GE Healthcare

Typical

<table>
<thead>
<tr>
<th>REV</th>
<th>DATE</th>
<th>MODIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>17/Dec/2018</td>
<td>Final study based on DC-</td>
</tr>
</tbody>
</table>

C1 - 01 - Cover Sheet
C2 - 02 - Disclaimer - Site Readiness
A1 - 03 - General Notes
A2 - 04 - Equipment Layout
A3 - 05 - Radiation Protection
A4 - 06 - Equipment Dimensions (1)
A5 - 07 - Equipment Dimensions (2)
A6 - 08 - Delivery
S1 - 09 - Structural Notes
S2 - 10 - Structural Layout
S3 - 11 - Structural Details (1)
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E2 - 14 - Electrical Layout
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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.

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 does not take 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.
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 room 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.

GLOBAL SITE READINESS CHECKLIST (DI)

Customer Name: ____________________________

PMI Name: ____________________________

GON/SO Number: ____________________________

Field Service Name: ____________________________

Equipment: ____________________________

Country/ City or City/ State: ____________________________

Site Visit Date for SRC: ____________________________

SRC Status: ____________________________

Site Ready Checks at Installation

General Site Planning

- Room dimensions, including ceiling height, for all Exam, Equipment/Technical & Control rooms meets GE specifications.
- Ceiling support structure, if on the GE drawing, is at correct location and height according to the drawing specifications. Leveness 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.
- Final ceiling is installed. If applicable ceiling tiles installed per PMI discretion.
- 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.
- System power & grounded audit has been scheduled to be completed during installation of equipment. (If Required) GEHC PM to confirmed if needed.
- Adequate room illumination installed and working.
- Cable ways (floor, wall, ceiling, etc.) ready for GE cables and are of correct length and diameter. Cable ways 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/contactor and they have confirmed GE requirements are met.
- Customer supplied countertops where GE equipment will be installed are in place.

Specific for PET and Nuclear Medicine

- Nuclear Medicine systems levelness measurement survey must be provided to GE prior the delivery. Site has license for using/Importing radioactive sources and a Hot Lab is available. Radioactive Sources should be available for system calibration during installation.
- Doors and windows complete or scheduled to be installed. If applicable, radiation protection (shielding) finished & radioprotection regulatory approval for installation obtained.

PMI Signature: ____________________________

Customer Signature: ____________________________

FS Signature: optional

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

DATE: ____________________________

NAME: ____________________________

SIGNATURE: ____________________________

Field Service Name: ____________________________

GE Signatature: optional

02/17
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,
3. Capability for image analysis,
4. Restrooms.

Provide for refuse removal and disposal (e.g. crates, cartons, packing)

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 preinstallation manual for the vibration specification.

Operating altitude: from -150 m [-492 ft] to 4100 m [13451 ft].

In order to avoid interference on the system, the static field limits from the surrounding environment must be less than 1 Gauss in both the scan and the operator rooms.

Ambient static magnetic fields less than 1 Gauss.
Ambient AC magnetic fields less than 0.01 Gauss peak.

Ambient static magnetic fields less than 1 Gauss.
Use static dissipative vinyl.

The maximum ambient noise level is produced by the gantry during a CT scan acquisition. It is less than 70 dB when measured at a distance of one meter from the nearest gantry surface, in any direction.

When the system is calibrated, background radiation from surrounding areas may adversely affect calibration. Therefore all radiation sources must be suitable shielded, including:
- Waiting/Injection areas
- Radionuclide storage and preparation area (sometimes known as “Hot Lab”)

The system components are sensitive to vibration in the frequency range of 0.5 to 20 Hz, depending on the amplitude of the vibration. It is the customer’s responsibility to contract a vibration consultant or qualified engineer to verify that these specifications are met and implement an appropriate solution.

To minimize vibrations, the system must be installed on a solid floor, as far as possible from vibration sources (parking lots, roadways, heliports, elevators, hospital power plants... etc).

The maximum steady state vibration transmitted through the floor should not exceed 0.001 m/s² RMS maximum single frequency above ambient baseline from 0.5 to 80 Hz (measured in any 1 hour during a normal operating period).

The behavioral characteristics must be such that any measurable transient disturbance must also be minimized to less than 0.01 m/s² peak-to-peak.

Secure area for equipment,
Power for drills and other test equipment,
Capability for image analysis,
Restrooms.

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RADIATION PROTECTION LAYOUT

SHIELDING REQUIREMENTS SCALING

<table>
<thead>
<tr>
<th>CHANGED PARAMETER (mAs)</th>
<th>MULTIPLICATION FACTOR (new mAs/100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 kV</td>
<td>0.24</td>
</tr>
<tr>
<td>100 kV</td>
<td>0.45</td>
</tr>
<tr>
<td>120 kV</td>
<td>0.71</td>
</tr>
<tr>
<td>140 kV</td>
<td>1.00</td>
</tr>
<tr>
<td>1.25 mm aperture</td>
<td>0.16</td>
</tr>
<tr>
<td>5 mm aperture</td>
<td>0.61</td>
</tr>
<tr>
<td>10 mm aperture</td>
<td>1.00</td>
</tr>
</tbody>
</table>

SHIELDING REQUIREMENTS:

Radiation shielding regulations differ from one country or state to another. It is the customer’s responsibility to ensure that radiation protection and shielding comply with such regulations and requirements during site preparation and system installation and operation. The system produces x-ray radiation and involves the use and storage of radionuclides. Appropriate barriers such as walls, lead-shielded glass, lead shields, etc. can be installed to protect staff from unnecessary exposure to radiation. Patients become significant sources of radioactivity; therefore consideration should be given to maximize the distance between the patient and operator during the uptake and acquisition phases of scan procedures. Scattered radiation must be reviewed by a qualified radiological health physicist taking into consideration:

- Scatter radiation levels within the scan room
- Equipment placement
- Weekly projected workloads (# patient/day technique (kVp*mA))
- Materials used for construction of walls, floors, ceiling, doors, and windows
- Access to areas surrounding the Scan Room
- Equipment in areas surrounding the Scan Room (for example: film developer, film storage)

BACKGROUND RADIATION

When the system is calibrated, background radiation from surrounding areas may adversely affect calibration. Therefore all radiation sources must be suitably shielded, including:

- Waiting/injection areas
- Radionuclide storage and preparation area (known as "hot lab")
- Shielding of the Scan Room includes walls, lead shielded glass, lead shields, etc. and must be sufficient to protect staff from unnecessary exposure to radiation. The shielding requirements must be determined by a qualified radiological health physicist, taking into consideration:
  - Local regulatory requirements
  - Facility policy
  - CT scatter radiation levels within the scanning room
  - Patient location and level of radiation from patients after intake of radionuclides
  - Equipment placement
  - Materials used for construction of walls, floors, ceiling, doors, and windows
  - Weekly projected work loads (# patient/day technique (kVp*mA))
  - Access to areas surrounding the Scan Room
  - Equipment in areas surrounding the Scan Room (for example: film developer, film storage)
  - Protection of operator room, included leaded window, walls and door

The illustrations on this page depict measurable CT radiation levels within the scanning room while scanning a 32 cm CTDI phantom (body) and 20 cm water phantom (head) with the technique shown. The mAs, kV and aperture scaling factors shown in the table can be used to adjust exposure levels to the scan technique used at the site.

NOTE: Actual measurements can vary. All measurements have an accuracy of ±20% because of measurement equipment, technique, and system to system variation.

The units of measurement used for radiation levels have been changed in this document, from mR (millirads) to μGy (micrograys). The conversion factor is: 1 mR = 0.01 μGy

The illustrations on this page were created using the following technique:

- 140 kV, 100 mA, 1 sec, 8x1.25 mm

RADIOACTIVE ISOTOPES

USING RADIOACTIVE ISOTOPES

Since the system involves the use of radioactive isotopes, compliance with Nuclear Regulatory Commission regulations, or similar regulatory requirements (depending on the country), must be adhered to and all permissions obtained well in advance. It is recommended that regulatory compliance is arranged early in the site planning process.

It is essential that all preparations are completed so that required source materials can be obtained prior to installation, including calibration sources. Take into consideration that these sources may have fairly long delivery lead times, yet may also have a short half life, so that it may not be advisable to store them over long periods of time.

RADIOACTIVE ISOTOPES FOR SYSTEM CALIBRATION

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site has license for Tc-99m</td>
</tr>
<tr>
<td>Tc-99m will be available during installation</td>
</tr>
<tr>
<td>Co-57 (Rectangular Flood Source)</td>
</tr>
<tr>
<td>Th-228</td>
</tr>
<tr>
<td>Pa-228</td>
</tr>
<tr>
<td>Ra-228</td>
</tr>
<tr>
<td>I-131 (inhalation gas)</td>
</tr>
<tr>
<td>Xe-133 (inhalation gas)</td>
</tr>
</tbody>
</table>

Isotopes to be used at site are available for installation. Note: Specify age and strength

Typical
**DELIVERY DETAILS**

**CT GANTRY:**

L = 2500 mm [98.4 in]
W = 879.2 mm [34.61 in]
H = 2000 mm [78.75 in]

**NM GANTRY WITH DETECTORS MOUNTED:**

L = 2250 mm [88.6 in]
W = 1200 mm [47 in]
H = 2200 mm [86.6 in]

**NM GANTRY WITHOUT THE DETECTORS (OPTION):**

L = 1680 mm [66.1 in]
W = 1500 mm [59 in]
H = 2200 mm [86.6 in]

**TABLE:**

L = 3000 mm [118.1 in]
W = 900 mm [35.4 in]
H = 1400 mm [55 in]

---

**CORRIDOR/ELEVATOR MINIMAL DIMENSIONS (without 90 degree turns):**

L = 2220 mm [87.4 in]
W = 1400 mm [55.1 in]
H = 2000 mm [78.75 in]

**CRATED DIMENSIONS OF DELIVERY**

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>DIMENSIONS</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT GANTRY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LENGTH</td>
<td>2070</td>
<td>82</td>
</tr>
<tr>
<td>WIDTH</td>
<td>1160</td>
<td>46</td>
</tr>
<tr>
<td>HEIGHT</td>
<td>2250</td>
<td>89</td>
</tr>
<tr>
<td>NM GANTRY WITH DETECTORS MOUNTED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LENGTH</td>
<td>2250</td>
<td>88.6</td>
</tr>
<tr>
<td>WIDTH</td>
<td>1200</td>
<td>47</td>
</tr>
<tr>
<td>HEIGHT</td>
<td>2200</td>
<td>86.6</td>
</tr>
<tr>
<td>NM GANTRY WITHOUT THE DETECTORS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LENGTH</td>
<td>1680</td>
<td>66.1</td>
</tr>
<tr>
<td>WIDTH</td>
<td>1500</td>
<td>59</td>
</tr>
<tr>
<td>HEIGHT</td>
<td>2200</td>
<td>86.6</td>
</tr>
<tr>
<td>TABLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LENGTH</td>
<td>3000</td>
<td>118.1</td>
</tr>
<tr>
<td>WIDTH</td>
<td>900</td>
<td>35.4</td>
</tr>
<tr>
<td>HEIGHT</td>
<td>1400</td>
<td>55</td>
</tr>
</tbody>
</table>

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**DELIVERY**

**THE CUSTOMER/CONTRACTOR SHOULD:***

- Provide an area adjacent to the installation site 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 into the definitive installation room.
- Ensure that access routes for equipment will accommodate the weights of the equipment and any transportation, lifting and rigging equipment.
- Ensure that all necessary arrangements for stopping and unloading on public or private property not belonging to the customer have been made.

**NOT TO SCALE**

- The gantry is shipped on a dolly equipped with elevating casters (normal shipping configuration).
All units that are wall mounted or wall supported are to be provided with supports where necessary. Wall supports are to be supplied and installed by the customer or his contractors. See plan and detail sheets for suggested locations and mounting hole locations.

Floor slabs on which equipment is to be installed must be level to specifications. (If not specified elsewhere on this sheet the floor levelness should be 1/8 in. [3 mm] in 10 ft. [3.05 m].)

Dimensions are to finished surfaces of room.

For seismic regions ensure supports span three members.

Customers contractor must provide all penetrations in post tension floors.

Customers contractor must provide and install any non-standard anchoring. Documents for standard anchoring methods are included with GE equipment drawings for geographic areas that require such documentation.

Customers contractor must provide and install hardware for "through the floor" anchoring and/or any bracing under access floors. This contractor must also provide floor drilling that cannot be completed because of an obstruction encountered while drilling by the GE installer such as rebar etc.

It is the customer’s responsibility to perform any floor or wall penetrations that may be required. The customer is also responsible for ensuring that no subsurface utilities (e.g., electrical or any other form of wiring, conduits, piping, duct work or structural supports (i.e. post tension cables or rebar)) will interfere or come in contact with subsurface penetration operations (e.g. drilling and installation of anchors/screws) performed during the installation process. To ensure worker safety, GE installers will perform surface penetration operations only after the customer’s validation and completion of the “GE surface penetration permit”
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CT Gantry baseplate</td>
</tr>
<tr>
<td>2</td>
<td>NM Gantry baseplate</td>
</tr>
<tr>
<td>3</td>
<td>Table Anchor plate</td>
</tr>
<tr>
<td>4</td>
<td>Collimator exchange plate</td>
</tr>
<tr>
<td>5</td>
<td>Swing plate</td>
</tr>
</tbody>
</table>

**Diagram:**
- **EXAM ROOM**
- **CONTROL ROOM**
- Dimensions: 10'-4" x 8'-6"
**Loading Distribution**

- **CT Gantry front leveling pads**: 237 Kg (522.5 lb) on each Ø63.5 mm [2.5 in] pad.
- **CT Gantry rear leveling pads**: 228 Kg (502.7 lb) on each Ø83 mm pad [2.5 in].
- **NM Gantry front pads**: 845 Kg (1863 lb) on each Ø83 mm [3.3 in] pad.
- **Load 509 Kg [1122 lb] distributed on 2 wheels + pivot.**
- **Patient Table center of gravity**: 509 Kg [1122 lb].
- **NM Gantry center of gravity**: 2190 Kg [4828 lb].
- **CT Gantry center of gravity**: 1150 Kg [2535 lb].
- **NM Gantry weight**: 2190 Kg [4828 lb] (with HEGP collimators mounted).
- **CT Gantry weight**: 1150 Kg [2535 lb].

**Floor Specifications**

- **Floor leveling area**: 595 cm x 334 cm [19 ft-6 in x 11 ft] (covering the entire planned area of table and gantry surface).
- **Slope**: less than 13 mm [0.5 in] over 4300 mm [160 in], if slope is between 13 mm [0.5 in] and 30 mm [1.18 in] refer to PIM for additional requirements.
- **Flatness**: the surface must be smooth, with deviations of no more than 5 mm [0.2 in] over 1500 mm [59 in] in any direction.
- **Floor surface**: a single poured surface.
- **Floor strength**: in order to enable mounting of the system floor anchors, concrete floors must have a minimum cube strength of fc=4350 psi. (30 MPa) at 28 days (curing time) for 25/30 concrete.
- **Floor thickness**: the system’s floor anchors are designed for use only on concrete floors that meet the minimal 140 mm [5.5 in] concrete floor requirements.
- **Center of gravity**: 509 Kg [1122 lb].
- **NM Gantry center of gravity**: 2190 Kg [4828 lb].
- **CT Gantry center of gravity**: 1150 Kg [2535 lb].
- **Table weight**: 509 Kg [1122 lb].
- **Load 509 Kg [1122 lb] distributed on 2 wheels + pivot.**
- **CT Gantry anchor points**: 4 × HILTI-HSL-3 M10/40 anchors.
- **NM Gantry anchor points**: 4 × HILTI-HSL-3 M10/40 anchors.
- **35 mm depth pocket for collimator cart pin.**
- **Table anchor plate**: 6 × Hex Head Sleeve Bolt 0.25" x 1.75".
- **Center of gravity**: 509 Kg [1122 lb].

**Anchoring to the Floor**

- **NM Gantry main anchoring**: 4 x HILTI-HSL-3 M10/40 anchors.
- **CT Transporter anchoring**: (4) Main anchor, (4) Alternative anchoring place.

**Scale 1:50**
MOUNTING DETAILS FOR CEILING MONITOR

Structural Supports
(Customer/contractor supplied)

356mm x356mm x 12.7mm
[14 in x 14 in x 1/2 in] Steel plate provided by GE and installed by customer/contractor

9.5 mm [0.375 in] Bolts
(not by GE)

Wire access portera2
Ø13.5mm [17/32 in]

Ceiling mount bolt hole pattern
4x M12 1.75 Pitch

Ø150mm
[5 29/32 in]

Cable feedthrough for
electrical connection
Ø15mm [19/32 in]

Safety anchor location
m8 1.25 pitch

305
[12 in]

21
[.83 in]

3.175
[1.25 in]

369
[14.53 in]

The support structure for this ceiling mounted option and a flush mounting plate must be designed by a structural engineer and installed by a qualified contractor prior to the system installation

Scale 1:10

MEDRAD MOUNTING DETAILS FOR CEILING INJECTOR

Verify mounting assembly dimensions with injector manufacturer.

<table>
<thead>
<tr>
<th>Post</th>
<th>Lengths</th>
<th>GE ECat No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short</td>
<td>22.8</td>
<td>S80</td>
</tr>
<tr>
<td>Intermediate</td>
<td>33.5</td>
<td>810</td>
</tr>
<tr>
<td>Long</td>
<td>39.4</td>
<td>1000</td>
</tr>
</tbody>
</table>

Recommended height to floor
2083mm - 2235mm [82 in - 88 in]

Top of mounting assembly

Max. Arc
1660
[65.4 in]

Not to Scale

MEDRAD MOUNTING DETAILS FOR CEILING INJECTOR

Verify mounting assembly dimensions with injector manufacturer.

<table>
<thead>
<tr>
<th>Post</th>
<th>Min. Plate Height</th>
<th>Max. Plate Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short</td>
<td>108</td>
<td>2743</td>
</tr>
<tr>
<td>Intermediate</td>
<td>120</td>
<td>3048</td>
</tr>
<tr>
<td>Long</td>
<td>126</td>
<td>3200</td>
</tr>
</tbody>
</table>

Recommended height to floor
2083mm - 2235mm [82 in - 88 in]
### TEMPERATURE AND HUMIDITY SPECIFICATIONS

#### IN-USE CONDITIONS

<table>
<thead>
<tr>
<th></th>
<th>EXAM ROOM</th>
<th>CONTROL ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature</strong></td>
<td>Min</td>
<td>Recommended</td>
</tr>
<tr>
<td><strong>Temperature gradient</strong></td>
<td>≤ 3°C/h [≤ 5°F/h]</td>
<td>≤ 5°C/h [≤ 9°F/h]</td>
</tr>
<tr>
<td><strong>Relative humidity (1)</strong></td>
<td>30% to 60%</td>
<td>30% to 60%</td>
</tr>
<tr>
<td><strong>Humidity gradient</strong></td>
<td>≤ 5% /h</td>
<td>≤ 5% /h</td>
</tr>
<tr>
<td>Altitude</td>
<td>150 m [-492 ft]</td>
<td>to 4100 m [13451 ft]</td>
</tr>
</tbody>
</table>

#### STORAGE CONDITIONS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature</strong></td>
<td>≤4°C [+40°F] to ≥7°C [+80°F]</td>
</tr>
<tr>
<td><strong>Temperature gradient</strong></td>
<td>≤ 3°C/h [≤ 5°F/h]</td>
</tr>
<tr>
<td><strong>Relative humidity (1)</strong></td>
<td>20% to 60%</td>
</tr>
<tr>
<td><strong>Humidity gradient</strong></td>
<td>≤ 5% /h</td>
</tr>
<tr>
<td>Air pressure</td>
<td>700 hPa to 1080 hPa</td>
</tr>
</tbody>
</table>

(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.

#### HEAT DISSIPATION

<table>
<thead>
<tr>
<th>ROOM</th>
<th>DESCRIPTION</th>
<th>HEAT DISSIPATION (kW)</th>
<th>HEAT DISSIPATION (BTU/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MAX</td>
<td>MAX</td>
</tr>
<tr>
<td>Exam Room</td>
<td>NM Gantry</td>
<td>1.32</td>
<td>4500</td>
</tr>
<tr>
<td></td>
<td>CT Gantry</td>
<td>3.50</td>
<td>11945</td>
</tr>
<tr>
<td></td>
<td>Patient table</td>
<td>0.20</td>
<td>682</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>5.02</td>
<td>17127</td>
</tr>
<tr>
<td>Exam/Technical Room*</td>
<td>Power distribution unit (CT PDU)</td>
<td>0.70</td>
<td>2389</td>
</tr>
<tr>
<td></td>
<td>Eaton 6 kVA UPS</td>
<td>0.39</td>
<td>1350</td>
</tr>
<tr>
<td></td>
<td>Transformer for 6kVA UPS</td>
<td>0.29</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>1.38</td>
<td>4739</td>
</tr>
<tr>
<td>Control Room</td>
<td>CT acquisition station (computer only)</td>
<td>0.30</td>
<td>1024</td>
</tr>
<tr>
<td></td>
<td>NM Acquisition station (with monitors)</td>
<td>0.30</td>
<td>1024</td>
</tr>
<tr>
<td></td>
<td>SmartConsole workstation</td>
<td>0.30</td>
<td>1024</td>
</tr>
<tr>
<td></td>
<td>Xeleris workstation (computer with 2 monitors)</td>
<td>0.08</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>0.97</td>
<td>3328</td>
</tr>
</tbody>
</table>

*Technical Room is not mandatory, the placements of these elements are recommended in the Exam Room.
ELECTRICAL NOTES

1. All wires specified shall be copper stranded, flexible, thermo-plastic, color coded, cut 10 foot long at outlet boxes, duct termination points or stubbed conduit ends. All conductors, power, signal and ground, must be run in a conduit or duct system. Electrical contractor shall ring out and tag all wires at both ends. Wire runs must be continuous copper stranded and free from splices.
   1.1. Aluminum or solid wires are not allowed.
   2. Wire sizes given are for use of equipment. Larger sizes may be required by local codes.
   3. It is recommended that all wires be color coded, as required in accordance with national and local electrical codes.
   4. Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local or national codes.
   5. Convenience outlets are not illustrated. Their number and location are to be specified by others. Locate at least one convenience outlet close to the system control, the power distribution unit and one on each wall of the procedure room. Use hospital approved outlet or equivalent.
   6. General room illumination is not illustrated. Caution should be taken to avoid excessive heat from overhead spotlights. Damage can occur to ceiling mounting components and wiring if high wattage bulbs are used. Recommend low wattage bulbs no higher than 75 watts and use dimmer controls (except mr). Do not mount lights directly above areas where ceiling mounted accessories will be parked.
   7. Routing of cable ductwork, conduits, etc., must run direct as possible otherwise may result in the need for greater than standard cable lengths (refer to the interconnection diagram for maximum usable lengths point to point).
   8. Conduit turns to have large, sweeping bends with minimum radius in accordance with national and local electrical codes.
   9. A special grounding system is required in all procedure rooms by some national and local codes. It is recommended in areas where patients might be examined or treated under present, future, or emergency conditions. Consult the governing electrical code and confer with appropriate customer administrative personnel to determine the areas requiring this type of grounding system.
   10. The maximum point to point distances illustrated on this drawing must not be exceeded.
   11. Physical connection of primary power to GE equipment is to be made by customers electrical contractor with the supervision of a GE representative. The GE representative would be required to identify the physical connection location, and insure proper handling of GE equipment.
   12. GEHC conducts power audits to verify quality of power being delivered to the system. The customer’s electrical contractor is required to be available to support this activity.

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
- Internet Access - connectivity for InSite 2.0

The requirements for these connectivity solutions are explained in the broadband solutions catalogue (separate document).
<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1/2&quot; x 3&quot; [300mm x 100mm] Trench duct with minimum 2 dividers</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>10&quot; x 3 1/2&quot; [250mm x 100mm] Surface wall duct with minimum 2 dividers</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>6&quot; x 3 1/2&quot; [150mm x 100mm] Surface wall duct with minimum 2 dividers</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>6&quot; x 3&quot; [150mm x 100mm] Trench duct with minimum 2 dividers</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>2 1/2&quot; cnd above ceiling</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>3 1/2&quot; cnd above ceiling</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>Box above ceiling size per local code</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>Main disconnect panel</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>Warning light</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>Warning light controller</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>Door switch</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>Duplex hospital grade, dedicated outlet 120-v, single phase outlet same feeder circuit as Main Disconnect Panel</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>Duplex hospital grade, dedicated outlet 120-v, single phase outlet 20 amp</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>Dedicated telephone line(s)</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>Network outlet</td>
</tr>
</tbody>
</table>

**Additional Conduit Runs**

- **From**
- **To**
- **Qty**
- **Size**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Qty</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 PHASE POWER</td>
<td>MAIN DISCONNECT</td>
<td>1</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>EMERGENCY OFF (EACH)</td>
<td>MEDICAL CENTER</td>
<td>1</td>
<td>1/2</td>
</tr>
<tr>
<td>POWER INPUT DISTRIBUTION BOX</td>
<td>MAIN DISCONNECT</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>WARNING LIGHT CONTROLLER</td>
<td>MEDICAL CENTER</td>
<td>1</td>
<td>1/2</td>
</tr>
<tr>
<td>1 PHASE POWER</td>
<td>CT PDU</td>
<td>1</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>DOOR SWITCH</td>
<td>MEDICAL CENTER</td>
<td>1</td>
<td>1/2</td>
</tr>
</tbody>
</table>

**Contractor Supplied & Installed**

- 12" x 3" [300mm x 100mm] Trench duct with minimum 2 dividers
- 10" x 3 1/2" [250mm x 100mm] Surface wall duct with minimum 2 dividers
- 6" x 3 1/2" [150mm x 100mm] Surface wall duct with minimum 2 dividers
- 6" x 3" [150mm x 100mm] Trench duct with minimum 2 dividers
- 2 1/2" cnd above ceiling
- 3 1/2" cnd above ceiling
- Box above ceiling size per local code
- Main disconnect panel
- Warning light
- Warning light controller
- Door switch
- Duplex hospital grade, dedicated outlet 120-v, single phase outlet same feeder circuit as Main Disconnect Panel
- Duplex hospital grade, dedicated outlet 120-v, single phase outlet 20 amp
- Dedicated telephone line(s)
- Network outlet

**DATE**

- 10/10/2019

**Rev**

- A
**POWER REQUIREMENTS**

**POWER SUPPLY**
- 3 PHASES+N-G 380 to 480 VAC ± 10%

**FREQUENCIES**
- 50/60 Hz ± 3 Hz

**MAXIMUM POWER DEMAND**
- 40 kVA

**AVERAGE (CONTINUOUS) POWER DEMAND**
- 8.8 kVA

**POWER FACTOR**
- 0.85 (120kV,200 mA)

- 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 difference 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 separate 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.
- Phase imbalance 2% maximum.
- Maximum voltage variation at full load = 6% (Including line impedance).
- Transients must be less than 1500 V peak. (on a 400 V line)

**GROUND SYSTEM**
- System of equipotential grounding.
- 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 system units are located.
- The impedance of the earth bar should be less than or equal to 0.5 Ohm.

**CABLES**
- Power and cable installation must comply with the distribution diagram.
- All cables must be isolated and flexible, cable color codes must comply with standards for electrical installation.
- The cables from signaling and remote control (Y, SEO, L...) will go to MDP with a pigtail length of 1.5 m, and will be connected during installation. Each conductor will be identified and isolated (screw connector).

**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.

**FEEDER TABLE**

<table>
<thead>
<tr>
<th>MIN. FEEDER WIRE SIZE, AWG OR MCM</th>
<th>MINIMUM FEEDER WIRE LENGTH - ft (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 (15)</td>
<td>100 (30)</td>
</tr>
<tr>
<td>100 (30)</td>
<td>150 (46)</td>
</tr>
<tr>
<td>150 (46)</td>
<td>200 (61)</td>
</tr>
<tr>
<td>200 (61)</td>
<td>250 (76)</td>
</tr>
<tr>
<td>250 (76)</td>
<td>300 (91)</td>
</tr>
<tr>
<td>300 (91)</td>
<td>350 (107)</td>
</tr>
<tr>
<td>350 (107)</td>
<td>400 (122)</td>
</tr>
<tr>
<td>400 (122)</td>
<td>480 VAC</td>
</tr>
<tr>
<td>4 (22)</td>
<td>4 (22)</td>
</tr>
<tr>
<td>4 (22)</td>
<td>4 (22)</td>
</tr>
<tr>
<td>4 (22)</td>
<td>4 (22)</td>
</tr>
<tr>
<td>4 (22)</td>
<td>4 (22)</td>
</tr>
<tr>
<td>3 (30)</td>
<td>3 (30)</td>
</tr>
<tr>
<td>3 (30)</td>
<td>3 (30)</td>
</tr>
<tr>
<td>3 (30)</td>
<td>2 (35)</td>
</tr>
<tr>
<td>2 (35)</td>
<td>1 (45)</td>
</tr>
</tbody>
</table>

**GENERAL NOTES**
- In all cases qualified personnel must verify that the feeder (at the point of take-off) and the run to the NMCT power meet all the requirements stated in the PIM.
- For a single unit installation, the minimum transformer size is 50kVA, with 2.4% rated regulation at unity power factor. Resultant maximum allowable feeder regulation is 3.6%.
- A 1/0 AWG (55mm²) grounding conductor recommended in all cases, will run from the equipment back to the power source/main grounding point in accordance with local codes.

**MAIN DISCONNECT PANEL**

**MDP**
- Main Disconnect Panel

**PIDB**
- Power input distribution unit

**SEO**
- Emergency OFF button (Control Room), located 1.50m (4.9') above floor

**WLC**
- Warning Light Control

**WL**
- Warning Light

**DS**
- Door Interlock Switch (needed only if required by state/local codes)

**Notes:**
1. Two dry contacts: "System ON" and "X-Ray ON", both released by PDU.
   - Max. voltage = 30 V
2. If length < 10 m (32.8')
   - Cable with 2m (6.6') extra length on the floor behind the back of PDU
3. Cable with 2m (6.6') extra length on the floor behind the back of PDU
4. Cable delivered with partial UPS installed by GE (Option)
5. NM additional ground for UPS
CABLE MANAGEMENT

FLUSH FLOOR DUCT

- Waterproof joint
- Removable cover

WALL DUCT

- Removable cover plate

NOT TO SCALE

INTERCONNECTIONS

EXAM ROOM

- 4.00 m [13 ft]
- PDU
- 4.00 m [13 ft]
- 10.00 m [32.8 ft]
- 3.00 m [9.8 ft]
- MDP
- Can be ordered from GE

- 23.90 m [78.4 ft]
- 16.00 m [52.5 ft]
- 10.00 m [32.8 ft]
- 3.00 m [9.8 ft]
- 1 m [3.3 ft]
- 2 m [6.6 ft]

CONTROL ROOM

- 22.50 m [73.8 ft]
- NM Host
- 17.00 m [55.7 ft]
- 17.00 m [55.7 ft]
- Table
- 17.00 m [55.7 ft]
- NM Gantry
- CT Gantry
- NM Gantry
- NM/UPS (O)PTION
- 10.00 m [32.8 ft]
- 22.00 m [72 ft]
- 17.00 m [55.7 ft]
- 2.10 m [6.9 ft]

- 1.00 m [3.3 ft]
- 3.00 m [9.8 ft]
- 3.00 m [9.8 ft]
- 3.00 m [9.8 ft]
- 3.00 m [9.8 ft]

CT UPS (O)PTION

- Can be ordered from GE

Can be ordered from GE