaded with carbon fibers, painted thermosetting plastic and integrated electronic components.
- Integrated electronic components: vetronite.
- Applied parts > non-biodegradable plastics, iron, aluminum and integrated electronic components.
- Other components: electric motors, cables, electric boards, plastic and rubber.
- Digital X-ray detector > iron, lead, copper, integrated electronic components.

WORKSTATION

Before disposing of the workstation, delete all the patient data from the hard disk. Use specific software for cleaning date from digital supports or physically destroy the hard disk.

Diagnostics

CONTENTS

This section deals with the following subjects:

Messages 92

Messages

DESCRIPTION

Messages are due to device malfunction.

When a message is active, LEDs are yellow. An error message window pops up when the user select a new exam.

Notice: If the image quality of an examination is deemed unsatisfactory and/or there are inaccurancies, issues, or errors in the image reconstruction, please contact the technical service. In such cases, no specific error message is provided. The assessment must be conducted by a qualified professional. Particular attention should be paid to patient positioning, which is especially critical for 2D examinations.

CHECKS AND ACTIONS

Notice: For any error not listed in this table, call technical service.

Message codes depend on the type of error. The warning codes listed below indicate alerts within the workflow that the user can directly address. If an error code that is not included in this list appears, please contact the technical service.

	Device code	Code on the display	Description	Action
FOV_POSITION_NOT_ACHIEVABLE	**1651**	1651	motor error - hardware failure	**The selected exam requires increasing the FOV beyond the maximum allowed value based on the room height. Please select a different exam or, if possible, have the patient sit to avoid collision with the room ceiling.**
RX_TUBE_OVERHEATED	**1701**	101	device duty cycle limit reached	**System overheating detected. Please wait the time reported before proceeding with the exam.**
TUBE_HEAD_OVERHEATED	**1702**	101	device duty cycle limit reached	**System overheating detected. Please wait the time reported before proceeding with the exam.**
RXTUBE_AND_TUBEHEAD_OVERHEATED	**1703**	101	device duty cycle limit reached	**System overheating detected. Please wait the time reported before proceeding with the exam**

	Device code	Code on the display	Description	Action
RX_BUTTON_RELEASED	**1802**	102	operation interrupted	**The X-ray button has been released during the exam.** ■ **If the release occurred accidentally, please evaluate the quality of the exam and, if necessary, reacquire it.**  **CAUTION!In case of exam repetition, evaluate the resultant exposure of the patient.** ■ **If the button has never been released by the user, please contact the technical service.**
RX_BUTTON_PRESSED	**1803**	106	operation interrupted	**The X-ray button has been pressed.** ■ **If it was pressed accidentally, please re-start acquisition process.** ■ **If the button has never been pressed by the user, please contact the technical service.**

	Device code	Code on the display	Description	Action
DOOR_OPEN_DURING_EXAM	**1804**	1804	operation interrupted	**The door has been opened during the exam.** ■ **If the opening occurred accidentally, please close the door, evaluate the quality of the exam and, if necessary, reacquire it.**  **CAUTION!In case of exam repetition, evaluate the resultant exposure of the patient.** ■ **If the door has never been opened by the user or by the patient, please contact the technical service**  **CAUTION! In case of door opening, the exam immediately stops. Ensure safety of all users closing the door.**
EMERGENCY_BUTTON_PRESSED	**1805**	1805	operation interrupted	**The Emergency stop button has been pressed.** ■ **If this occurred accidentally, please turn OFF the device. Wait for 30 seconds, Turn ON the device. Restart the workstation. If the button was pressed during an exam, please also valuate the quality of the exam and, if necessary, reacquire it.**  **CAUTION!In case of exam repetition, evaluate the resultant exposure of the patient.** ■ **If the button has never been pressed by the user, please contact the technical service.**  **CAUTION! In case of actual emergency, ensure the safety of the patient and/or all the users within the area.**

Technical data

CONTENTS

This section deals with the following subjects:

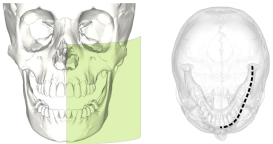
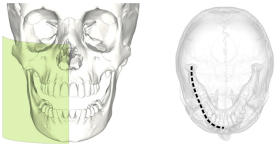
List of available exams 96
Technical data 114
Dosimetry 119
Components, spare parts, consumables 145

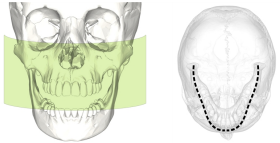
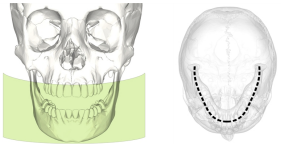
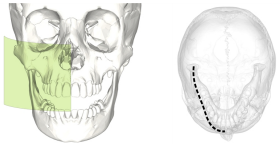
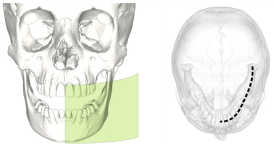
List of available exams

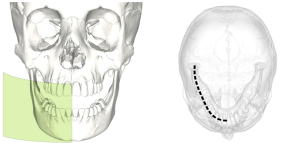
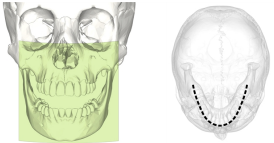
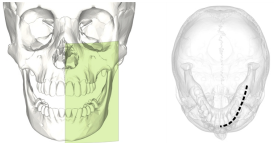
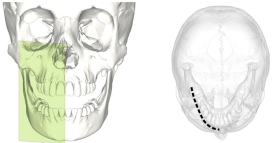
All FOV dimensions in the following tables are reported in centimeters and are based on an ADULT M size patient.

PANORAMIC EXAMS

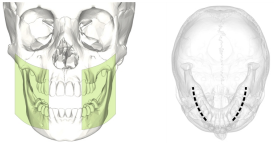
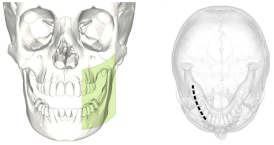
Dental arch

Code	FoV (length x height)	Description	Reference
P1FULL	22x11	Full panoramic	
P2FULL	23x11	Full panoramic ortho	
P1L	12x11	Left panoramic	
P2L	12x11	Left panoramic ortho	
P1R	12x11	Right panoramic	
P2R	12x11	Right panoramic ortho	

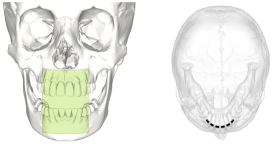
Code	FoV (length x height)	Description	Reference
P1UP	16x8	Upper panoramic	
P2UP	15x8	Upper panoramic ortho	
P1LO	16x7	Lower panoramic	
P2LO	15x7	Lower panoramic ortho	
P1UPL	9x8	Upper left panoramic	
P2UPL	8x8	Upper left panoramic ortho	
P1UPR	9x8	Upper right panoramic	
P2UPR	8x8	Upper right panoramic ortho	
P1LOL	9x7	Lower left panoramic	
P2LOL	8x7	Lower left panoramic ortho	

Code	FoV (length x height)	Description	Reference
P1LOR	9x7	Lower right panoramic	
P2LOR	8x7	Lower right panoramic ortho	
P1NTM	16x11	Panoramic w/o TMJ	
P2NTM	15x11	Panoramic w/o TMJ ortho	
P1NTML	9x11	Left panoramic w/o TMJ	
P2NTML	8x11	Left panoramic w/o TMJ ortho	
P1NTMR	9x11	Right panoramic w/o TMJ	
P2NTMR	8x11	Right panoramic w/o TMJ ortho	

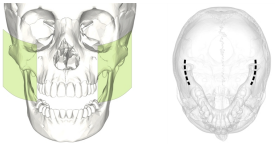
Bitewing

Code	FoV (length x height)	Description	Reference
BWFULL	7x7 + 7x7	Full bitewing	
BWL	7x7	Left bitewing	
BWR	7x7	Right bitewing	

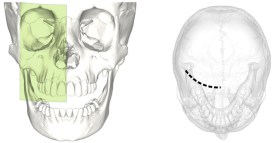
Incisors

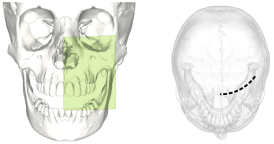
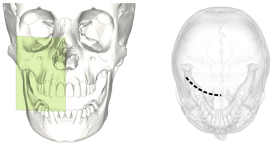
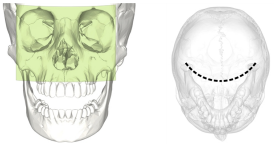
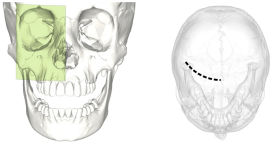
Code	FoV (length x height)	Description	Reference
P3FULL	7x7	Incisors (upper+lower)	
P3UP	7x4	Upper incisors	
P3L0	7x4	Lower incisors	

TMJ

Code	FoV (length x height)	Description	Reference
TMLL1	5x8 + 5x8	LL TMJ 2-view	
TMLL2	5x8 + 5x8	LL TMJ 4-view (open, closed mouth)	

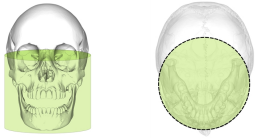
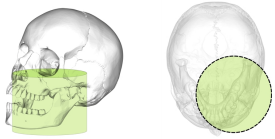
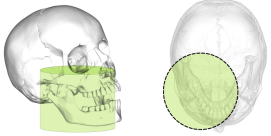
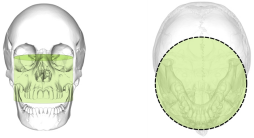
Sinuses

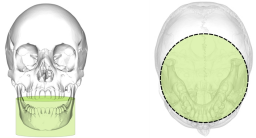
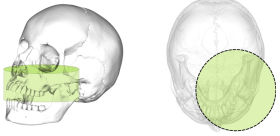
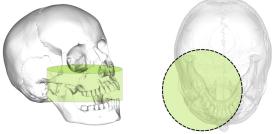
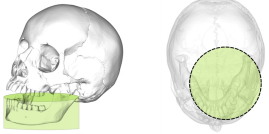
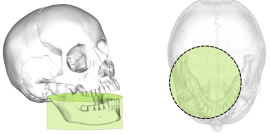
Code	FoV (length x height)	Description	Reference
S1FULL	12x13	AP full sinuses	
S1L	6x13	AP left sinuses	
S1R	6x13	AP right sinuses	
S2MAX	12x7	AP maxillary sinuses	

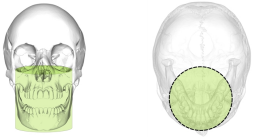
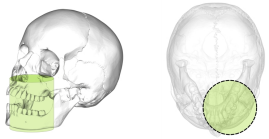
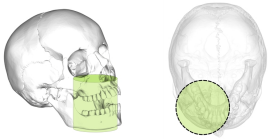
Code	FoV (length x height)	Description	Reference
S2MAXL	6x7	AP left maxillary sinus	
S2MAXR	6x7	AP right maxillary sinus	
S3FR	12x7	AP frontal sinuses	
S3FRL	6x7	AP left frontal sinus	
S3FRR	6x7	AP right frontal sinus	

3D EXAMS

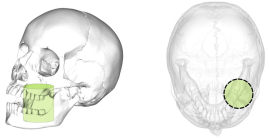
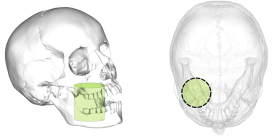
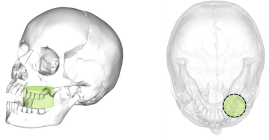
Dental arch

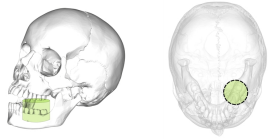
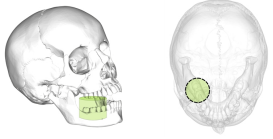
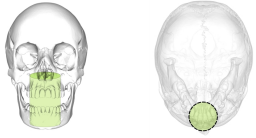
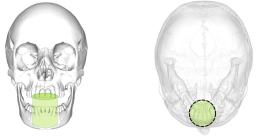
Code	FoV (length x height)	Description	Reference
V1FULL	10x11	Full mouth	
V1L	9x11	Left arch (upper+lower)	
V1R	9x11	Right arch (upper+lower)	
V1UP	10x8	Upper jaw	

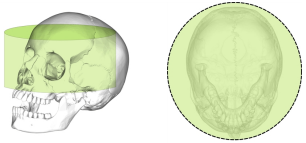
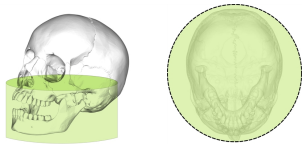
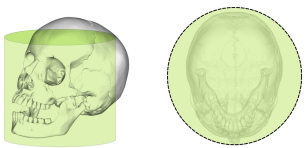
Code	FoV (length x height)	Description	Reference
V1L0	10x6	Lower jaw	
V1UPL	8x8	Upper left jaw	
V1UPR	8x8	Upper right jaw	
V1L0L	8x6	Lower left jaw	
V1L0R	8x6	Lower right jaw	

Code	FoV (length x height)	Description	Reference
V1NTM	9x10	Full mouth w/o TMJ	
V1NTML	8x10	Left arch (upper+lower) w/o TMJ	
V1NTMR	8x10	Right arch (upper+lower) w/o TMJ	

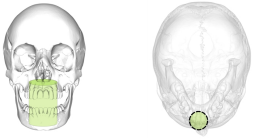
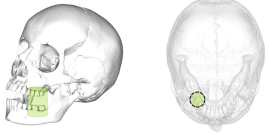
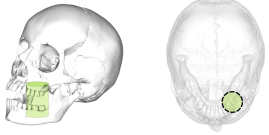
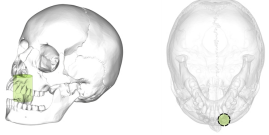
Molars/incisors

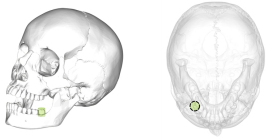
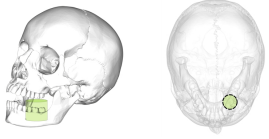
Code	FoV (length x height)	Description	Reference
V2M0L	7x8	Left molars/premolars (upper+lower)	
V2M0R	7x8	Right molars/premolars (upper+lower)	
V2MUPL	7x5	Left upper molars/premolars	
V2MUPR	7x5	Right upper molars/premolars	

Code	FoV (length x height)	Description	Reference
V2MLOL	7x5,5	Left lower molars/premolars	
V2MLOR	7x5,5	Right lower molars/premolars	
V2IN	5x8	Incisors/canine (upper+lower)	
V2INUP	5x5	Upper incisors/canine	
V2INLO	5x5,5	Lower incisors/canine	

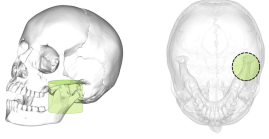
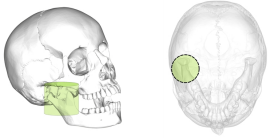
Code	FoV (length x height)	Description	Reference
V3MXUP	17x11	Upper head	
V3MXLO	17x11	Lower head	
V3MXF	17x17	Full head	

Individual teeth

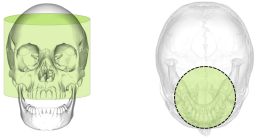
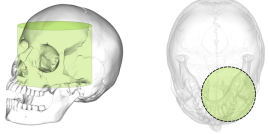
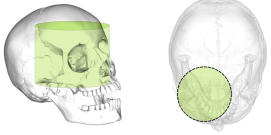
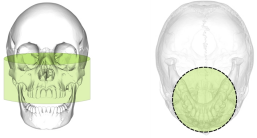
Code	FoV (length x height)	Description	Reference
V4ENDS	3x8	Endo S (upper+lower) incisors, canine, premolars	
V4ENDM	4x8	Endo M (upper+lower) molars	
V4ENDX	5x8	Endo multiple tooth (upper+lower) up to 3+3 teeth	
V4ES1	3x4	Endo S incisors, canine, premolars	

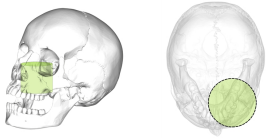
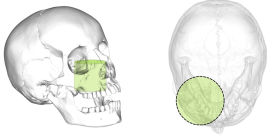
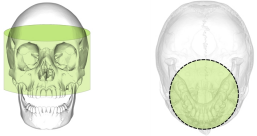
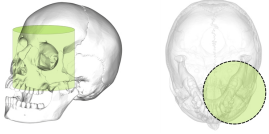
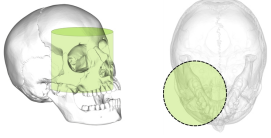
Code	FoV (length x height)	Description	Reference
V4EM1	4x5	Endo M molars	
V4EX3	5x5	Endo multiple tooth up to 3 teeth	

TMJ

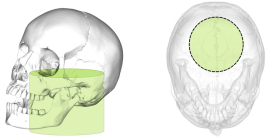
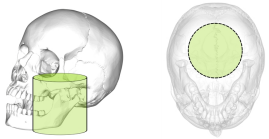
Code	FoV (length x height)	Description	Reference
V5TML	8x11	TMJ left single view	
V5TMR	8x11	TMJ right single view	

Sinuses

Code	FoV (length x height)	Description	Reference
V6SIN	10x11	Full sinunes (maxillary+frontal)	
V6SINL	7,5x11	Left sinuses (maxillary + frontal)	
V6SINR	7,5x11	Right sinuses (maxillary + frontal)	
V6MX	10x8	Maxillary sinuses	

Code	FoV (length x height)	Description	Reference
V6MXL	7,5x8	Left maxillary sinuses	
V6MXR	7,5x8	Right maxillary sinuses	
V6FR	10x7	Frontal sinunes	
V6FRL	7,5x7	Left frontal sinuses	
V6FRR	7,5x7	Right frontal sinuses	

Airways/spine

Code	FoV (length x height)	Description	Reference
V7AW	10x11	Airways view	
V8CV	10x11	Cervical vertebrae	

Technical data

POWER SUPPLY SYSTEM

Characteristic	Unit	Data
Nominal voltage	Vac	100 ÷ 240 ± 10%
Number of phases		Monophase
Absorbed current	A	16 @ 100 Vac - 6.3 @ 240 Vac
Frequency	Hz	50/60
Power	kVA	1.6 kVA
Line resistance	Ω	≤1 @ 100-240

DUTY CYCLE

Worse case scenario

Exam type worst case	-	V3MXF (volume 17x17), 98 kV @ 8 mA
Max thermal load	J	23708.16
Max Load	kV	98 @ 8 mA
Duty cycle* - Time ON (exposure time)	s	30,24
Duty cycle* - Time OFF (waiting time)	s	360

* It is possible to execute a sequence of 12 consecutive exams respecting the time OFF (between each exam with the same parameters) reported in the table. After the completion of this sequence, it is necessary to wait at least 1320 seconds before executing one more exam (not a new sequence of exams). If the user wants to execute another sequence of 12 consecutive exams, it is necessary to wait the complete cooling of the device. In accordance with ANSI/AAMI ES60601-1 the device is classified as long time operation.

Normal use

Movement	-	All movements (stand, rotating core)
Duty cycle* - Time ON (exposure time)	s	30.24
Duty cycle* - Time OFF (waiting time)	s	360

** It is possible to execute a sequence of 12 consecutive exams respecting the time OFF (between each exam with the same parameters) reported in the table. After the completion of this sequence, it is necessary to wait at least 1320 seconds before executing one more exam (not a new sequence of exams). If the user wants to execute another sequence of 12 consecutive exams, it is necessary to wait the complete cooling of the device. In accordance with ANSI/AAMI ES60601-1 the device is classified as long time operation.*

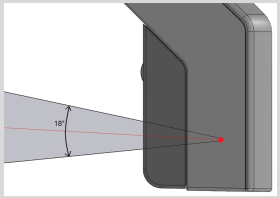
X-RAY TUBE

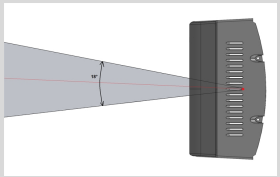
Nominal high tension (HT)	kV	110
Focal spot	mm	0.5
Max filament voltage	V	6.7
Max filament current	A	4.0
Anode material		Tungsten
Anode angle	°	12
Anode head storage	kJ	30
Nominal anode power (@ 0.1 s)	W	1900
Continuous anode power (@ 75 kV, 4mA)	W	300
Manufacturer	-	CEI
Model	-	OPX/105-12

X-RAY TUBE HEAD

Dimensions	mm	240 x 186 x 108
Weight	kg	~8
Maximum HT	kV	105
Maximum anode current	mA	12
Inherent filtration	mmAl eq	2.5
Leakage @ 1m	mGy/h	< 1 (IEC 60601-1-3 p 12.4)
Manufacturer	-	W&H Sterilization Srl
Model	-	■ ZZP.00.045.001 ■ S3730000

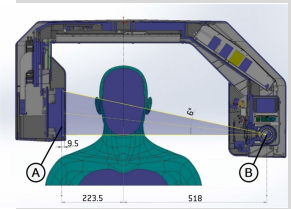
CENTRAL X-RAY BEAM AND ANODE ANGLE





GEOMETRICAL RELATIONSHIP

Focal spot, beam cone, patient position and image-receiving area.



Part	Name
A	Image receiving area
B	Focal spot (X-ray tube head)
C	X axis range
D	Rotation axis

FILTRATION

Inherent filtration	mmAl eq	2.5 @ 70 kVp
Additional fixed filtration	mmAl eq	1.5 @ 70 kVp
Total filtration	mmAl eq	4 @ 70 kVp
Additional filtration	mmAl eq	1 + 0.2 mmCu eq
Filtration patient-detector	mmAl eq	0.3 @ 70 kV

ADDITIONAL FILTRATION

Filter	1 mmAl eq + 0.2 mmCu eq*

*: active in 3D exams

RADIOLOGICAL PARAMETERS

HT inverter frequency	kHz	Variable with load
Ripple	%	< 4
Nominal high tension	kV	60 ÷ 105 ± 5%
Anode current	mA	4 ÷ 10 ± 5%

LASER CHARACTERISTICS

Safety		conformity to IEC 60825:2014
Classification		Class 1M Laser
Wavelength	nm	640
Maximum power output	mW	5

EXAM CHARACTERISTICS

Exam time (max)	sec	14	Panoramic - adults
		14	Panoramic - children
		14	3D - adults
		14	3D - children
		28	3D extended FOV - adults
		28	3D extended FOV - children
Image size	cm	30 x 11	Panoramic - adults
		25 x 9	Panoramic - children
		3 x 4 ÷ 17 x 11	3D
		17 x 17	3D Maximum FOV with stitching

X-RAY DETECTOR - PANO AND CBCT

Note: different X-ray detectors could be mounted on the device. Characteristics are reported below. With each X-ray detector, the same image quality is granted.

		A	B	C
Technology			TFT	
Active area dimensions	mm	155 x 155	159 x 159	153.6 x 153.6
Panoramic image matrix	pixel	1328 x 60 (16 bpp)	100 x 1516	1536 x 100
CBCT image matrix	pixel	1328 x 1308 (16 bpp)	1516 x 1516	1536 x 1536
Nominal pixel dimension	µm	120	105	100
Nominal spatial resolution	pl/mm	4	4.5	4
Grayscale	bits	16	16	16

ENVIRONMENTAL REQUIREMENTS

Working temperature	°C	5 ÷ 40
	°F	41 ÷ 104
Working relative humidity	%	Max. 80 up to 31 °C (88 °F), linearly decreasing to 50 at 40 °C (104 °F)
Storage and transport temperature	°C	-20 ÷ 60
	°F	-4 ÷ 140
Storage and transport relative humidity	%	0 ÷ 90
Atmospheric pressure	hPa	700 - 1060
Maximum temperature achievable by the applied part	°C	42
	°F	107,6

MECHANICAL CHARACTERISTICS

Foot print	mm	1280 x 1520
Weight	kg	190
Max column height	mm	2370
Stand range	mm	800
Rotation range	°	420
Min distance floor -chinrest	mm	1000
Max distance floor -chinrest	mm	1800

Patient LR axis range	mm	80
Patient AP axis range	mm	100
Vertical FOV range	mm	80
Focus-to-detector distance - PANO and CBCT	mm	742
Ideal examination room size	mm	3000 x 2500

Dosimetry

DAP VALUES

Values of Dose per Area Product (DAP) used to evaluate the radiation dose to the patient are reported in the tables below.

A tolerance of 50% must be taken into account.

To measure Air Kerma, the dosimetry probe was placed at the center of the detector area, stuck to the cover. No phantoms were placed in the device and the probe was fully irradiated during the entire duration of the procedure.

RADIOLOGICAL PARAMETERS

The radiological parameters are guaranteed to remain within the permitted range, in compliance with IEC 60601-2-63.

Maximum exposure time	30,24 s
Output linearity	Better than 0.2
Output reproducibility	Below 0.05

PANORAMIC EXPOSURE (2D) - CHILD (CH)

Dental arch

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
P1FULL	Full panoramic	14,0	62	5	28	64	6	36	66	8	51
P1L	Left panoramic	8,0	62	5	16	64	6	20	66	8	29
P1R	Right panoramic	8,0	62	5	16	64	6	20	66	8	29
P1UP	Upper panoramic	11,7	62	5	18	64	6	23	66	8	33
P1LO	Lower panoramic	11,7	62	5	14	64	6	19	66	8	27
P1UPL	Upper left panoramic	6,9	62	5	10	64	6	13	66	8	19
P1UPR	Upper right panoramic	6,9	62	5	10	64	6	13	66	8	19
P1LOL	Lower left panoramic	6,9	62	5	9	64	6	11	66	8	16
P1LOR	Lower right panoramic	6,9	62	5	9	64	6	11	66	8	16
P1NTM	Panoramic w/o TMJ	11,7	62	5	23	64	6	30	66	8	43
P1NTML	Left panoramic w/o TMJ	6,9	62	5	14	64	6	18	66	8	25
P1NTMR	Right panoramic w/o TMJ	6,9	62	5	14	64	6	18	66	8	25
P2FULL	Full panoramic ortho	14,5	62	5	29	64	6	37	66	8	52
P2L	Left panoramic ortho	8,1	62	5	16	64	6	21	66	8	29
P2R	Right panoramic ortho	8,1	62	5	16	64	6	21	66	8	29
P2UP	Upper panoramic ortho	11,9	62	5	18	64	6	23	66	8	33
P2LO	Lower panoramic ortho	11,9	62	5	15	64	6	19	66	8	27
P2UPL	Upper left panoramic ortho	6,8	62	5	10	64	6	13	66	8	19
P2UPR	Upper right panoramic ortho	6,8	62	5	10	64	6	13	66	8	19
P2LOL	Lower left panoramic ortho	6,8	62	5	8	64	6	11	66	8	15
P2LOR	Lower right panoramic ortho	6,8	62	5	8	64	6	11	66	8	15
P2NTM	Panoramic w/o TMJ ortho	11,9	62	5	24	64	6	30	66	8	43
P2NTML	Left panoramic w/o TMJ ortho	6,8	62	5	14	64	6	17	66	8	25
P2NTMR	Right panoramic w/o TMJ ortho	6,8	62	5	14	64	6	17	66	8	25
P3FULL	Incisors (upper+lower)	6,5	68	5	11	70	6	14	72	8	19

P3UP	Upper incisors	6,5	68	5	6	70	6	8	72	8	12
P3LO	Lower incisors	6,5	68	5	6	70	6	8	72	8	12

Bitewing

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
BWFULL	Full bitewing	9,1	62	5	13	64	6	17	66	8	24
BWL	Left bitewing	4,5	62	5	6	64	6	8	66	8	12
BWR	Right bitewing	4,5	62	5	6	64	6	8	66	8	12

TMJ

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
TMLL1	LL TMK 2-view	8,5	66	7	18	68	8	22	70	9	27
TMLL2	LL TMJ 4-view (open, closed mouth)	16,9	66	7	36	68	8	45	70	9	53

Sinuses

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
S1FULL	AP full sinuses	12,0	71	6	36	72	8	50	74	8	62
S1L	AP left sinuses	6,0	71	6	18	72	8	25	74	8	31
S1R	AP right sinuses	6,0	71	6	18	72	8	25	74	8	31
S2MAX	AP maxillary sinuses	12,0	71	6	24	72	8	33	74	8	41
S2MAXL	AP left maxillary sinus	6,0	71	6	12	72	8	17	74	8	21
S2MAXR	AP right maxillary sinus	6,0	71	6	12	72	8	17	74	8	21
S3FR	AP frontal sinuses	12,0	71	6	19	72	8	26	74	8	32
S3FRL	AP left frontal sinus	6,0	71	6	9	72	8	13	74	8	16
S3FRR	AP right frontal sinus	6,0	71	6	9	72	8	13	74	8	16

PANORAMIC EXPOSURE (2D) - ADULT S

Dental arch

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
P1FULL	Full panoramic	14	62	6	40	64	7	50	66	9	69
P1L	Left panoramic	8	62	6	23	64	7	29	66	9	40
P1R	Right panoramic	8	62	6	23	64	7	29	66	9	40
P1UP	Upper panoramic	11,73	62	6	25	64	7	30	66	9	42
P1LO	Lower panoramic	11,73	62	6	21	64	7	25	66	9	35
P1UPL	Upper left panoramic	6,87	62	6	15	64	7	18	66	9	25
P1UPR	Upper right panoramic	6,87	62	6	15	64	7	18	66	9	25
P1LOL	Lower left panoramic	6,87	62	6	12	64	7	15	66	9	21
P1LOR	Lower right panoramic	6,87	62	6	12	64	7	15	66	9	21
P1NTM	Panoramic w/o TMJ	11,73	62	6	34	64	7	42	66	9	59
P1NTML	Left panoramic w/o TMJ	6,87	62	6	20	64	7	25	66	9	35
P1NTMR	Right panoramic w/o TMJ	6,87	62	6	20	64	7	25	66	9	35
P2FULL	Full panoramic ortho	14,5	62	6	42	64	7	51	66	9	72
P2L	Left panoramic ortho	8,09	62	6	23	64	7	29	66	9	40
P2R	Right panoramic ortho	8,09	62	6	23	64	7	29	66	9	40
P2UP	Upper panoramic ortho	11,85	62	6	25	64	7	31	66	9	43
P2LO	Lower panoramic ortho	11,85	62	6	21	64	7	26	66	9	36
P2UPL	Upper left panoramic ortho	6,76	62	6	14	64	7	18	66	9	25
P2UPR	Upper right panoramic ortho	6,76	62	6	14	64	7	18	66	9	25
P2LOL	Lower left panoramic ortho	6,76	62	6	12	64	7	15	66	9	20
P2LOR	Lower right panoramic ortho	6,76	62	6	12	64	7	15	66	9	20
P2NTM	Panoramic w/o TMJ ortho	11,85	62	6	34	64	7	43	66	9	59
P2NTML	Left panoramic w/o TMJ ortho	6,76	62	6	20	64	7	25	66	9	34
P2NTMR	Right panoramic w/o TMJ ortho	6,76	62	6	20	64	7	25	66	9	34
P3FULL	Incisors (upper+lower)	6,53	70	6	14	72	7	17	74	9	23

P3UP	Upper incisors	6,53	70	6	8	72	7	10	74	9	14
P3LO	Lower incisors	6,53	70	6	8	72	7	10	74	9	14

Bitewing

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
BWFULL	Full bitewing	9,07	62	6	16	64	7	19	66	9	27
BWL	Left bitewing	4,53	62	6	8	64	7	10	66	9	13
BWR	Right bitewing	4,53	62	6	8	64	7	10	66	9	13

TMJ

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
TMLL1	LL TMK 2-view	8,47	70	7	21	72	8	25	74	10	34
TMLL2	LL TMJ 4-view (open, closed mouth)	16,94	70	7	41	72	8	50	74	10	67

Sinuses

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
S1FULL	AP full sinuses	12	76	6	49	77	8	68	78	8	82
S1L	AP left sinuses	6	76	6	25	77	8	34	78	8	41
S1R	AP right sinuses	6	76	6	25	77	8	34	78	8	41
S2MAX	AP maxillary sinuses	12	76	6	28	77	8	38	78	8	46
S2MAXL	AP left maxillary sinus	6	76	6	14	77	8	19	78	8	23
S2MAXR	AP right maxillary sinus	6	76	6	14	77	8	19	78	8	23
S3FR	AP frontal sinuses	12	76	6	26	77	8	35	78	8	42
S3FRL	AP left frontal sinus	6	76	6	13	77	8	18	78	8	21
S3FRR	AP right frontal sinus	6	76	6	13	77	8	18	78	8	21

PANORAMIC EXPOSURE (2D) - ADULT M

Dental arch

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
P1FULL	Full panoramic	14	68	7	57	70	9	78	72	11	102
P1L	Left panoramic	8	68	7	33	70	9	45	72	11	59
P1R	Right panoramic	8	68	7	33	70	9	45	72	11	59
P1UP	Upper panoramic	11,73	68	7	35	70	9	48	72	11	62
P1LO	Lower panoramic	11,73	68	7	29	70	9	40	72	11	52
P1UPL	Upper left panoramic	6,87	68	7	20	70	9	28	72	11	37
P1UPR	Upper right panoramic	6,87	68	7	20	70	9	28	72	11	37
P1LOL	Lower left panoramic	6,87	68	7	17	70	9	23	72	11	30
P1LOR	Lower right panoramic	6,87	68	7	17	70	9	23	72	11	30
P1NTM	Panoramic w/o TMJ	11,73	68	7	48	70	9	66	72	11	86
P1NTML	Left panoramic w/o TMJ	6,87	68	7	28	70	9	39	72	11	51
P1NTMR	Right panoramic w/o TMJ	6,87	68	7	28	70	9	39	72	11	51
P2FULL	Full panoramic ortho	14,5	68	7	58	70	9	81	72	11	105
P2L	Left panoramic ortho	8,09	68	7	33	70	9	45	72	11	59
P2R	Right panoramic ortho	8,09	68	7	33	70	9	45	72	11	59
P2UP	Upper panoramic ortho	11,85	68	7	35	70	9	48	72	11	63
P2LO	Lower panoramic ortho	11,85	68	7	29	70	9	40	72	11	52
P2UPL	Upper left panoramic ortho	6,76	68	7	20	70	9	28	72	11	36
P2UPR	Upper right panoramic ortho	6,76	68	7	20	70	9	28	72	11	36
P2LOL	Lower left panoramic ortho	6,76	68	7	17	70	9	23	72	11	30
P2LOR	Lower right panoramic ortho	6,76	68	7	17	70	9	23	72	11	30
P2NTM	Panoramic w/o TMJ ortho	11,85	68	7	48	70	9	67	72	11	87
P2NTML	Left panoramic w/o TMJ ortho	6,76	68	7	28	70	9	38	72	11	50
P2NTMR	Right panoramic w/o TMJ ortho	6,76	68	7	28	70	9	38	72	11	50
P3FULL	Incisors (upper+lower)	6,53	76	7	19	78	9	26	80	11	33

P3UP	Upper incisors	6,53	76	7	11	78	9	15	80	11	20
P3LO	Lower incisors	6,53	76	7	11	78	9	15	80	11	20

Bitewing

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
BWFULL	Full bitewing	9,07	68	7	22	70	9	31	72	11	40
BWL	Left bitewing	4,53	68	7	11	70	9	15	72	11	20
BWR	Right bitewing	4,53	68	7	11	70	9	15	72	11	20

TMJ

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
TMLL1	LL TMK 2-view	8,47	78	9	33	80	11	43	82	12	50
TMLL2	LL TMJ 4-view (open, closed mouth)	16,94	78	9	67	80	11	87	82	12	100

Sinuses

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
S1FULL	AP full sinuses	12	82	9	88	84	11	113	84	11	132
S1L	AP left sinuses	6	82	9	44	84	11	57	84	11	66
S1R	AP right sinuses	6	82	9	44	84	11	57	84	11	66
S2MAX	AP maxillary sinuses	12	82	9	49	84	11	63	84	11	74
S2MAXL	AP left maxillary sinus	6	82	9	25	84	11	32	84	11	37
S2MAXR	AP right maxillary sinus	6	82	9	25	84	11	32	84	11	37
S3FR	AP frontal sinuses	12	82	9	46	84	11	59	84	11	69
S3FRL	AP left frontal sinus	6	82	9	23	84	11	29	84	11	34
S3FRR	AP right frontal sinus	6	82	9	23	84	11	29	84	11	34

PANORAMIC EXPOSURE (2D) - ADULT L

Dental arch

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
P1FULL	Full panoramic	14	72	9	81	73	12	113	78	12	129
P1L	Left panoramic	8	72	9	47	73	12	65	78	12	74
P1R	Right panoramic	8	72	9	47	73	12	65	78	12	74
P1UP	Upper panoramic	11,73	72	9	50	73	12	69	78	12	78
P1LO	Lower panoramic	11,73	72	9	41	73	12	57	78	12	65
P1UPL	Upper left panoramic	6,87	72	9	29	73	12	40	78	12	46
P1UPR	Upper right panoramic	6,87	72	9	29	73	12	40	78	12	46
P1LOL	Lower left panoramic	6,87	72	9	24	73	12	34	78	12	38
P1LOR	Lower right panoramic	6,87	72	9	24	73	12	34	78	12	38
P1NTM	Panoramic w/o TMJ	11,73	72	9	69	73	12	95	78	12	109
P1NTML	Left panoramic w/o TMJ	6,87	72	9	40	73	12	55	78	12	63
P1NTMR	Right panoramic w/o TMJ	6,87	72	9	40	73	12	55	78	12	63
P2FULL	Full panoramic ortho	14,5	72	9	84	73	12	117	78	12	134
P2L	Left panoramic ortho	8,09	72	9	47	73	12	66	78	12	75
P2R	Right panoramic ortho	8,09	72	9	47	73	12	66	78	12	75
P2UP	Upper panoramic ortho	11,85	72	9	50	73	12	69	78	12	79
P2LO	Lower panoramic ortho	11,85	72	9	42	73	12	58	78	12	66
P2UPL	Upper left panoramic ortho	6,76	72	9	29	73	12	40	78	12	45
P2UPR	Upper right panoramic ortho	6,76	72	9	29	73	12	40	78	12	45
P2LOL	Lower left panoramic ortho	6,76	72	9	24	73	12	33	78	12	38
P2LOR	Lower right panoramic ortho	6,76	72	9	24	73	12	33	78	12	38
P2NTM	Panoramic w/o TMJ ortho	11,85	72	9	69	73	12	96	78	12	110
P2NTML	Left panoramic w/o TMJ ortho	6,76	72	9	40	73	12	55	78	12	63
P2NTMR	Right panoramic w/o TMJ ortho	6,76	72	9	40	73	12	55	78	12	63
P3FULL	Incisors (upper+lower)	6,53	78	9	26	79	12	36	84	12	40

P3UP	Upper incisors	6,53	78	9	15	79	12	21	84	12	24
P3LO	Lower incisors	6,53	76	9	15	79	12	21	84	12	24

Bitewing

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
BWFULL	Full bitewing	9,07	72	9	32	73	12	45	78	12	52
BWL	Left bitewing	4,53	72	9	16	73	12	22	78	12	26
BWR	Right bitewing	4,53	72	9	16	73	12	22	78	12	26

TMJ

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
TMLL1	LL TMK 2-view	8,47	79	10	38	81	12	49	85	12	54
TMLL2	LL TMJ 4-view (open, closed mouth)	16,94	79	10	77	81	12	97	85	12	108

Sinuses

EXAM ID	EXAM DESCRIPTION	T exp (s)	LOW DOSE (LD)			NORMAL (NR)			HIGH QUALITY (HQ)		
			kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)	kV	mA	DAP (mGy*cm2)
S1FULL	AP full sinuses	12	84	10	103	86	11	119	86	11	139
S1L	AP left sinuses	6	84	10	51	86	11	59	86	11	69
S1R	AP right sinuses	6	84	10	51	86	11	59	86	11	69
S2MAX	AP maxillary sinuses	12	84	10	57	86	11	66	86	11	78
S2MAXL	AP left maxillary sinus	6	84	10	29	86	11	33	86	11	39
S2MAXR	AP right maxillary sinus	6	84	10	29	86	11	33	86	11	39
S3FR	AP frontal sinuses	12	84	10	53	86	11	62	86	11	72
S3FRL	AP left frontal sinus	6	84	10	27	86	11	31	86	11	36
S3FRR	AP right frontal sinus	6	84	10	27	86	11	31	86	11	36

3D EXPOSURE - CHILD (CH)

Dental arch

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V1FULL	Full mouth	14	9	88	4	4,32	0,495	104	88	4	8,64	0,989	209	84	4	12,02	1,280	270	84	6	15,12	2,451	517	84	8	15,12	3,221	679
V1L	Left arc (upper+lower)	10	9	88	4	2,34	0,268	61	88	4	4,68	0,535	122	84	5	6,51	0,840	192	84	8	8,19	1,745	399	84	8	10,08	2,147	491
V1R	Right arc (upper+lower)	8	9	88	4	2,34	0,268	50	88	4	4,68	0,535	100	84	5	6,51	0,840	157	84	8	8,19	1,745	326	84	8	10,08	2,147	401
V1UP	Upper jaw	8	9	88	4	2,34	0,268	50	88	4	4,68	0,535	100	84	5	6,51	0,840	157	84	8	8,19	1,745	326	84	8	10,08	2,147	401
V1LO	Lower jaw	8	7	88	4	2,34	0,268	40	88	4	4,68	0,535	80	84	5	6,51	0,840	125	84	8	8,19	1,745	260	84	8	10,08	2,147	319
V1UPL	Upper left jaw	8	6	88	4	2,34	0,268	35	88	4	4,68	0,535	69	84	5	6,51	0,840	109	84	8	8,19	1,745	226	84	8	10,08	2,147	278
V1UPR	Upper right jaw	7	7	88	4	2,34	0,268	35	88	4	4,68	0,535	71	84	5	6,51	0,840	111	84	8	8,19	1,745	231	84	8	10,08	2,147	284
V1LOL	Lower left jaw	7	7	88	4	2,34	0,268	35	88	4	4,68	0,535	71	84	5	6,51	0,840	111	84	8	8,19	1,745	231	84	8	10,08	2,147	284
V1LOR	Lower right jaw	7	6	88	4	2,34	0,268	31	88	4	4,68	0,535	62	84	5	6,51	0,840	97	84	8	8,19	1,745	201	84	8	10,08	2,147	247
V1NTMEXT	Full mouth w/o TMJ extended	7	6	88	4	2,34	0,268	31	88	4	4,68	0,535	62	84	5	6,51	0,840	97	84	8	8,19	1,745	201	84	8	10,08	2,147	247
V1NTM	Full mouth w/o TMJ	10	9	88	4	2,34	0,268	61	88	4	4,68	0,535	122	84	5	6,51	0,840	192	84	8	8,19	1,745	399	84	8	10,08	2,147	491
V1NTML	Left arc (upper+lower) w/o TMJ	8	9	88	4	2,34	0,268	50	88	4	4,68	0,535	100	84	5	6,51	0,840	157	84	8	8,19	1,745	326	84	8	10,08	2,147	401
V1NTMR	Right arc (upper+lower) w/o TMJ	7	9	88	4	2,34	0,268	44	88	4	4,68	0,535	89	84	5	6,51	0,840	140	84	8	8,19	1,745	290	84	8	10,08	2,147	357
V2MOL	Left molars/premolars (upper+lower)	7	9	88	4	2,34	0,268	44	88	4	4,68	0,535	89	84	5	6,51	0,840	140	84	8	8,19	1,745	290	84	8	10,08	2,147	357
V2MOR	Right molars/premolars (upper+lower)	6	7	88	4	2,34	0,268	31	88	4	4,68	0,535	62	84	5	6,51	0,840	97	84	8	8,19	1,745	202	84	8	10,08	2,147	248
V2MUPL	Left upper molars/premolars	6	7	88	4	2,34	0,268	31	88	4	4,68	0,535	62	84	5	6,51	0,840	97	84	8	8,19	1,745	202	84	8	10,08	2,147	248
V2MUPR	Right upper molars/premolars	6	4	88	4	2,34	0,268	19	88	4	4,68	0,535	38	84	5	6,51	0,840	60	84	8	8,19	1,745	124	84	8	10,08	2,147	153
V2MLOL	Left lower molars/premolars	6	4	88	4	2,34	0,268	19	88	4	4,68	0,535	38	84	5	6,51	0,840	60	84	8	8,19	1,745	124	84	8	10,08	2,147	153
V2MLOR	Right lower molars/premolars	6	4,5	88	4	2,34	0,268	21	88	4	4,68	0,535	42	84	5	6,51	0,840	66	84	8	8,19	1,745	137	84	8	10,08	2,147	169
V2IN	Incisors/canine (upper+lower)	6	4,5	88	4	2,34	0,268	21	88	4	4,68	0,535	42	84	5	6,51	0,840	66	84	8	8,19	1,745	137	84	8	10,08	2,147	169
V2INUP	Upper incisors/canine	4	7	88	4	2,34	0,268	22	88	4	4,68	0,535	44	84	5	6,51	0,840	69	84	8	8,19	1,745	143	84	8	10,08	2,147	176
V2INLO	Lower incisors/canine	4	4	88	4	2,34	0,268	14	88	4	4,68	0,535	27	84	5	6,51	0,840	42	84	8	8,19	1,745	88	84	8	10,08	2,147	108

Maxillo

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V3MXF	Full head	15	15	88	4	8,64	0,989	220	88	4	17,28	1,979	440	84	5	24,05	3,104	690	84	6	30,24	4,903	1.090	84	6	30,24	4,903	1.090
V3MXUP	Upper head	15	9	88	4	4,32	0,495	110	88	4	8,64	0,989	220	84	5	12,02	1,552	344	84	6	15,12	2,451	544	84	6	15,12	2,451	544
V3MXLO	Lower head	15	9	88	4	4,32	0,495	110	88	4	8,64	0,989	220	84	5	12,02	1,552	344	84	6	15,12	2,451	544	84	6	15,12	2,451	544

Endo/Teeth

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V4ENDS	Endo S upper+lower (incisors, canine, premolars)	3	7	88	4	2,34	0,268	18	88	4	4,68	0,536	35	84	5	6,51	0,841	55	84	8	8,19	1,745	114	84	8	10,08	2,148	141
V4ENDM	Endo M upper+lower (molars)	4	7	88	4	2,34	0,268	22	88	4	4,68	0,536	44	84	5	6,51	0,841	69	84	8	8,19	1,745	143	84	8	10,08	2,148	176
V4ENDX	Endo multiple tooth upper+lower (upto 3+3 tooth)	5	7	88	4	2,34	0,268	26	88	4	4,68	0,536	53	84	5	6,51	0,841	83	84	8	8,19	1,745	172	84	8	10,08	2,148	212
V4ES1	Endo S (incisors, canine, premolars)	3	4	88	4	2,34	0,268	11	88	4	4,68	0,536	22	84	5	6,51	0,841	34	84	8	8,19	1,745	70	84	8	10,08	2,148	86
V4EM1	Endo M (molari)	4	5	88	4	2,34	0,268	16	88	4	4,68	0,536	33	84	5	6,51	0,841	51	84	8	8,19	1,745	107	84	8	10,08	2,148	131
V4EX3	Endo multiple tooth (upto 3 tooth)	5	5	88	4	2,34	0,268	20	88	4	4,68	0,536	39	84	5	6,51	0,841	62	84	8	8,19	1,745	128	84	8	10,08	2,148	158

TMJ

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V5TML	TMJ left single view	6	9	88	4	2,34	0,268	39	88	4	4,68	0,536	78	84	5	6,51	0,841	122	84	8	8,19	1,745	253	84	8	10,08	2,148	312
V5TMR	TMJ right single view	6	9	88	4	2,34	0,268	39	88	4	4,68	0,536	78	84	5	6,51	0,841	122	84	8	8,19	1,745	253	84	8	10,08	2,148	312

Sinuses

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V6SIN	Full sinuses (maxillary+frontal)	9	10	88	4	2,34	0,268	61	88	4	4,68	0,536	123	84	5	6,51	0,841	193	84	8	8,19	1,745	400	84	8	10,08	2,148	492
V6SINL	Left sinuses (maxillary+frontal)	6,5	10	88	4	2,34	0,268	46	88	4	4,68	0,536	92	84	5	6,51	0,841	144	84	8	8,19	1,745	299	84	8	10,08	2,148	369
V6SINR	Right sinuses (maxillary+frontal)	6,5	10	88	4	2,34	0,268	46	88	4	4,68	0,536	92	84	5	6,51	0,841	144	84	8	8,19	1,745	299	84	8	10,08	2,148	369
V6MX	Maxillary sinuses	9	6	88	4	2,34	0,268	39	88	4	4,68	0,536	77	84	5	6,51	0,841	121	84	8	8,19	1,745	251	84	8	10,08	2,148	309
V6MXL	Left maxillary sinus	6,5	6	88	4	2,34	0,268	29	88	4	4,68	0,536	58	84	5	6,51	0,841	91	84	8	8,19	1,745	188	84	8	10,08	2,148	232
V6MXR	Right maxillary sinus	6,5	6	88	4	2,34	0,268	29	88	4	4,68	0,536	58	84	5	6,51	0,841	91	84	8	8,19	1,745	188	84	8	10,08	2,148	232
V6FR	Frontal sinuses	9	5	88	4	2,34	0,268	33	88	4	4,68	0,536	66	84	5	6,51	0,841	103	84	8	8,19	1,745	215	84	8	10,08	2,148	264
V6FRL	Left frontal sinus	6,5	5	88	4	2,34	0,268	25	88	4	4,68	0,536	49	84	5	6,51	0,841	77	84	8	8,19	1,745	161	84	8	10,08	2,148	198
V6FRR	Right frontal sinus	6,5	5	88	4	2,34	0,268	25	88	4	4,68	0,536	49	84	5	6,51	0,841	77	84	8	8,19	1,745	161	84	8	10,08	2,148	198

Airways

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V7AW	Airways view	10	9	88	4	2,34	0,268	61	88	4	4,68	0,536	122	84	5	6,51	0,841	192	84	8	8,19	1,745	399	84	8	10,08	2,148	491

Spine

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V8CV	Cervical vertebrae	10	9	88	4	2,34	0,268	61	88	4	4,68	0,536	122	84	5	6,51	0,841	192	84	8	8,19	1,745	399	84	8	10,08	2,148	491

3D EXPOSURE - ADULT S

Dental arch

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V1FULL	Full mouth	14	11	92	4	4,32	0,557	142	92	4	8,64	1,114	283	88	4	12,02	1,470	374	88	7	15,12	3,259	828	88	8	15,12	3,697	940
V1L	Left arc (upper+lower)	10	11	92	5	2,34	0,360	99	92	5	4,68	0,720	198	88	6	6,51	1,134	312	88	8	8,19	2,003	552	88	8	10,08	2,465	679
V1R	Right arc (upper+lower)	9	11	92	5	2,34	0,360	90	92	5	4,68	0,720	180	88	6	6,51	1,134	284	88	8	8,19	2,003	501	88	8	10,08	2,465	617
V1UP	Upper jaw	9	11	92	5	2,34	0,360	90	92	5	4,68	0,720	180	88	6	6,51	1,134	284	88	8	8,19	2,003	501	88	8	10,08	2,465	617
V1LO	Lower jaw	10	8	92	5	2,34	0,360	74	92	5	4,68	0,720	148	88	6	6,51	1,134	233	88	8	8,19	2,003	411	88	8	10,08	2,465	506
V1UPL	Upper left jaw	10	6	92	5	2,34	0,360	57	92	5	4,68	0,720	114	88	6	6,51	1,134	180	88	8	8,19	2,003	317	88	8	10,08	2,465	390
V1UPR	Upper right jaw	8	8	92	5	2,34	0,360	60	92	5	4,68	0,720	121	88	6	6,51	1,134	190	88	8	8,19	2,003	336	88	8	10,08	2,465	414
V1LOL	Lower left jaw	8	8	92	5	2,34	0,360	60	92	5	4,68	0,720	121	88	6	6,51	1,134	190	88	8	8,19	2,003	336	88	8	10,08	2,465	414
V1LOR	Lower right jaw	8	6	92	5	2,34	0,360	47	92	5	4,68	0,720	93	88	6	6,51	1,134	147	88	8	8,19	2,003	259	88	8	10,08	2,465	319
V1NTMEXT	Full mouth w/o TMJ extended	8	6	92	5	2,34	0,360	47	92	5	4,68	0,720	93	88	6	6,51	1,134	147	88	8	8,19	2,003	259	88	8	10,08	2,465	319
V1NTM	Full mouth w/o TMJ	11	10	92	5	2,34	0,360	98	92	5	4,68	0,720	197	88	6	6,51	1,134	310	88	8	8,19	2,003	548	88	8	10,08	2,465	674
V1NTML	Left arc (upper+lower) w/o TMJ	9	10	92	5	2,34	0,360	82	92	5	4,68	0,720	165	88	6	6,51	1,134	260	88	8	8,19	2,003	459	88	8	10,08	2,465	565
V1NTMR	Right arc (upper+lower) w/o TMJ	8	10	92	5	2,34	0,360	74	92	5	4,68	0,720	148	88	6	6,51	1,134	234	88	8	8,19	2,003	413	88	8	10,08	2,465	508
V2MOL	Left molars/premolars (upper+lower)	8	10	92	5	2,34	0,360	74	92	5	4,68	0,720	148	88	6	6,51	1,134	234	88	8	8,19	2,003	413	88	8	10,08	2,465	508
V2MOR	Right molars/premolars (upper+lower)	7	8	92	5	2,34	0,360	54	92	5	4,68	0,720	107	88	6	6,51	1,134	169	88	8	8,19	2,003	299	88	8	10,08	2,465	368
V2MUPL	Left upper molars/premolars	7	8	92	5	2,34	0,360	54	92	5	4,68	0,720	107	88	6	6,51	1,134	169	88	8	8,19	2,003	299	88	8	10,08	2,465	368
V2MUPR	Right upper molars/premolars	7	5	92	5	2,34	0,360	35	92	5	4,68	0,720	71	88	6	6,51	1,134	111	88	8	8,19	2,003	197	88	8	10,08	2,465	242
V2MLOL	Left lower molars/premolars	7	5	92	5	2,34	0,360	35	92	5	4,68	0,720	71	88	6	6,51	1,134	111	88	8	8,19	2,003	197	88	8	10,08	2,465	242
V2MLOR	Right lower molars/premolars	7	5,5	92	5	2,34	0,360	38	92	5	4,68	0,720	77	88	6	6,51	1,134	121	88	8	8,19	2,003	213	88	8	10,08	2,465	263
V2IN	Incisors/canine (upper+lower)	7	5,5	92	5	2,34	0,360	38	92	5	4,68	0,720	77	88	6	6,51	1,134	121	88	8	8,19	2,003	213	88	8	10,08	2,465	263
V2INUP	Upper incisors/canine	5	8	92	5	2,34	0,360	40	92	5	4,68	0,720	80	88	6	6,51	1,134	126	88	8	8,19	2,003	223	88	8	10,08	2,465	275
V2INLO	Lower incisors/canine	5	5	92	5	2,34	0,360	26	92	5	4,68	0,720	53	88	6	6,51	1,134	83	88	8	8,19	2,003	147	88	8	10,08	2,465	181

Maxillo

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V3MXF	Full head	17	17	92	4	8,64	1,114	327	92	4	17,28	2,228	655	88	4	24,05	2,939	864	88	5	30,24	4,746	1.395	88	5	30,24	4,746	1.395
V3MXUP	Upper head	17	11	92	4	4,32	0,557	164	92	4	8,64	1,114	327	88	4	12,02	1,470	431	88	5	15,12	2,373	697	88	5	15,12	2,373	697
V3MXLO	Lower head	17	11	92	4	4,32	0,557	164	92	4	8,64	1,114	327	88	4	12,02	1,470	431	88	5	15,12	2,373	697	88	5	15,12	2,373	697

Endo/Teeth

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V4ENDS	Endo S upper+lower (incisors, canine, premolars)	3	8	92	5	2,34	0,360	27	92	5	4,68	0,720	53	88	6	6,51	1,134	84	88	8	8,19	2,003	148	88	8	10,08	2,465	182
V4ENDM	Endo M upper+lower (molars)	4	8	92	5	2,34	0,360	33	92	5	4,68	0,720	67	88	6	6,51	1,134	105	88	8	8,19	2,003	186	88	8	10,08	2,465	229
V4ENDX	Endo multiple tooth upper+lower (upto 3+3 tooth)	5	8	92	5	2,34	0,360	40	92	5	4,68	0,720	80	88	6	6,51	1,134	126	88	8	8,19	2,003	223	88	8	10,08	2,465	275
V4ES1	Endo S (incisors, canine, premolars)	3	4	92	5	2,34	0,360	14	92	5	4,68	0,720	29	88	6	6,51	1,134	46	88	8	8,19	2,003	81	88	8	10,08	2,465	99
V4EM1	Endo M (molari)	4	5	92	5	2,34	0,360	22	92	5	4,68	0,720	44	88	6	6,51	1,134	69	88	8	8,19	2,003	122	88	8	10,08	2,465	151
V4EX3	Endo multiple tooth (upto 3 tooth)	5	5	92	5	2,34	0,360	26	92	5	4,68	0,720	53	88	6	6,51	1,134	83	88	8	8,19	2,003	147	88	8	10,08	2,465	181

TMJ

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V5TML	TMJ left single view	8	11	92	5	2,34	0,360	81	92	5	4,68	0,720	162	88	6	6,51	1,134	255	88	8	8,19	2,003	451	88	8	10,08	2,465	555
V5TMR	TMJ right single view	8	11	92	5	2,34	0,360	81	92	5	4,68	0,720	162	88	6	6,51	1,134	255	88	8	8,19	2,003	451	88	8	10,08	2,465	555

Sinuses

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V6SIN	Full sinuses (maxillary+frontal)	10	11	92	5	2,34	0,360	99	92	5	4,68	0,720	198	88	6	6,51	1,134	312	88	8	8,19	2,003	552	88	8	10,08	2,465	679
V6SINL	Left sinuses (maxillary+frontal)	7,5	11	92	5	2,34	0,360	77	92	5	4,68	0,720	153	88	6	6,51	1,134	241	88	8	8,19	2,003	426	88	8	10,08	2,465	524
V6SINR	Right sinuses (maxillary+frontal)	7,5	11	92	5	2,34	0,360	77	92	5	4,68	0,720	153	88	6	6,51	1,134	241	88	8	8,19	2,003	426	88	8	10,08	2,465	524
V6MX	Maxillary sinuses	10	8	92	5	2,34	0,360	74	92	5	4,68	0,720	148	88	6	6,51	1,134	233	88	8	8,19	2,003	411	88	8	10,08	2,465	506
V6MXL	Left maxillary sinus	7,5	8	92	5	2,34	0,360	57	92	5	4,68	0,720	114	88	6	6,51	1,134	180	88	8	8,19	2,003	318	88	8	10,08	2,465	391
V6MXR	Right maxillary sinus	7,5	8	92	5	2,34	0,360	57	92	5	4,68	0,720	114	88	6	6,51	1,134	180	88	8	8,19	2,003	318	88	8	10,08	2,465	391
V6FR	Frontal sinuses	10	7	92	5	2,34	0,360	66	92	5	4,68	0,720	131	88	6	6,51	1,134	206	88	8	8,19	2,003	364	88	8	10,08	2,465	448
V6FRL	Left frontal sinus	7,5	7	92	5	2,34	0,360	51	92	5	4,68	0,720	101	88	6	6,51	1,134	159	88	8	8,19	2,003	281	88	8	10,08	2,465	346
V6FRR	Right frontal sinus	7,5	7	92	5	2,34	0,360	51	92	5	4,68	0,720	101	88	6	6,51	1,134	159	88	8	8,19	2,003	281	88	8	10,08	2,465	346

Airways

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V7AW	Airways view	10	11	92	5	2,34	0,360	99	92	5	4,68	0,720	198	88	6	6,51	1,134	312	88	8	8,19	2,003	552	88	8	10,08	2,465	679

Spine

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V8CV	Cervical vertebrae	10	11	92	5	2,34	0,360	99	92	5	4,68	0,720	198	88	6	6,51	1,134	312	88	8	8,19	2,003	552	88	8	10,08	2,465	679

3D EXPOSURE - ADULT M

Dental arch

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V1FULL	Full mouth	14	11	98	4	4,32	0,657	167	98	4	8,64	1,313	334	92	6	12,02	2,371	603	92	7	15,12	3,700	940	92	8	15,12	4,196	1.067
V1L	Left arc (upper+lower)	10	11	98	6	2,34	0,490	135	98	6	4,68	0,979	270	92	7	6,51	1,469	405	92	8	8,19	2,273	626	92	8	10,08	2,797	771
V1R	Right arc (upper+lower)	9	11	98	6	2,34	0,490	123	98	6	4,68	0,979	245	92	7	6,51	1,469	368	92	8	8,19	2,273	569	92	8	10,08	2,797	701
V1UP	Upper jaw	9	11	98	6	2,34	0,490	123	98	6	4,68	0,979	245	92	7	6,51	1,469	368	92	8	8,19	2,273	569	92	8	10,08	2,797	701
V1LO	Lower jaw	10	8	98	6	2,34	0,490	101	98	6	4,68	0,979	201	92	7	6,51	1,469	302	92	8	8,19	2,273	467	92	8	10,08	2,797	575
V1UPL	Upper left jaw	10	6	98	6	2,34	0,490	78	98	6	4,68	0,979	155	92	7	6,51	1,469	233	92	8	8,19	2,273	360	92	8	10,08	2,797	443
V1UPR	Upper right jaw	8	8	98	6	2,34	0,490	82	98	6	4,68	0,979	164	92	7	6,51	1,469	247	92	8	8,19	2,273	382	92	8	10,08	2,797	470
V1LOL	Lower left jaw	8	8	98	6	2,34	0,490	82	98	6	4,68	0,979	164	92	7	6,51	1,469	247	92	8	8,19	2,273	382	92	8	10,08	2,797	470
V1LOR	Lower right jaw	8	6	98	6	2,34	0,490	63	98	6	4,68	0,979	127	92	7	6,51	1,469	190	92	8	8,19	2,273	294	92	8	10,08	2,797	362
V1NTMEXT	Full mouth w/o TMJ extended	8	6	98	6	2,34	0,490	63	98	6	4,68	0,979	127	92	7	6,51	1,469	190	92	8	8,19	2,273	294	92	8	10,08	2,797	362
V1NTM	Full mouth w/o TMJ	11	10	98	6	2,34	0,490	134	98	6	4,68	0,979	268	92	7	6,51	1,469	402	92	8	8,19	2,273	622	92	8	10,08	2,797	765
V1NTML	Left arc (upper+lower) w/o TMJ	9	10	98	6	2,34	0,490	112	98	6	4,68	0,979	224	92	7	6,51	1,469	337	92	8	8,19	2,273	521	92	8	10,08	2,797	641
V1NTMR	Right arc (upper+lower) w/o TMJ	8	10	98	6	2,34	0,490	101	98	6	4,68	0,979	202	92	7	6,51	1,469	303	92	8	8,19	2,273	468	92	8	10,08	2,797	576
V2MOL	Left molars/premolars (upper+lower)	8	10	98	6	2,34	0,490	101	98	6	4,68	0,979	202	92	7	6,51	1,469	303	92	8	8,19	2,273	468	92	8	10,08	2,797	576
V2MOR	Right molars/premolars (upper+lower)	7	8	98	6	2,34	0,490	73	98	6	4,68	0,979	146	92	7	6,51	1,469	219	92	8	8,19	2,273	339	92	8	10,08	2,797	417
V2MUPL	Left upper molars/premolars	7	8	98	6	2,34	0,490	73	98	6	4,68	0,979	146	92	7	6,51	1,469	219	92	8	8,19	2,273	339	92	8	10,08	2,797	417
V2MUPR	Right upper molars/premolars	7	5	98	6	2,34	0,490	48	98	6	4,68	0,979	96	92	7	6,51	1,469	144	92	8	8,19	2,273	223	92	8	10,08	2,797	275
V2MLOL	Left lower molars/premolars	7	5	98	6	2,34	0,490	48	98	6	4,68	0,979	96	92	7	6,51	1,469	144	92	8	8,19	2,273	223	92	8	10,08	2,797	275
V2MLOR	Right lower molars/premolars	7	5,5	98	6	2,34	0,490	52	98	6	4,68	0,979	104	92	7	6,51	1,469	157	92	8	8,19	2,273	242	92	8	10,08	2,797	298
V2IN	Incisors/canine (upper+lower)	7	5,5	98	6	2,34	0,490	52	98	6	4,68	0,979	104	92	7	6,51	1,469	157	92	8	8,19	2,273	242	92	8	10,08	2,797	298
V2INUP	Upper incisors/canine	5	8	98	6	2,34	0,490	55	98	6	4,68	0,979	109	92	7	6,51	1,469	164	92	8	8,19	2,273	253	92	8	10,08	2,797	312
V2INLO	Lower incisors/canine	5	5	98	6	2,34	0,490	36	98	6	4,68	0,979	72	92	7	6,51	1,469	108	92	8	8,19	2,273	167	92	8	10,08	2,797	205

Maxillo

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V3MXF	Full head	17	17	98	4	8,64	1,313	386	98	4	17,28	2,626	772	92	4	24,05	3,329	978	92	5	30,24	5,421	1.593	92	5	30,24	5,421	1.593
V3MXUP	Upper head	17	11	98	4	4,32	0,657	193	98	4	8,64	1,313	385	92	4	12,02	1,664	489	92	5	15,12	2,710	796	92	5	15,12	2,710	796
V3MXLO	Lower head	17	11	98	4	4,32	0,657	193	98	4	8,64	1,313	385	92	4	12,02	1,664	489	92	5	15,12	2,710	796	92	5	15,12	2,710	796

Endo/Teeth

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V4ENDS	Endo S upper+lower (incisors, canine, premolars)	3	8	98	6	2,34	0,490	36	98	6	4,68	0,979	72	92	7	6,51	1,469	109	92	8	8,19	2,273	168	92	8	10,08	2,797	207
V4ENDM	Endo M upper+lower (molars)	4	8	98	6	2,34	0,490	45	98	6	4,68	0,979	91	92	7	6,51	1,469	136	92	8	8,19	2,273	211	92	8	10,08	2,797	259
V4ENDX	Endo multiple tooth upper+lower (upto 3+3 tooth)	5	8	98	6	2,34	0,490	55	98	6	4,68	0,979	109	92	7	6,51	1,469	164	92	8	8,19	2,273	253	92	8	10,08	2,797	312
V4ES1	Endo S (incisors, canine, premolars)	3	4	98	6	2,34	0,490	20	98	6	4,68	0,979	39	92	7	6,51	1,469	59	92	8	8,19	2,273	92	92	8	10,08	2,797	113
V4EM1	Endo M (molari)	4	5	98	6	2,34	0,490	30	98	6	4,68	0,979	60	92	7	6,51	1,469	90	92	8	8,19	2,273	139	92	8	10,08	2,797	171
V4EX3	Endo multiple tooth (upto 3 tooth)	5	5	98	6	2,34	0,490	36	98	6	4,68	0,979	72	92	7	6,51	1,469	108	92	8	8,19	2,273	167	92	8	10,08	2,797	205

TMJ

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V5TML	TMJ left single view	8	11	98	6	2,34	0,490	110	98	6	4,68	0,979	221	92	7	6,51	1,469	331	92	8	8,19	2,273	512	92	8	10,08	2,797	630
V5TMR	TMJ right single view	8	11	98	6	2,34	0,490	110	98	6	4,68	0,979	221	92	7	6,51	1,469	331	92	8	8,19	2,273	512	92	8	10,08	2,797	630

Sinuses

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V6SIN	Full sinuses (maxillary+frontal)	10	11	98	6	2,34	0,490	135	98	6	4,68	0,979	270	92	7	6,51	1,469	405	92	8	8,19	2,273	626	92	8	10,08	2,797	771
V6SINL	Left sinuses (maxillary+frontal)	7,5	11	98	6	2,34	0,490	104	98	6	4,68	0,979	208	92	7	6,51	1,469	313	92	8	8,19	2,273	484	92	8	10,08	2,797	595
V6SINR	Right sinuses (maxillary+frontal)	7,5	11	98	6	2,34	0,490	104	98	6	4,68	0,979	208	92	7	6,51	1,469	313	92	8	8,19	2,273	484	92	8	10,08	2,797	595
V6MX	Maxillary sinuses	10	8	98	6	2,34	0,490	101	98	6	4,68	0,979	201	92	7	6,51	1,469	302	92	8	8,19	2,273	467	92	8	10,08	2,797	575
V6MXL	Left maxillary sinus	7,5	8	98	6	2,34	0,490	78	98	6	4,68	0,979	155	92	7	6,51	1,469	233	92	8	8,19	2,273	360	92	8	10,08	2,797	444
V6MXR	Right maxillary sinus	7,5	8	98	6	2,34	0,490	78	98	6	4,68	0,979	155	92	7	6,51	1,469	233	92	8	8,19	2,273	360	92	8	10,08	2,797	444
V6FR	Frontal sinuses	10	7	98	6	2,34	0,490	89	98	6	4,68	0,979	178	92	7	6,51	1,469	267	92	8	8,19	2,273	413	92	8	10,08	2,797	509
V6FRL	Left frontal sinus	7,5	7	98	6	2,34	0,490	69	98	6	4,68	0,979	138	92	7	6,51	1,469	206	92	8	8,19	2,273	319	92	8	10,08	2,797	393
V6FRR	Right frontal sinus	7,5	7	98	6	2,34	0,490	69	98	6	4,68	0,979	138	92	7	6,51	1,469	206	92	8	8,19	2,273	319	92	8	10,08	2,797	393

Airways

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V7AW	Airways view	10	11	98	6	2,34	0,490	135	98	6	4,68	0,979	270	92	7	6,51	1,469	405	92	8	8,19	2,273	626	92	8	10,08	2,797	771

Spine

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V8CV	Cervical vertebrae	10	11	98	6	2,34	0,490	135	98	6	4,68	0,979	270	92	7	6,51	1,469	405	92	8	8,19	2,273	626	92	8	10,08	2,797	771

3D EXPOSURE - ADULT L

Dental arch

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V1FULL	Full mouth	14	11	105	4	4,32	0,773	196	105	4	8,64	1,545	393	98	6	12,02	2,820	717	98	7	15,12	4,393	1.117	98	9	15,12	5,553	1.411
V1L	Left arc (upper+lower)	10	11	105	5	2,34	0,509	140	105	5	4,68	1,019	281	98	7	6,51	1,733	477	98	8	8,19	2,698	743	98	9	10,08	3,702	1.020
V1R	Right arc (upper+lower)	9	11	105	5	2,34	0,509	128	105	5	4,68	1,019	255	98	7	6,51	1,733	434	98	8	8,19	2,698	676	98	9	10,08	3,702	927
V1UP	Upper jaw	9	11	105	5	2,34	0,509	128	105	5	4,68	1,019	255	98	7	6,51	1,733	434	98	8	8,19	2,698	676	98	9	10,08	3,702	927
V1LO	Lower jaw	10	8	105	5	2,34	0,509	105	105	5	4,68	1,019	209	98	7	6,51	1,733	356	98	8	8,19	2,698	554	98	9	10,08	3,702	760
V1UPL	Upper left jaw	10	6	105	5	2,34	0,509	81	105	5	4,68	1,019	161	98	7	6,51	1,733	275	98	8	8,19	2,698	427	98	9	10,08	3,702	586
V1UPR	Upper right jaw	8	8	105	5	2,34	0,509	86	105	5	4,68	1,019	171	98	7	6,51	1,733	291	98	8	8,19	2,698	453	98	9	10,08	3,702	622
V1LOL	Lower left jaw	8	8	105	5	2,34	0,509	86	105	5	4,68	1,019	171	98	7	6,51	1,733	291	98	8	8,19	2,698	453	98	9	10,08	3,702	622
V1LOR	Lower right jaw	8	6	105	5	2,34	0,509	66	105	5	4,68	1,019	132	98	7	6,51	1,733	224	98	8	8,19	2,698	349	98	9	10,08	3,702	480
V1NTMEXT	Full mouth w/o TMJ extended	8	6	105	5	2,34	0,509	66	105	5	4,68	1,019	132	98	7	6,51	1,733	224	98	8	8,19	2,698	349	98	9	10,08	3,702	480
V1NTM	Full mouth w/o TMJ	11	10	105	5	2,34	0,509	139	105	5	4,68	1,019	279	98	7	6,51	1,733	474	98	8	8,19	2,698	738	98	9	10,08	3,702	1.012
V1NTML	Left arc (upper+lower) w/o TMJ	9	10	105	5	2,34	0,509	117	105	5	4,68	1,019	233	98	7	6,51	1,733	397	98	8	8,19	2,698	618	98	9	10,08	3,702	848
V1NTMR	Right arc (upper+lower) w/o TMJ	8	10	105	5	2,34	0,509	105	105	5	4,68	1,019	210	98	7	6,51	1,733	357	98	8	8,19	2,698	556	98	9	10,08	3,702	763
V2MOL	Left molars/premolars (upper+lower)	8	10	105	5	2,34	0,509	105	105	5	4,68	1,019	210	98	7	6,51	1,733	357	98	8	8,19	2,698	556	98	9	10,08	3,702	763
V2MOR	Right molars/premolars (upper+lower)	7	8	105	5	2,34	0,509	76	105	5	4,68	1,019	152	98	7	6,51	1,733	259	98	8	8,19	2,698	403	98	9	10,08	3,702	552
V2MUPL	Left upper molars/premolars	7	8	105	5	2,34	0,509	76	105	5	4,68	1,019	152	98	7	6,51	1,733	259	98	8	8,19	2,698	403	98	9	10,08	3,702	552
V2MUPR	Right upper molars/premolars	7	5	105	5	2,34	0,509	50	105	5	4,68	1,019	100	98	7	6,51	1,733	170	98	8	8,19	2,698	265	98	9	10,08	3,702	364
V2MLOL	Left lower molars/premolars	7	5	105	5	2,34	0,509	50	105	5	4,68	1,019	100	98	7	6,51	1,733	170	98	8	8,19	2,698	265	98	9	10,08	3,702	364
V2MLOR	Right lower molars/premolars	7	5,5	105	5	2,34	0,509	54	105	5	4,68	1,019	109	98	7	6,51	1,733	185	98	8	8,19	2,698	287	98	9	10,08	3,702	394
V2IN	Incisors/canine (upper+lower)	7	5,5	105	5	2,34	0,509	54	105	5	4,68	1,019	109	98	7	6,51	1,733	185	98	8	8,19	2,698	287	98	9	10,08	3,702	394
V2INUP	Upper incisors/canine	5	8	105	5	2,34	0,509	57	105	5	4,68	1,019	114	98	7	6,51	1,733	193	98	8	8,19	2,698	301	98	9	10,08	3,702	413
V2INLO	Lower incisors/canine	5	5	105	5	2,34	0,509	37	105	5	4,68	1,019	75	98	7	6,51	1,733	127	98	8	8,19	2,698	198	98	9	10,08	3,702	272

Maxillo

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V3MXF	Full head	17	17	105	4	8,64	1,545	454	105	4	17,28	3,091	909	98	5	24,05	4,816	1.416	98	5	30,24	6,502	1.911	98	5	30,24	6,502	1.911
V3MXUP	Upper head	17	11	105	4	4,32	0,773	227	105	4	8,64	1,545	454	98	5	12,02	2,408	707	98	5	15,12	3,251	954	98	5	15,12	3,251	954
V3MXLO	Lower head	17	11	105	4	4,32	0,773	227	105	4	8,64	1,545	454	98	5	12,02	2,408	707	98	5	15,12	3,251	954	98	5	15,12	3,251	954

Endo/Teeth

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V4ENDS	Endo S upper+lower (incisors, canine, premolars)	3	8	105	5	2,34	0,509	38	105	5	4,68	1,019	75	98	7	6,51	1,733	128	98	8	8,19	2,698	200	98	9	10,08	3,702	274
V4ENDM	Endo M upper+lower (molars)	4	8	105	5	2,34	0,509	47	105	5	4,68	1,019	94	98	7	6,51	1,733	161	98	8	8,19	2,698	250	98	9	10,08	3,702	343
V4ENDX	Endo multiple tooth upper+lower (upto 3+3 tooth)	5	8	105	5	2,34	0,509	57	105	5	4,68	1,019	114	98	7	6,51	1,733	193	98	8	8,19	2,698	301	98	9	10,08	3,702	413
V4ES1	Endo S (incisors, canine, premolars)	3	4	105	5	2,34	0,509	21	105	5	4,68	1,019	41	98	7	6,51	1,733	70	98	8	8,19	2,698	109	98	9	10,08	3,702	149
V4EM1	Endo M (molari)	4	5	105	5	2,34	0,509	31	105	5	4,68	1,019	62	98	7	6,51	1,733	106	98	8	8,19	2,698	165	98	9	10,08	3,702	226
V4EX3	Endo multiple tooth (upto 3 tooth)	5	5	105	5	2,34	0,509	37	105	5	4,68	1,019	75	98	7	6,51	1,733	127	98	8	8,19	2,698	198	98	9	10,08	3,702	272

TMJ

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V5TML	TMJ left single view	8	11	105	5	2,34	0,509	115	105	5	4,68	1,019	230	98	7	6,51	1,733	390	98	8	8,19	2,698	608	98	9	10,08	3,702	834
V5TMR	TMJ right single view	8	11	105	5	2,34	0,509	115	105	5	4,68	1,019	230	98	7	6,51	1,733	390	98	8	8,19	2,698	608	98	9	10,08	3,702	834

Sinuses

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V6SIN	Full sinuses (maxillary+frontal)	10	11	105	5	2,34	0,509	140	105	5	4,68	1,019	281	98	7	6,51	1,733	477	98	8	8,19	2,698	743	98	9	10,08	3,702	1.020
V6SINL	Left sinuses (maxillary+frontal)	7,5	11	105	5	2,34	0,509	108	105	5	4,68	1,019	217	98	7	6,51	1,733	369	98	8	8,19	2,698	574	98	9	10,08	3,702	788
V6SINR	Right sinuses (maxillary+frontal)	7,5	11	105	5	2,34	0,509	108	105	5	4,68	1,019	217	98	7	6,51	1,733	369	98	8	8,19	2,698	574	98	9	10,08	3,702	788
V6MX	Maxillary sinuses	10	8	105	5	2,34	0,509	105	105	5	4,68	1,019	209	98	7	6,51	1,733	356	98	8	8,19	2,698	554	98	9	10,08	3,702	760
V6MXL	Left maxillary sinus	7,5	8	105	5	2,34	0,509	81	105	5	4,68	1,019	162	98	7	6,51	1,733	275	98	8	8,19	2,698	428	98	9	10,08	3,702	587
V6MXR	Right maxillary sinus	7,5	8	105	5	2,34	0,509	81	105	5	4,68	1,019	162	98	7	6,51	1,733	275	98	8	8,19	2,698	428	98	9	10,08	3,702	587
V6FR	Frontal sinuses	10	7	105	5	2,34	0,509	93	105	5	4,68	1,019	185	98	7	6,51	1,733	315	98	8	8,19	2,698	491	98	9	10,08	3,702	673
V6FRL	Left frontal sinus	7,5	7	105	5	2,34	0,509	72	105	5	4,68	1,019	143	98	7	6,51	1,733	243	98	8	8,19	2,698	379	98	9	10,08	3,702	520
V6FRR	Right frontal sinus	7,5	7	105	5	2,34	0,509	72	105	5	4,68	1,019	143	98	7	6,51	1,733	243	98	8	8,19	2,698	379	98	9	10,08	3,702	520

Airways

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V7AW	Airways view	10	11	105	5	2,34	0,509	140	105	5	4,68	1,019	281	98	7	6,51	1,733	477	98	8	8,19	2,698	743	98	9	10,08	3,702	1.020

Spine

EXAM ID	EXAM DESCRIPTION	D FoV	H FoV	LD + LOW DEFINITION (LL)					LOW DOSE (LD)					NORMAL (NR)					HIGH QUALITY (HQ)					HQ + HIGH DEFINITION (HD)				
				kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP	kV	mA	T Exp (s)	Air Kerma	DAP
				base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2	base	base	total	mGy	mGy*cm2
V8CV	Cervical vertebrae	10	11	105	5	2,34	0,509	140	105	5	4,68	1,019	281	98	7	6,51	1,733	477	98	8	8,19	2,698	743	98	9	10,08	3,702	1.020

EXAM FILTRATION

Exam type	Inherent filtration	Fixed filtration	Additional filtration	Total filtration
Panoramic exposure (2D)	**2.5 mmAl**	**1.5 mmAl**	**-**	**4 mmAl**
3D exposure	**2.5 mmAl**	**1.5 mmAl**	**1 mmAl + 0.2 Cu**	**5 mmAl + 0.2 mmCu**

METHOD FOR CALCULATING DAP

The total DAP for a 2D or a 3D exam is computed as the product of the irradiated area in cm2 and the air kerma, both measured on the sensor plane:

$$DAP = AirKerma * XrayArea_{cm2}$$

The value of the Air Kerma at sensor level is measured with a dosimetry probe, placed at the center of the detector area, stuck to the cover, with collimators wide open.

Components, spare parts, consumables

LIST OF COMPONENTS AND SPARE PARTS
seethrough^{MAX}

Picture	Part	Part number
	Bite block (10 pcs)	19740018
	Edentulous/TMJ support	19740021

Picture	Part	Part number
	Chinrest	19740019
	Temple support- right	19740022
	Temple support - left	19740023

Picture	Part	Part number
	Temple support pad (2 pcs)	19740024
	Mobile X-ray command (chord + command – no wall holder)	**X056036X**

Authorized W&H service partners

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In memory of Simona, whose work and dedication were essential to the development of this product.

Thanks Simona

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XRE-100
Instructions for Use
ENG
Rev02
09/02/2026
Subject to changes

Type: XRE-100

Valid edition of the Instructions for Use: Rev02 of 09/02/2026

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