



# REV DATE MODIFICATIONS

# **DMC EQUIPOS MEDICOS**

01 - Cover Sheet

02 - Equipment Layout

03 - Floor - Electrical Layout

04 - Structural Details

05 - Power Requirements - Power Distribution

06 - HVAC - Equipment dimensions

07 - Environment - Interconnections - Delivery

08 - Disclaimer - Site Readiness



GE CONTACT NAME
PHONE NUMBER
EMAIL ADDRESS

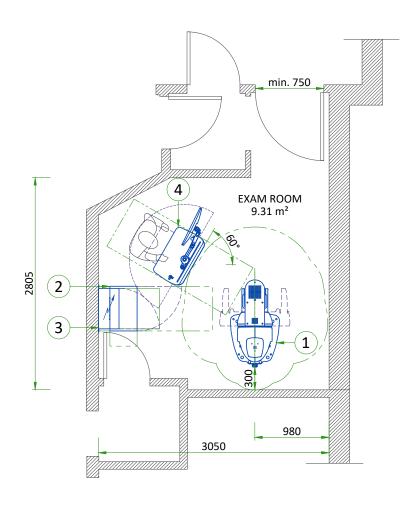
# SENOGRAPHE CRYSTAL NOVA FINAL STUDY

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: https://www.gehealthcare.com/support/manuals

GE HealthCare 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 HealthCare cannot accept responsibility for any damage due to the partial use of GE HealthCare final issue drawings, however caused. All dimensions are in millimeters unless otherwise specified. Do not scale from printed pdf files. GE HealthCare accepts no responsibility or liability for defective work due to scaling from these drawings.

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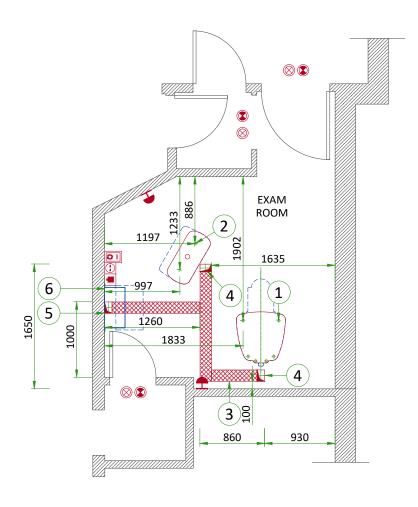
# **EQUIPMENT LAYOUT**

ITEM	DESCRIPTION	DIMENSIONS LxWxH (mm)	WEIGHT (kg)
1	GANTRY	1104x650x2002	308.6
2	GENERATOR CABINET	360x592x690	91.8
3	POWER DISTRIBUTION BOX (PDB)	270x530x730	90
4	OPERATOR CONSOLE	616x1130x1853	97.2

WALL - ACCORDING TO RECEIVED DRAWING

EXAM ROOM HEIGHT	
FINISHED FLOOR TO SLAB HEIGHT	-
FALSE CEILING HEIGHT	min. 2.40 m

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# FLOOR AND ELECTRICAL LAYOUT

REP	QTE	DESIGNATION	
1		Gantry anchoring (see Floor & Wall Struct Details)	
2		Console anchoring (see Floor & Wall Struct Details)	
3		150x80 flush floor duct	
4		150x100 cable inlet on the floor	
5		150x100 vertical duct from floor to PDB	
6	6 Power Distribution Box (PDB)		
		Basic system	
<b>⊙</b>	1	Electrical outlet 10/16A 230V + G	
	1	RJ 45 network socket	
O I	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	
<b>1</b>	2	System emergency off (SEO), (recommended height 1.50m-1.85m above floor)	
8	3	System ON light (L) - 24V	
<b>②</b>	3	X-Ray ON lamp (L1) - 24V	

03/09

Flush floor duct

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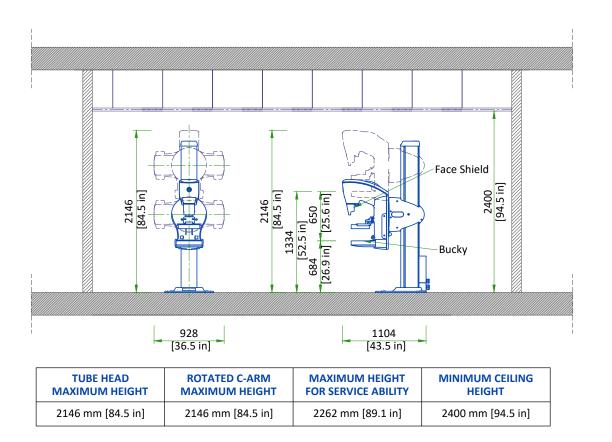
# **ANCHORING TO THE FLOOR**

#### **GANTRY CONTROL STATION** 340 [13.4] [28.3] 400 6xØ12 [Ø0.47 in] Ø35 [Ø1.38 in] [15.7] Baseplate holes in the floor cable inlet 6xØ14 [Ø0.55 in] holes in the plate Gantry axis Baseplate Ø60 [Ø2.36 in] 2xØ12 [Ø0.47 in] cable inlet holes in the floor Control station 2xØ14 [Ø0.55 in] 470 [18.5] axis holes in the plate

- Anchors are supplied by GE
- Inserts to be used: Hilti M8/20 HSL-4
- Minimum hole depth in the floor: 80 mm [3.2 in]
- Minimum floor thickness: 120 mm [3.9 in]
- Recommended tightening torque: 15 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 m<sup>2</sup> [3.78 ft<sup>2</sup>] / 0.22 m<sup>2</sup> [2.37 ft<sup>2</sup>]

# **NOT TO SCALE**

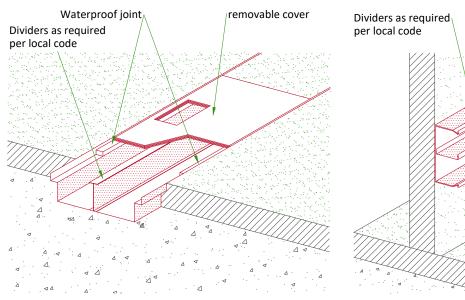
# **ROOM HEIGHT REQUIREMENTS**

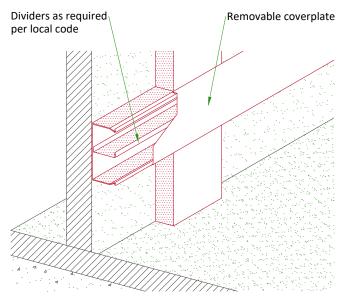


# TYPICAL CABLE MANAGEMENT

#### **FLUSH FLOOR DUCT**

#### **WALL DUCT**





**NOT TO SCALE** 



# **POWER REQUIREMENTS**

# **POWER SUPPLY**

POWER SUPPLY		SINGLE PHASE + N + G or 2 PHASES + G	
VOLTAGES		220/230 V ± 10%	
MAXIMUM INSTANTANEOUS	POWER (DURING EXPOSURES)	6.9 kVA	
MAXIMUM POWER IN STAND	ВУ	0.5 kVA	
FREQUENCIES		50/60 Hz ± 1 Hz	
	Distribution transformer	0.339 Ohm	
LINE IMPEDANCE	Each feeder cable	0.095 Ohm	
	Generator input terminal	0.625 Ohm	

- TNS neutral point connection recommended (TNC neutral point connection must not be used)
- Power supply should come into a Main Disconnect Panel (MDP) 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 MDP.

#### **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**

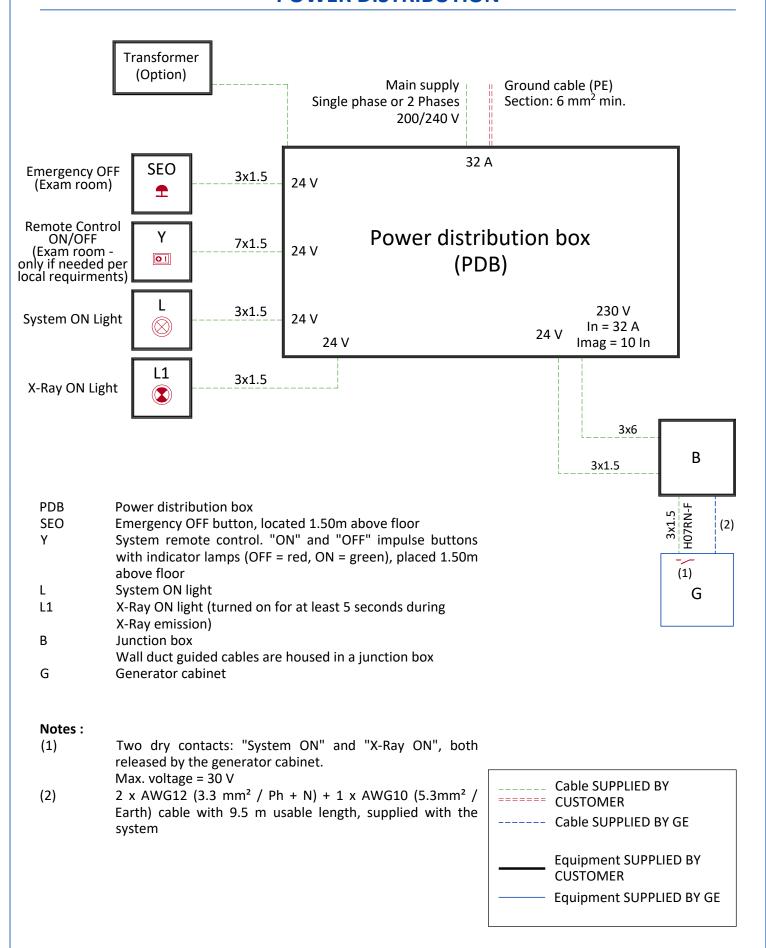
- Power and cable installation must comply with the distribution diagram below.
- All cables must be isolated and flexible.
- Cable color codes must comply with standards for electrical installation.
- Case MDP furnished by GE: the cables for signals and remote control (Y, SEO, L...) will go to MDP with 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



# **TEMPERATURE AND HUMIDITY SPECIFICATIONS**

# **IN-USE CONDITIONS**

Environmental conditions must ensure patient and operator comfort and must be maintained within the range

30.011.					
	Min Recommended Max		Max		
Temperature	15°C [59°F]	23°C ± 3°C [73°F ± 5°F]	30°C [86°F]		
Relative humidity (1)	10% to 80%				
Atmospheric pressure	700 hPa to 1060 hPa				
	Average				
System heat dissipation	0.44 kW [1507 BTU/h]				

# **STORAGE CONDITIONS**

Temperature	-5°C to +40°C [23°F to 104°F]
Atmospheric pressure	500 hPa to 1060 hPa
Relative humidity (1)	10% to 95%

Storage for less than 5 days. (1) Non-condensing

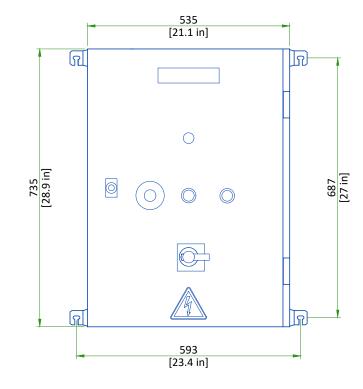
# **AIR RENEWAL**

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.

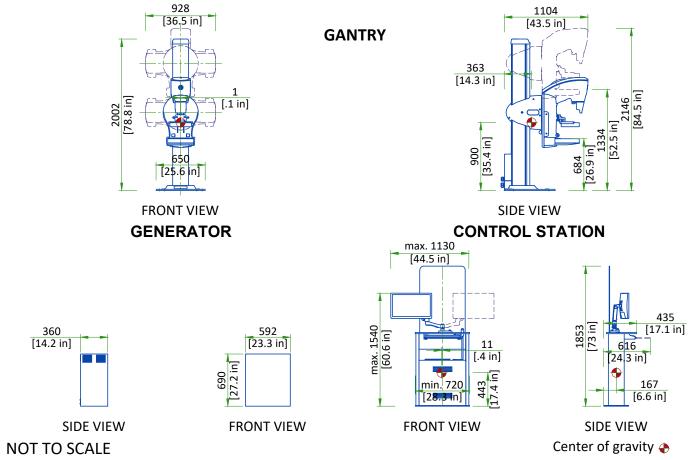
# **POWER DISTRIBUTION BOX**





Scale 1:10

# **EQUIPMENT DIMENSIONS**



# **ENVIRONMENTAL SPECIFICATIONS**

#### 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.

# 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.

## **ALTITUDE**

Operating altitude: from 0 m [0 ft] to 3000 m [9,843 ft].

# **CONNECTIVITY REQUIREMENTS**

Your new GE Healthcare imaging modality will require local and remote connectivity to enable our full range of digital support:

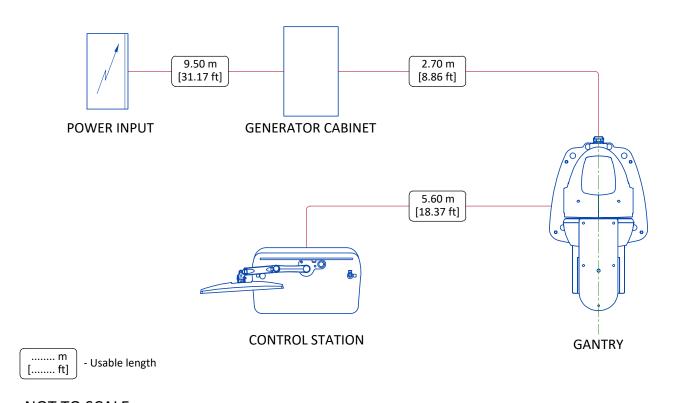
- Local connectivity This allows your system to connect to local devices such as PACS and modality worklist. We will require network information to configure the system(s), and a live ethernet port(s) prior to the delivery of the system(s).
- Remote connectivity Your GE Healthcare service warranty includes InSite™ (applicable to InSite capable products), a powerful broadband-based service which enables digital tools that can help guard your hospital against equipment downtime and revenue loss by quickly connecting you to a GE Healthcare expert.

Depending on product family and software version, imaging systems can be connected in one of the following methods:

- 1. TLS over TCP Port 443 (Preferred method for new products) via:
  - a. DNS resolution
  - b. Customer-provided Proxy or
  - c. GE Proxy (Available in some regions)
- 2. Site-to-Site IPsec VPN tunnel

Please provide the GE project manager with the contact information for the resource that can provide information required to set up these connections. GEHC will send out communication to these contacts, which will include the project's Connectivity requirements, and a Connectivity form. This form will need to be completed and returned to GEHC prior to delivery of the system to ensure the system is tested and connectivity is enabled prior to the completion of the installation.

# INTERCONNECTION



# NOT TO SCALE

# 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.

**DELIVERY** 

- 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.

	DIMENSIONS		
	CRATE 1	CRATE 2	
DEPTH (mm [in])	2280 [89.76]	698.5 [27.50]	
WIDTH (mm [in])	1400 [55.12]	622.3 [24.50]	
HEIGHT (mm [in])	1550 [61.02]	428.6 [16.87]	
WEIGHT (kg [lb])	765 [1686.5] ± 10%	19.575 [43.2] ± 10%	

#### **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)

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# **DISCLAIMER**

#### **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 legal 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 conformation 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.				
DATE NAME SIGNATURE				

# **CUSTOMER SITE READINESS REQUIREMENTS**

REQUIRED MANUALS FOR SYSTEM PRE-INSTALLATION  Description Document Number*  Product specific Pre-installation Manual Refer to cover page  *documents can be accessed in multiple languages at https://www.gehealthcare.com/support/manuals	
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- 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.
- The items on the GE HealthCare Site Readiness Checklists listed below are REQUIRED to facilitate equipment delivery to the site. Equipment will not be delivered if these requirements are not satisfied.

REQUIRED SITE-READINESS CHECKLISTS FOR SYSTEM PRE-INSTALLATION		
Modality Document Number*		
Computerized Tomography	DOC2949059	
Radiology, Radiology and Fluouroscopy, Mammography, Bone Mass Densitometry  All modality Customer/Contractor Worksheet  *documents can be accessed in multiple languages at <a href="https://www.gehealthcare.com/support/manuals">https://www.gehealthcare.com/support/manuals</a>		

- Any deviation from these drawings must be communicated in writing to and reviewed by your local GE HealthCare installation project manager prior to making changes.
- Make arrangements for any rigging, special handling, or facility modifications that must be made to
  deliver the equipment to the installation site. If desired, your local GE HealthCare installation project
  manager can supply a reference list of rigging contractors.
- New construction requires the following;
  - 1. Secure area for equipment,
  - 2. Power for drills and other test equipment,
  - Restrooms.
- Provide for refuse removal and disposal (e.g. crates, cartons, packing)
- For CT systems it is required to minimize vibrations within the scan room. It is the customer's responsibility to contract a vibration consultant/engineer to implement site design modifications to meet the GE vibration specification. Refer to the system Pre-installation manual for vibration specifications.



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