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|     |             |
| B   | 03/NOV/2015 |
| A   | 02/NOV/2015 |
| REV | DATE        |

Change of cableways  
First issue drawing  
MODIFICATIONS

This plan is made to suggest a typical location of GE equipment and associated devices, electrical wiring details and room arrangements. While preparing this layout, every effort has been made to meet the installation requirements of the actual set of drawings. GE does not take responsibility for any damages resulting from changes on drawings made by others. This drawing shall not be used for construction purposes.

- 01 - Cover Sheet
- 02 - Equipment Layout
- 03 - Structural, Electrical Layout
- 04 - Floor Structural Details
- 05 - Power Requirements, Power Distribution
- 06 - HVAC
- 07 - Environment, Delivery and Cables Length
- 08 - Room and Equipment Dimensions
- 09 - Disclaimer

Errors may occur by not referring to the complete set of final issue drawing. GE cannot accept responsibility for any damages due to the partial use of GE final issue drawings, however caused.

**SZENT RÓKUS KÓRHÁZ**  
**BUDAPEST**  
**HUNGARY**



**GE Healthcare**

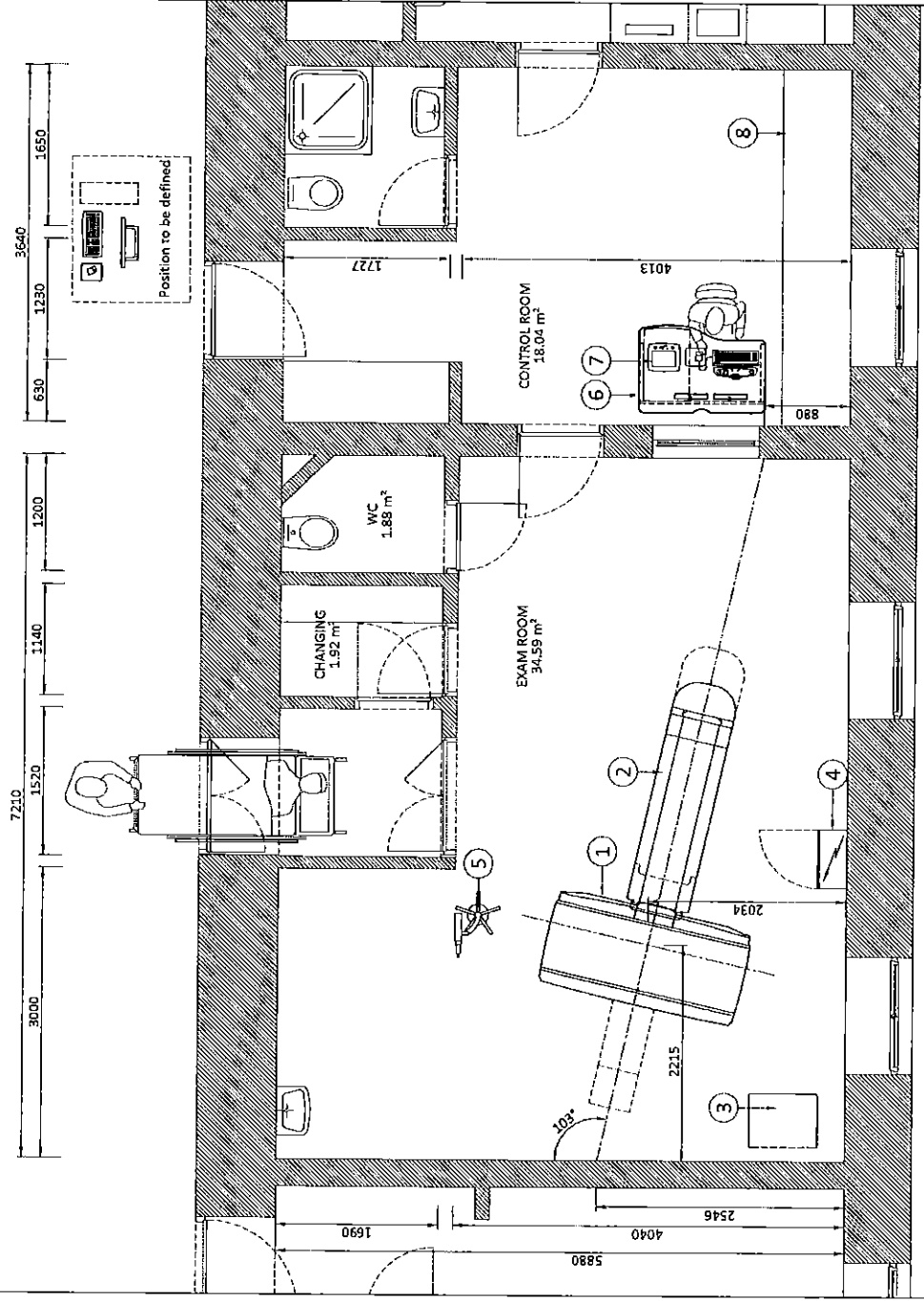
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**PRE-INSTALLATION REQUIREMENTS FOR  
OPTIMA CT540**

|                  |             |             |      |                   |             |             |
|------------------|-------------|-------------|------|-------------------|-------------|-------------|
| Scale            | Drawn by    | Verified by | S.O. | PIM Ref & Rev     | Date        | Drawing Rev |
| 1:50             | D. Zemlényi | V. Szabó    | -    | 5341627-1EN REV10 | 03/NOV/2015 | B           |
| CT-02381-001.DWG |             |             |      |                   |             | 01/09       |

# EQUIPMENT LAYOUT

| ITEM                                 | DESCRIPTION                         | DIMENSIONS<br>LxWxH (mm) | WEIGHT<br>(kg) |
|--------------------------------------|-------------------------------------|--------------------------|----------------|
| 1                                    | GANTRY                              | 2050x1048x1944           | 1810           |
| 2                                    | PATIENT TABLE                       | 650x2370x1046            | 445            |
| 3                                    | POWER DISTRIBUTION UNIT (PDU)       | 700x550x1062             | 336            |
| 4                                    | POWER DISTRIBUTION BOX (PDB)        | 600x300x800              | 42             |
| 5                                    | STAND ALONE INJECTOR                | -                        | -              |
| 6                                    | OPERATORS CONSOLE WITH OPTIMA TABLE | 1395x895x850             | 147            |
| 7                                    | INJECTOR CONTROL                    | -                        | -              |
| 8                                    | AW SERVER 8k                        | -                        | -              |
| WALL - ACCORDING TO RECEIVED DRAWING |                                     |                          |                |
| EXAM ROOM HEIGHT                     |                                     |                          |                |
| SLAB TO SLAB HEIGHT                  |                                     |                          |                |
| FALSE CEILING HEIGHT                 |                                     |                          |                |
| rec. 2.75 m                          |                                     |                          |                |

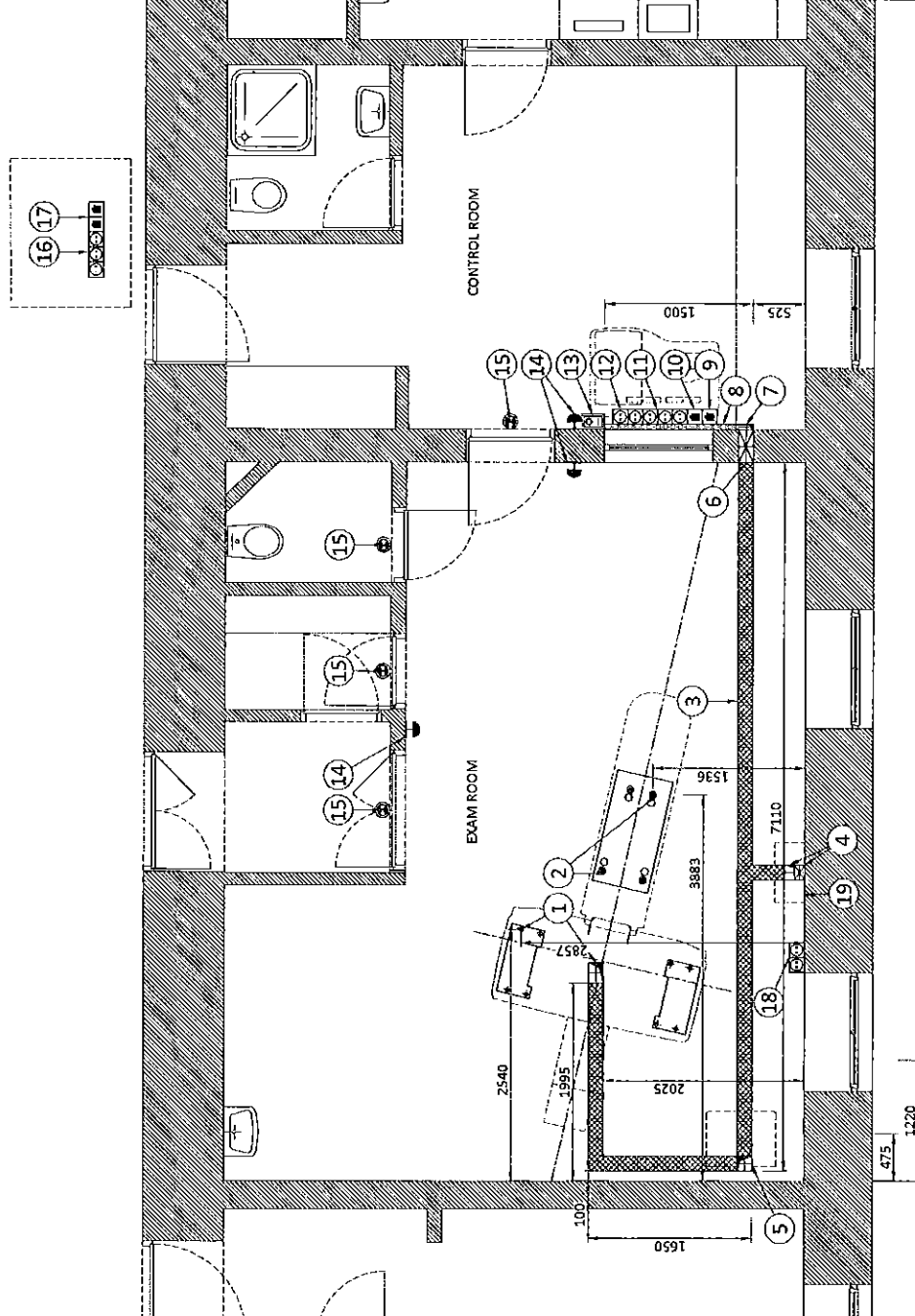


# STRUCTURAL-ELECTRICAL LAYOUT

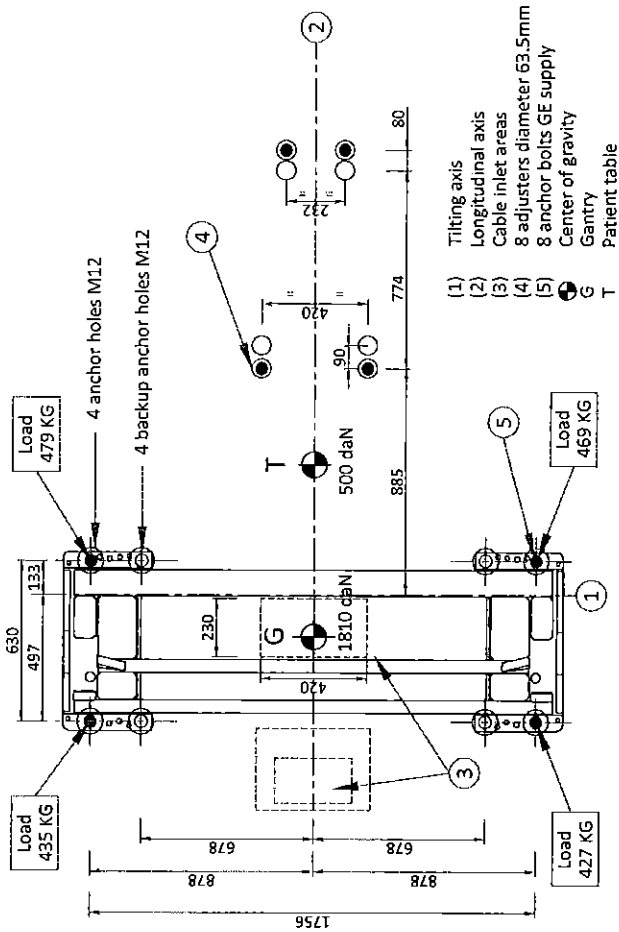
| ITEM | QTY | DESCRIPTION   |
|------|-----|---|
| 1    |     | Gantry anchoring and 150x200 cable inlet (see Structural Details)                   |
| 2    |     | Table anchoring (see Structural Details)  |
| 3    |     | 150x100 flush floor duct (existing)   |
| 4    |     | 150x200 cable inlet and 150x100 vertical duct from floor to PDB (h=1.1m)            |
| 5    |     | 150x200 cable inlet for PDU cabling   |
| 6    |     | 150x100 opening through the wall  |
| 7    |     | 150x50 cable inlet and 150x50 vertical wall duct from floor to horizontal wall duct |
| 8    |     | 150x50 horizontal wall duct   |

|    |   |   |
|----|---|---|
| 9  | 1 | RJ45 Network socket for main system console   |
| 10 | 1 | Additional RJ45 Network socket for main system console  |
| 11 | 4 | Additional electrical outlets: 10/16A 230V + G  |
| 12 | 1 | Power supply for injector: 10/16A 230V  |
| 13 | 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 |
| 14 | 3 | System emergency off (SED), Emergency OFF, 1.50m above floor near access doors  |
| 15 | 4 | XR ON lamp (L1) - 24V, located near access doors  |
| 16 | 3 | Electrical outlets for AW Server L: 10/16A 230V + G   |
| 17 | 2 | RJ45 socket for AW Server L   |
| 18 | 2 | Additional electrical outlets: 10/16A 230V + G for service  |
| 19 |   | Power Distribution Box (PDB)  |

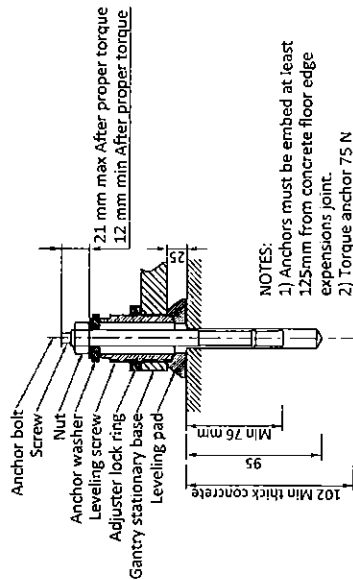
Flush floor duct  
Wall duct



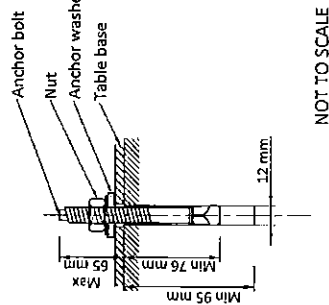
### ANCHORING/LOADING DISTRIBUTION TO THE FLOOR



### GANTRY ANCHORING



### TABLE ANCHORING



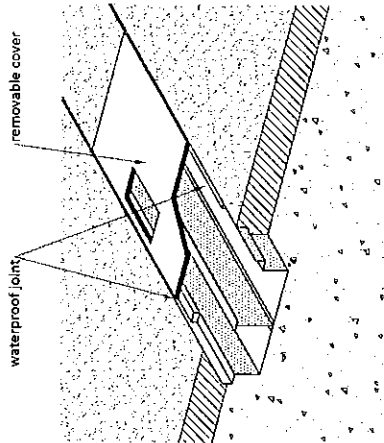
### FINISHED FLOOR REQUIREMENTS:

Installation requires a finish floor in the scan and control rooms :

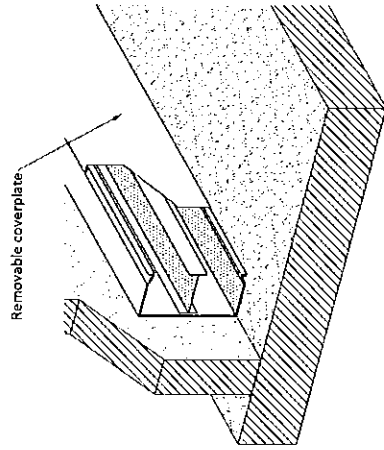
- The floor surface in the scan room directly under the gantry and table must be level.
- The floor flatness tolerance of the floor surface that the gantry and table will rest on is 6 mm over a 3000 mm distance.
- Shims should not be used to compensate for a floor that does not meet this requirement.
- Eight or more floor covering openings that are 101.6 mm in diameter are made to ensure the table and gantry rest on a solid surface.
- These floor penetrations can be sealed if required, these requirements apply to all installation types.

### CABLE MANAGEMENT

#### FLUSH FLOOR DUCT



#### DUCT ON THE WALL



NOT TO SCALE

## POWER & NETWORK REQUIREMENTS

### POWER SUPPLY

|                                   |                                |
|-----------------------------------|--------------------------------|
| POWER SUPPLY                      | 3 PHASES-N+G 200 to 480V ± 10% |
| FREQUENCIES                       | 50/60Hz ± 3Hz                  |
| MAXIMUM POWER DEMAND              | 90 KVA                         |
| AVERAGE (CONTINUOUS) POWER DEMAND | 20 KVA                         |
| POWER FACTOR                      | 0.85                           |

- 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 material at the beginning of the installation (main low-voltage transformer side) and the protective devices in the PDB.

### 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 GEMS system components must be powered separately.
- Phase imbalance 2% maximum.
- Maximum voltage variation at 90KVA = 6% (including line impedance.)

### GROUND NETWORK

- 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 GEMS cableways and to additional equipotential connections linking up all the conducting units in the rooms where GEMS system units are located.
- The impedance of the earth bar should be less than or equal to 2 Ohms.

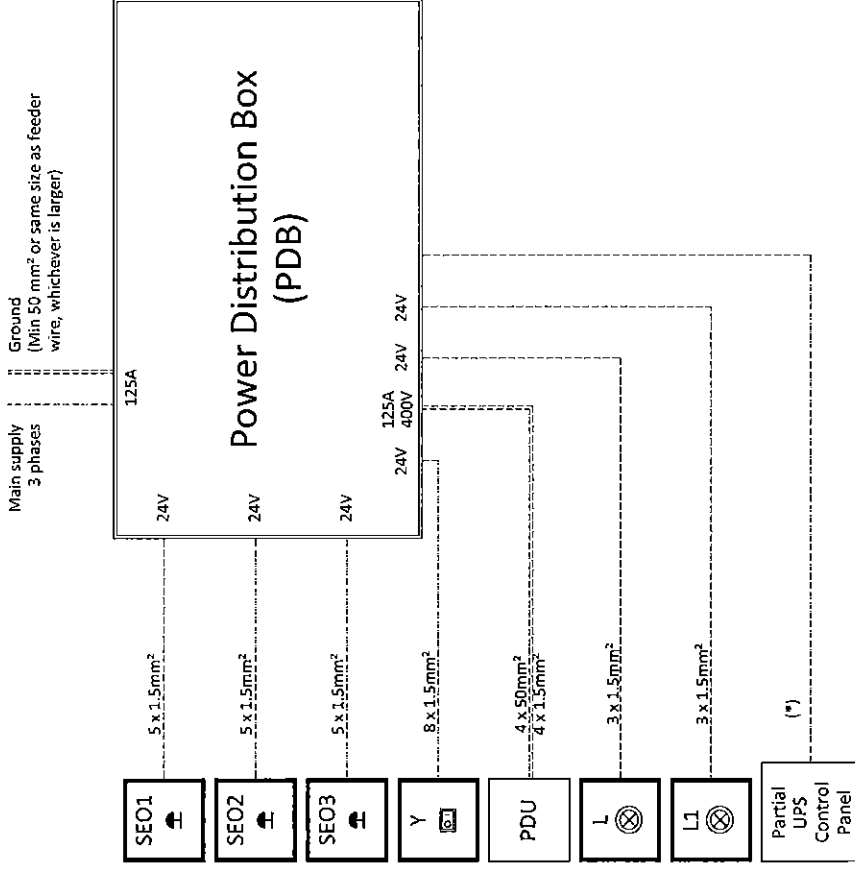
### CABLES

- 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.
- The cables from signalling 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).

### 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 water-proof)
  - 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

## RECOMMENDED POWER DISTRIBUTION SYSTEM



### PDB

- Power distribution box for CT equipment (Can be ordered as an option from GE)
- Emergency OFF located near to the access door.
- Remote control, locked when power OFF, "ON" and "OFF" impulse buttons with indicator lamps red=ON / green=OFF.
- Power Distribution Unit
- System ON light - 24V Located near access doors
- XRay ON light - 24V Located near access doors
- (\*) Cable supplied with the partial UPS Powerware 9155

----- Cable SUPPLIED BY CUSTOMER

===== Equipment SUPPLIED BY CUSTOMER

----- Equipment SUPPLIED BY GE

===== Equipment CAN BE ORDERED FROM GE

# TEMPERATURE AND HUMIDITY SPECIFICATIONS

## ENVIRONMENTAL CONDITIONS

| EXAM ROOM (1) |             | CONTROL ROOM |             |
|---------------|-------------|--------------|-------------|
| Min           | Recommended | Max          | Recommended |
| 18°C          | 22°C        | 26°C         | 22°C        |
| ≤ 3°C/h       |             | ≤ 3°C/h      |             |
| 30% to 60%    |             | 30% to 60%   |             |
| ≤ 5%/h        |             | ≤ 5%/h       |             |
| Max           |             | Max          |             |
| 7.30 kW       |             | 1.78 kW      |             |

(1) In case of separated Technical Room the heat dissipation in the Exam Room: 5.8 kW and in the Technical Room: 1.5 kW

## STORAGE CONDITIONS

Temperature : +4°C to +27°C  
 Relative humidity (Without condensing) : 20% to 60%  
 Storage longer than 6 months is not recommended.

## RENEWAL AIR

According to local standards.

## HEAT DISSIPATION DETAILS

| ROOM                         | DESCRIPTION                                      | Max (kW) |
|------------------------------|--|----------|
| Exam Room                    | Gantry   | 5.5      |
|                              | Patient table (Without patient)                  | 0.3      |
| Exam Room or Technical Room* | Power distribution unit                          | 1.5      |
|                              | Uninterruptible power supply                     | 1.2      |
|                              | NI016 Operator console                           | 1.08     |
|                              | Advantage windows                                | 1.0      |
| Control Room                 | LCD monitor (Total amount of 2 monitors)         | 0.1      |
|                              | AW server 8k                                     | 0.7      |
|                              | AW server data center (16k-30k)                  | 1.0      |
|                              | AW server stand alone (16k-30k) with LCD monitor | 1.0      |

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

## ENVIRONMENT

### MAGNETIC FIELD SPECIFICATIONS

- Limit the magnetic interference to guarantee specified imaging performance.

#### Gantry :

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

#### Operator console :

- Ambient static magnetic fields less than 10 Gauss.
- Use static dissipative vinyl.

### MAXIMUM GANTRY AUDIBLE NOISE LEVEL

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

## 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 utilizing the wide range of digital tools using the connectivity solutions listed below:

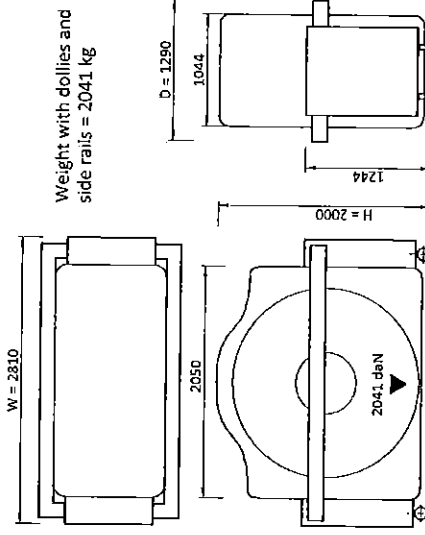
- Site-to-Site VPN/GE Solution
- Site-to-Site VPN/Customer Solution
- Connection through Dedicated Service Network
- Internet Access - connectivity for inSite 2.0

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

## DELIVERY

The customer / contractor must :

- Provide an area, adjacent to the CT 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 GEMS equipment from the delivery area to the specific rooms of the CT 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.

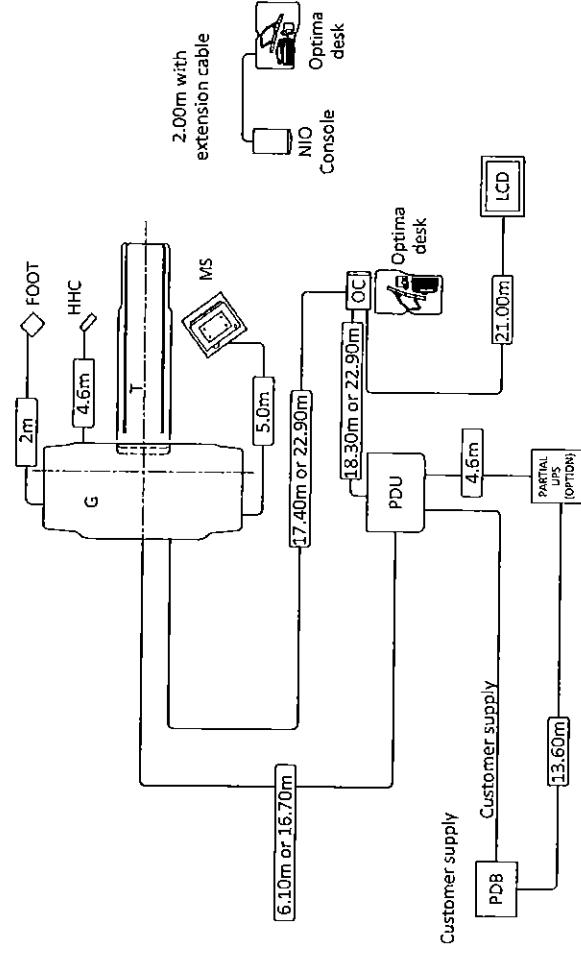


Dimensions of delivery of the patient table with table dolly transport equipment

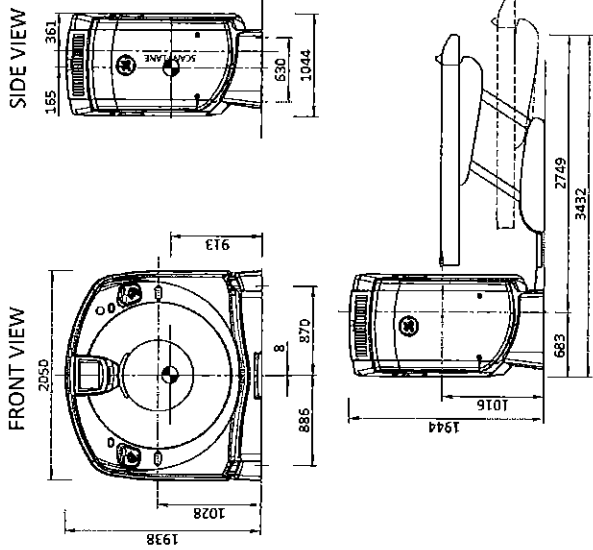
| length (mm) | width (mm) | height (mm) | weight (kg) |
|-------------|------------|-------------|-------------|
| 2489        | 762        | 1143        | 576         |

The gantry is shipped on a dolly equipped with elevating casters (normal shipping configuration). Dimensions and weight without dollies, side rails and covers : W = 1970mm, D = 860mm, H = 1850mm, Weight = 1662 kg

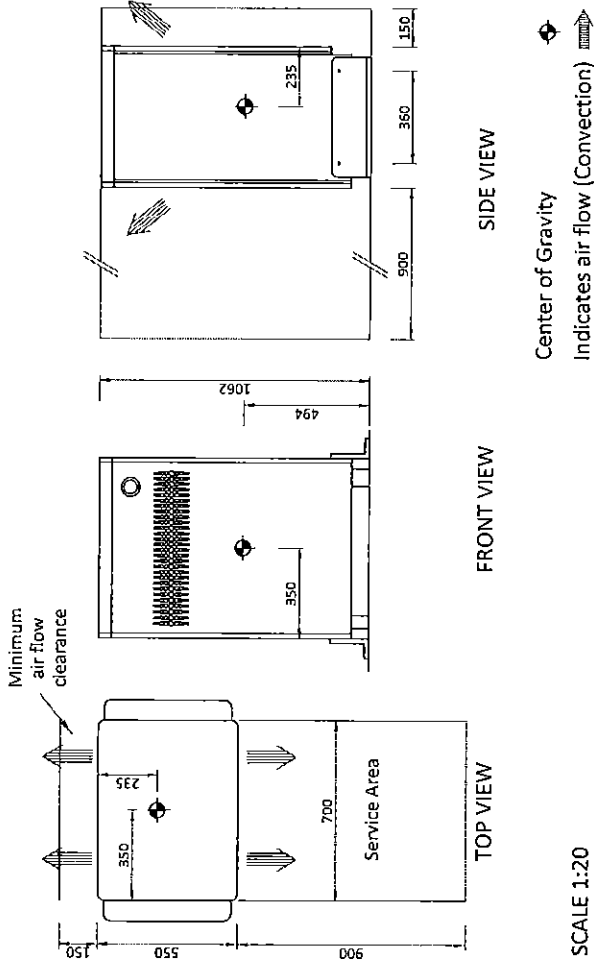
## MAXIMUM USABLE CABLES LENGTH



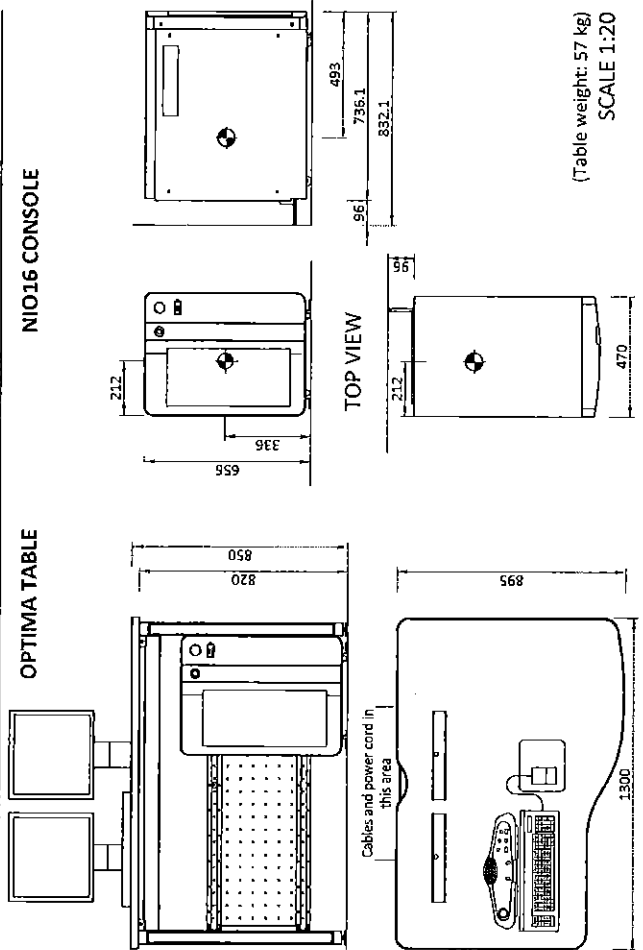
**GANTRY WITH TABLE**



**POWER DISTRIBUTION UNIT (PDU)**



**OPTIMA TABLE AND NIO16 CONSOLE**





## DISCLAIMER

### GENERAL SPECIFICATIONS

- GE is not responsible for the installation of development and associated equipment, lighting, cassette trays and protective screens or derivatives not mentioned in the order.
- The metallic frameworks - supporting equipment - on the ceiling, floor or walls are the customer's responsibility. Dimensioning and installation of these structures are the responsibility of the engineer chosen by the customer.
- 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 on-site during the study and the wishes expressed by the customer.
- If this study 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. This 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.
- Actual configuration may differ from options presented in some typical views or tables.
- 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.
- Dimensions apply to finished surfaces of the room.
- For Preliminary study : 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.

### SITE READINESS SPECIFICATIONS

The following responsibilities of the customer or his contractor are to be addressed prior to the start of the equipment installation :

- Adequate room lighting.
- A minimum of one convenience outlet available for GE in each room.
- Power network (3 phase and 1 phase) installed, and power is available.
- Finished ceiling.
- All wall and ceiling support structures installed.
- Room and adjacent corridor is dirt and dust free.
- All junction boxes, raceway and conduit installed with cover plates, screws, and chase nipples ready for use.
- Lead coated doors and control installed.
- At least one coat of paint finished on wall.
- Finished floor.
- HVAC system operating, checked and balanced in technical or equipment room.

### CUSTOMER RESPONSIBILITIES

It is the responsibility of the customer to prepare the site in accordance with the specifications stated in this set of final drawings.  
This set of final drawings contains recommendations of the location of GE equipment and associated devices, electrical wiring and room arrangements. When preparing these drawings, every effort has been made to consider every aspect of the actual equipment expected to be installed.  
These drawings are not to be used for actual construction purposes. The company cannot take responsibility for any damage resulting therefrom.  
The contractor must ensure the floor strength is sufficient to support the fixings as required. A qualified structural engineer must be consulted and all work carried out according to his specifications.

### 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.