

**VMC KARABURMA  
BELGRADE  
SERBIA**



**GE Healthcare**

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**REVOLUTION EVO  
FINAL STUDY**

Drawn by	Verified by	Concession	S.O. (GON)	PIM Manual	Rev
E. Vékony	J. Sikala	-	5092071	5866663-1EN	12
Format	Scale	File Name	Date	Sheet	
A3	1:50	CT-B283219-FIN-00.DWG	19/OCT/2021	01/15	

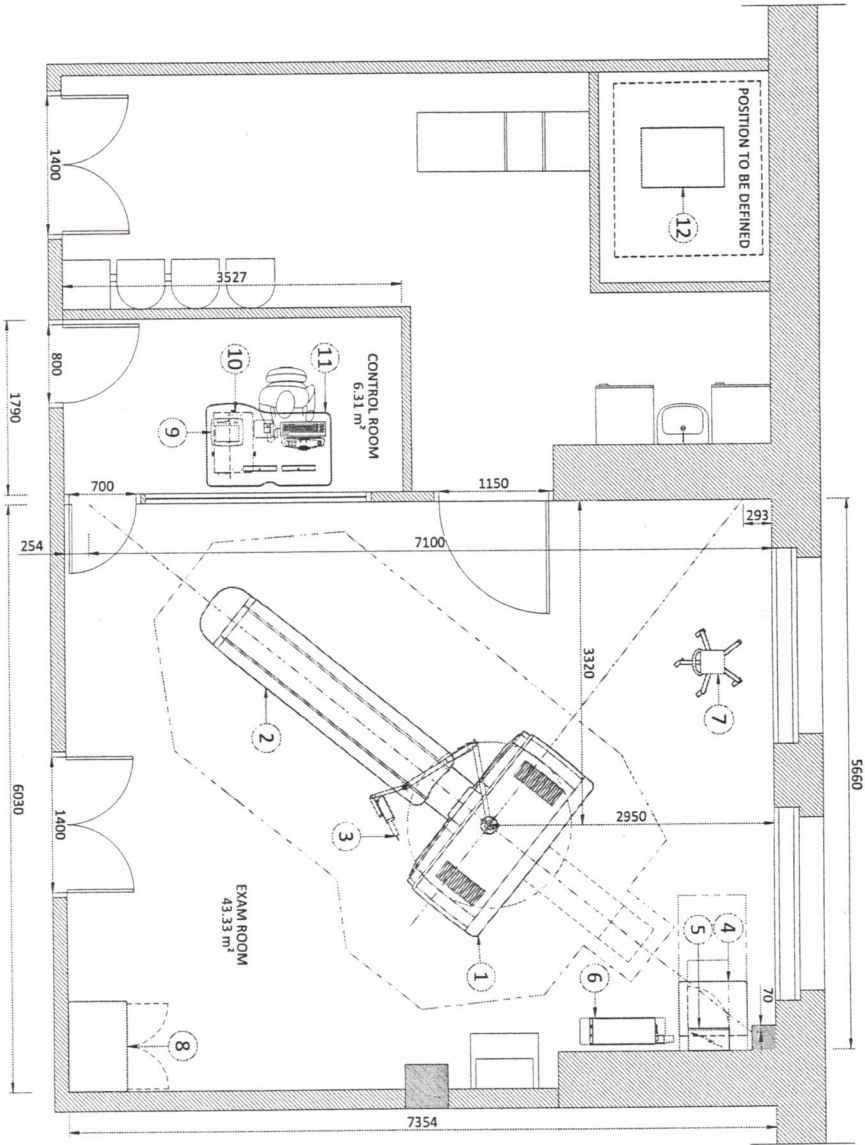
REV	DATE	MODIFICATIONS
A	19/OCT/2021	First issue drawing (DC-318120)

- 01 - Cover Sheet
- 02 - Equipment Layout
- 03 - Structural - Electrical Layout
- 04 - Floor Structural Details
- 05 - Ceiling Layout
- 06 - Ceiling Structural Details (1)
- 07 - Radiation Protection Layout
- 08 - Radiation Protection Details
- 09 - Power Requirements - Power Distribution

- 10 - Detailed PDB Schematics
- 11 - Environment - Interconnections
- 12 - Equipment Dimensions (1)
- 13 - Equipment Dimensions (2)
- 14 - HVAC - Delivery
- 15 - Disclaimer - Site Readiness

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 construction. Incomplete documentation can be accessed on the web at: [www.gehealthcare.com/siteplanning](http://www.gehealthcare.com/siteplanning)

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**EQUIPMENT LAYOUT**

ITEM	DESCRIPTION	DIMENSIONS LxWxH (mm)	WEIGHT (kg)
1	GANTRY	2050x1035x1938	1820
2	VIT2000 TABLE	650x2910x1047	505
3	INJECTOR ON CEILING	-	36
4	POWER DISTRIBUTION UNIT (PDU)	700x550x1062	370
5	POWER DISTRIBUTION BOX (PDB)	225x424x929	33
6	PARTIAL UPS	770x264x528	120
7	ECG MONITOR	-	3
8	STORAGE CABINET	610x915x1070	41
9	INJECTOR CONTROL	-	-
10	OPEN CONSOLE	672x400x576	64.2
11	AURORA SMS TABLE	1300x850x850	40
12	AW SERVER STAND-ALONE RACK	851x600x638	-

WALL - ACCORDING TO RECEIVED DRAWING

STRUCTURE - ACCORDING TO RECEIVED DRAWING

EXAM ROOM HEIGHT

FINISHED FLOOR TO SLAB HEIGHT 3.100 m

FALSE CEILING HEIGHT 2.700 m\*

\*Ceiling suspension column's lowest point can't be lower than 2.285 m

2



## POWER REQUIREMENTS

POWER SUPPLY	3 PHASES+G 200 /220 /240 /380 /400 /420 /440 /460 /480 V ± 10%
FREQUENCIES	50/60 Hz ± 3 Hz
MAXIMUM POWER DEMAND	100 KVA
AVERAGE (CONTINUOUS) POWER DEMAND	20 KVA
POWER FACTOR	0.85

- 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 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.
- Transients must be less than 1500V peak. (on a 400V 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.

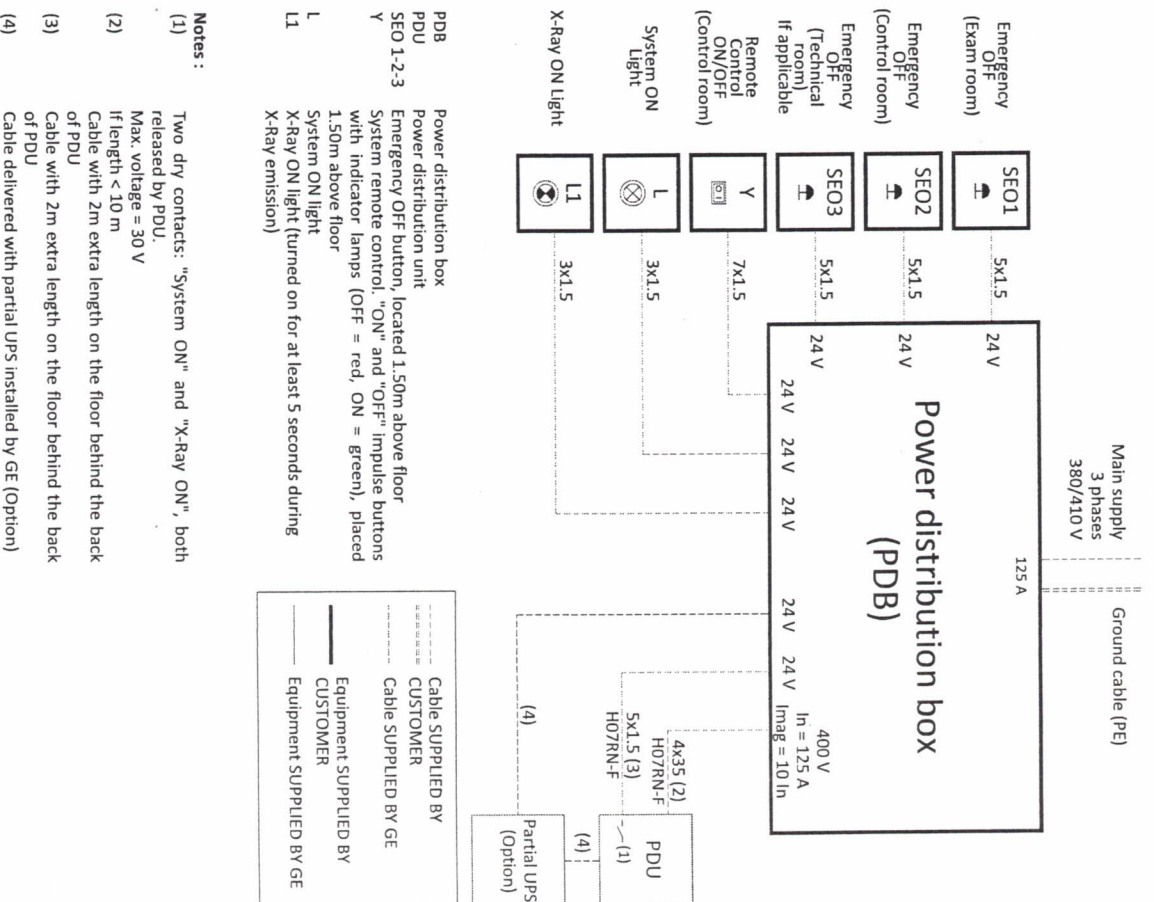
### CABLES

- 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 1.5m, and will be connected during installation. Each conductor will be identified and isolated (screw connector).

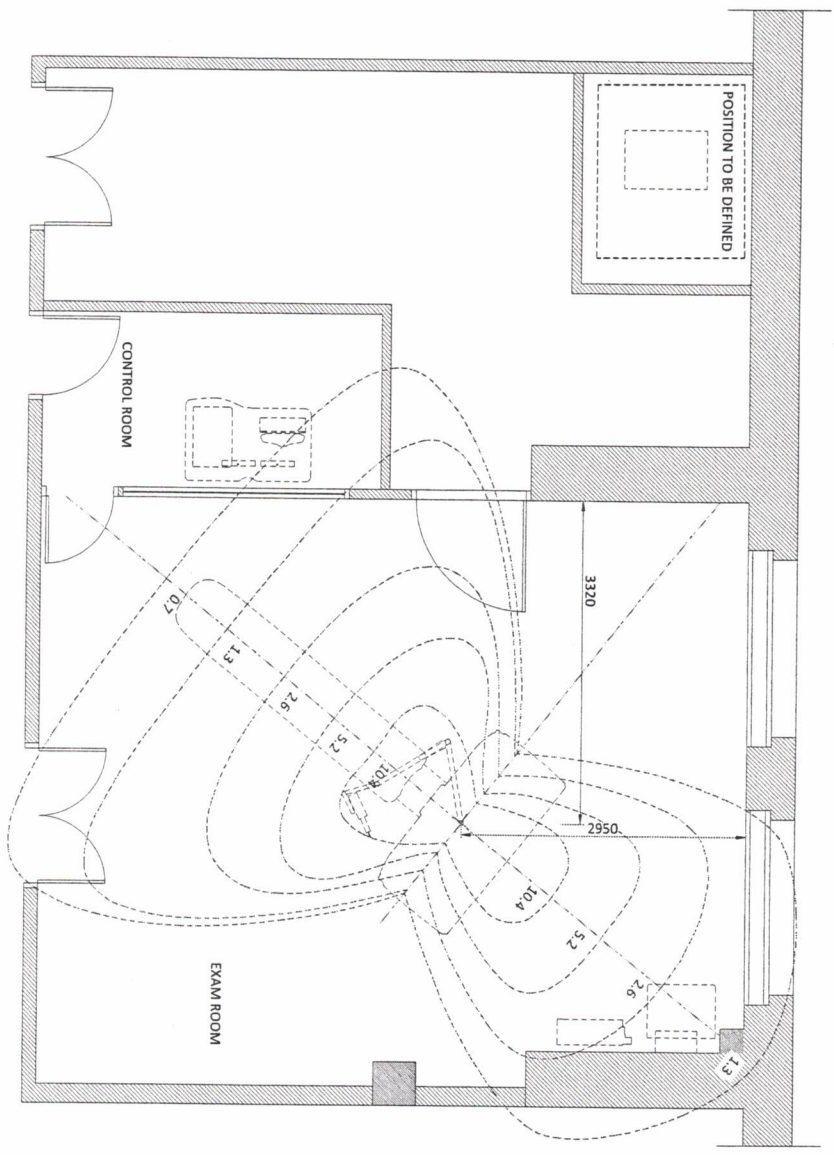
### CABLEWAYS

- 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 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



# RADIATION PROTECTION LAYOUT



SHIELDING REQUIREMENTS SCALING	
CHANGED PARAMETER (mAs)	MULTIPLICATION FACTOR (new mAs/100)
80 kV	0.24
100 kV	0.45
120 kV	0.71
140 kV	1.00
1 mm aperture	0.20
3 mm aperture	0.22
5 mm aperture	0.27
10 mm aperture	0.38
15 mm aperture	0.48
20 mm aperture	0.59
30 mm aperture	0.79
40 mm aperture	1.00

## SHIELDING REQUIREMENTS:

Engage a qualified radiological health physicist to review your scan room shielding requirements, taking into consideration:

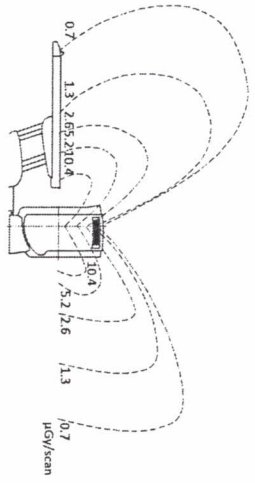
- Scatter radiation levels within the scanning room
- Equipment placement
- Weekly projected work-loads (number of patients/day technique [kVp\*ma])
- Materials used for construction of walls, floors, ceiling, doors, and windows.
- Activities in surrounding scan room areas.
- Equipment in surrounding scan room areas (e.g., film developer, film storage)
- Room size and equipment placement within the room relative to room size.

The illustrations on this page depict measured radiation levels within the scanning room, while scanning a 32 cm or 16 cm CTDI phantom with the technique shown. Use the mAs, kV and aperture scaling factors in the table shown here to adjust exposure levels to the scan technique used at the site.

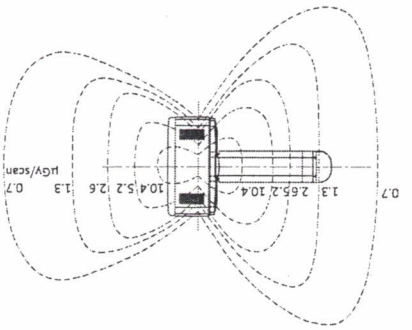
**NOTE:** Actual measurements can vary. Expected deviations equals ±15%, except for the 5 ma and 1mm techniques, where variations may be greater (up to a factor of 2), due to the inherent deviation in small values. The maximum deviation anticipated for tube output equals ±40%.

### RADIATION SCATTER - HEAD PHANTOM

NOTE: 140 kV  
100 mAs/scan  
1 sec  
40mm aperture



Elevation

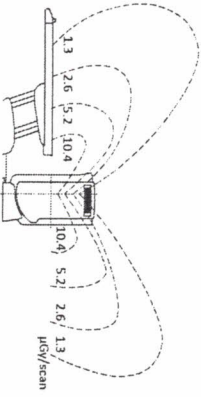


Plan View

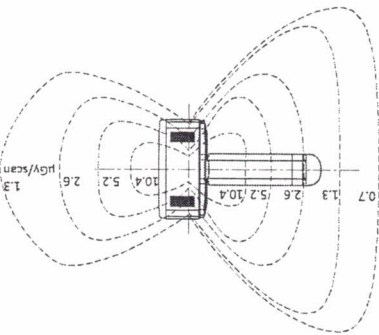
APPROX.  
0"  
50"  
0.5 1.0m

### RADIATION SCATTER - BODY PHANTOM

NOTE: 140 kV  
100 mAs/scan  
1 sec  
40mm aperture



Elevation



Plan View

APPROX.  
0"  
50"  
0.5 1.0m

5