

Cone Beam 3D Imaging  
**NewTom**  
what's next



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# NewTom GO COMPLETE.VISION

COMPLETE AND VERSATILE 2D/3D IMAGING



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## GO 2D/3D COMPLETE.VISION

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THE 2D/3D  
IMAGING DEVICE  
THAT EXPANDS  
DIAGNOSTIC  
POTENTIAL. THE  
IDEAL COMBINATION  
OF EXCELLENT  
2D PERFORMANCE  
AND THE MOST  
INNOVATIVE  
3D TECHNOLOGY.

Technological research, reliability and innovation. Designed by 3D CBCT pioneers in the dental-maxillofacial sector, NewTom offers the superior performance and outstanding quality of 2D/3D imaging in a versatile user-friendly device.

## USER-FRIENDLY AND VERSATILE.

The best 2D/3D imaging that expands the diagnostic potential of every clinic.

GO 2D/3D is a CBCT device that offers high resolution images, exceptional performance and the utmost safety. Low dose protocols and the exclusive SafeBeam™ technology allow to adapt the dose released, based on diagnostic needs and the dimensions of the anatomical area, to protect the patient's health.

Ergonomics and the adaptive alignment system ensure excellent positioning of the patient and perfect focusing for clear and detailed images.

The virtual console on tablet or PC is the ideal device to guide the operator during all phases of examinations. NNT is the technologically advanced software platform to manage, process, consult and share diagnostic images.



### ACCURATE DIAGNOSIS

NewTom image acquisition technology and the powerful NNT software provide exceptional support for diagnoses that are always precise and detailed.



### ACCESSIBLE TECHNOLOGY

Only the best results with excellent ergonomics and stable positioning of the patient.



### MINIMUM X-RAY DOSE

ECO Dose functions and SafeBeam™ technology, which automatically adapts to the dose radiated to the patient, makes patient safety a priority.



### MAXIMUM CONNECTIVITY

The X-ray images acquired can be easily stored, exported and shared with specialist third party software.





## THE BEST CHOICE OF 2D/3D IMAGES.

### IMAGING EXCELLENCE

#### 3D IMAGING

The Adaptive-FOV system allows to select the field of view that is best suited for the diagnostic needs, based on patient build and on anatomical region of interest. The NNT software generates detailed images with realistic rendering. The implant simulation device offers excellent support for correct treatment planning and communications with the patient.

#### 2D IMAGING

A complete set of 2D software generates very high quality software for a wide range of therapeutic needs. The special MultiPAN function provides, with a single scan, 5 images from which the user can choose the panoramic view that best suits his diagnostic needs. Instead, the ApT function allows to automatically obtain clear and homogeneous images of all anatomical regions by autoadapting to the patient.

#### MINIMUM DOSE

GO 2D/3D combines excellent image quality and low radiation dose by using pulsed emission CBCT technology, which allows to considerably reduce exposure. Specific ECO protocols and autoadaptive technology further reduce emission to suite diagnostic needs and the patient's actual build, thus underscoring NewTom's interest in patient health.

### NEWTOM KNOW-HOW

#### ADVANCED IMAGE CHAIN

Images are acquired using a high frequency pulsed emission X-ray generator coupled with a single 16-bit sensor for 2D/3D images. Latest-generation technology at the service of dental diagnostics.

#### AUTOADAPTIVE FUNCTIONS

GO 2D/3D offers advanced functions to automatically adapt image acquisition to the anatomical characteristics of the patient and to improve image processing. The software filters compensate for any artifacts or problems associated with patient morphology.

#### HIGH RESOLUTION IMAGING

When required, GO 2D/3D produces volumes up to an exceptional resolution of 80  $\mu\text{m}$ , which allows to carefully examine even the smallest anatomical detail. Very high quality scans for every accurate diagnoses.

### MAXIMUM PERFORMANCE

#### ADVANCED SOFTWARE

NNT, NewTom's powerful software, offers all functions required to process and analyse 2D and 3D images. An essential tool to perform correct diagnoses and establish the most suitable therapy.

#### OPERATIVE WORKFLOW

The virtual console is a very easy and user-friendly device for guided examinations. Image management and processing can also be performed with APP viewer for iPad. Compatibility with third party software, complete and precise reports, and the possibility of remote technical support enhance efficiency of the clinic's workflow.

#### SPECIALIST APPLICATIONS

Excellent image quality, extraordinary performance and multiple dedicated protocols make GO 2D/3D the ideal tool for implantology, endodontics, periodontics and radiology applications as well as maxillofacial surgery.

# SUPERIOR DIAGNOSTIC QUALITY.

Ultra clear images  
that are ideal for  
every clinical need.

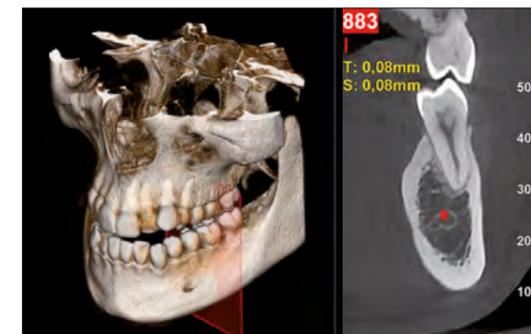
GO 2D/3D generates images that are always clear and detailed for precise diagnoses in all situations. Superior quality obtained with advanced algorithms and protocols, and with an image sequence comprising cutting edge technological features.

Using a single native 16-bit sensor produces 2D/3D images with thousands of grey levels, reduces examination selection times and improves operations. The high frequency generator and pulsed emission precisely adjust exposure, even automatically, to always obtain excellent scan quality.



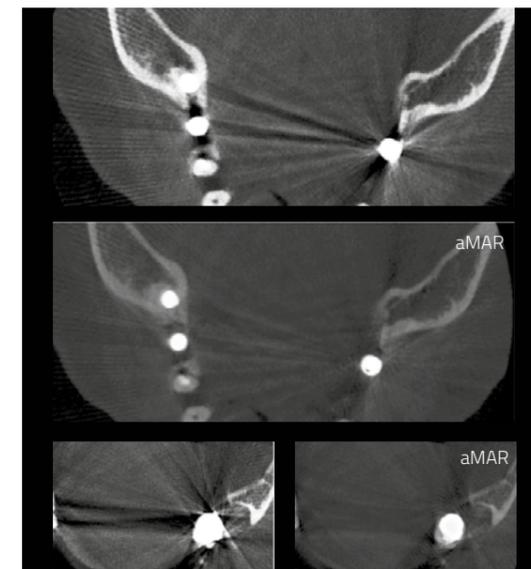
## HiRes

HiRes mode scans produce very high definition images with voxel size 80  $\mu\text{m}$ . It is also available with maximum FOV 10 x10 cm and combined with the ECO Scan protocol. This function is essential for an in-depth study of anatomical details.



## aMAR

The aMAR (autoadaptive Metal Artifact Reduction) algorithm clearly shows the anatomical structures even when there are metal objects, such as amalgam or implants, that would impair image quality. This function of the software recognises the metal elements present and automatically generates an additional set of better quality images for a clearer view with artifacts reduced to a minimum.



## MultiPAN

Without an increase in dose, with a single scan the exclusive MultiPAN mode generates a set of 5 panoramic images corresponding to five different focal planes. The operator can choose the most suitable one for his diagnostic needs.



## 3D IMAGING. ADVANCED DIAGNOSIS.

High-quality 3D images to improve treatment planning.

Detailed volumes and a broad range of FOVs with 4 image acquisition modes. GO 2D/3D offers the ultimate 3D technology for volumetric examinations that are always precise. The Adaptive FOV function allows to define the area to be analysed and to reduce the anatomical region exposed to radiations.

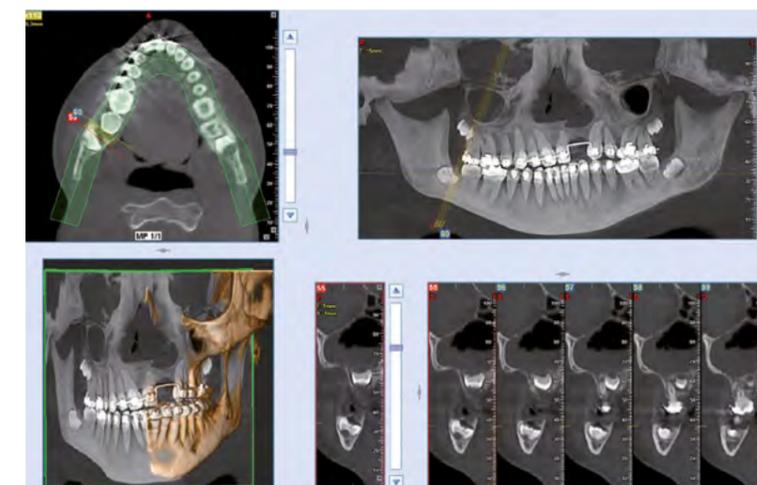
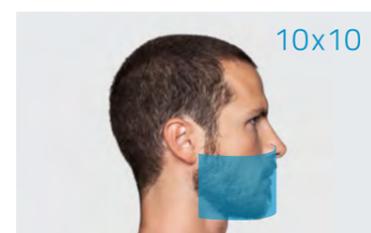
The choice of four scan modes allows to adapt the standard of detail and emissions to suit the actual diagnostic needs.



### HIGH RESOLUTION

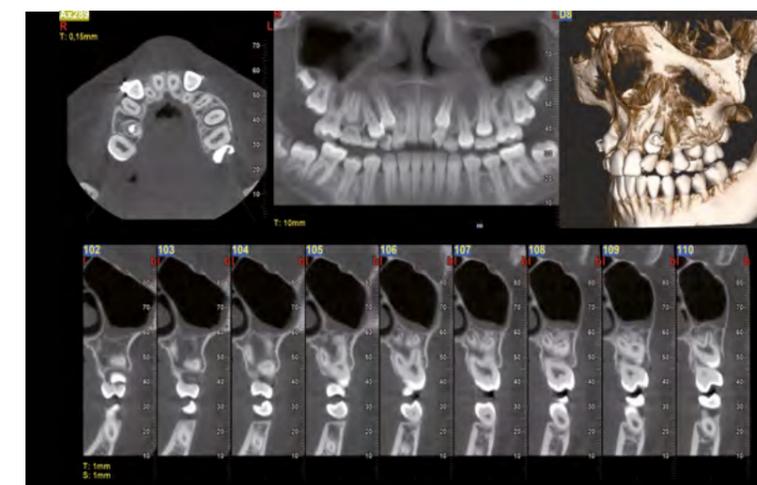
The 2D/3D native 16-bit sensor allows image acquisition up to 80  $\mu\text{m}$ .

### COMPLETE ADULT DENTITION



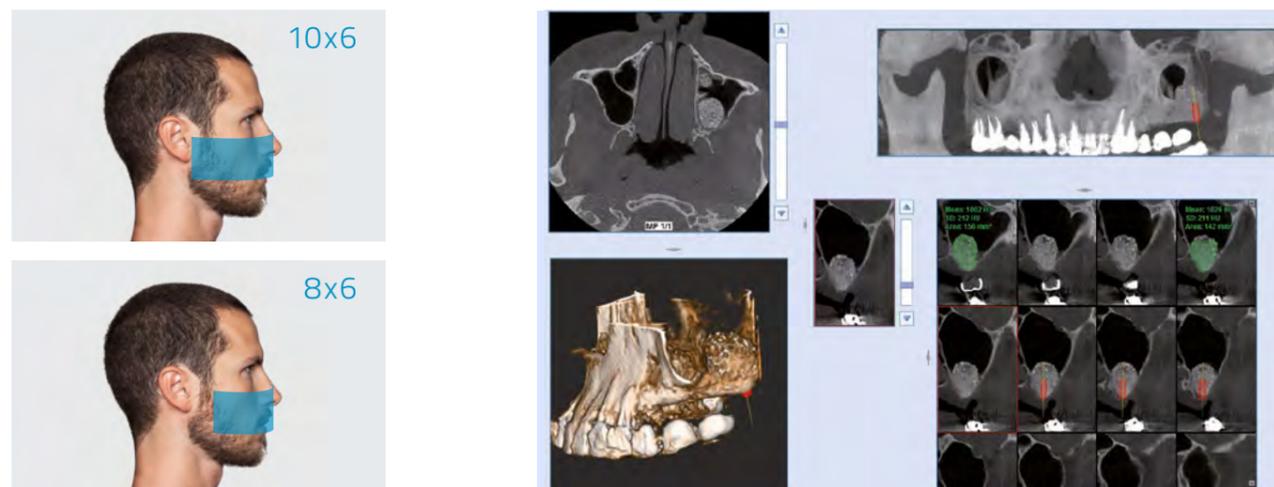
The complete 10 x 10 cm FOV is ideal to see inferior and superior third molar ratios with complete teething, including the maxillary sinus floor. Clear images even when there is metal or amalgam.

### COMPLETE CHILD DENTITION



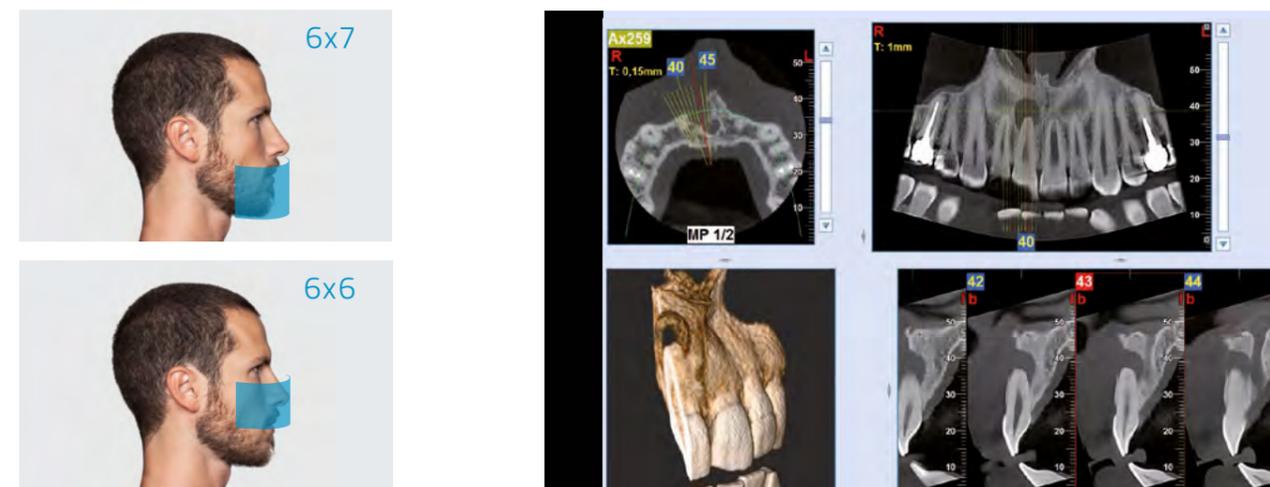
Small FOVs that are specific for paediatric applications can be chosen. The 8 x 7 cm volume offers high quality images of a child's complete dentition. It is especially useful for orthodontic applications and to diagnose the most severe diseases, always clear and detailed as a result of filters to reduce artifacts.

## COMPLETE CHILD/ADULT SUPERIOR ARCH



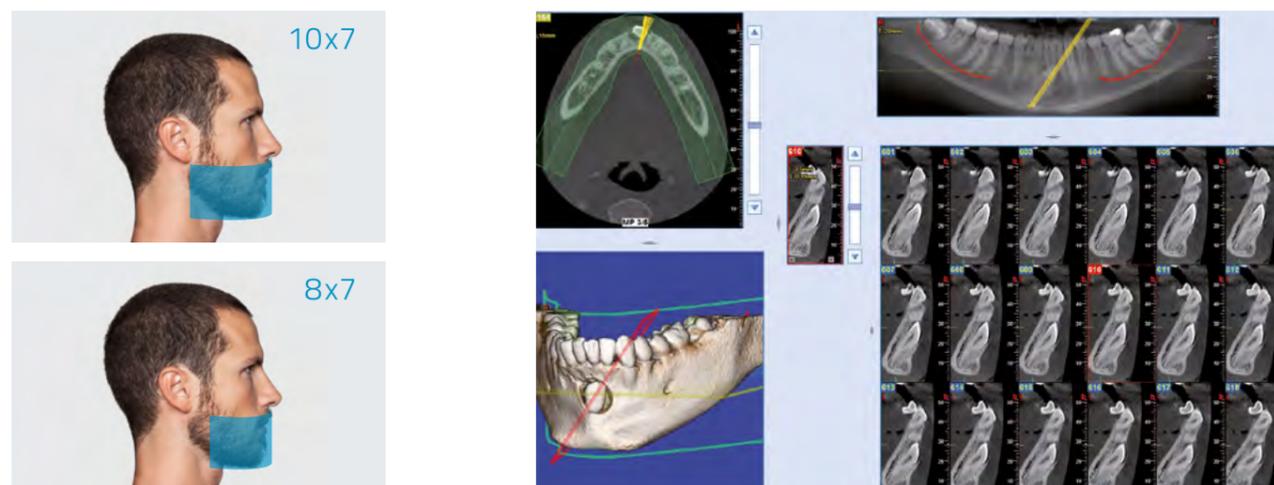
Volumes with FOV 10 x 6 cm and 8 x 6 cm produce images of localised anatomical districts, such as, for example, a maxillary sinus with suitable lifting to insert an implant. The ideal solution in the field of implantology to assess both implant site and bone density.

## UPPER AND LOWER LOCAL INVESTIGATIONS



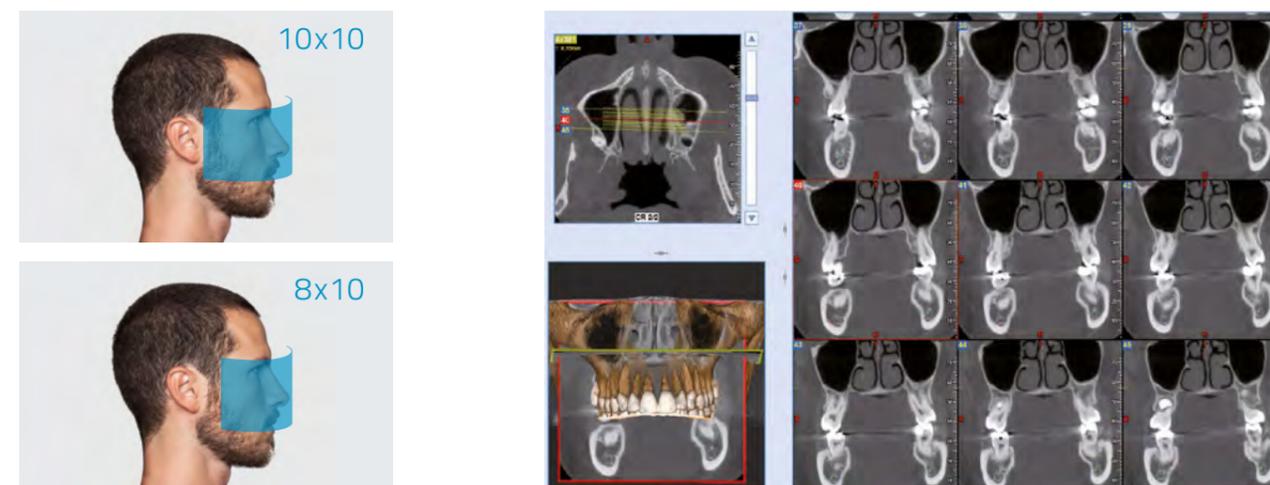
With FOVs 6 x 7 cm and 6 x 6 cm, scans can be performed with very high resolution to clearly see even the smallest detail. This mode is especially indicated for endodontic and periodontic applications.

## COMPLETE CHILD/ADULT LOWER ARCH



The 10 x 7 cm and 8 x 7 cm FOVs are designed for analysis of the mandibular region. In the case of impacted canines, where it is necessary to assess their relationship with the mandibular canal and adjacent anatomical structures, the advanced image acquisition and processing functions allow to easily and rapidly highlight the slices of interest.

## STUDYING ADULT/CHILD MAXILLARY SINUSES



Complete view of maxillary sinuses and of upper airways, including the superior dental arch, using FOV 10 x 10 cm and 8 x 10 cm.

# COMPLETE 2D VISION.

Ever clear and homogeneous panoramic images with auto-adaptive and MultiPAN technology.

GO 2D/3D offers rapid and accurate diagnoses with several image acquisition software designed to obtain high quality 2D images that always suit the diagnostic needs.

Excellent, clear and detailed panoramic images with ApT (Autoadaptive picture Treatments) technology. The MultiPAN function allows to acquire five layers of panoramic images with a single scan in order to choose the most suitable one for the scope of the examination.

## ADULT PANORAMIC IMAGING

Standard panoramic software provide a complete, accurate view of the dental arches, maxillary sinuses and temporomandibular joints.



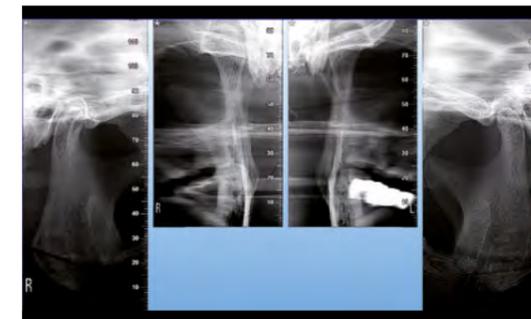
## CHILD PANORAMIC IMAGING

Child panoramic imaging with vertical collimation and low radiated dose: field of view and exposure are adapted to the paediatric patient's build.



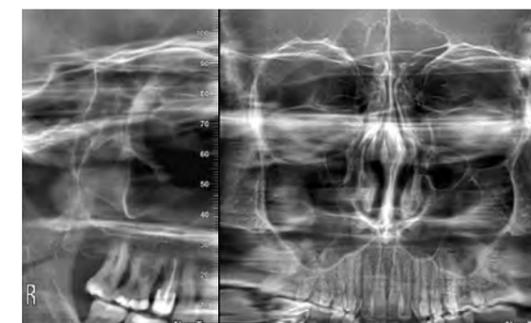
## TEMPOROMANDIBULAR JOINT

The trajectories dedicated to the temporomandibular (TMJ) joints generate four projections with a single scan: two lateral and two postero-anterior, with mouth either open or closed.



## MAXILLARY SINUSES

The SIN software uses a focal layer that has been specially designed to improve maxillary sinus examinations. A dedicated support allows to obtain both frontal and lateral slices.



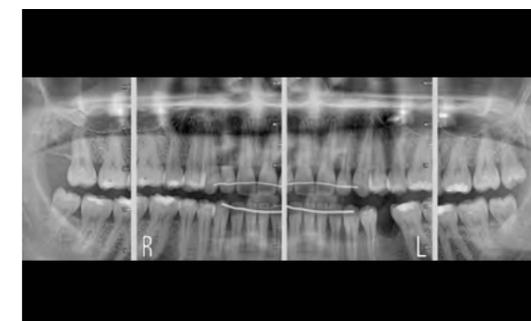
## DENTITION

Clear detailed images limited only to the teeth, either whole or partial, with orthogonal projection and better signal-noise ratio. Ideal for periodontal controls.



## BITEWING

Optimised collimated interproximal projection with a low dose to study dental crowns. An alternative to intraoral bitewings, with a less invasive and more comfortable procedure.



## MINIMUM DOSE, MAXIMUM DIAGNOSTIC QUALITY.

Advanced protocols and systems to reduce the radiated dose to a minimum.

Top quality imaging with a very low dose of radiations. Protocols defined by NewTom research in over 20 years of experience allow to automatically adapt exposure based on the anatomical characteristics of the patient, on the anatomical district examined and on the actual diagnostic needs.



6.4s

### ECO Scan AND ADAPTIVE FOV

NewTom, ever keen on patient health, was the first to use pulsed emission with CBCT technology applied to dental imaging, thus considerably reducing the dose of radiations emitted during 3D examinations. The introduction of the 3D ECO Scan protocol (ultra rapid scan of only 6.4 seconds and actual emission time of only 1.6 seconds) provides the ideal solution for post-surgery follow-up examinations and for all situations that need to reduce the radiated dose to a minimum. Instead, the 3D Adaptive FOV function allows to reduce the radiated anatomical district in order to adapt to the different morphological features of adults and children or to simply perform sectional examinations up to FOV 6 x 6 cm, whose minimum effective dose in ECO mode is 9  $\mu$ Sv.



6.6s

### ECO Pan AND VARIABLE COLLIMATION

GO 2D/3D offers several PAN software with variable collimation for adults and children, image acquisitions only for teeth and bitewing views. The ECO Pan protocol allows to perform an ultra rapid scan (6.6 seconds) and to further reduce the radiation dose up to 5  $\mu$ Sv. Versatile, high quality 2D diagnoses with limited emission.



### SAFEBEAM™

SafeBeam™ technology developed and patented by NewTom automatically adapts the radiated dose to the patient's anatomical characteristics in the chosen area for investigation, thus avoiding exposure to an unnecessarily high dose. An exclusive function that allows GO 2D/3D to control both power and intensity of radiations, and to obtain clear and detailed 2D and 3D images regardless of patient bone dimensions and density.

## EXCELLENT ERGONOMICS AND ACCESSIBILITY.

Excellent comfort  
for rapid and stable  
positioning of the  
patient.

Designed to ensure excellent positioning of the patient, GO 2D/3D allows to rapidly find the correct position for examinations that are always perfect. The device has an ideal functional structure for daily use that flawlessly merges into the clinic's diagnostic workflow. The outstanding ergonomic features of the device ensure excellent adaptability to every patient and, hence, ideal results for all applications.



### EASY ACCESS

Extensive column excursion and obstacle-free access to the scanning area allow to easily examine even patients with motor difficulties or on wheelchairs.

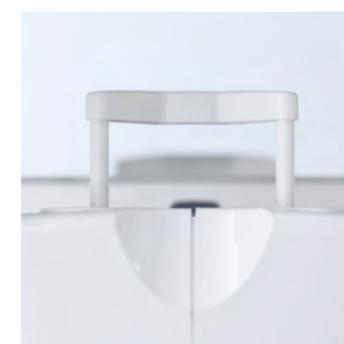
### EXCELLENT POSITIONING

GO 2D/3D offers outstanding patient stability with stable and comfortable positioning, which is essential for perfect focusing and images that are always clear. The angled position of the rotary arm facilitates patient access and ensures a correct view for the operator.

The column, which features a two-speed drive, reaches the desired height in a few seconds and precisely performs fine adjustments of patient position (e.g., for the Frankfurt Plane).

The head support unit ensures exceptional stability with 5 contact points: three auto-stabilising supports for head, bite and chin rest.

Two metal handles for effective patient support and to ensure that the patient is correctly positioned during all phases of the examination.



# ACCURATE DIAGNOSES IN ALL CONDITIONS.

Automatic  
technologically  
advanced functions  
ensure constant quality.

The auto-adaptive functions of GO 2D/3D allow to perform accurate examinations with extremely useful images for diagnostic purposes and with an assured high quality result.

The operator has tools for patient positioning and guided alignment, which yield perfect focusing.



## GUIDED ALIGNMENT

Three laser guides and a wide front mirror allow rapid and precise positioning of the patient. The device can be controlled by the operator with a user-friendly on-board keyboard or by using the dedicated App for iPhone and Android.

## VIRTUAL CONSOLE

Rapid and user-friendly image acquisition with the virtual console on PC or a dedicated software for iPad. The operator follows all examination phases, from the choice of investigation to initiation of the scan.



## ALIGNMENT CHECKS

Before performing a 3D scan, two scout images allow to precisely check and adjust patient alignment via PC-controlled servo-assisted movements.



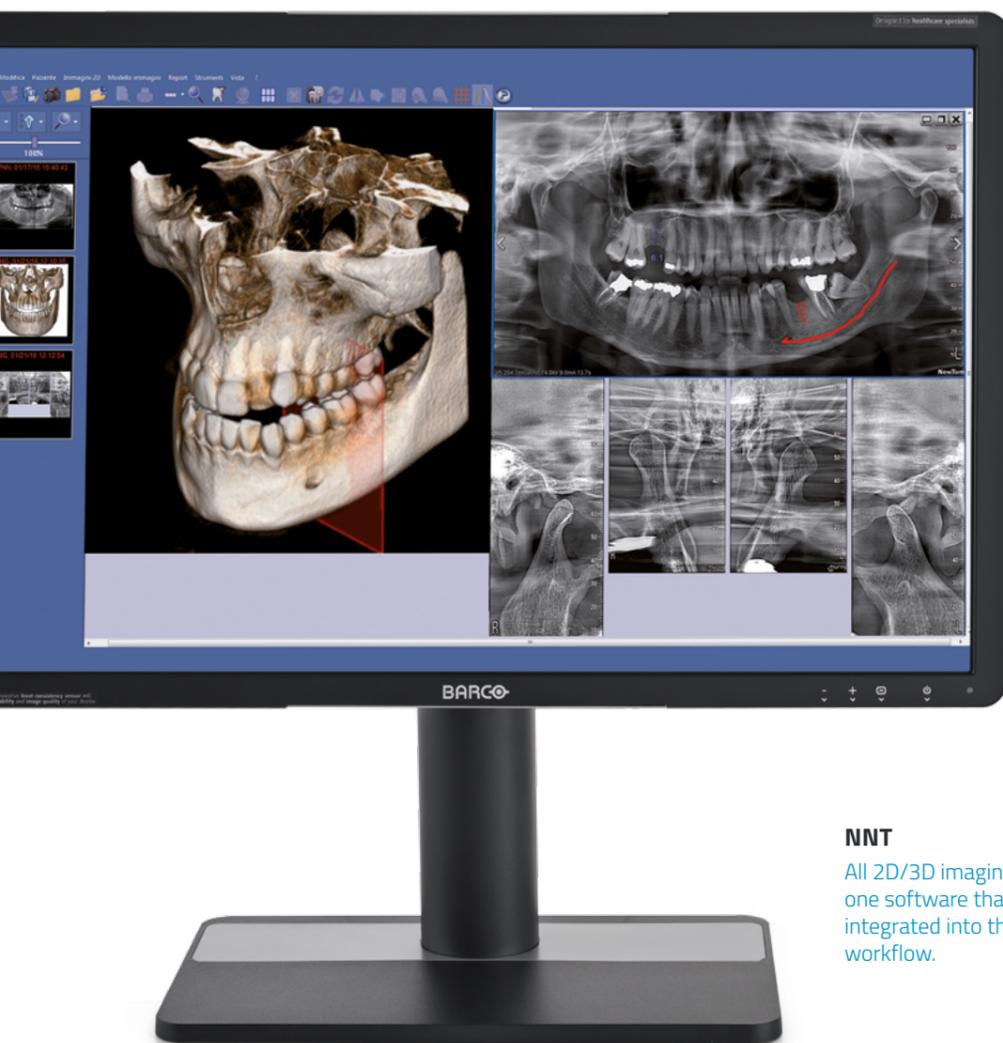
## Self-adaptive PANORAMIC IMAGING

The ApT function (Autoadaptive picture Treatments) allows to generate clear and homogeneous high quality panoramic images. The system automatically adjusts focus, brightness, contrast and filters based on the anatomical district and tissues examined, always ensuring excellent results.

# NNT, ADVANCED SOFTWARE FUNCTIONS.

Extensive sharing and processing power with the ultimate imaging platform.

NewTom's NNT software offers all functions required to perform, process, display and share 2D and 3D examinations. NNT also provides different application modes and functions specifically intended to plan the best treatment for implantology, endodontics, periodontics and radiology applications as well as maxillofacial surgery.

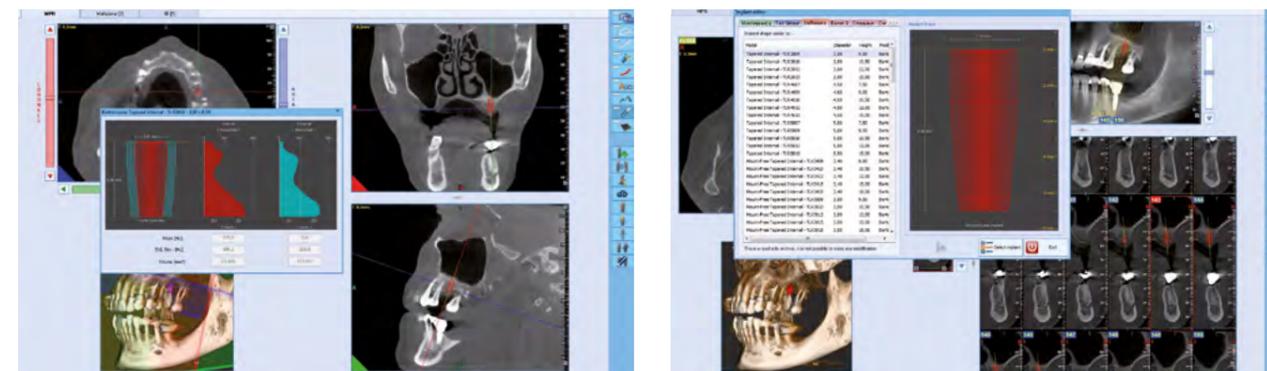


## NNT

All 2D/3D imaging tools in one software that is perfectly integrated into the clinic's workflow.

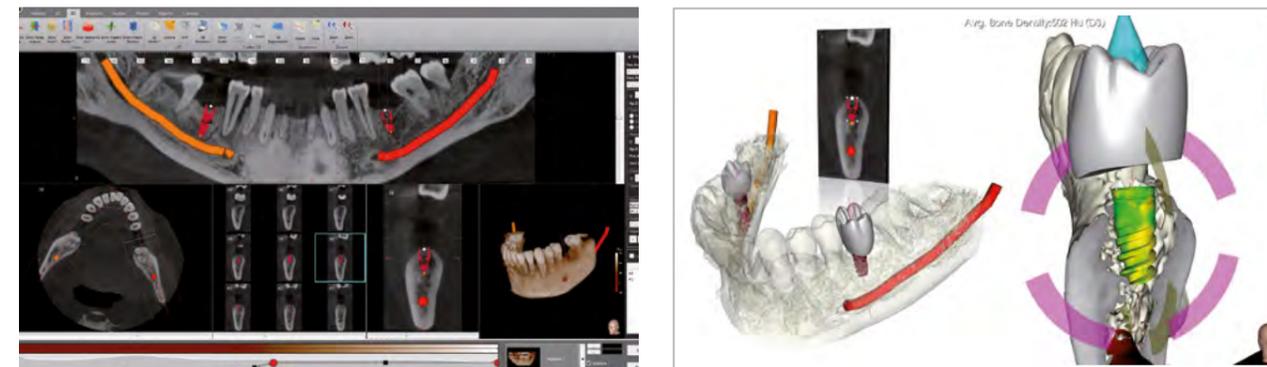
## IMPLANT SIMULATION

Rapid processing of 3D volumes acquired with realistic images to perform simulations either with implants present in the extensive library or with personalised ones. Advanced NNT functions allow the user to assess bone quality (on the MISCH scale) and adjacent anatomical structures. This data is essential to define the best implant and correct insertion axis.



## IMPLANT PLANNING MODULAR SOFTWARE

The module allows to plan accurate and precise implant surgery procedures. The implant can be positioned by assessing both the clinical aspect (bone quality, canal position, etc.) and prosthesis details by combining 3D reconstruction of radiological data with the optical scan of an anatomical model and the relative prosthetic project (importable in STL format). The possibility of creating a surgical template for use during the clinical procedure allows to position implants with extreme precision and predictability.



# COMPLETE CONNECTIVITY.

Excellent connectivity and integration with the modern systems adopted by NewTom. Workflow and clinical and diagnostic activities become much easier and highly performing.

## VIRTUAL CONSOLE

Settings required for acquisition can be easily controlled from a remote virtual control panel on the PC, laptop, Windows tablet or iPad.

## REMOTE ASSISTANCE

By appropriately configuring the device to use the surgery's Internet connection, technical support can be provided from remote, and device status can be monitored.

## 3D/2D VIEWER

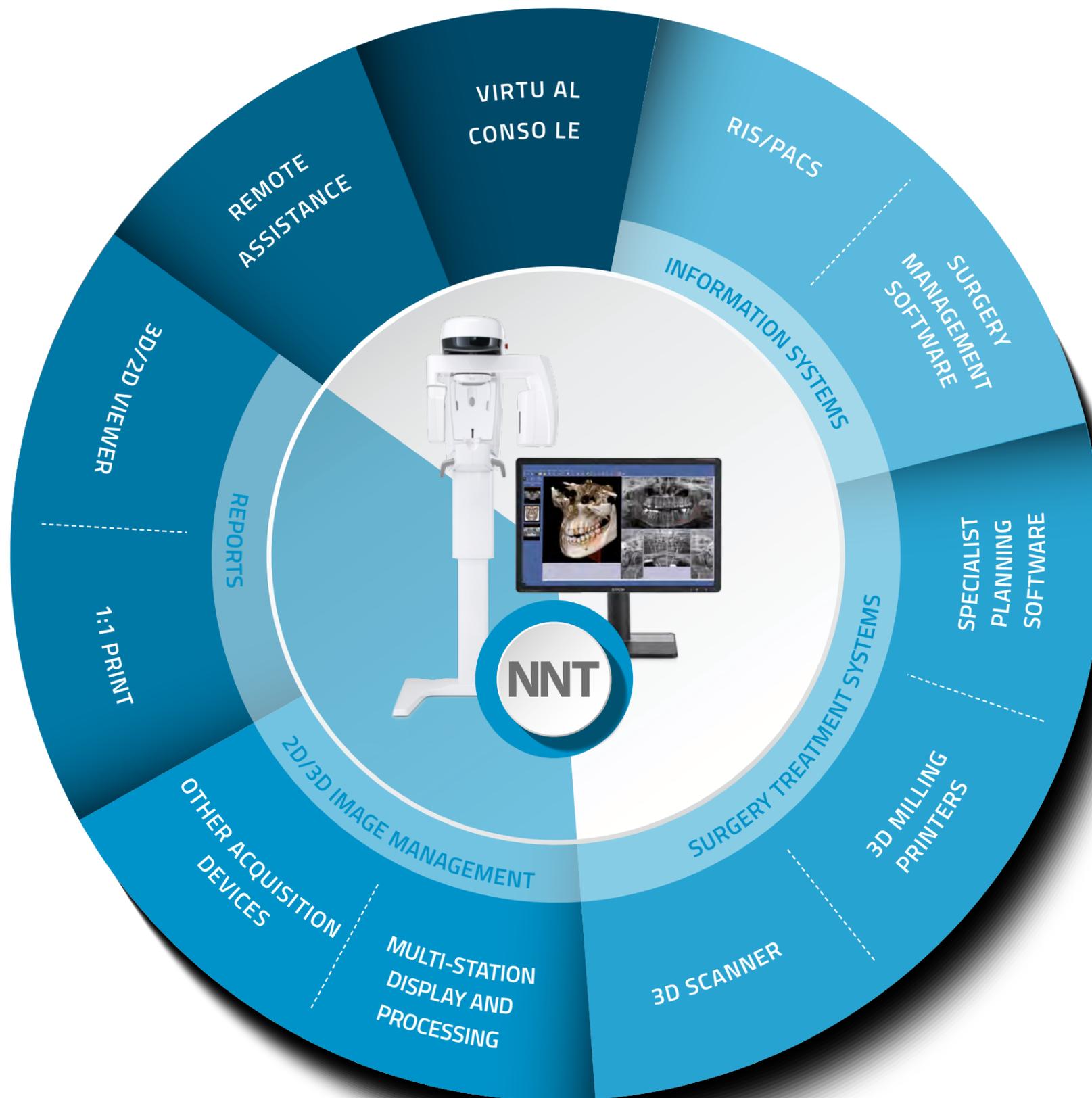
Examinations can be shared with colleagues and patients by providing the Viewer directly on CD, DVD or a USB storage device.

## 1:1 PRINT

Complete and flexible report for storing and sharing colour reports on photographic paper or grey scale reports on X-ray-equivalent transparencies.

## OTHER ACQUISITION DEVICES

Compatibility with TWAIN and DICOM 3.0 standards guarantees NNT software management of images from other 2D/3D image acquisition devices, such as video cameras, sensors, PSP and CBCT scanners.



## RIS/PACS

IHE compliant system that allows communication with RIS/PACS systems and DICOM printers. Complete services available: Print, Worklist, Storage Commitment, MPPS and Query/Retrieve.

## SURGERY MANAGEMENT SOFTWARE

An open system designed for fast, efficient interfacing with the main dental surgery management software solutions via various standard VDDS, TWAIN and/or proprietary NNTBridge modes.

## SPECIALIST PLANNING SOFTWARE

Exports in DICOM 3.0 format to specialist planning software to process orthodontic treatments, prostheses, implants, orthognathic and maxillofacial surgery.

## 3D MILLING PRINTERS

Software modules are available to segment the reconstructed volume and export to STL format the surfaces required to create 3D models that can underpin planning and treatment.

## 3D SCANNER

Prosthetically guided planning by integrating (via the dedicated software module) data in STL format from optical, intraoral or laboratory scanners, with volumetric data.

## MULTI-STATION DISPLAY AND PROCESSING

Image storage on a shared database in a local network that can be accessed from any workstation and iPad (only 2D). Management of multiple archives and access to password-protected data.

# TECHNICAL SPECIFICATIONS.

Images	2D	3D
Type	Adult and child panoramic, ECOPAN, MultiPAN, Dentition, Bitewing, PA and LL (right and left) maxillary sinuses, Temporomandibular Joint (2 x LL + 2 x PA) open and closed.	Complete examination of the 2 arches in a single scan for adults and children with reduced collimation. Studies of the maxillary region with maxillary sinuses. Studies localised to region of interest.
Child examination	Yes	Yes
Maximum resolution	from 5 to 7 lp/mm	Voxel 80 µm (minimum section thickness)
Maximum field of view (mm)	280 (length); 150 (height)	102 (diameter); 96 (height)
Reduced fields of view (cm)	6 x 12.5 (Child); 6 x 9 (Dentition bitewing)	10 x 10 - 10 x 7 - 10 x 6 - 8 x 10 - 8 x 7 - 8 x 6 - 6 x 7 - 6 x 6
Maximum image data dimensions	7.5 MB	720 MB
Magnification	PAN 1.2 - 1.3	1 to 1
Scan time	PAN 12 s (STD.) - 6.6 s (ECO)	HiRes 16.8 s (Regular) - 9.6 s (ECO) STD 11.2s (Regular) - 6.4 s (ECO)
Minimum image display times	RealTime	15 s
Advanced filters	ApT (Autoadaptive picture Treatments)	aMAR (Autoadaptive Metal Artifact Removal)

## X-ray Generator

Generator type	Constant potential (DC)
Anode voltage	2D mode: 60 kV - 85 kV (1 kV step); 3D mode: 90 kV (Pulsed mode)
Anode current	4 mA - 15 mA
Focal spot	0.6 mm (IEC 60336)
Exposure Control	SafeBeam™
Maximum continuous anode input power	42 W (1:20 at 85 kV/10 mA)
Inherent filtration	6 mm Al eq. (at 90 kV)

## Detector

Detector type	Amorphous Silicon (CSI)
Dynamic range	16 bit (65,536 grey levels)

## Ergonomics

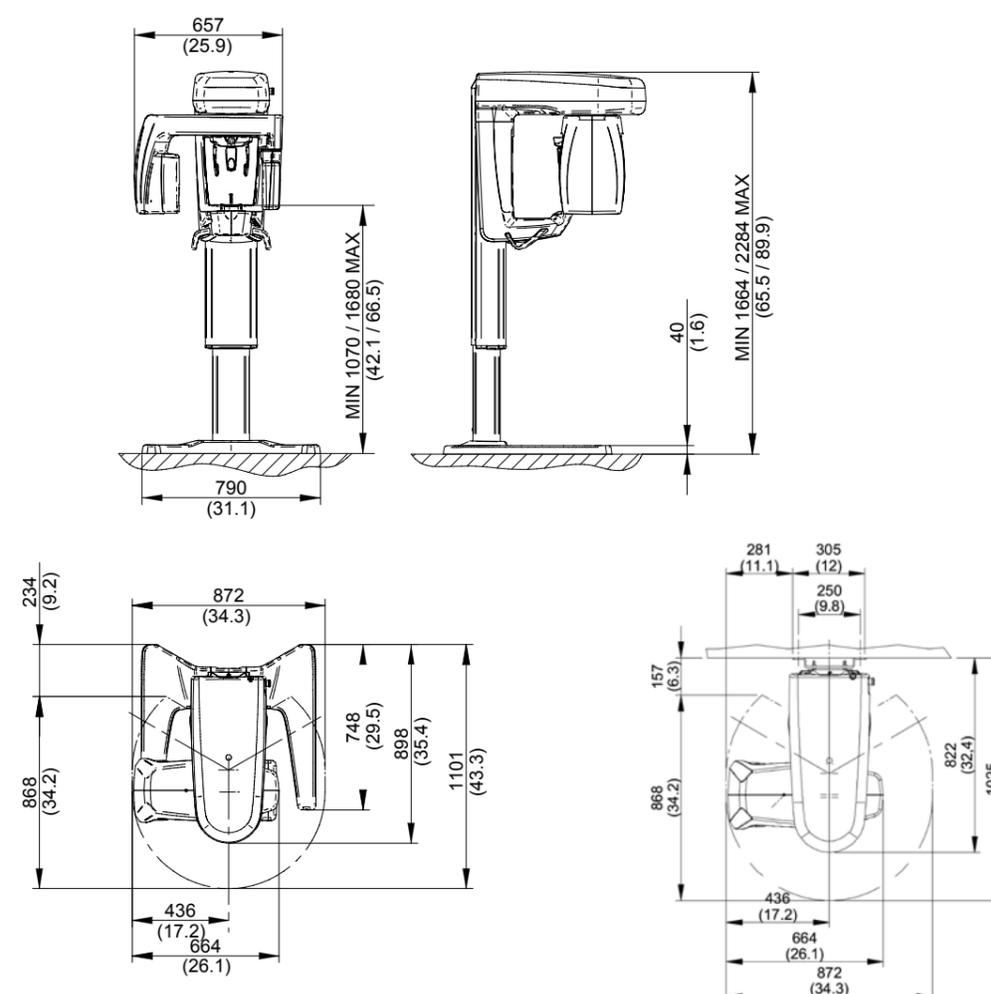
Patient alignment	3 laser guides
Patient positioning	5 head contact points
Adjustments	On-board keypad and/or iPhone/Android Phone 2-speed height drive
Examination selection	Virtual control panel on PC, Windows tablet and/or iPad
Notes	Easy access for patients in wheelchairs

## Connectivity

Connections	LAN / Ethernet
Software	NNT with Viewer software, free
Supported protocols	DICOM 3.0, TWAIN, VDDS
DICOM nodes	IHE certification (Print; Storage Commitment; WorkList; MPPS; Query Retrieve)
App iPad	Virtual control panel for the device and for the NNT 2D viewer

Installation	
Minimum available work space requirement	872 mm (L) x 1101 mm (P)
Package dimensions (L) x (D) x (H) in mm	Box1 930x690x960 + Box2 1860x355x350
Weight	90 Kg (199lb)
Accessories	Free standing base
Power supply	
Voltage   Frequency	115 - 240 Vac, +/- 10%   50/60 Hz +/- 2 Hz
Maximum absorbed surge current	20 A at 115 V; 12 A at 240 V
Current absorption in standby mode	Maximum 0.5 A (240 V); 1 A (115 V)
Notes	Automatic adaptation for voltage and frequency

Specifications subject to change without prior notice.



Dimensions in millimeters  
(dimensions in inches)