SkyView
3D panoramic images, at your fingertips

MyRay
Cone-Beam Computed Tomography (CBCT)
Fifty years have passed since the first clinical utilisation of pantomography in the dentistry field. Effective, fast and economic, this technique provides an overall view of the dental arches and adjacent anatomical structures. In recent years it has evolved to incorporate digital technology and, for most dentists, has become not just a technique but one of the dental surgery’s most common X-ray equipment items, the “panoramic dental system”.

The two-dimensional approach to panoramic images generates data requiring interpretation. In many cases this does not give the required level of precision; patient positioning errors can make measurements on the resulting image unreliable. There may be non-uniform resolution dependent on proximity to the theoretical line along which the focal layer runs. Above all, the technique is limited by the overlapping of anatomical structures belonging to different planes – in short, it is two-dimensional.

It is necessary to interpret the panoramic image to determine, for example, whether an object is labial or lingual, as there is no perception of the missing dimension, depth.

Today, a new X-ray image diagnostic revolution is under way, and it is already changing dental treatment standards.

SkyView takes you into the third dimension

You are about to be released from the limitations of two dimensions to discover true-to-life views of the maxillofacial area. Relax, and enjoy the experience.

Fast, safe imaging

SkyView adopts a new and increasingly successful X-ray technique, known as Cone Beam Computed Tomography (CBCT), ideal for obtaining three-dimensional reconstructions of teeth and the entire maxillofacial area. If compared to more dated tomography techniques such as hospital CAT scans, CBCT has the advantage of acquiring images with just one partial rotation of the source-detector system around the patient. Consequently, less time is needed to perform the examination and, above all, the patient is exposed to a considerably lower X-ray dose.

SkyView with 9” detector

Especially suitable for X-ray and image-based diagnosis centres, the 15 cm-diameter spherical field of view allows the entire maxillofacial region to be framed in a single scan.

SkyView with 6” detector

By limiting the field of view to a sphere with a diameter of 11 cm, SkyView can produce high-resolution images of the entire adult dentition, with minimal X-ray doses. The field of view can, however, be shifted to frame other areas of interest, such as the temporomandibular joints.

4” HR Zoom

Where necessary a variable X-ray beam collimation system (HR Zoom) allows the field of view to be narrowed further, to give higher-resolution focussing of smaller anatomical regions, to a sphere just 7 cm in diameter.

NEW COMFORT IN DIGITAL IMAGING

MyRay is a line of technologically advanced imaging systems designed specifically for dentistry. Whereas new technologies generally offer increasingly higher performance, MyRay aims at taking technology a step further. By creating unique features for each device, to bring digital imaging comfortably within every dental professional’s reach, MyRay’s main focus is to simplify workflow within the operatory, because better workflow means you can focus on what matters the most: patient care.

MyRay whole new imaging experience also includes:

- X-POD, handheld digital system for mobile intraoral radiography
- HYPERON, panoramic imager with Morphology Recognition Technology
- RXDC HyperSphere, touch-activated X-ray unit with Wireless Control

Discover more about digital intraoral cameras, wireless X-ray sensors, high-frequency X-ray units at www.my-ray.com.
Image Intensifier

SkyView is a tomographic system based on a state-of-the-art detector: a variable-field image intensifier offering maximum contrast and maximum definition with low X-ray doses. The high sensitivity of the image intensifier, the scan speed and the pulsed X-ray emission system ensure that X-ray doses are very low indeed; in fact, by restricting the field of view to the dentition only, doses are comparable to those of the panoramic X-ray systems commonly used in dental practices. So diagnostic potential is enhanced – but without increasing the risk to the patient.

Absolute diagnostic precision

After acquisition, SkyView proceeds with volumetric reconstruction. This fully automatic operation generates a faithful, virtual representation of the examined area, free from distortion and measurable with absolute precision whatever its orientation. The third dimension is now at your fingertips, leaving you free to explore a new world of diagnostic efficiency.

High definition with low emissions

The technology is based on 3 main elements:

- A scintillator that converts radiation into a visible image
- A beam concentrator that intensifies the image by a factor of 10
- A high resolution CCD digital sensor consisting of pixels with a size of 7.4 µm to detect the image
Putting the patient at ease

SkyView clearly demonstrates the achievements of MyRay research, aimed at providing the very best diagnostic experience for dentist and patient alike. So MyRay has chosen to go the supine way, conceived for total patient relaxation. For the patient, the entire SkyView X-ray imaging experience is, starting with positioning, a comfortable one. The reclining patient chair is automatically lowered into the access position to make seating the patient easier; the patient’s head is supported by the comfortable headrest, a soft height-adjustable cushion designed to stabilise the cranium; then the chair stretches out to perform the quick X-ray examination. The patient can lie down and relax thanks to the comfortable headrest; the field of view is unhindered and the whole procedure is a pleasant anxiety-free experience, simpler for both patient and dentist, who maintains reassuring eye contact with the patient during positioning.

Speed and comfort

The total lack of cephalostats, straps or bites means that the patient can be made ready for the X-ray simply and quickly. This prevents the downtimes normally associated with seating the patient and preparing them for the brief scan that completes the examination. No unpleasantness for the patient: all they have to do is lie down and rest their head on a soft cushion specially designed to guarantee stability. During the examination, the detector rotates - in just a few seconds - around the table, without the patient experiencing the unpleasant feeling of being enclosed in a machine.

Enhanced image quality

It has been demonstrated that patient immobility is greatly enhanced when patients are lying down and relaxed as opposed to standing or seated. Image quality is proportional to the immobility of the irradiated subject, since even minimal movements can generate confused or blurred images. So supine is simple – and better.

Patient immobility is a fundamental prerequisite for good extra-oral radiography, especially so when 3-D images are acquired using the CBCT technique.


SkyView produces high definition images, completely free from geometric deformation, perfectly measurable with micrometric precision and reliable over time. Thanks to Isotropic Voxel measurements are reliable and on a 1:1 scale whatever the reference plane of the measured sections.
Preparation

SkyView has two simple, user-friendly, instruments to identify the anatomical region to be X-rayed: laser tracking or software on an automatic console.

Tracking laser

As on the best panoramic systems, three laser beams identify correct alignment of the region of interest. The innovation here lies in the fact that alignment is adjusted by controlling the motor-driven bed via the dedicated keypad. The control panel allows both pre-set movements and fine adjustment. Positioning is therefore precise and effortless and also comforting as visual contact with the patient is maintained.

Scout method

A software-guided procedure allows the operator to align the region of interest while remaining comfortably seated at the PC workstation. This method is extremely high-precision and involves the acquisition of two preview (Scout) X-ray images at extremely low dosages; these previews are used to identify the centre of volumetric reconstruction. By using the mouse cursor to adjust the aiming device superimposed on the Scout images, the motorised SkyView table will automatically be repositioned to frame the selected region. These advanced positioning methods, used alternatively or in combination, ensure the X-ray will not have to be repeated because of alignment errors.

Outstanding data control allows for better treatment planning

The supplied software allows the user to manage one or more X-ray directories, organised into medical record folders. Each X-ray examination can generate several studies in that, once the volumetric data has been acquired, it can be used in several investigations during different stages of the treatment plan – without any need for further exposure.

Data on tap

At the end of the acquisition/volumetric reconstruction procedure, the dentist will have multiple views of the patient’s anatomy: a curvilinear cross-section that resembles the “panoramic” image, a moveable 3-D model, a coronal cross-section that allows exploration of the upper/lower dental arches, and ten transverse cross-sections that are especially useful for the linear and angular measurements so often used with implants. These views are interconnected and colour-coded to aid exploration of the anatomical structures. All cross-sections and two-dimensional reconstructions can be defined according to modifiable profiles and the user can select their thickness.

Easy installation

The radiation source is a 90 kV X-ray tube, a power level comparable to that of a panoramic dental system. This allows the equipment to be installed easily in any dental surgery: X-ray shielding requirements are, in fact, comparable to those of a panoramic system.

Compact design

SkyView is a compact, professionally designed device. Minimum dimensions for a room in which SkyView is to be installed are approximately 160 cm x 250 cm. A more spacious room will undoubtedly enhance the user’s experience. The room must allow easy access to one of the two table sides; the control panel can be installed on either side of the patient table.
Dental problems from a new viewpoint

Accurate 3-D representation of impacted molars, supernumerary teeth and unerupted teeth allows precise illustration of relationships with adjoining anatomic structures.

Clear 3-D imaging 3-D planar cross-sections of the condyloid process, the articular space and adjoining structures to analyse and prepare reports on any kind of temporomandibular dysfunction.

Implant placement planning

A dedicated protocol for surgical template acquisition and DICOM 3 tomography data exportation ensures compatibility with all third party software, which allows implant placement planning and design surgical templates.

Connectivity and Reports

Flexible, able to communicate through the standard DICOM protocol with the normal hospital IT systems: sending and receiving data, consultation of work lists and much more.

The report generator allows useful report documents to be created in automatic mode using forms with the user’s favourite layout and content; these forms can also be personalised.