Pure confidence in action

Philips Ingenuity CT specifications
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1. Introduction

Until now, CT scanning has too often been about trade-offs. You’ve been forced to choose high image quality or low dose. Iterative reconstruction or speed. Well, no longer. The all-new Ingenuity CT system is so original and resourceful that it will cause you to reevaluate everything you thought you knew about low-dose imaging.

Ingenuity CT brings pure confidence: confidence in image quality, confidence in the right dose for the right patient, confidence in an iterative reconstruction technique with speeds calculated in seconds, and confidence in your investment. Imagine up to 80% less dose while maintaining diagnostic image quality and improving spatial resolution. Picture routinely using up to 15% less injected contrast. Envision a revolutionary X-ray tube designed for no warm up or cool down, with an exclusive introductory two-year tube warranty. Expect minimal training time and fewer repeat exams for better departmental efficiency. It’s confidence and quality to put you at the center of patient care. It’s Ingenuity CT.

Clinical integration and collaboration
• Dial in the image quality you want
  – Up to 68% improvement in spatial resolution at the same dose
  – Up to 50% less dose with up to 35% improvement in spatial resolution
  – Up to 80% less dose with equivalent diagnostic image quality
• Personalized contrast injections for consistent image quality

Patient focus
• Scan with up to 80% less dose and maintain diagnostic image quality
• Benefits of iterative reconstruction technique for everyone
• Use up to 15% less injected contrast

Improved economic value
• Save up to five minutes per study
• Scan up to 25% more patients a day
• Exclusive introductory* two-year tube warranty on Ingenuity CT

High volume with high confidence
Designed to perform in the most demanding and critical environments, Ingenuity CT can help you achieve outstanding and consistent results day in and day out.

Effective power** 105 kW
Slices 128
Coverage 40 mm
Helical scannable range 2,000 mm
Bore size 700 mm
Reconstruction speed with iDose4 20 IPS
Equivalent anode heat capacity*** 30 MHU

** See Section 8.1 Generator for description.
*** See section 8.2 X-ray Tube for description.

Philips Ingenuity CT is synonymous with diagnostic confidence.
Introducing a new era in radiology. Just as Web 2.0 redefined the way people connect, share and use the Internet, Imaging 2.0 represents a new world of possibilities for radiology. It is about integration and collaboration, and new levels of patient focus and safety that can help clinicians achieve what was unimaginable just a few short years ago.

The first medical networking platform? That’s Imaging 2.0. An unprecedented amount of energy and focus behind new innovations in nearly every aspect of Radiology? That’s Imaging 2.0. Transforming the way you see imaging? That’s Imaging 2.0. Increasing your clinical integration, enhancing focus on patients, improving the economic value of the tools you count on every day? It’s all Imaging 2.0.

Web 2.0 is used to describe the evolution of the web from being data-driven to user-centric. It is about openness and collaboration to achieve what was unimaginable just a few short years ago. Imaging 2.0 promises to do the same.

What could you do with more?
More clinically integrated
As clinical complexity increases and new applications for imaging emerge, influence is shifting away from the traditional role of the radiologist. The key to putting imaging first is to integrate innovation in a natural way. Philips is introducing advances in nearly every aspect of radiology to help you do just that.

More collaboration and patient focus
We’re working with you to create smarter integration and better patient satisfaction, while providing greater value for your investment. In this next generation of imaging, we are incorporating advanced technology to facilitate new levels of collaboration between radiologists and referring physicians, to ensure efficient, personalized care for patients.

More value from each image
With Philips, you’ll also experience hybrid systems better than that of any single modality, while building lifetime value for your investment through optimized workflows and easier upgrades to the latest innovations. We’re opening up richer views, so you can perform procedures that are less invasive and less expensive while delivering the information you need.

More reasons to believe
Imaging 2.0 from Philips is a new approach to clinical collaboration and integration, patient focus and safety, and improved economic value to help radiologists find success in the new realities of practicing medicine.

We are creating smart, patient-adaptive systems for optimal patient comfort and safety. We’re designing reliable tools that improve value to you through increased uptime, easier upgrades, and flexible applications.

People focused. Healthcare simplified.
We’re dedicated to understanding the challenges you face, and helping you overcome those challenges every day. We believe that better collaboration, enabled through advanced technology, is fueling a revolution in imaging science, one that leads to better outcomes and lower costs. Giving people the best healthcare possible is your mission. It’s our mission, too.
3. Results Driven Scanning

Ingenuity CT introduces a new way of scanning with Results Driven Scanning. The last decade has seen significant advances in the capabilities of the CT scanner; but the way the operator runs the scanner has changed very little. Results Driven Scanning closes this gap, reducing decision points, automating routine tasks, and integrating into the way you work.

3.1 ExamCards
ExamCards are the evolution of the scanning protocol. With ExamCards, the results are planned, not the acquisition as traditionally done in CT; this reduces decision points and clicks, saves time and can improve operator-to-operator consistency. ExamCards can include axials, coronals, sagittals, MPRs, MIPS, and other results, all of which will be automatically reconstructed and can be sent off to where they will be read with no additional work required by the operator.

3.2 ScanRuler
Interactive timeline of the study that provides the operator a quick overview of the important events of the study, such as surview, acquisition, bolus tracking, auto voice, and injection.

Optional
3.3 SyncRight
SyncRight allows the CT scanner and the contrast injector to communicate together in a new way. Operators can now visualize the injection and acquisition progress on a single screen. With SyncRight, healthcare institutions can store the injection protocol inside the ExamCard; this means with a single click the injection protocol and scan protocol can be loaded. Additionally, operators program the injector directly from the operator console and the system can prompt the operator to stop the injection if the acquisition has stopped.

This is the first and only CT scanner to offer Results Driven Scanning.
4. Dose management

DoseWise is a philosophy, a set of principles and practices, focused on lowering radiation dose for patients and staff. Philips focuses on system design optimization, current (mA) optimization, and increasing dosage awareness to reduce the cumulative risk of radiation while obtaining high-quality images.

4.1 DoseRight Automatic Current Selection
Optimizes the dose for each patient based on the planned scan by suggesting the lowest mAs settings to maintain constant image quality at low dose throughout the exam.

4.2 DoseRight angular dose modulation
Automatically controls the tube current rotationally, increasing the signal over areas of higher attenuation (lateral) and decreasing signal over areas of less attenuation (AP).

4.3 DoseRight Z-DOM
(Longitudinal dose modulation)
Automatically controls the tube current, adjusting the signal along the length of the scan, increasing the signal over regions of higher attenuation (shoulders, pelvis), and decreasing the signal over regions of less attenuation (neck, legs).

4.4 DoseRight 3D-DOM
DoseRight 3D-DOM combines in-plane information and longitudinal information from the surview to modulate the dose delivered to the patient according to three dimensions.

4.5 Dedicated pediatric protocols
Developed in collaboration with top children's hospitals, age and weight-based infant and pediatric protocols optimize image quality with low dose.

4.6 Locking protocols
Consistency is critical to establishing a high standard of care and this consistency begins with ensuring the correct scanning protocols are used. With locking protocols, it is now possible to prevent unapproved modification of your scanning protocols by password-protecting them.

4.7 Dose warning messages
For brain perfusion studies a warning message is presented if the CTDIvol exceeds 250 mGy.

4.8 DoseRight Index
DoseRight Index (DRI) is a fourth generation tool for specifying desired image quality. This tool uses the patient’s size, as measured by the surview, and the pre-defined DRI value established by the healthcare institution to deliver the required dose to the patient to produce the desired image quality.

4.9 DoseCheck
It is now possible to build into each ExamCard an operator notification message that will be shown to the operator if the acquisition is planned and exceeds the specified CTDIvol or DLP. In addition, an alert dose threshold is available that, if an acquisition is planned and will exceed a specified CTDIvol or DLP, the operator will be required to enter their name and (if configured) a password to proceed, or they can adjust the scan parameters.

4.10 Dose summary table
Captures per-patient dose information for each individual series acquired and reports the total dose for the entire study. The dose summary table can be sent to PACS or a workstation along with the study for easy review by the radiologist.

4.11 DICOM structured reporting
System creates DICOM structured report for dose information that can be used by external systems such as HIS/RIS and PACS systems to extract dose information for a given patient.

4.12 Dose performance date

<table>
<thead>
<tr>
<th>CTDIvol</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>11.0 mGy/100 mAs</td>
</tr>
<tr>
<td>Body</td>
<td>5.6 mGy/100 mAs</td>
</tr>
</tbody>
</table>

Using IEC standard phantoms
5. Gantry

5.1 Gantry

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aperture</td>
<td>700 mm</td>
</tr>
<tr>
<td>Focus-isocenter distance</td>
<td>570 mm</td>
</tr>
<tr>
<td>Focus-detector distance</td>
<td>1040 mm</td>
</tr>
<tr>
<td>Rotation times</td>
<td>0.4, 0.5, 0.75, 1, 1.5, 2 seconds for full 360° scans</td>
</tr>
<tr>
<td></td>
<td>0.28, 0.33, seconds for partial angle 240° scans</td>
</tr>
<tr>
<td>Intercom system</td>
<td>Two-way connection between the gantry and console area</td>
</tr>
<tr>
<td>Gantry tilt</td>
<td>-30° to +30° with 0.5° increments</td>
</tr>
</tbody>
</table>
5. Gantry

5.2 Control panel on gantry
Controls:
• Multi-directional control for fast movement
• Fine movement in/out control
• Start button
• Pause button
• Visual countdown
• Zero couch location
• Lasers
Audio notification 10 seconds before X-ray On so that operator and staff can exit room before X-ray On.

5.3 Control panel at operator’s console
Controls:
• Tilt
• Table in/out/up/down
• Emergency stop
• X-ray indicator
• Start button
• Pause button

5.4 Auto voice
A standard set of commands for patient communication before, during, and after scanning is available in the following languages:
• English
• French
• Spanish
• Italian
• Japanese
• Hebrew
• Arabic
• Russian
• Georgian
• Turkish
• German
• Danish
• Swedish
• Chinese
• Portuguese
Customized messages can also be created.
6. Patient table

6.1 Extended range table

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum survey length</td>
<td>2,050 mm</td>
</tr>
<tr>
<td>Maximum axial scan length</td>
<td>2,100 mm</td>
</tr>
<tr>
<td>Maximum helical scan length</td>
<td>2,000 mm</td>
</tr>
<tr>
<td>Z-position accuracy</td>
<td>+/- 0.25 mm</td>
</tr>
<tr>
<td>Longitudinal speed</td>
<td>0.5 mm/s – 185 mm/s</td>
</tr>
<tr>
<td>Vertical range</td>
<td>578 mm to 1,028 mm with 1.0 mm increment</td>
</tr>
<tr>
<td>Floating tabletop</td>
<td>Carbon-fiber table top with foot pedal and hand controls for easy positioning and quick release.</td>
</tr>
<tr>
<td>Maximum load capacity with accuracy</td>
<td>450 lbs (204 kg) with 0.25 mm</td>
</tr>
</tbody>
</table>

Optional

6.2 Bariatric table

- Maximum survey length: 1,820 mm
- Maximum axial scan length: 1,860 mm
- Maximum helical scan length: 1,770 mm
- Z-position accuracy: +/- 0.25 mm
- Longitudinal speed: 0.5 mm/s – 185 mm/s
- Vertical range: 578 mm to 1,028 mm with 1.0 mm increment
- Floating tabletop: Carbon-fiber table top with foot pedal and hand controls for easy positioning and quick release.
- Maximum load capacity with accuracy: 650 lbs (295 kg) with 0.25 mm Z-axis accuracy
7. Accessories

7.1 Standard accessories

- Arm rests
- Cushions and pads
- Elevated head holder
- IV poles
- Patient restraint kit
- Table extension
- Table pad

7.2 Optional accessories

- Infant cradle
- Flat head holder
- Load and unload foot pedals
- Radiology Flat Top Kit
- Therapy table top
8. Imaging chain

8.1 Generator

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective power</td>
<td>105 kW</td>
</tr>
<tr>
<td>Power rating</td>
<td>80 kW</td>
</tr>
<tr>
<td>kV setting</td>
<td>80, 100, 120, 140</td>
</tr>
<tr>
<td>mA range (and step size)</td>
<td>20 – 665 (1 mA steps)</td>
</tr>
</tbody>
</table>

Effective power is calculated by using full generator power (80 kW) and using iDose4 at the same time. This gives Ingenuity CT effectively more power.

8.2 X-ray tube

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focal spot sizes, quoted to IEC 336/93 standard</td>
<td>Small: 0.5 mm × 1.0 mm</td>
</tr>
<tr>
<td></td>
<td>Large: 1.0 mm × 1.0 mm</td>
</tr>
<tr>
<td>Equivalent anode heat capacity</td>
<td>30 MHU</td>
</tr>
<tr>
<td>Anode heat capacity</td>
<td>8.0 MHU</td>
</tr>
<tr>
<td>Maximum anode cooling rate</td>
<td>1,608 kHU/min</td>
</tr>
<tr>
<td>Anode diameter</td>
<td>200 mm</td>
</tr>
<tr>
<td>Anode rotation speed</td>
<td>105 Hz (6,300 rpm)</td>
</tr>
<tr>
<td>Target angle</td>
<td>7 degrees</td>
</tr>
</tbody>
</table>

Liquid coolant carries heat away from the MRC Ice X-ray tube, so Ingenuity CT is ready for the most demanding scans, one right after the other.

8.3 Detector

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Solid-state GOS with 43,008 elements</td>
</tr>
<tr>
<td>Dynamic range</td>
<td>1,000,000:1</td>
</tr>
<tr>
<td>Slip ring</td>
<td>Optical – 5.3 Gbps transfer rate</td>
</tr>
<tr>
<td>Data sampling rate</td>
<td>Up to 4,640 views/revolution/element</td>
</tr>
<tr>
<td>Slice collimations available</td>
<td>64 (128) × 0.625 mm = 40 mm</td>
</tr>
<tr>
<td></td>
<td>40 (80) × 0.625 mm = 25 mm</td>
</tr>
<tr>
<td></td>
<td>32 (64) × 1.25 mm = 40 mm</td>
</tr>
<tr>
<td></td>
<td>16 (32) × 2.5 mm = 40 mm</td>
</tr>
<tr>
<td></td>
<td>2 (4) × 0.5 mm = 1 mm</td>
</tr>
<tr>
<td></td>
<td>2 (4) × 0.625 = 1.25 mm</td>
</tr>
<tr>
<td></td>
<td>12 (24) × 0.625 = 7.5 mm</td>
</tr>
<tr>
<td></td>
<td>12 (24) × 1.25 = 15 mm</td>
</tr>
<tr>
<td></td>
<td>20 (40) × 0.625 = 12.5 mm</td>
</tr>
<tr>
<td></td>
<td>16 (32) × 1.25 = 20 mm</td>
</tr>
<tr>
<td></td>
<td>32 (64) × 0.625 = 20 mm</td>
</tr>
<tr>
<td></td>
<td>16 (32) × 0.625 = 10 mm</td>
</tr>
<tr>
<td>Slice thickness (helical mode)</td>
<td>0.55 mm – 5 mm</td>
</tr>
<tr>
<td>Slice thickness (axial mode)</td>
<td>0.5 mm – 12.5 mm</td>
</tr>
<tr>
<td>Scan angles</td>
<td>240°, 360°, 420°</td>
</tr>
<tr>
<td>Scan field of view</td>
<td>250 mm, 500 mm</td>
</tr>
</tbody>
</table>
Ingenuity Data Acquisition and Sampling is a new technique that provides an alternative to dynamic Z-focal spot (ZFS) imaging, which reduces helical MDCT imaging artifacts and provides improved resolution. Ingenuity Data Acquisition and Sampling provides, high resolution, 128-slice, thin reconstructions that are clinically equivalent to those resulting from ZFS standard resolution acquisition and exceed those resulting from ZFS high-resolution and ultrahigh-resolution acquisitions.
10. Reconstruction

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reconstruction speed with iDose⁴</td>
<td>20 IPS</td>
</tr>
<tr>
<td>Reconstruction speed without iDose⁴</td>
<td>33 IPS</td>
</tr>
</tbody>
</table>

10.1 RapidView IR
RapidView IR is the reconstruction specifically designed to support iDose⁴, specifically to provide reconstruction speed (images per second) that allows this iterative reconstruction technique to be routinely used in inpatient, outpatient, and emergency care settings.

10.2 Evolving images
Real-time 256² matrix image reconstruction and display in step with helical acquisition or off-line. Images can be modified for window width and level, zoom, and pan prior to larger matrix reconstruction. At the end of the acquisition, all images are updated with the desired viewing settings.

10.3 Fast preview
Real-time 512² matrix image reconstruction and 5 mm x 5 mm contiguous slice display with helical acquisition or off-line reconstruction. Images can be modified for window width and level, zoom, and pan prior to larger matrix reconstruction. At the end of the acquisition, all images are updated with the desired viewing settings.

10.4 iDose⁴
iDose⁴ is an advanced fourth generation iterative reconstruction technique designed to maintain critical image quality aspects of low-contrast detectability and spatial resolution while enabling dramatically lower dose levels. iDose⁴ complements other proven dose reduction techniques available on Philips CT scanners to improve image quality and lower radiation dose acquisitions beyond those previously achievable through conventional filtered back-projection techniques.

10.5 Cone Beam Reconstruction
Philips patented Cone Beam Reconstruction Algorithm (COBRA) enables true three-dimensional data acquisition and reconstruction from helical scanning.

10.6 ClearRay reconstruction
A revolutionary solution to beam hardening and scatter artifact, new modeling and simulation technology pre-computes and stores beam hardening and scatter corrections in a database that is later referenced to create a correction that is personalized to each individual patient. As a fully three-dimensional technique, contrast scale stability is preserved across different patient sizes, image uniformity is improved, and organ boundaries are better visualized.

10.7 Adaptive filtering
Adaptive filters reduce pattern noise (streaks) in non-homogenous bodies, improving overall image quality.

10.8 Adaptive multicycle reconstruction
Image data can be prospectively gated or retrospectively tagged. COBRA automatically delivers the best temporal resolution possible (as low as 53 milliseconds).

10.9 Metal artifact reduction
Metal artifact reduction reduces the artifacts in image data caused by large, high density, metal objects such as prosthetic hip replacements.

10.10 Reconstruction field of view
- 50 to 500 mm continuous
- 25 to 250 mm (Ultra High mode)

10.11 Image matrix
- 512 x 512
- 768 x 768
- 1,024 x 1,024

10.12 Off-line reconstruction
Off-Line (batch) background image reconstruction of user-defined groups of raw data files with automatic image storage.
11. Networking and archiving

11.1 Networking
Ingenuity CT supports 10/100/1000 Mbps (10/100/1000 BaseT) network speeds. For optimal performance, Philips recommends a minimum of 100 Mbps network speed (1 Gbps preferred) and for the CT network to be segmented from the rest of the hospital network.

11.2 DICOM
Ingenuity CT supports IHE requirements for DICOM connectivity and can work with DICOM 3.0-compliant PACS, scanners, workstations, and printers. It supports IHE requirements for scheduled workflow and other integration profiles as defined in IHE statement.

Ingenuity CT includes the following DICOM functionality:
- Service class user and profile (CT, MR, NM, Secondary Capture)
- DICOM Print
- DICOM Modality Worklist User
- Query/Retrieve User and Provider
- Modality Performed Procedure Step User
- Storage Commitment User
- Removable Media

11.3 Archiving
The full implementation of the DICOM 3.0 communications protocol in the Ingenuity CT allows connectivity to DICOM 3.0 compliant scanners, workstations, and printers; supports IHE requirements for DICOM connectivity.

11.4 DICOM DVD/CD writer
A DICOM DVD/CD Writer option stores DICOM images and associated image viewing software on very low cost DVD/CD media. Images on these DVD/CDs can be viewed and manipulated on PCs meeting the minimum specifications. Ideally suited for individual result storage and referring physician support.

11.5 Filming
This function allows the user to set up and store filming parameters. Pre-stored protocols can be set to include auto-filming. The operator can film immediately after each image, at the end of a series, or after the end of a study, and review images before printing. The operator can also automatically film the study at three different windows and incorporate “Combine Images” functionality to manage large datasets. Basic monochrome and color DICOM print capability are supported.

### Type

<table>
<thead>
<tr>
<th>Type</th>
<th>Hard drive</th>
<th>DVD</th>
<th>CD</th>
<th>DVD RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>262 GB</td>
<td>262 GB</td>
<td>4.7 GB</td>
<td>4.7 GB</td>
</tr>
<tr>
<td>Approximate</td>
<td>473,000</td>
<td>826,000</td>
<td>8,500</td>
<td>1,240</td>
</tr>
<tr>
<td>images (compressed)</td>
<td></td>
<td></td>
<td></td>
<td>15,000</td>
</tr>
<tr>
<td>Patients</td>
<td>1,577</td>
<td>2,755</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>Images per study</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>
12. Clinical enhancements

12.1 Bolus tracking
An automated injection planning technique to monitor actual contrast enhancement and initiate scanning at a predetermined level.

12.2 Spiral Auto Start (SAS)
Spiral Auto Start allows the injector to communicate with the scanner. This allows the technologist to monitor the contrast injection and to start the scan (with a predetermined delay) while in the scan room.

12.3 Patient centering on surview
Centering the patient properly is one of the most important factors in getting good image quality. Traditionally, patients are centered using the gantry laser lights; with this new feature it is now possible to improve patient centering using the lateral surview with real time feedback.

12.4 Rate responsive CV toolkit
Enables cardiac imaging and includes an ECG monitor, Retrospective Tagging, Prospective Gating, the Cardiac Viewer, Heartbeat-CS, and CT Reporting. Uses Philips exclusive adaptive Multicycle Reconstruction Algorithm to optimize the temporal resolution.

12.5 Step & Shoot Cardiac
Enables low dose, high quality cardiac CT imaging. This axial prospective ECG-gated acquisition technique achieves full heart coverage with sub-millimeter isotropic resolution within a short breath-hold. Includes automatic arrhythmia detection and handling.

12.6 Jog Scan
Jog Scan provides up to 80 mm of imaging area for perfusion studies. The scanner acquires two 40 mm volumes of interest by translating the couch back and forth – doubling the standard perfusion coverage.

Optional

12.7 CT Interventional
CT Interventional includes both CT Fluoroscopy and Continuous CT (CCT) applications and is available as either cart-mount or ceiling-mount. CT Fluoroscopy provides real-time guidance for interventional procedures and CCT biopsy mode enables the clinician to perform gantry room scans using a foot pedal and includes a remote monitor for viewing.

This option also includes the Philips interventional couch control which improves operational efficiency during CT-guided interventional procedures through table side control of longitudinal movements for patient positioning.

12.8 Clinical applications
Standard
- CT Viewer
- CT Reporting
- Filming
- Calcium Scoring
- Cardiac Viewer
- Brain Perfusion

Optional
- Dental
- Bone Mineral Analysis
Philips has introduced the IntelliSpace Portal, a multimodality workspace that facilitates a higher level of collaboration among radiologists and referring physicians while streamlining imaging workflow. The IntelliSpace Portal uses advanced networking capabilities to facilitate collaboration among clinicians that may ultimately lead to faster, more accurate and informed patient care.

The IntelliSpace Portal is a clinical application that turns virtually any PC into an advanced multimodality imaging system workspace that can support radiology, cardiology, oncology and other specialties’ imaging needs. This allows radiologists and referring physicians – who are often burdened with scheduling conflicts – to review the results of multiple imaging modalities at their convenience in their preferred location via a secure interactive Internet browser. Until now, most powerful visualization workstations were housed in the radiology department requiring a referring physician to make a special trip to radiology in order to view the advanced images so crucial to accurate patient diagnoses.

The IntelliSpace Portal offers several exclusive features, including:

- Thin client architecture that makes image data and applications available anywhere for all CT, MR, NM images
- Award winning and easy-to-use applications (based on the Best-in-KLAS Brilliance Workspace Portal)
- Tooling to allow easy communication amongst clinicians of advanced visualization results
- Integration on Philips’ picture archiving and communication system (PACS)
- The Philips “open integration” policy allows the IntelliSpace Portal to synch with several third party solutions by conforming to the Digital Imaging and Communications in Medicine (DICOM) standards
- Multimodality tumor tracking application that provides automated tumor segmentation of all lesions from discovery to treatment, and reports on the growth and functional changes of individual lesions in the form of standards (RECIST, WHO, PERCIST)

The IntelliSpace Portal offers comprehensive visualization capabilities such as CT virtual colonoscopy, cardiac plaque analysis, lung nodule assessment and all routine CT and MR necessities such as perfusion and diffusion analysis, cartilage assessment and CT and MR angiography. The quantitative clinical application that drives the IntelliSpace Portal ensures consistent and replicable images and results regardless of the user.

Web Collaboration is the first medical networking platform, and allows for the collaboration among radiologists and referring physicians using the IntelliSpace Portal. Web Collaboration enables clinicians to:

- Share images and data
- Discuss cases in real-time using everyday communication tools like email and chat programs
- Invite multiple colleagues to join a virtual collaboration meeting to interactively review patient images
14. Image quality

14.1 Spatial resolution

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spatial resolution Cut-off</td>
<td>+/- 2 lp/mm</td>
</tr>
<tr>
<td>Ultra high mode (lp/cm)</td>
<td>24</td>
</tr>
<tr>
<td>High mode (lp/cm)</td>
<td>16</td>
</tr>
<tr>
<td>Standard mode (lp/cm)</td>
<td>13</td>
</tr>
</tbody>
</table>

14.2 Noise

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>0.27% [120 kVp, 250 mAs, 10 mm, 0.75 sec, 250 mm FOV, UA filter, 21.6 cm water equivalent phantom]</td>
</tr>
</tbody>
</table>

14.3 Low-contrast resolution

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-contrast resolution</td>
<td>4.0 mm @ 0.3% [120 kVp, 250 mAs, 10 mm, 0.75 sec, 250 mm FOV, UB filter, 27 mGy at surface of CATPHAN phantom]</td>
</tr>
</tbody>
</table>

14.4 Other

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorption range</td>
<td>-1,024 to +3,072 Hounsfield units</td>
</tr>
</tbody>
</table>
The initial installations of Ingenuity CT will be released without Results Driven Scanning. All Ingenuity CT’s will receive Results Driven Scanning upon its release. The table below highlights the key features and how they are associated with Ingenuity CT.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Ingenuity CT Before Results Driven Scanning</th>
<th>Ingenuity CT With Results Driven Scanning</th>
</tr>
</thead>
<tbody>
<tr>
<td>DoseRight ACS</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>DoseRight angular</td>
<td>Standard</td>
<td>Replaced by DoseRight 3D-DOM</td>
</tr>
<tr>
<td>Dose modulation</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>DoseRight Z-DOM</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>DoseRight 3D-DOM</td>
<td>N/A</td>
<td>Standard</td>
</tr>
<tr>
<td>DoseRight index</td>
<td>N/A</td>
<td>Standard</td>
</tr>
<tr>
<td>Dose summary table</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Dose warning messages</td>
<td>Standard</td>
<td>Replaced by DoseCheck</td>
</tr>
<tr>
<td>DoseCheck</td>
<td>N/A</td>
<td>Standard</td>
</tr>
<tr>
<td>DICOM structured reporting</td>
<td>N/A</td>
<td>Standard</td>
</tr>
<tr>
<td>Locking protocols</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Metal artifact reduction</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>iDose⁴</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>ExamCards</td>
<td>N/A</td>
<td>Standard</td>
</tr>
<tr>
<td>ScanRuler</td>
<td>N/A</td>
<td>Standard</td>
</tr>
<tr>
<td>Evolving images</td>
<td>Standard</td>
<td>N/A</td>
</tr>
<tr>
<td>Fast Preview</td>
<td>N/A</td>
<td>Standard</td>
</tr>
<tr>
<td>Ingenuity data acquisition and sampling</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Rate responsive CV toolkit</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Step &amp; Shoot Cardiac</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>ClearRay reconstruction</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Jog scan</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Optional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SyncRight</td>
<td>N/A</td>
<td>Optional</td>
</tr>
</tbody>
</table>
A lifetime of value starts here. Reliable from the ground up, Ingenuity CT is designed to fit seamlessly into your operation.

16.1 Power requirements
- 200/208/240/380/400/415/480/500 VAC
- 50/60 Hz
- 112.5 kVA source (150 kVA preferred)
- Three-phase distribution source computer, reconstruction, and monitors.

16.2 Console Uninterrupted Power Supply (UPS)
Provides up to 30 minutes of backup power for host

Optional

16.3 Environmental requirements
Temperature
- Gantry room: 18° to 24° C (64° to 75° F)
- Control room: 15° to 24° C (59° to 75° F)
- Storage/Transport: -5° to +35° C (23° F to 95° F)

Humidity
- Gantry/Control: 35% to 70% non-condensing
- Storage/Transport: 10% to 90% non-condensing

Heat dissipation
- Gantry: 18,000 BTU/hr
- Computer: 2,559 BTU/hr
- Reconstruction: 5,293 BTU/hr

16.4 Dimensions and weights

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gantry</td>
<td>1941 kg (4280 lbs.)</td>
<td>201 cm (79&quot;)</td>
<td>238 cm (94&quot;)</td>
</tr>
<tr>
<td>2</td>
<td>Couch (extended couch version at full travel w/ foot extender)</td>
<td>400 kg (882 lbs.)</td>
<td>107 cm (42&quot;)</td>
<td>566 cm (223&quot;)</td>
</tr>
<tr>
<td>3</td>
<td>Control console</td>
<td>193 kg (425 lbs.)</td>
<td>118 cm (47&quot;)</td>
<td>120 cm (47&quot;)</td>
</tr>
<tr>
<td>4</td>
<td>Computer/server (CRC)</td>
<td>269 kg (593 lbs.)</td>
<td>77 cm (31&quot;)</td>
<td>61 cm (24&quot;)</td>
</tr>
</tbody>
</table>

* Dimensions and weights for one unit

This layout represents minimum space for equipment installation and service access. National and local codes may require additional space for electrical safety and patient access.