



## X RADIUS COMPACT

FULL DIAGNOSTIC POTENTIAL WITHIN REACH

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# SPACE-EFFICIENT, INTUITIVE AND BEST-IN-CLASS

X-Radius Compact combines the latest 2D and 3D imaging technologies with the smallest footprint in its category, a user-friendly software suite and complete with guided procedures to support your diagnostic potential. Excellent clinical performance is ensured despite exposure protocols which safeguard patient health by minimising radiation exposure.



# PRACTICAL AT EVERY STEP OF THE WAY

X-Radius Compact is immediately practical as it will fit into the smallest environments better than any of its rival devices. Extremely compact, the equipment can be ordered as a 3-in-1 solution including 3D, 2D and cephalometric functions.



## **STABILITY IN ALL SITUATIONS**

During pre-scan set-up, patient positioning is made fast and straightforward thanks to an effective alignment system with 3 laser beams. Adjustable on the right and left sides, the ergonomic head support with 5 stabilising points ensures the correct position is maintained throughout the scan procedure.

A powerful generator together with a highly sensitive 3D - PAN sensor enable excellent image quality combined with a notably low X-ray dose.



## **VERSATILITY**

Positioning for lateral and anterior projections is easy thanks to the flexible head support which can be adjusted according to the specific exam requirements.

## **CARPUS POSITIONING**

A Plexiglas panel representing the carpus helps speed up image acquisition to assess residual growth.

## **CEPH POSITIONING**

The head support on the teleradiographic arm includes two lateral and one frontal support rods. Extended lateral versions are available for children in order to minimise exposure of the thyroid gland.

# SIMPLE WORKFLOW, GUIDED PROCEDURES

When a workflow is simplified thanks to intuitive controls and the support of easy-to-follow procedures, achieving correct diagnosis is faster and a step closer to satisfactory treatment outcomes. Operators are guided at all times in selecting the best-suited investigation protocols and the console helps users identify the appropriate mode, streamlining examination procedures.



## STARTING WITH USER-FRIENDLY CONTROLS

The virtual control panel, available for iPad and PC, guides operators through an easy procedure to select the examination type and allows acquired images to be viewed after scanning. 2D previews are available and dentists can also use the console to achieve correct alignment prior to 3D scans. Scout View images will also help obtaining volumetric data according to needs without needing to re-scan in case of inadequate positioning accuracy.

The guided procedure entails exam selection and FOV positioning. Correct parameters are ensured thanks to patented automatic exposure control mechanism which makes an assessment of patient build, calibrating the X-ray dosage according to the physical characteristics of the patient.



## LOW DOSE



## SPEED SCAN

Routine or post-surgical follow-up exams can be handled with low dosage scans, also suited to macro-structural analyses, as well as being ideal for children.

## REGULAR



## STANDARD SCAN

High-resolution 3D images obtained with standard scans are ideal for initial diagnosis and treatment planning.

## BEST QUALITY



## ULTRA SCAN

Top-quality, ultra-high-resolution scan mode for the most detailed, comprehensive volumetric data, especially for microstructures.

# BEST RESULTS COME WITH EASY POSITIONING

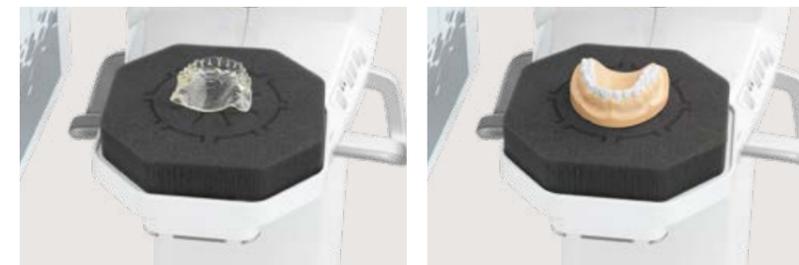
Castellini provides dentists with every means to achieve correct alignment as smoothly as possible. This leads to less time spent immobilised during the examination, which is crucial to obtaining volumetric data for precise diagnosis and positive treatment outcome.



## LINED UP FOR A PERFECT SCAN

Laser guides further simplify precise positioning for all exams and assisted 3D centring for Scout Views complete the support features for volumetric scans.

The head support for 3D exams is comprised of 5 points of contact of which three can be adjusted to fit the anatomy of each patient. Extended head support elements, together with a nasal support are used to achieve optimal positioning for examinations of the maxillary sinuses.



## ACCESSORIES FOR TOMOGRAPHIC SCANS

A specific protocol is available for scanning of surgical guides, dental impressions and other three-dimensional objects, which can be placed on the appropriate tray.

# AN ETHICAL APPROACH TO DIAGNOSTIC IMAGING

Without altering the high quality of the images obtained, X-Radius Compact makes patient health and safety a priority. First of all, short scan times eliminate unnecessary exposure to radiation in respect of the ALARA principle. Accurate positioning for added comfort, as well as SCOUT VIEWS also ensure first-time satisfactory images and no need to repeat acquisition. Low dosage, variable scan-specific collimation, pulsed emissions and high-speed scans all contribute to safeguarding patient health.

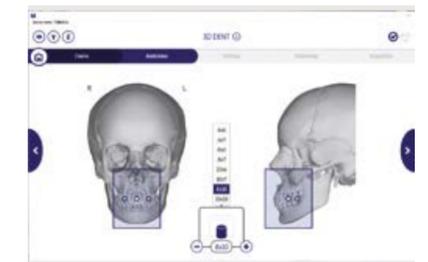


**LOW DOSE**



### **SIMPLE DENTITION**

The exposure area can be adjusted according to the actual X-ray imaging needs for adults or children to include the whole or partial dentition, also dividing it into Bitewing quadrants or sectors.



### **DYNAMIC 3D FOV**

The dynamic FOV selection makes it possible to limit the exposure only to the area of interest and perform dedicated analyses for various applications, both for adults and children.

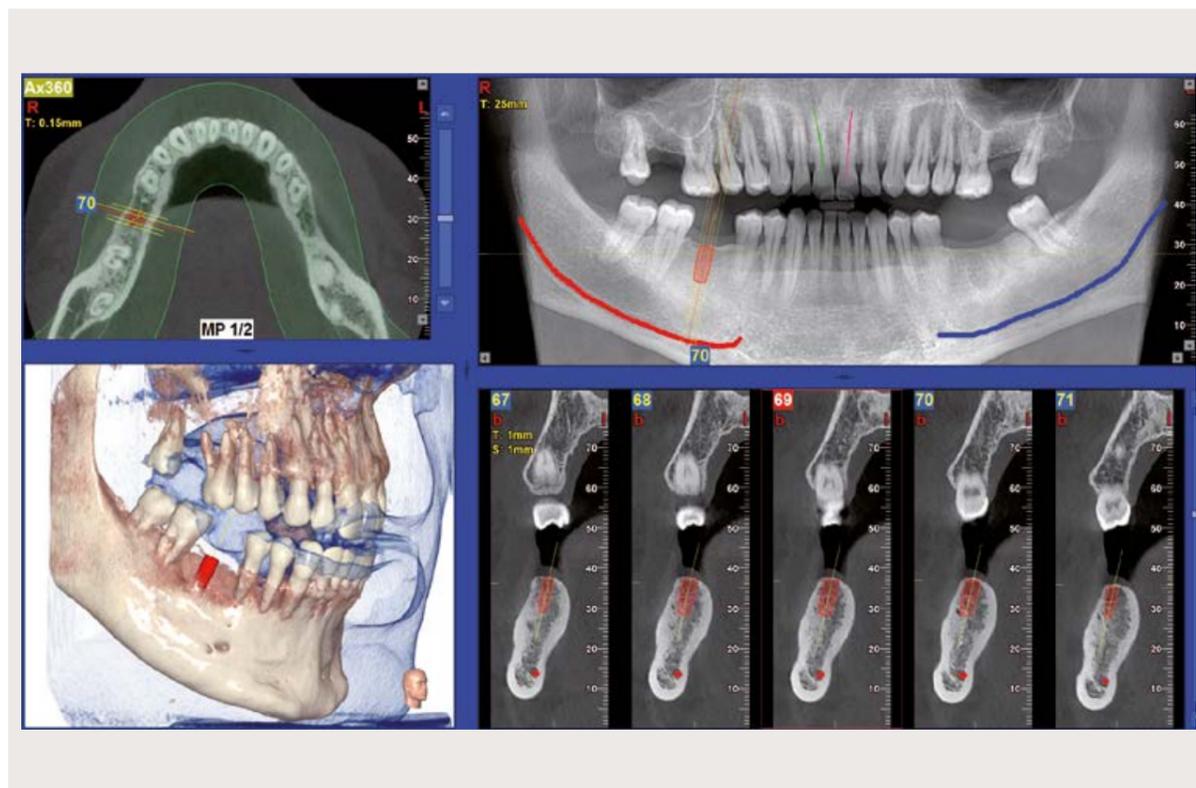


### **X-SAFE AUTOMATIC EXPOSURE CONTROL (MRT)**

Thanks to this technology, patient morphology is assessed prior to exposure, so that X-ray dosage is calibrated according to the actual physical characteristics and build of the person being examined. This results in suitable clinical images and avoids unnecessary exposure.

# CLINICAL DIAGNOSTICS MADE ACCESSIBLE

X-Radius Compact covers the majority of needs for clinical investigations and image-based diagnoses, including 2D PAN, CEPH and 3D capabilities. A series of automatic functions and the versatile concept behind the equipment enable excellent workflow and lead to optimal results.



## 3D FLEXIFOV EXAMINATIONS

Defined according to diagnostic requirements and ranging from a minimum of 6 x 6 cm to a maximum of 10 x 10 cm, the three-dimensional field of view is selected via the guided procedures on the virtual control panel. Minimising scan times to what is essential, a wealth of data is obtained in a single scan, allowing for an in-depth study of the anatomical features.

The variable collimator automatically sets the field of view when just a small portion [e.g. 6 x 6 cm] is required. The flexibility of having a multiple choice for the FOV also benefits the patient by limiting exposure wherever possible.



## SUPERIOR CEPH

The compact arm, complete with its own 2D sensor, has long and short head support rods for adults and children. Using a reduced scan in combination with a fast scan minimises X-ray exposure while using short rods for children prevents unwanted exposure to the thyroid gland.



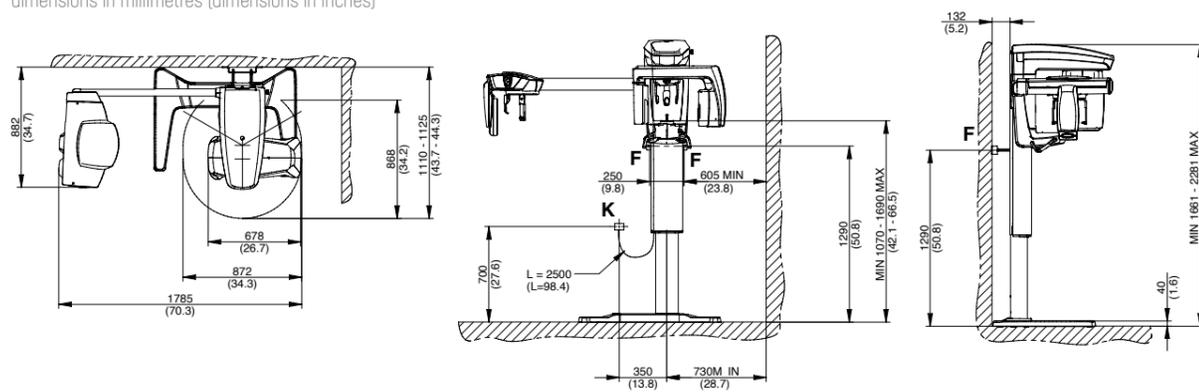
## MULTILEVEL PAN ORTHO

Performing a single scan in MultiLevel mode, X-Radius Compact acquires a set of 5 panoramic images corresponding to five different focal planes. This allows users choose the panoramic image best suited to highlighting the detail of clinical interest. The new orthogonal panoramic function highlights interproximal spaces and the entire root structure without any overlap thanks to orthogonal projections.

# TECHNICAL SPECIFICATIONS

IMAGES	2D	3D
Type	Complete or partial adult and child panoramic, Orthogonal Panoramic, QuickPAN, MultiPAN, Dentition, Bitewing Frontal and Lateral (right and left) maxillary sinuses, Temporomandibular Joint (2 x Lateral + 2 x Frontal) open and closed mouth. Telerradiography: Skull AP-PA, LL Short/Long, Standard/Quick; Carpal telerradiography	Complete examination of the 2 arches in a single scan for adults and children (reduced collimation); Studies of the maxillary region with maxillary sinuses; Studies localized to region of interest.
Maximum resolution [MTF <sub>10</sub> ]	PAN: 5 LP/mm CEPH: 3 LP/mm	Best quality: ≥ 2 LP/mm Voxel 80 μm (minimum section thickness)
Fields of view on patient (mm)	PAN: 210 (length) x 115 (height) CEPH: 258 (length); 194 (height) PAN Child: 180 (length) x 100 (height) Dentition: 140 (length); 100 (height) Bitewing: 167 (length); 70 (height)	DENT and SIN: 100 (diameter) x 100 (height) 100 (diameter) x 70 (height); 100 (diameter) x 60 (height) 80 (diameter) x 70 (height); 80 (diameter) x 60 (height); 80 (diameter) x 100 (height); 60 (diameter) x 70 (height); 60 (diameter) x 60 (height);
Maximum image data dimensions	PAN: 7.5 MB (single image) CEPH: 14 MB	720 MB
Magnification	PAN 1.2 - 1.3 CEPH 1.13	1 to 1 (Isotropic voxel)
Scan time	PAN: 13.8 s (ORTHO), 12.3 s (STD.), 6.8 s (QUICK) CEPH: 9.9 s (STD); 3.7s (QUICK)	ULTRA SCAN: 16.8s (Best Quality) STANDARD SCAN: 11.2s (Regular) SPEED SCAN: 6.4s (Low Dose)
Estimate of typical effective dose (ICRP 103)	PAN: 5 - 9 μSv	FOV: 10x10   35 μSv (Voxel 160 μm) - 80 μSv (Voxel 80 μm) FOV: 6x6   9 μSv (Voxel 160 μm) - 27 μSv (Voxel 80 μm)
Minimum image display times	RealTime	15 s
Advanced filters	PIE (Powerful image Enhancer) Autofocus PAN	MAR [Metal Artifact Reduction]

dimensions in millimetres (dimensions in inches)



INSTALLATION	CEPH LEFT VERSION
Minimum space requirement (L x D)	1785 mm x 1030 mm
Package dimensions (L) x (P) x (H) in mm	Box1 930 x 690 x 960 (machine base) Box2 1860 x 355 x 350 (floor-mounted) Box3: 575 x 1275 x 380 (Telerradiographic arm)
Machine Weight	3D version: 93,5 kg (251 lb) + Ceph: 21 kg (46 lb)
Accessories	CEPH self-standing base

ERGONOMICS	
Examination selection	Procedure guided from virtual control panel on PC and/or iPad
Patient positioning	Suggestion from virtual control panel - Servo-assisted alignment, 3 laser guides (Class 1-IEC60825-1) - 3D Scout View
Patient head support	5 contact points left/right on 3D/2D version
Adjustments	2-speed height adjustment drive Keypad on machine and/or iPad app Servo-assisted alignment: Keypad on machine or remote control (via Scout View)
Other functions	Multilingual, parking position, remote control
Notes	Easy access for patients in wheelchairs

CONNECTIVITY	
Connections	LAN / Ethernet
Image management software	CASTELLINI iRYS and App iPad iRYS viewer (Free)
Supported protocols	DICOM 3.0, TWAIN, VDDS
DICOM nodes	IHE compliant (Print; Storage Commitment; WorkList MPPS; Query Retrieve)
Virtual Control Panel	PC and iPad

X-RAY GENERATOR	
Generator type	Constant potential (DC)
Anode voltage	3D mode: 90kV pulsed emission (25% ON - 75% OFF) 2D mode: 60-85 kV continuous emission
Anode current	4 mA - 15mA
Focal spot	0.6 mm (IEC 60336)
Exposure Control	Automatic. X-Safe Technology
Maximum continuous anode input power	42W (1:20 at 85kV/10mA)
Inherent filtration	3D mode: 90kV pulsed emission (25% ON - 75% OFF) 2D mode: 60-85 kV continuous emission

3D/PAN DETECTOR	
Detector type	Amorphous Silicon (CSI)
Dynamic range	16 bit (65536 grey levels)

2D CEPH DETECTOR	
Detector type	CMOS (CSI)
Dynamic range	14 bit (16384 grey levels)

POWER SUPPLY	
Voltage   Frequency	115 - 240 V Single-phase   50 / 60 Hz
Maximum absorbed surge current	20A at 115V; 12A at 240V
Current absorption in standby mode	Maximum 0.5A (240 V); 1A (115 V)
Notes	Automatic adaptation for voltage and frequency