A mandatory component of this drawing set is the GE Healthcare Pre Installation manual. Failure to reference the Pre Installation manual will result in incomplete documentation required for site design and preparation.

Pre Installation documents for GE Healthcare products can be accessed on the web at: www.gehealthcare.com/siteplanning

GE does not take responsibility for any damages resulting from changes on drawings made by others. Errors may occur by not referring to the complete set of final issue drawings. GE cannot accept responsibility for any damage due to the partial use of GE final issue drawings, however caused. All dimensions are in millimeters unless otherwise specified. Do not scale from printed PDF files. GE accepts no responsibility or liability for defective work due to scaling from these drawings.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>DIMENSIONS LxWxH (mm)</th>
<th>WEIGHT (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GENERATOR CABINET</td>
<td>360x592x690</td>
<td>91.8</td>
</tr>
<tr>
<td>2</td>
<td>OPERATOR CONSOLE</td>
<td>616x1130x1853</td>
<td>97.2</td>
</tr>
<tr>
<td>3</td>
<td>GANTRY</td>
<td>1104x650x2002</td>
<td>308.6</td>
</tr>
<tr>
<td>4</td>
<td>POWER DISTRIBUTION BOX (PDB)</td>
<td>500x270x700</td>
<td>42</td>
</tr>
</tbody>
</table>

**WALL - ACCORDING TO RECEIVED DRAWING**

**EXAM ROOM HEIGHT**

FINISHED FLOOR TO SLAB HEIGHT: -

FALSE CEILING HEIGHT: 2.68 m
### FLOOR AND ELECTRICAL LAYOUT

<table>
<thead>
<tr>
<th>REP</th>
<th>QTE</th>
<th>DESIGNATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Gantry anchoring (see Floor &amp; Wall Struct Details)</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Console anchoring (see Floor &amp; Wall Struct Details)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>150x70 flush floor duct</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>100x100 cable inlet on the floor</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>150x100 vertical duct from floor to PDB</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Power Distribution Box (PDB)</td>
</tr>
</tbody>
</table>

#### Basic system

- **1** Electrical outlet 10/16A 230V + G
- **1** RJ 45 network socket
- **1** System remote control (Y), locked when power OFF "ON" and "OFF" impulse buttons with indicator lamps red=ON / green=OFF located at 1.50m above floor
- **2** System emergency off (SEO), (recommended height 1.50m-1.85m above floor)
- **1** System ON light (L) - 24V
- **1** X-Ray ON lamp (L1) - 24V

#### Flush floor duct
**ANCHORING TO THE FLOOR**

- Anchors are not supplied by GE
- Inserts to be used: Hilti HSL-3 M8/20
- Minimum hole depth in the floor: 80 mm [3.15 in]
- Minimum floor thickness: 100 mm [3.94 in]
- Tightening torque: 25 Nm
- The floor must be stable and flat, and sufficiently strong to accept masses as defined below without distortion beyond the tolerance given:
  - The worst case mass of the complete Gantry / Control station is 308.6 kg [680.3 lb]±10% / 97.2 kg [214.3 lb]±10%
  - The bearing surface of the Gantry / Control Station base plate is 0.35 m² [3.78 ft²] / 0.22 m² [2.37 ft²]

**NOT TO SCALE**

**ROOM HEIGHT REQUIREMENTS**

<table>
<thead>
<tr>
<th>TUBE HEAD</th>
<th>ROTATED C-ARM</th>
<th>MAXIMUM HEIGHT</th>
<th>MINIMUM CEILING HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2146 mm [84.49 in]</td>
<td>2146 mm [84.49 in]</td>
<td>2262 mm [89.06 in]</td>
<td>2400 mm [94.49 in]</td>
</tr>
</tbody>
</table>

**CABLE MANAGEMENT**

**FLUSH FLOOR DUCT**

- Waterproof joint
- Removable cover

**VERTICAL DUCT ON WALL**

- Removable coverplate

**NOT TO SCALE**
POWER AND NETWORK REQUIREMENTS

POWER SUPPLY

<table>
<thead>
<tr>
<th>POWER SUPPLY</th>
<th>SINGLE PHASE + GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLTAGES</td>
<td>220/230 V ± 10%</td>
</tr>
<tr>
<td>MAXIMUM INSTANTANEOUS POWER (DURING EXPOSURES)</td>
<td>6.9 kVA</td>
</tr>
<tr>
<td>MAXIMUM POWER IN STANDBY</td>
<td>0.5 kVA</td>
</tr>
<tr>
<td>FREQUENCIES</td>
<td>50/60 Hz ± 1 Hz</td>
</tr>
<tr>
<td>LINE IMPEDANCE</td>
<td>0.339 Ohm</td>
</tr>
</tbody>
</table>

- TNS neutral point connection recommended (TNC neutral point connection must not be used)
- Power supply should come into a Power Distribution Box (PDB) containing the protective units and controls.
- The section of the supply cable should be calculated in accordance with its length and the maximum permissible voltage drops.
- There must be discrimination between supply cable protective device at the beginning of the installation (Main low-voltage transformer side) and the protective devices in the PDB.

SUPPLY CHARACTERISTICS

- Power input must be separated from any others which may generate transients (elevators, air conditioning, radiology rooms equipped with high speed film changers...)
- All equipment (lighting, power outlets, etc...) installed with GE system components must be powered separately.

GROUND SYSTEM

- Equipotential: the equipotential link will be by means of an equipotential bar.
  This equipotential bar should be connected to the protective earth conductors in the ducts of the non GE cableways and to additional equipotential connections linking up all the conducting units in the rooms where GE units are located.

CABLES

- Power and cable installation must comply with the distribution diagram below.
- All cables must be isolated and flexible.
- Cable color codes must comply with standards for electrical installation.
- Case PDB furnished by GE: the cables for signals and remote control (Y, SEO, L...) will go to PDB with a pigtail length of 1.5m, and will be connected during installation. Each conductor will be identified and isolated (screw connector).
- The ligne supply cable from the generator must be internally and permanently connected to the hospital power distribution box and cannot be externally connected to the Power Distribution Box via a plug. The internal and permanent connection must be made in a way such the line supply cable can only be disconnected by use of a tool.

CABLEWAYS

The general rules for laying cableways should meet the conditions laid down in current standards and regulations, with regard to:

- Protecting cables against water (cableways should be waterproof)
- Protecting cables against abnormal temperatures (proximity to heating pipes or ducts)
- Protecting cables against temperature shocks
- Replacing cables (cableways should be large enough for cables to be replaced). Metal cableways should be grounded.

POWER DISTRIBUTION

<table>
<thead>
<tr>
<th>PDB</th>
<th>Emergency Off (Exam room)</th>
<th>Remote Control ON/OFF (Exam room)</th>
<th>System ON Light</th>
<th>X-Ray ON Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEO</td>
<td>3x1.5</td>
<td>7x1.5</td>
<td>3x1.5</td>
<td>3x1.5</td>
</tr>
<tr>
<td></td>
<td>24 V</td>
<td>24 V</td>
<td>24 V</td>
<td>24 V</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24 V</td>
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<td></td>
<td></td>
<td>24 V</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td></td>
<td>24 V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24 V</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td>24 V</td>
<td></td>
</tr>
<tr>
<td>L1</td>
<td></td>
<td></td>
<td>24 V</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

(1) Two dry contacts: "System ON" and "X-Ray ON", both released by the generator cabinet.
Max. voltage = 30 V

(2) 2 x AWG12 (3.3 mm² / Ph + N) + 1 x AWG10 (5.3 mm² / Earth) cable with 9.5 m usable length, supplied with the system

PDB SCHEMATICS AND DETAILS THAT APPEAR ON THIS PAGE ARE THE PROPERTY OF "GE MEDICAL SYSTEMS FRANCE"
230 V SINGLE PHASE MAIN SUPPLY FROM GENERAL ELECTRIC BOARD

Magnetic Breaker MBD1: D type 2x32A 30mA

Relay R1/R2/R3: 24 VAC 50 Hz relay

Time Delay Relay TDR1/TDR2: 24 V 50 Hz time delay relay with switch-off/switch-on delay

Contactor C1: 24 VAC 50 Hz contactor

Circuit Breaker B1/B2/B3/B4: Circuit breaker

Emergency OFF button in exam room SEO

System remote control in control room Y

On the door of PDB unit H1

PDB SCHEMATICS AND DETAILS THAT APPEAR ON THIS PAGE ARE THE PROPERTY OF "GE MEDICAL SYSTEMS FRANCE"
ENVIRONMENTAL SPECIFICATIONS

LIGHT REQUIREMENTS
In order to obtain a room brightness value of 160 lux or less for correct viewing of monitor images, the room lights must be equipped with a dimmer switch. Shades and/or drapes must be fitted to windows.

MAGNETIC INTERFERENCE
In order to avoid interference on the Senographe system, static field limits from the surrounding environment are specified:
- Static field is specified as less than 1 Gauss in the Examination room (Gantry room), and the Control Area (for all Subsystems).
- Static field is specified as less than 3 Gauss in the Technical Room.

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In order to obtain a room brightness value of 160 lux or less for correct viewing of monitor images, the room lights must be equipped with a dimmer switch. Shades and/or drapes must be fitted to windows.

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TEMPERATURE AND HUMIDITY SPECIFICATIONS

IN-USE CONDITIONS
Environmental conditions must ensure patient and operator comfort and must be maintained within the range below:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Min</th>
<th>Recommended</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>15°C (59°F)</td>
<td>23°C ± 3°C</td>
<td>30°C (86°F)</td>
<td></td>
</tr>
</tbody>
</table>

Relative humidity (1) 10% to 80%
System heat dissipation 0.44 kW (1507 BTU/h)

STORAGE CONDITIONS

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Min</th>
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</tr>
</thead>
<tbody>
<tr>
<td>-5°C to +40°C</td>
<td>23°F to 104°F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Relative humidity (1) 10% to 95%
Storage for less than 5 days.
(1) Non-condensing

AIR RENEWAL
According to local standards.

NOTE
In case of using air conditioning systems that have a risk of water leakage it is recommended not to install it above electric equipment or to take measures to protect the equipment from dropping water.

CONNECTIVITY REQUIREMENTS

Broadband Connections are necessary during the installation process and going forward to ensure full support from the Engineering Teams for the customers system. Maximum performance and availability for the customers system is maintained and closely monitored during the lifetime of the system. Proactive and reactive maintenance is available utilising the wide range of digital tools using the connectivity solutions listed below:
- Site-to-Site VPN/GE Solution
- Site-to-Site VPN/Customer Solution
- Connection through Dedicated Service Network

The requirements for these connectivity solutions are explained in the broadband solutions catalogue (separate document).

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**INTERCONNECTION**

- **POWER INPUT**
- **GENERATOR CABINET**
- **CONTROL STATION**
- **GANTRY**

**DIMENSIONS**

<table>
<thead>
<tr>
<th></th>
<th>CRATE 1</th>
<th>CRATE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPTH (mm [in])</td>
<td>2280 [89.76]</td>
<td>608.5 [27.50]</td>
</tr>
<tr>
<td>WIDTH (mm [in])</td>
<td>1400 [55.12]</td>
<td>622.3 [24.50]</td>
</tr>
<tr>
<td>HEIGHT (mm [in])</td>
<td>1550 [61.02]</td>
<td>428.6 [16.87]</td>
</tr>
<tr>
<td>WEIGHT (kg [lb])</td>
<td>765 [1686.5] ± 10%</td>
<td>19.575 [43.2] ± 10%</td>
</tr>
</tbody>
</table>

**DELIVERY WITH DOLLIES**

Minimum dimensions for door:
- Width 750 mm [29.52 in]
- Height 2136 mm [84.09 in] (2002 mm [78.81 in] with gantry's top cover, without dolly)

**DELIVERY**

THE CUSTOMER MUST:

- Provide an area, adjacent to the GE suite, for delivery and unloading of the GE equipment.
- Ensure that the dimensions of all doors, corridors, ceiling heights, are sufficient to accommodate the movement of GE equipment from the delivery area to the specific rooms of the GE site.
- Ensure that the access route will accommodate the weights of the equipment and any transportation, lifting and rigging equipment,
- If the parking and dock facilities are on property which does not belong to the customer, ensure that all necessary steps have been taken to ensure their temporary use by GE.
GENERAL SPECIFICATIONS

- GE is not responsible for the installation of developers and associated equipment, lighting, cassette trays and protective screens or derivatives not mentioned in the order.
- The final study contains recommendations for the location of GE equipment and associated devices, electrical wiring and room arrangements. When preparing the study, every effort has been made to consider every aspect of the actual equipment expected to be installed.
- The layout of the equipment offered by GE, the dimensions given for the premises, the details provided for the pre-installation work and electrical power supply are given according to the information noted during on-site study and the wishes expressed by the customer.
- The room dimensions used to create the equipment layout may originate from a previous layout and may not be accurate as they may not have been verified on site. GE cannot take any responsibility for errors due to lack of information.
- Dimensions apply to finished surfaces of the room.
- Actual configuration may differ from options presented in some typical views or tables.
- If this set of final drawings has been approved by the customer, any subsequent modification of the site must be subject to further investigation by GE about the feasibility of installing the equipment. Any reservations must be noted.
- The equipment layout indicates the placement and interconnection of the indicated equipment components. There may be local requirements that could impact the placement of these components. It remains the customer's responsibility to ensure that the site and final equipment placement complies with all applicable local requirements.
- All work required to install GE equipment must be carried out in compliance with the building regulations and the safety standards of local force in the country concerned.
- These drawings are not to be used for actual construction purposes. The company cannot take responsibility for any damage resulting therefrom.

CUSTOMER RESPONSIBILITIES

- It is the responsibility of the customer to prepare the site in accordance with the specifications stated in the final study. A detailed site readiness checklist is provided by GE. It is the responsibility of the customer to ensure all requirements are fulfilled and that the site conforms to all specifications defined in the checklist and final study. The GE Project Manager of Installation (PMI) will work in cooperation with the customer to follow up and ensure that actions in the checklist are complete, and if necessary, will aid in the rescheduling of the delivery and installation date.
- Prior to installation, a structural engineer of record must ensure that the floor and ceiling is designed in such a way that the loads of the installed system can be securely borne and transferred. The layout of additional structural elements, dimensioning and the selection of appropriate installation methods are the sole responsibility of the structural engineer. Execution of load bearing structures supporting equipment on the ceiling, floor or walls are the customer’s responsibility.

RADIO-PROTECTION

- Suitable radiological protection must be determined by a qualified radiological physicist in conformance with local regulations. GE does not take responsibility for the specification or provision of radio-protection.

THE UNDERSIGNED, HEREBY CERTIFIES THAT I HAVE READ AND APPROVED THE PLANS IN THIS DOCUMENT.

<table>
<thead>
<tr>
<th>DATE</th>
<th>NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
</table>

GLOBAL SITE READINESS CHECKLIST (DI)

Customer Name:  
PMI Name:  
GON/SD Number:  
Field Service Name:  
Equipment:  
Country/City or City/State:  
Site Visit Date for SRC:  
SRC Status:  

Site Ready Checks at Installation

- Room dimensions, including ceiling height, for all Exam, Equipment/Technical & Control rooms meets GE specifications.
- Ceiling structure, if on the GE drawing, is at correct location and height according to the drawing specifications. Levelement and spacing has been measured. Overhead support Structure has been confirmed with contractor to meet GE criteria.
- Rooms that will contain equipment, including staging areas if applicable, are construction debris free. Precautions must be taken to prevent debris from entering rooms containing equipment.
- Delivery route from truck to installation space has been reviewed, all communications have occurred, arrangements made for special handling (if needed). Floors along delivery route will support weight of the equipment, reinforcements arranged if needed.
- System power & grounding (PDB/MDP) is available as per GE specifications, installed at point of final connection and ready to use. Lock Out Tag Out is available.
- Adequate room illumination installed and working.
- Cableways (floor, wall, ceiling, etc.) ready for GE cables and are of correct length and diameter. Cableways routed per GE Final drawings and access openings installed as determined by GEHC PM. Surface floor duct installed at time of system installation.
- HVAC systems installed, and the site meets minimum environmental operational system requirements.
- Network outlets installed and computer network available and working.
- Hospital IT/connectivity contacts have been engaged and information has been added to Project management tool. (If Required)
- Floor levelness/flatness is measured and within tolerance, and there are no visible defects per GEHC specifications. Floor Strength and thickness have been discussed with customer/contractor and they have confirmed GE requirements are met.
- Customer supplied countertops where GE equipment will be installed are in place.

Specific for CT & X-ray

- Doors and windows complete or scheduled to be installed. If applicable, radiation protection (shielding) finished & radioprotective regulatory approval for installation obtained.
- PMI Signature:  
- Customer Signature:  
- FS Signature: optional

SITE NAME:  
SENORAPHIE CRYSTAL NOVA:  
EN-MAM-TYP-SEND_CRYSTAL_NOVA_C.DWG:  
Rev 6 (Date DD/MMM/YYYY):  
Disclaimers: Site Readiness  
09/09