GE Healthcare

Allia™ IGS 5 with AutoRight™

Edison

PRODUCT DATA SHEET

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01 | Image Quality and Dose

X-Ray Generator

The IGS system uses a 100 kW high-frequency Jedi three-phase power unit that provides grid pulsed fluoroscopy capability. 6.4

Maximum power available	100 kW 5.1
Maximum kVp available	125 kVp
Maximum continuous input power	3200W for the tube unit
Pulse frequency	0.5 to 50 fps
Radiographic/recording mode 1.2	50 to 125 kVp 5.2
Radiographic mA ratings	1 - 1000 mA
Max. continuous power in fluoro mode	3200 W
Fluoroscopy mode 1.1	60 - 120 kVp
Fluoroscopy mA ratings	1 – 180 mA
Fluoroscopic timer	Yes

X-Ray Tube

The IGS system is equipped with the high-performance, highly reliable Performix™ 160A metal X-ray tube, which meets requirements for all vascular applications.

Anode diameter	160 mm brazed graphite
Anode rotation	7800 rpm/ 130 HZ
Anode Target angle	11,25°
Anode heat storage capacity	2.7MJ (3.7 MHU) 6.3
Anode steady state heat dissipation	6.72 kW
Cathode	Bi-filament design
Coincident focal spot sizes	0.3, 0.6 and 1.0 6.2
Fluoroscopic power	• 3200 W (continuous) • 4500 W (peak capability for maximum of 10 minutes)
Maximum casing heat storage	5.14 MJ (6.9 MHU)
Continuous casing heat dissipation	3200 W
Maximum anode cooling rate	544 KHU/min (6.72 kW)
Total filtration (IEC 60601-1-3)	1.0 mm Al
Leakage radiation (IEC 60601-1-3)	<50mR/h measured at 3.2kW (125kv, 25.4mA)

Tube Cooling Unit	COOLIX 4100
Cooling type	Closed-loop remote water chiller 6.1.1
Maximum Cooling capacity	4100 W
Flow rate	12 l/min
Coolant volume	23 liters in chiller + 17 liters in pipes
Dry weight	120kg+/- 5

Collimation	
Number of collimation blades	2 pairs 4.1
Spectral filtration 4.2	0.1, 0.2, 0.3, 0.6 and 0.9 mm of copper (20cm detector) 0.1, 0.2, 0.3 mm of copper (30cm and 40cm detector) 1 integrated contour filter blades (20cm detector) 3 integrated contour filter blades (30cm and 40cm detector) 4.1 motorized, tapered filter blade that can be rotated 360° as well as translated in and out using a simple joystick control at tableside

Detector*

The Allia IGS 5 system comes with 3 detector configurations : 20cm detector, 30cm detector or 40cm detector.

Detector manufacturer	GE
Size of the detector 3.3	20.5 cm x 20.5 cm (20cm detector) 31 cm x 31 cm (30cm detector) 41 cm x 41 cm (40cm detector)
Material	Amorphous silicon photodiode array on a continuous-substrate
Pixel size	200 x 200 µm 3.5
Image matrix	1024 x 1024 (20cm detector) 1536 x 1536 (30cm detector) 3.4 2048 x 2048 (40cm detector)
Bit acquisition 3.2	14 bit

Mode @ Dose/Fr	
DQE values at average fluoro and record dose operating points	
Record, e.g. DSA 175 nGy (20 uR)	80% (20cm detector), 84% (30cm and 40cm detector) 3.6
Fluoro 8.8 nGy (1 uR)	77% (20cm detector), 81% (30cm and 40cm detector)
Additional DQE values at minimum fluoro dose operating point	
Fluoro 2.2 nGy (0.25 uR)	68% (20cm detector), 73% (30cm and 40cm detector)
Note: DQE values given are typical at f = 0 cycles/mm with RQA5 conditions as defined by IEC62220-1-3 standards	

*In clinical use, the results of dose reduction techniques will vary depending on the clinical task, patient size, anatomical location and clinical practice. Physicians assisted by a physicist as necessary have to determine the appropriate settings for each specific clinical task

Anti-scatter Grid

The system is configured with an anti-scatter grid to enhance image quality during routine imaging. Removal of the grid can improve the X-ray dose efficiency for infants (e.g. less than one-year-old) for field of view (FOV) smaller than 20 cm (7.9 in).

Grid ratio	13:1
Focal distance of the grid	100 cm (39in) (20cm and 30cm detector), 105 cm (41in) (40cm detector)
Grid Line frequency	70 LP/cm

Image acquisition

Fluoroscopy modes	Non-subtracted, subtracted, roadmap, Blended Roadmap[1]
Fluoroscopy frame rate	30 fps, 15 fps, 7.5 fps and 3.75* fps
Fluorostore	450 fluoro images (up to 900)
Sub/no Sub simultaneous display[1]	Yes
Angio Acquisition Package	• DSA (digital subtracted angiography) at 0.5 - 7.5 fps including Automated Pixel Shift • Multi-segment DSA with flexible frame rate and duration and single shot capabilities
Dynamic Acquisition Package	30 fps, 15 fps and 7.5 fps
Innova Chase acquisition	5 fps
Digital output	1024 x 1024
Field-of-view adjustment from tableside with four magnification selections (records mode)	20 cm, 17 cm, 15 cm, and 12 cm (20cm detector) 30 cm, 20 cm, 16 cm and 12 cm (30cm detector) 40 cm, 32 cm, 20 cm and 16 cm (40cm detector)
Image flip capability	Horizontal and vertical image flip capability for all acquisition
Shutter	Automated electronic shutter matched to collimated portion of image
Integrated X-ray dose tracking and in-room display of air kerma and dose area product	
A configurable auditable tone is activated when using the fluoro mode	

*: non-subtracted Fluoro mode only

Image Processing and Review

Immediate auto-review of acquisition
Next and prior sequences or images
Slow and fast review of sequences, forward and reverse
Pause, adjust brightness and contrast during review
Image review with or without edge enhancement filters
Mask select, pixel shift
Store/recall reference images

10.1

AutoRight™: Intelligent Image Chain Powered by Edison

AutoRight is an AI-based image chain, trained on a dataset containing more than 6,000 data, that automatically adjusts acquisition parameters, processing, and display, to ensure consistent image quality regardless of patient size, anatomy or C-arm angulations*.

Adjusts up to 7 acquisition parameters: tube voltage, tube current, pulse width, focal spot, spectral filtration, detector dose, source to image distance (InnovaSense[1])
Retaining and enhancing processing tools and algorithms: Dynamic Range Management, Subtraction, AutoPixelShift, Edge Enhancement, Denoising Techniques
Direct access to up to 5 user selectable image-quality levels for fluoro, 4 for dynamic, 6 for 3DCT HD, 3 for DSA, 2 for Chase, 4 for Bolus.
Graphical representation of the real time air kerma rate at the patient reference point using a color-coded dose rate meter
Dose limiter button in direct access to set air kerma rate limit to either 50% or 25% of max air kerma rate
Default image-quality levels can be customized for the various clinical acquisition protocols

*Except when system limits are reached

InnovaSense[1]

InnovaSense is an advanced patient contouring technology available with 20cm and 30cm detector configurations that uses an intelligent algorithm during gantry motion to select the optimal position for the image receptor relative to the patient. By reducing the distance from receptor to patient, the system optimizes imaging geometry and helps reduce radiation exposure. The user also can position both the gantry and detector with one integrated operation. Capacitive sensor technology and optimized collision avoidance software enable a speed of pivot and C-arm, of up to 20° per second.

2.3

Dose Awareness

Integrated dose monitoring

The user can monitor air kerma rate, integrated air kerma over the exam, and the total dose area product received by the patient during a procedure. The threshold of cumulated dose displayed on a gauge icon is customizable to warn operator when such threshold has been reached. The threshold is customizable depending on the protocol.

Dose reporting

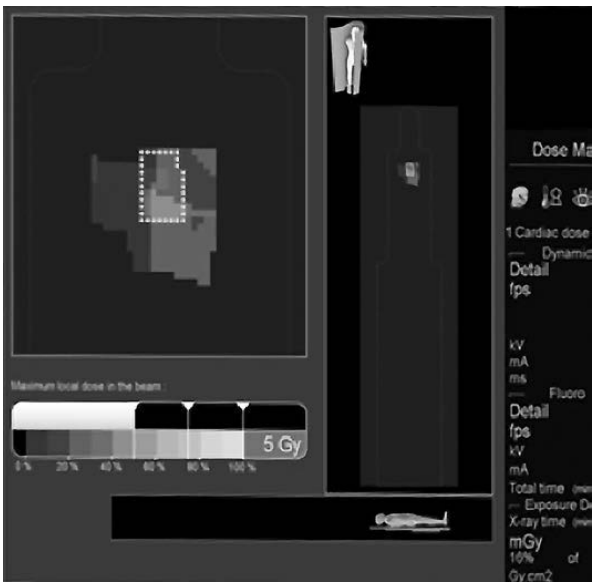
14.2

The system provides DICOM* compatible Radiation Dose Structured Report allowing the export of the dose and related acquisition parameters.

Dose Map

Dose Map is a feature used to calculate, display and record an estimated local cumulated dose during procedures done on the GE X-Ray angiographic system. It is designed to provide to the user a visualization of the distribution of the local cumulated dose throughout the exam as well as the current projection of the beam.

Estimated local cumulated dose	Yes
Pediatric patient	Yes
Real-time calculation	Yes
Configurable alert	Yes



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02 | Applications

2D Applications

InnovaChase™

InnovaChase™ is a dynamic, unsubtracted acquisition at a fixed frame rate of 5 fps with manual and remote panning of the table. It is optimized for visualization of a run off.

T3

ECG acquisition package[1]

9.1.1

With the ECG acquisition package the heart rate is displayed on the console and live monitor.

The ECG acquisition package is compatible with recording system outputs providing analog ECG signals comprised between +/-5 V. Connection cables compatible with Mac-Lab™[1,3], CardioLab™[1,3], Combolab[1,3] and some third party recording systems are provided with this package.

Quantitative Analysis Package[1]

10.7

Stenosis Analysis[1] and Left Ventricle Analysis[1] allow the user to perform stenosis and left ventricle measurements and analysis. With OneTouchQA[1], the user can select measurement points with a fingertip directly on the selected image frame displayed on the Touch Panel at tableside – no mouse or joystick is required. One Touch QA is available for stenosis analysis and distance measurements.

PCI ASSIST 2[1]

10.4

is an ASSIST package containing StentViz and StentVesselViz applications and including High Contrast Fluoro which decreases the pulse width by 38%. While the dose is equivalent, it is delivered in an efficient way that helps significantly reduce the blurring in the image due to organ motion. With PCI ASSIST 2 our StentViz enhancement algorithm has been improved to better operate in complex bifurcation.

StentViz[1]

10.4

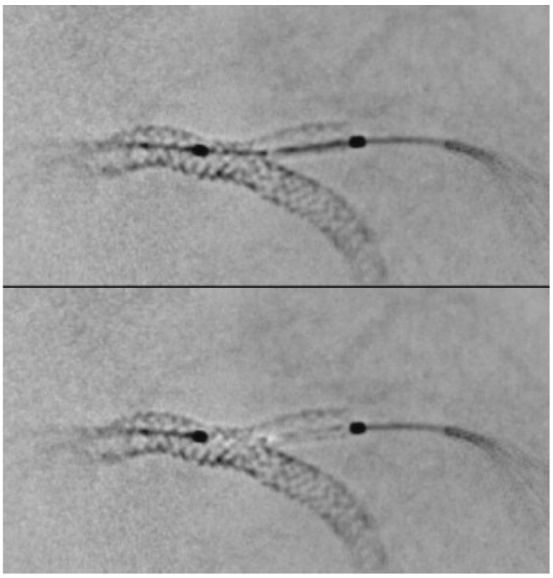
The StentViz option enhances visibility of the stent structure. It is particularly useful in verifying placement and deployment of stents during coronary interventions where moving arteries could make visibility challenging. StentViz processing is fully automated and can be launched at the press of a button on the Touch Panel. The result is automatically displayed on the reference monitor and shows two zoomed and enhanced images of the stent(s): One with the guidewire in view and a second one where the guidewire is subtracted out in the area between the two balloon markers (for one stent) or four balloon markers (for two stents such as in complex bifurcations) to allow better visualization of the stent(s) struts or borders.

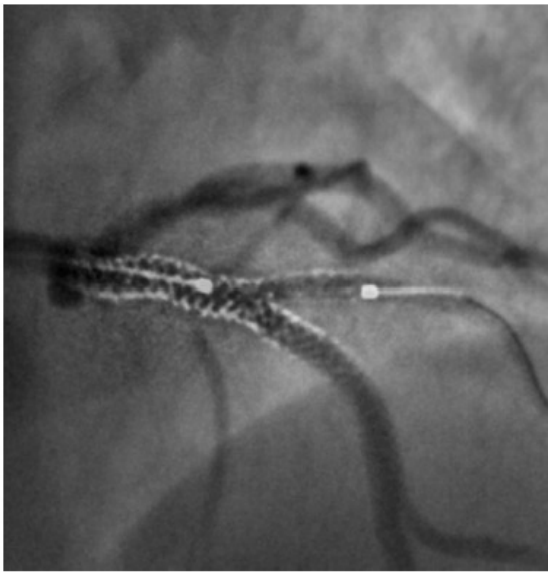
StentVesselViz[1]

Being able to see the position of stent into the vessel is especially critical in cases of complex clinical situations such as bifurcations or calcified lesions. A complete apposition of stent onto vessel wall can contribute to prevent stent thrombosis & restenosis.

StentVesselViz improves the user confidence in the assessment of the position, correct deployment and shape of the stent in relation with the vessel in 2D versus cine.

Thanks to an intuitive workflow, StentVesselViz is operated smoothly and can help the user position and expand stent appropriately. The StentVesselViz option delivers from a single acquisition a StentViz image and then the fusion of this one with an image of the injected vessel. Those two images are automatically fading together for optimized and simultaneous visualization of stent into the vessel pre and post deployment.





Blended Roadmap[1]

Blended Roadmap is a vascular road mapping application that superimposes a previously acquired vascular image over live fluoroscopy. This advanced application helps clinicians view the progression of guidewires and devices through the vessels.

Clinicians can select any DSA or bolus image as a reference roadmap image. By using this image multiple times, Blended Roadmap has the potential to minimize contrast media injections during road mapping.

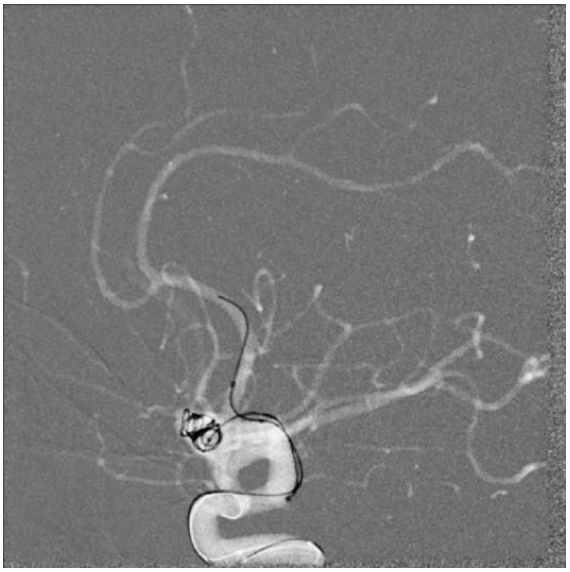
10.5

Blended Roadmap provides additional features to enhance road mapping procedures, including:

- Automated pixel shift between vessel mask and fluoroscopy to compensate for motion
- Semi-automated pixel shift between fluoro mask and fluoroscopy to compensate for motion
- Automatic resizing of the roadmap image to adapt to the fluoroscopic field-of-view
- Adjustment of vessel transparency
- Adjustment of the subtraction level
- Automatic system repositioning according to vessel mask location

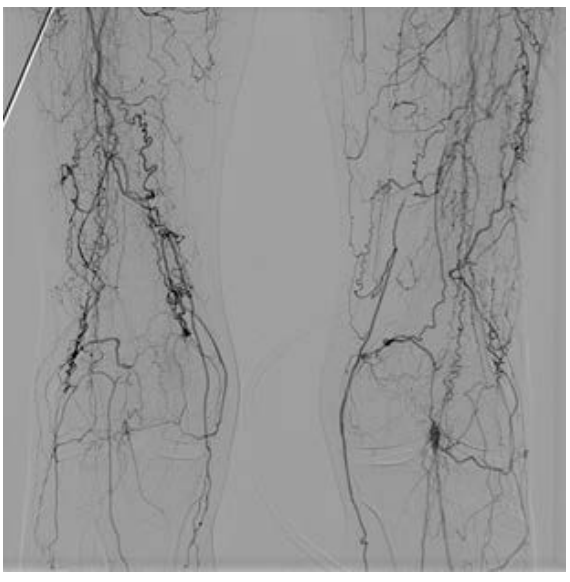
10.5

- Blended Roadmap is available on systems with either the Omega V or Innova^{IQ} tables



InnovaBreeze™ peripheral angiography[1]

InnovaBreeze, available with 30cm and 40cm detector configurations, lets the user follow the contrast using variable panning speed control in the control room while looking at subtracted images in real time. InnovaBreeze includes Advantage Paste.



Advantage Paste[2,3]

Advantage paste is an application running on AW[3] VolumeShare Workstation that provides the ability to reconstruct and visualize the entire length of the subtracted bolus chasing acquisition on a single image.

InnovaSpin™[,1]

10.6

T4

The offset C-arm permits fast-spin rotational angiography over a maximum range of 200° at variable speeds from 20° to 40°/sec (maximum speed of 30°/s from LAO to RAO) with flexible cranio/caudal oblique angulations. The enhanced InnovaSpin™ trajectories are not constrained to a single transverse plane and can be used at oblique angulations within physical constraints. A total of seven trajectories can be preset (limited to five on a tilting table). The entire workflow for the test run and spin acquisition can take place at tableside. The spin acquisitions can be performed in the cardiac record mode for coronaries, or peripheral image quality can be optimized in the InnovaChase™ mode.

INTERACT - ViewX[1]

INTERACT View X enables display of the Live X-Ray or fusion of Pre-Op CT with Live X-Ray, on the Vivid E95 / S70N 3 (with ViewX[3]) as a picture in picture. With INTERACT View X, the echo cardiologist is able to follow the whole workflow of the procedure from the echo display, helping facilitate communication between the echo cardiologist and the Interventional Cardiologist.

3D Applications

3DCT[1,2]

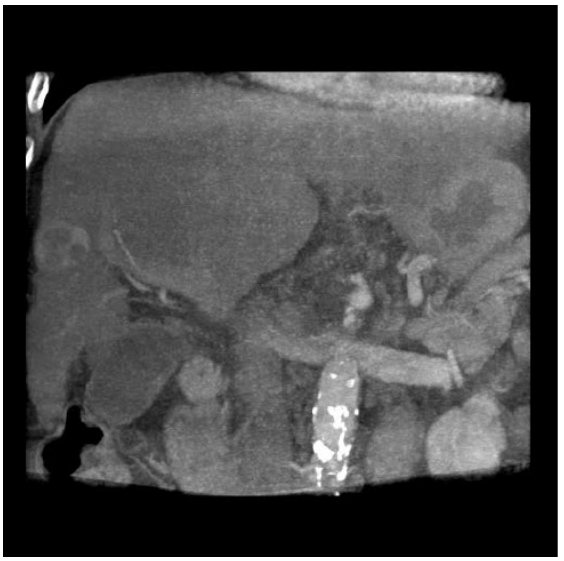
10.6

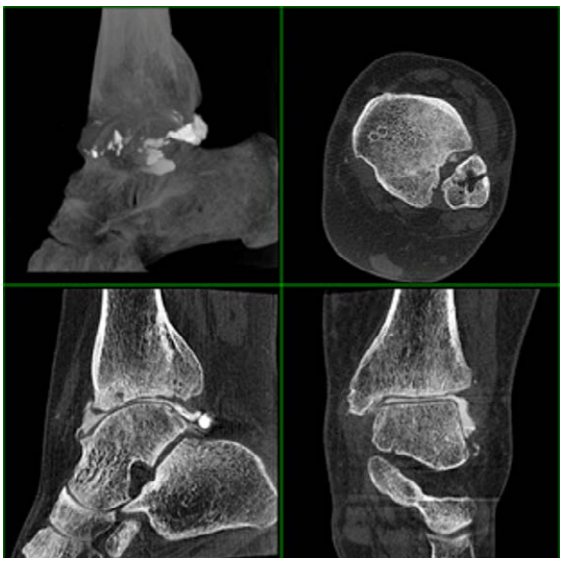
3DCT is intended for imaging vessels, bone and other internal body structures. It helps physicians in diagnosis, surgical planning, interventional procedures and treatment follow-up. 3DCT performs at 40 degree/sec and can be used with 4 different field of views. It utilizes automatic exposure technique to optimize image quality and dose all along the rotational acquisition.

3DCT HD[1,2]

3DCT HD is intended for imaging vessels, bone, soft tissues, and other internal body structures. It helps physicians in diagnosis, surgical planning, interventional procedures and treatment follow-up. 3DCT HD offers 3 rotation speeds: 16, 28 and 40 degree/sec, and 4 different field of views. It utilizes automatic exposure technique to optimize image quality and dose all along the rotational acquisition.

	3DCT	3DCT HD
Spin duration	5 sec.	5, 7, 13 sec.
Frame rate	50 fps	50 fps
Reconstructed 3D model resolution	512x512x512 256x256x256	512x512x512 256x256x256





Transfer of the acquired data to the AW workstation is automated including image reconstruction, processing and display. The resulting 3D model can be visualized as axial slices and volume rendering.

Slice reconstruction for 3DCT / 3DCT HD can be exported as DICOM CT format.

Subtracted 3D[1,2]

1.4 10.6

Subtracted 3D enhances the 3DCT / 3DCT HD application by adding automated sequential mask and contrast spin acquisitions with processing protocols to produce subtracted 3D vascular images. Clinicians may use Subtracted 3D to quickly visualize vessels without the need to remove surrounding bone, tissue, and implanted devices. The output of the 3D processing provides convenient side-by-side and separate visualization of the mask series, the subtracted vascular anatomy and the standard segmented 3D vascular images.

Interventional devices such as coils, stents, glue and clips, as well as calcified plaque, are visible on the mask image and can be fused onto the subtracted image. Their transparency can be adjusted for optimal visualization of the implanted devices in relationship to the vascular anatomy.

3D presets

It is possible to recall predefined 3D CT acquisition parameters through 3D presets targeted for anatomy and particular clinical purposes such as vascular, soft tissues, bones, devices visualization, or a combination thereof.

The following 3D acquisition parameters can be customized:

Field of view
Rotation speed
Image-quality level
Subtraction
Percentage of horizontal (top-bottom) and vertical (left-right) collimation in the FOV

MAR[1,2]

3DCT HD MAR reduces streak artifacts induced by the presence of small metallic devices such as coils or clips within the 3D field of view.

Motion Freeze[1,2]

3DCT HD Motion Freeze is designed to reduce artefacts caused by involuntary respiratory motion during the rotational acquisition and recover small detail visibility impacted by motion.

INTERACT - Active Tracker[1,2]

3DCT HD Active Tracker automatically detects the omniTRAX™ Active Tracked device and adds its location to the 3DCT HD datasets. GE LOGIQ E9[3] can use the Active Tracked locations in order to facilitate fusion with live ultrasound images.

Workstations

Two optional workstations, the AW and the CA1000 workstations[3], can be connected to the system depending on site requirements.

9.1.2, 9.1.3

AW is a multi-modality (CT, MR, XR, TEP, CBCT...) image review, comparison, and processing workstation. It allows the use of real-time image fusion applications through a dedicated communication interface: fastlink (1Gb/sec).

CA1000 provides comprehensive image viewing capabilities for nearly all DICOM** images in a cardiology-specific display protocol and it also provides advanced cardiac X-ray analysis tools.

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03 | Gantry

Positioner specifications	
L-arm rotation on vertical axis	±100° (±95° motorized limit set)
C-arm angulation	50° cranial and 45° caudal 2.2.1, 2.2.2
Combination of movements of the C-arm and L-arm	Permits -/+55° cranial and caudal angulations
C-arm angulations speed	0 to 15° (Up to 20°/sec with InnovaSense)
Offset C-arm	-117°/+105° RAO/LAO rotations 2.1.1, 2.1.2
offset C-arm throat depth	107 cm (42 in) with L-arm at 0° provides femoral coverage on most patients without rotating the L-arm
Fully motorized SID	8.9 cm/s (3.5 in/s)
SID range	85 cm to 119 cm (33 in to 47 in) – 20cm detector configuration 89 cm to 119 cm (35 in to 47 in) – 30cm detector configuration 95 cm to 119 cm (37 in to 47 in) – 40cm detector configuration
Tube Focal Spot distance to Isocenter (SOD)	72 cm (28 in)
Isocenter to floor distance	107 cm (42 in)
Positioning modes	• Anatomical mode to hold the view while moving the L-arm to an optimum patient access position. • Mechanical angulation allows movement of any one of the three axes independently for maximum positioning flexibility and vessel profiling
Support 2.4	Floor-mounted
Weight	~ 710 kg (20cm detector configuration) ~762 kg (30cm detector configuration) ~786 kg (40cm detector configuration)

04 | Patient Table

The Allia IGS 5 system comes with either Omega table (Omega IV table is only available with 20cm detector configuration) or with Innova^{IQ} table. Configurations with Innova^{IQ} table are compliant with standard IEC 60601-2-46 required for operating tables.

	Omega IV	Omega V
Maximum total load	304 kg (670 lbs.)	304 kg (670 lbs.)
Maximum patient weight	204 Kg (450 lbs.)	204 Kg (450 lbs.)
Maximum accessories weight	100kg (220 lbs.) while complying with the following -maximum weight requirements: • 40 kg (88lbs.) on each of the two fixed side rails • 20 kg (44 lbs.) of accessories on the table foot-end rail (option)	100kg (220 lbs.) while complying with the following -maximum weight requirements: • 40 kg (88lbs.) on each of the two fixed side rails • 20 kg (44 lbs.) of accessories on the table foot-end rail (option)
CPR	50 kg (110 lbs.) additional maximum load	50 kg (110 lbs.) additional maximum load
Tabletop absorption	Less than 0.85mm Al Equivalence, 100KVp	Less than 0.85mm Al Equivalence, 100KVp
Tabletop Material	Radio translucent carbon fiber tabletop	Radio translucent carbon fiber tabletop
Tabletop length	300 cm (118 in)	333 cm (131 in)
Tabletop width	46 cm (18”) in patient trunk area	46 cm (18”) in patient trunk area
Horizontal Float Movement	8-way	8-way
Longitudinal travel	Up to 110 cm (43.3”)	Up to 170 cm (67”)
Longitudinal Speed	15cm/s	15cm/s
Imaging coverage with table panning	Up to 127 cm (50”)	Up to 187 cm (73”) – 20cm detector Up to 195 cm (76”) – 30cm detector Up to 201 cm (79”) -40cm detector
Transverse Travel	± 14 cm (± 5.5”)	± 14 cm (± 5.5”)
Vertical travel above floor	From 78 cm (30.7”) to 108 cm (42.7”)	From 78 cm (30.7”) to 108 cm (42.7”)
Vertical Speed	2 cm/s (0.8”/s) at 50Hz. 2.5 cm/s (1”/s) at 60 Hz	2 cm/s (0.8”/s) at 50Hz. 2.5 cm/s (1”/s) at 60 Hz
Accessories rails	Available on the base section of the tabletop to mount tableside controls and IV pole	Available on the base section of the tabletop to mount tableside controls and IV pole
Table weight	538 kg	538 kg

Innova[IQ] Table	
Maximum total load	320 kg (705 lbs.)
Maximum patient weight	250 kg (551 lbs.)
Maximum accessories weight	116kg (255 lbs.) while complying with the following -maximum weight requirements: • 40 kg (88 lbs.) on each of the two fixed side rails • 20 kg (44 lbs.) on each of the two removable side rails • 16 kg (35 lbs.) for other miscellaneous components/accessories
CPR	50 kg (110 lbs.) additional maximum load Position for CPR accessible using a dedicated auto-positioner memory position
Imaging coverage with table panning	Up to 187 cm (73") – 20cm detector Up to 195 cm (76") – 30cm detector Up to 201 cm (79") -40cm detector
Tabletop absorption	Less than 0.85mm Al Equivalence, 100KVp
Tabletop material	Radio translucent carbon fiber tabletop
Tabletop length	333 cm (131")
Tabletop width	46 cm (18 in) in the patient trunk area
Longitudinal travel	Up to 170 cm (67")
Longitudinal speed	Up to 25cm/s
Transverse travel	• +/-14 cm (5.5") in manual mode • +/-13 cm (5.1") with motorized panning
Vertical travel	• Without tilt: From 78 cm (30.7") to 108 cm (42.7") • With tilt: From 80 cm (31.5") to 137 cm (53.9")
Vertical speed	Up to 2.5 cm/s (1"/s)
Tilting angles	20° Trendelenburg (head down), 12° reverse Trendelenburg (head up)*
Tilting speed	Up to 2°/sec
Tilting modes	• Isocenter tracking mode to help maintain the region of interest centered during the tilt • Incidence-keeping mode: The gantry moves in synchronization with the table tilt. In this mode, clinicians can also pan the table to follow the contrast media

* Typical values

Patient mattress	5 cm (2") mattress Mattress is a sandwich of 2 Visco Elastic foams of 1" thickness each, top layer of which with density of 85Kg/m3 (provides support and envelops quickly and efficiently adapting to patient body shape) is laminated to a lower layer with density of 110Kg/m3 (capable of redistributing loading forces), with X-Ray absorption of < 1.2mm Al Equivalence @ 3.6HVL, 100KVp
Table weight	767 kg (maximum)
Auto-positioning features	Memorizes up to 49 table and gantry position simultaneously or separately. Table auto-positioning includes longitudinal, lateral, vertical and tilt movements of the tabletop. Auto-positioning control using the touch panel and control panel
Interconnect panel	Includes connectors for injectors, two potential equalization outletsand control panel
Accessories rails	Available on the base section of the tabletop to mount tableside controls and IV pole

Table accessories for Innova^{IQ} table	
Anesthesia screen holder[1]	Malleable screen holder that helps separate the patient's head from the surgical site during procedures
Removable rails[1]	Standard size table rails** that can be adapted on the trunk section of the table to accommodate tableside user interface or comfort accessories
Arm boards with cushions[1]	Arm boards with thick pads that can be mounted on the removable rails
Patient comfort accessories[1]	• Table width extenders • Patient restraint straps • Head support widener
Sockets[1]	• Universal clamp • Easy Lock socket
TSUI adaptor rail[1]	Allows attachment of TSUI on removable rails
Rail extenders[1]	To be adapted on the head section of the table; can handle up to 15 kg (33 lbs.) of accessories on each of the two side rails.
Accessories cart[1]	For accessories storage

** Available in US (0.4 x 1.1 in) and European (10 x 25 mm) standard sizes

05 | User interface

In the examination room

Control Panel

8.2.1

Gantry and table motion control, disable/enable patient contouring, system lock/unlock, emergency stop, Fields-of-view, collimator blades, contour filters
With Omega table : Mushroom with free floating panning With Innova^{IQ} table : Mushroom with power-assisted panning
Hand detection technology using capacitive sensors to enable system motion
IPX4 certified
Size: 310 x 180 mm
Weight: Less than 2.35 kg, without rail clamp and cable
A second optional control panel can be added at tableside or in the control room

8.2.2

8.1.2

Touch Panel

8.1.1

The Touch Panel provides safe and simple access to key features throughout the exam, to control the system functions as well as integrated equipment.

8.2.4

Allows to control image acquisition, image review, dose settings, Auto Positioner, Mac-Lab™ hemodynamic recording systems[1,3], CardioLab™ EP recording systems[1,3], AW advanced applications[1], Large Display Monitor[1] layout management
Personalization: home page content and layout, imaging protocols, large display monitor layouts, auto-positioner presets, Touch Panel theme.
Operator profiles for personalized experience
IPX4 certified
Size: 312 x 200 mm
Weight: 1.4 kg without rail clamp and cable
Screen size: 12.5” diagonal
Screen resolution: 1 920 x 1 080
Viewing angles: ± 80° (H & V, minimal)
Screen treatment: Mat, anti-glare
Can be mounted at tableside or on an articulated arm
A second optional Touch panel can be added at tableside with Omega Table configuration.

8.2.3

8.1.2

8.1.2

Direct Access Panel

Controls at the detector level : • Configurations with 30cm and 40cm detectors : controls for table longitudinal motion (Omega V and Innova[IQ] table configurations) and lateral motion (Innova[IQ] table configurations), gantry angulation, and detector lift • Configurations with 20cm detector : gantry angulation, and detector lift
Emergency detector back-out
Controls adapting to gantry position around the table

Wireless mouse

To provide more AW capabilities at tableside, the In-Room AW Mouse Interface Kit[1] enables to connect an in room wireless mouse to drive the AW from table side is available
A mouse tray can be mounted at tableside

IGS Control Center (Cart)

For configurations with Innova[IQ] table, the Control Panel, Touch Panel, and mouse tray for a wireless mouse can be provided on a wheeled cart
Control panel with joystick configuration
Size (without wheels): 585 x 545 mm
Adjustable height: minimum control panel position 89 cm, maximum control panel position 114 cm

Footswitch

Ergonomic footswitch to control fluoroscopy, record acquisitions, as well as table longitudinal and lateral brakes
Optionally comes as wireless footswitch[1] 7.8
Wireless footswitch has an autonomy of approximatively 3 months (depending on usage)

In the control room

A remote stand is provided to mount the Control Panel in the control room[1]
9.2.1 The IGS system includes one 48 cm (19 in) LCD monitor for display of live images in the control room. Additional reference and subtracted roadmap repeater monitors[1] are available 9.1.1
Dedicated keypad for convenient control of commonly used review functions provides an image shuttle knob to control playback and one-touch access to image review functions
Pause, adjust brightness and contrast during review
Flat graphic display with easy point-and-click mouse control supports patient management and advanced processing and analysis features
Keyboard enables patient data entry

06 | In room display

IGS system can be installed with 48 cm (19 inch) LCD monitors as primary display or GE Large Display Monitor as primary display.

48 cm (19in) live and reference imaging monitors

Diagonal	48cm (19in) 9.2.1
Active Display	376 x 301 mm
Display matrix	1280 x 1024 9.2.2
Brightness	700 cd/m² (typical)
400 cd/m² (calibrated)	178° (H & V, typical)
Viewing angles	178° (H & V, typical)
LUT	DICOM
Contrast ratio	1000:1 (typical) 690:1 (calibrated)

AW color monitor

Diagonal	48cm (19in) 9.2.1
Active Display	376 x 301 mm
Display matrix	1280 x 1024 9.2.2
Brightness	330 cd/m² (typical) 200 cd/m² (calibrated)
Viewing angles	178° (H & V, typical)
Contrast ratio	1000:1 (typical) 500:1 (calibrated)

GE Large Display Monitor[1]

The GE Large Display Monitor (LDM) is an in-room primary monitor designed to streamline procedure workflow. It includes a video server solution and is fully integrated with the Touch Panel at tableside. 8.2.5

GE Large Display Monitor specifications	
Diagonal 8.3.2	148 cm (58in)
Active Display	127 x 72 cm
Display matrix 8.3.3	8 megapixels
3840 x 2160-pixel array	
Calibrated Brightness	400 cd/m²
Viewing angles	178° (H & V, typical)
LUT	DICOM
Frequency	59.7 – 60.5 Hz
Contrast ratio	At least 3000:1
Video inputs 8.3.4	10 video†† inputs for Live, Reference, AW and optional subtracted Fluoro monochrome signals as well as for a wide variety of other video signals usually used in an interventional environment - including 3 free open inputs compatible with VGA and DVI video formats
Layouts	• up to 200 • Digital zoom (up to 200%)
User interface 8.3.5	Layouts are selectable from the Touch Panel 8.2.5
Back-up monitors	48 cm (19 in) live and reference monitors, with a calibrated brightness of 250 cd/m2 and a calibrated contrast ratio of 640:1, attached at the back of the LDM or on another suspension[1]
Additional HD output[1]	For HD video compatible solutions (second 8MP monitor, 2MP HD monitor, recorder...)
Protection screen[1] 8.3.6	Yes
V-Point[1] 8.3.8	In-room connector for other modality source display on the Large Display Monitor

†† Can optionally be equipped with video processor up to 16 inputs

An optional kit to interface a third-party suspension according to GE Healthcare specifications allows users to install another third-party suspension instead of the standard GE Healthcare monitor suspension offering.

07 | Image management, connectivity and workflow

10.2

Record images stored in 8 bits, maximum 450 images per sequence. Storage capacity: 136,000 record images

DSA images with 12 bits data stored in 16 bits, maximum 450 images per sequence. Storage capacity: 68,000 DSA images

DICOM image output on 100Mbit Ethernet with Autosend and background transfer for fast transmission with minimal user interaction. 10.8.2

Patient Worklist capability provides a single point of entry of patient data, increasing staff productivity and eliminating clerical errors: patient information can easily be imported into the digital system from information systems that support DICOM Worklist Service Class Provider. 10.8.3

9.1.3 Multi-destination Push enables images to be sent to multiple remote DICOM destinations sequentially (one after another). Multi-destination helps to support a clinical scenario of handling post processing and archival activities in multiple destinations independently of each other (workstation, PACS). Multi-destination provides a seamless integration of the system into clinical workflow. 10.8.2

MPPS: Modality Performed Procedure Step allows the IGS system to share the main exam parameters with the hospital information system.

For the 3DCT / 3DCT HD option, users can direct-push the 3D acquisition directly to the pre-configured AW, even if the images of the exam are pushed to a PACS or another archiving system.

For further information about DICOM conformance statement: http://www3.gehealthcare.com/en/products/interoperability/dicom/x-ray_and_mammography_dicom_conformance_statements

08 | **Privacy and Security**

The IGS system incorporates IGSDefense, our multi-layer approach to cybersecurity and data privacy, to help protect the IGS system operation and patient data from cyber threats and unauthorized access.

Access Controls	The provisioning of password-protected user accounts allows controlling the access to sensitive information of the clinical application and the Operating System. The clinical application can be accessed through local accounts as well as centralized enterprise accounts. Local accounts of the clinical application and the Operating System support password changes, and configuration of complex password rules and account policies.
User Authorization	The user accounts are members of role-based groups, which grants the users with the group's permissions. It allows restricting the access by unauthorized users to specific parts of the application. An unauthenticated Emergency Access mode can be configured, which makes the clinical application available for clinical procedures.
Audit Trails	The audit trail capability generates and exports to a central server the audit records of events related to security and privacy: system state changes, user authentication, account management, patient data manipulation, malware detection, network communications and service operations. This provides means to remotely monitor such events, and to protect the system against individuals falsely denying having performed actions to be covered by non-repudiation.
Anti-Malware[1]	A whitelisting-based malware protection contains a list of all authorized executables to create a closed protected system. It blocks any kind of modification to the whitelisted files as well as the execution of any unauthorized program. This provides a complete endpoint security against malware.
Firewall	The IGS system provides two levels of network firewall: (1) Operating System Firewall, and (2) external firewall/router device. These firewalls isolate network traffic to only those systems required for communication. The firewalls can manage inbound and outbound traffic rules to deny-all and allow-by-exception based on authorized ports and/or IP addresses.
Data Privacy	The IGS system provides de-identification and encryption capabilities to limit privacy risks to sensitive information. The patient data exported during clinical workflow may be encrypted by using the DICOM TLS protocol. The person names and patient identifying attributes that are collected for service purposes are anonymized by using FIPS 140-2 compliant one-way hashing algorithms.

09 | Room Requirements

Load distribution for the gantry	2678 kg/m²
Load distribution for the Omega Table	3065 kg/m²
Load distribution for the Innova^{IQ} Table	2260 kg/m²
Minimum ceiling height	2.71 m with dual arm fix point suspension or 2.74 m with rails and bridge suspension (9 ft)
Minimum Room dimensions with Omega IV table (without accessories)	5.47 m (17 ft 11 in) length & 4.4 m (14 ft 5 in) width
Minimum Room dimensions with Omega V table (without accessories)	6.04 m (19 ft 10 in) length & 4.4 m (14 ft 5 in) width
Minimum Room dimensions with Innova^{IQ} table (without accessories)	6.14 m (20 ft 2 in) length & 4.4 m (14 ft 5 in) width
Humidity	20 to 70 % in exam room
Range of temperature	15 to 32 °C in exam room
Atmospheric pressure	70 to 106 kPa

System Power

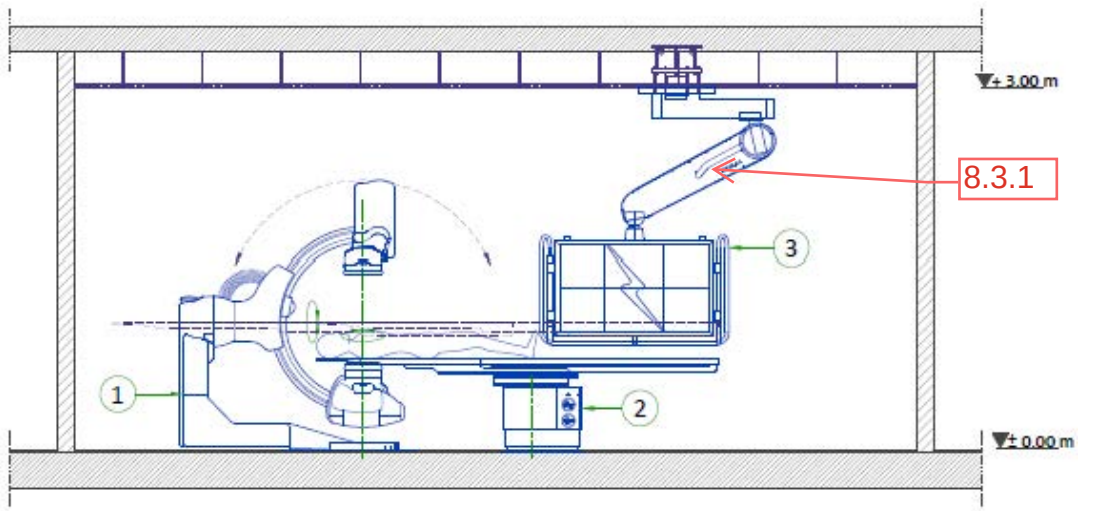
Nominal 380 to 480 Volts AC, three phase 50 or 60 Hz without neutral.
Maximum momentary power demand: 150 kVA

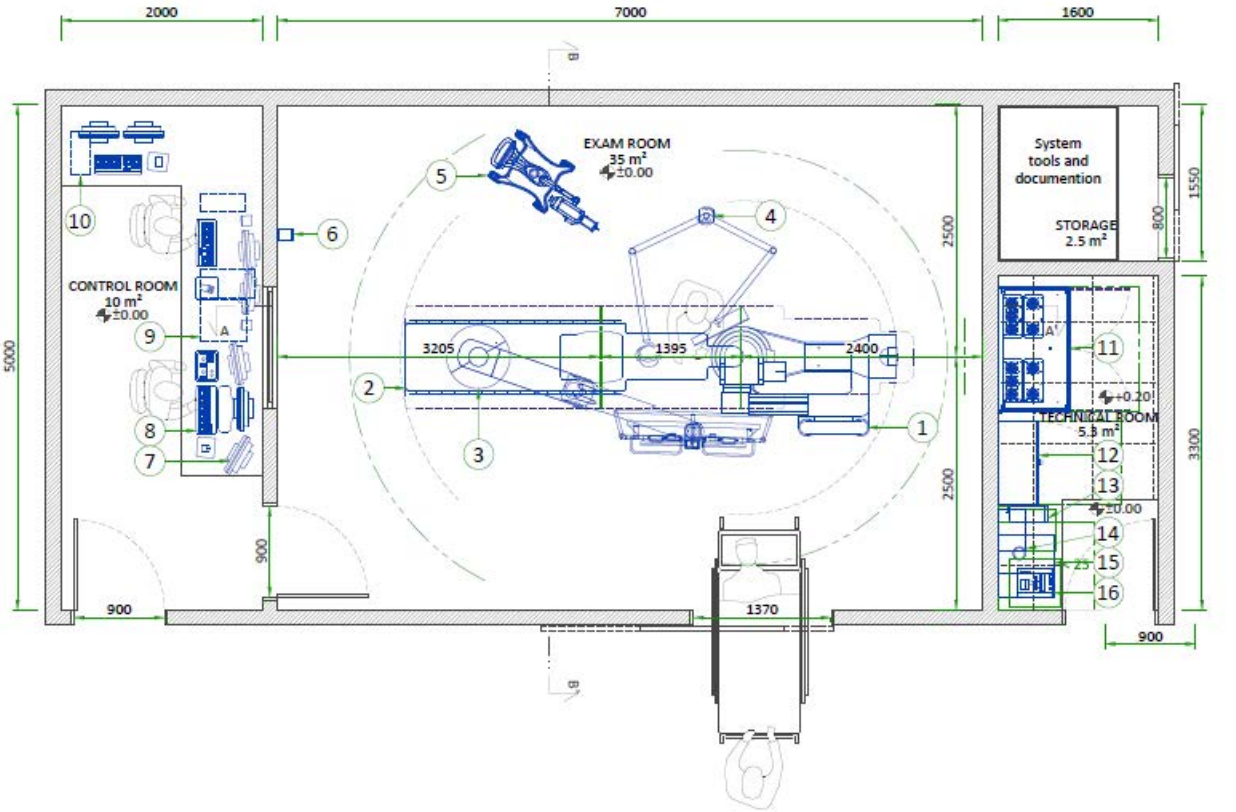
Emergency power supply

In case of power outage, an Uninterruptible Power Supply[1] (UPS) supports the system.

1kVA UPS	8kVA UPS	20kVA UPS
Only available with IGS systems with Omega table	Available with all configurations	May not be available in all countries and regions
Supports proper system shutdown in case of power outage	Supports emergency table control (required with Innova^{IQ} table to secure CPR) and vital components (preventing to require to re-boot) until the power is restored	Supports emergency table control and fluoroscopy until the power is restored

Typical room layout





10 | Customer service

Advanced remote connectivity allows GE to monitor systems and intervene if necessary.

Serviceability

The Digital System Manager simplifies troubleshooting and minimizes downtime with built-in equipment error logging and power-up diagnostics in real time. Resident software monitors the entire system, including peripheral hardware. The IGS system features 24-hour InSite™ remote service diagnostics and repair. InSite™ service is available to systems covered by the original warranty or by a GE service contract (broadband required).

Extended service[1]

An optional full-service contract ensures uptime even after the original warranty expires and provides advanced remote diagnostics through a broadband or phone connection.

Product may not be available in all countries and regions.
Allia IGS 5 cannot be placed on the market or put into service until it has been made to comply with all required regulatory authorizations. Allia IGS 5 equipped with 20cm detector is not yet CE marked. May not be marketed or placed into service until it has been made to comply with the CE marking.
Allia IGS 5 catalog number is 5872892.
Full product technical specification is available upon request.
Contact a GE Healthcare Representative for more information.
Please visit www.gehealthcare.com/promotional-locations.
Data subject to change.

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1 Option
2 Requires AW
3 Other Device or option not covered by Allia IGS 5 regulatory authorization.
IGS system refers to Allia IGS 5 system
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GE HealthCare

Allia™ IGS 3, Allia™ IGS 5, Allia™ IGS 7, Allia™ IGS 7 OR

User Manual

CE 0459

WARNING: BEFORE USING THIS SYSTEM

THIS SYSTEM SHOULD BE USED ONLY BY OPERATORS ADEQUATELY TRAINED IN THE USE OF THIS EQUIPMENT.
BEFORE USING THIS SYSTEM, THE OPERATOR SHOULD BE THOROUGHLY ACQUAINTED WITH THE INSTRUCTIONS FOR USE AND SAFETY RECOMMENDATIONS PROVIDED IN THIS MANUAL.
FAILURE TO FOLLOW THE INSTRUCTIONS FOR USE AND SAFETY RECOMMENDATIONS PROVIDED IN THIS MANUAL CAN CAUSE SERIOUS INJURY TO THE PATIENT, TO THE OPERATOR OR TO OTHER PERSONS.

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Revision 1
US English

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Revision History

Part / Rev	Date	Reason for change
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