
# SOMATOM go.Open Pro

## Basic Planning Information



SIEMENS Healthineers

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## Legend

- Motion area / Swivelling range / Minimal room size / Safety distance
- Service area
- Floor mounted
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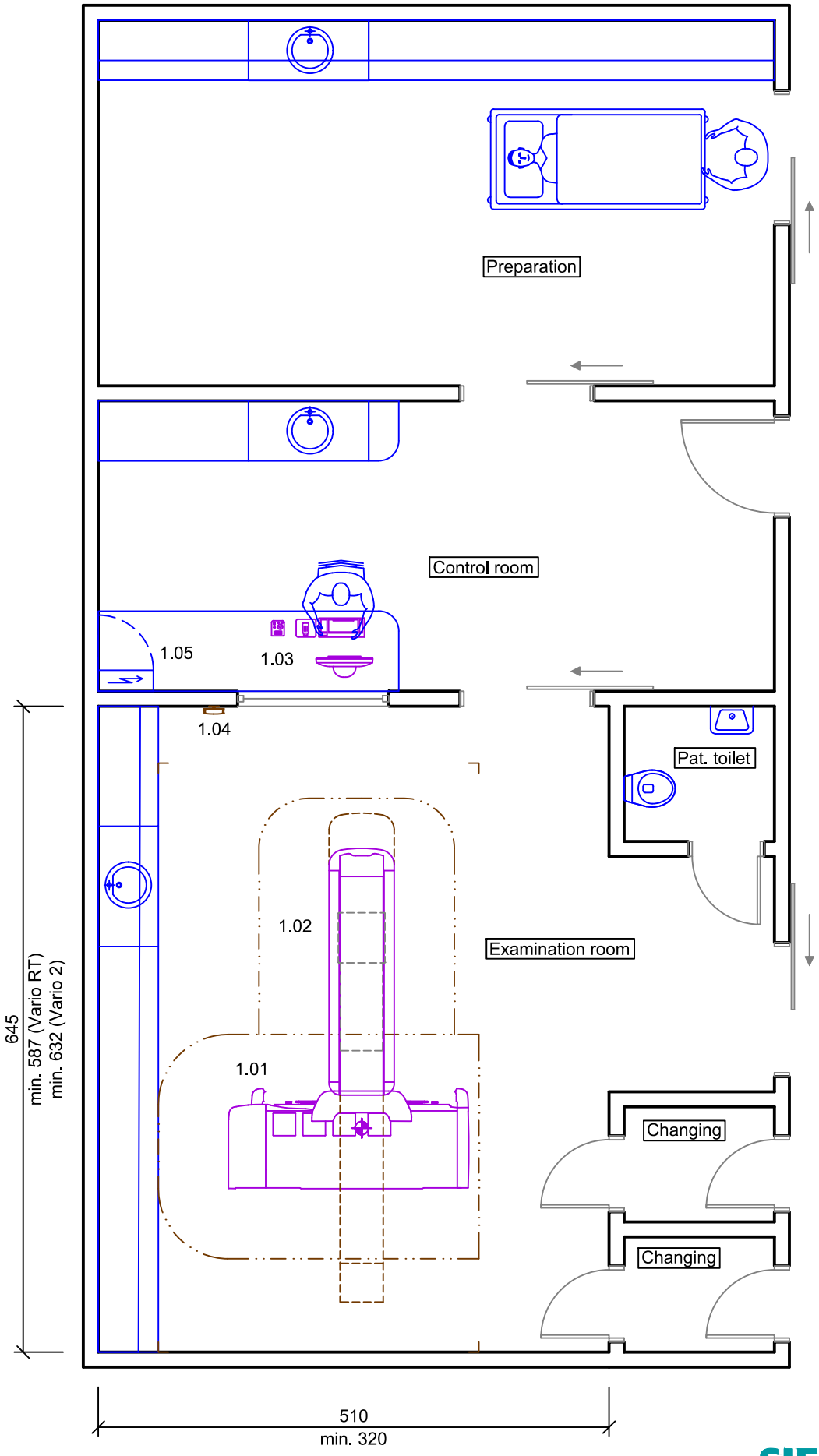
## Dimensioning

All installation measurements apply to finished wall/floor/ceiling and are to be checked prior to assembling the unit.


Orientation point = reference point of the Siemens Healthineers unit for planning and installation

Please note: The drawing parts in this document are not to scale!

# Planning Example



| SOMATOM go.Open Pro - Equipment Legend | | | | |
|---|---|---|---|---|
| | | Weight (kg), Heat dissipation to the air (W) | | |
| Pos. | Description | kg | W | Remark |
| 1.01 | Gantry with tablet, remote control, computer, UPS and direct laser | 1728 | 7100 | #1, #2, gantry not tiltable |
| 1.02 | 227 kg Patient table Vario RT (1600 mm scannable range) | 338 | 300 | |
| 1.03 | Control unit with TFT monitor, control box, keyboard | 9 | 75 | |
| 1.04 | Wireless Access Point | 3 | | |
| 1.05 | Power Distributor | | | by customer |
| | #1 2250 W in stand-by mode, isocentre at 1020 mm<br>#2 Protective regulations for dealing with laser light indicators must be observerd | | | |

# Room Dimensioning

## Room dimensioning

The indicated room dimensions have to be checked on site. The planning department has to be informed about possible deviations. Otherwise we cannot assume any guarantee for the accurate implementation of the dimensions indicated in the planning documents.

## Room height

Technically required minimum room height 2200 mm (with injector arm: 2400 mm) for the CT system - additional components not considered.
Measured from the highest point of the finished floor (with covering) to the lowest point of the ceiling.

## On-site LAN network

Poor network bandwidth impairs the performance of image transmission significantly. The ICSi-1d (11362303) can't communicate with an Ethernet slower than Gigabit.The other ICSi- types can still connect to a 100 MBit network.
If the ICSi-1d is ordered and the customer can only provide a 100 MBit/s network, a switch must be connected to adapt the speed of 1 GBit/s to the hospital's 100 MBit/s network. Either the switch 10547105 can be ordered, or the customer's IT may provide their own switch.

# Statics and Transport

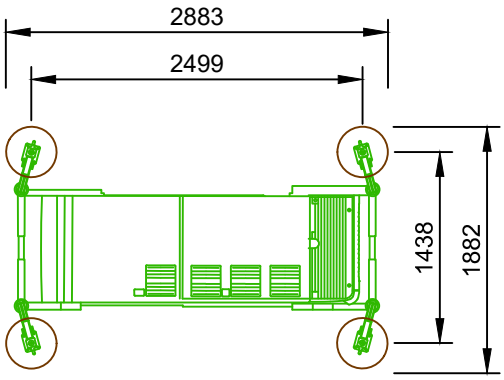
## Transport

not to scale

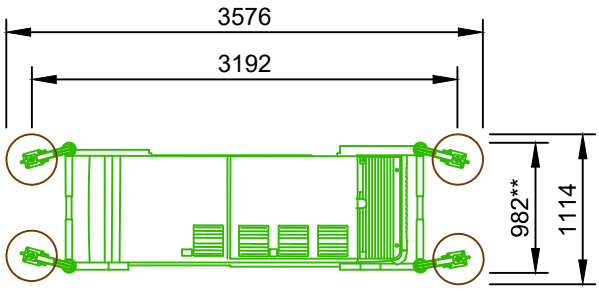
The transport route (doors and hallways) needs sufficient dimensions for the following parts!

### Gantry with transport device

Transport rollers swiveled out
ca. 2883 x 1627 x 1952* mm ( L x W x H )




Transport rollers swiveled in
ca. 3576 x 1037 x 1952* mm ( L x W x H )




* The transport device with the gantry can be lowered to a ground clearance of 7 mm.
** The Gantry can be moved through the entrance < 1000 mm, when the transport adapter is partially removed.

TIPPING HAZARD ! Transport with the rollers swivelled in is permissible only in narrow passages! As soon as the system has passed through narrow passages, the transport rollers have to be swivelled out again.

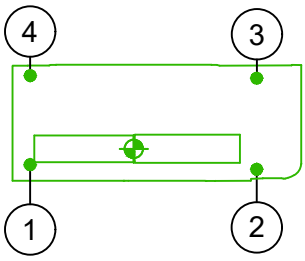
Gantry with transport device 1825 kg, transport device 220 kg.
The maximum possible floor load (2-point load) per roller may be reached during gantry transport.
If necessary, cover the transport route with metal sheets to distribute the load.

The door must have a final clearance of 1250 mm if bed entrance to the CT examination room is requested.

| | | |
|---|---|---|
| PHS Vario RT | Weight 570 kg | 2574 x 824 x 1517 mm ( L x W x H ) |
| PHS Vario2 | Weight 592 kg | 2574 x 824 x 1517 mm ( L x W x H ) |

## Statics

not to scale




The floor construction has to be performed solid and free of vibration, e.g. concrete flooring C20/25 to C50/60 corresponding to DIN EN 206-1, according to the maximum values as specified in the textblock “Floor and building vibrations”.
It is recommended to test the weight capacity of the concrete or composite flooring by a stress analyst.
Fastening the gantry on the floor is possible but only necessary in countries prone to earthquakes or according to local regulations.
Securing the patient table to the floor is mandatory.

| Total weight of Gantry: 1708 kg | Total static load (center of gravity ): $F_{stat\ total}$ = 17.08 kN |
|---|---|

| Partial load on gantry foot number | | ① | ② | ③ | ④ |
|---|---|---|---|---|---|
| Nominal static load after levelling | $F_{stat\ nom}$ [kN] | 3.43 | 4.61 | 5.26 | 3.78 |
| Maximum dynamic load (amplitude) during gantry rotation | $F_{dyn\ max}$ [kN] | ± 0.3 | ± 0.3 | ± 0.3 | ± 0.3 |
| Outer diameter gantry foot [mm] | | 54 | 54 | 54 | 54 |
| Floor contact area gantry foot [cm²] | | 16 | 16 | 16 | 16 |

During gantry installation and leveling, the maximum possible load on one gantry foot can be 9.87 kN (the gantry is standing on two diagonal feet). Design access floors for a weight capacity of min. 400 kg per slab/plate. During gantry transport, the load may be higher at certain individual points (3-point load, e.g. due to uneven flooring).

When the system has tilt function, the tilt actuator will be equipped and a fifth gantry foot has to touch the floor during system installation.
The fifth foot shouldn't share floor load from the other four feet on static mode. It will share the load from the tilt actuator when gantry is tilting.

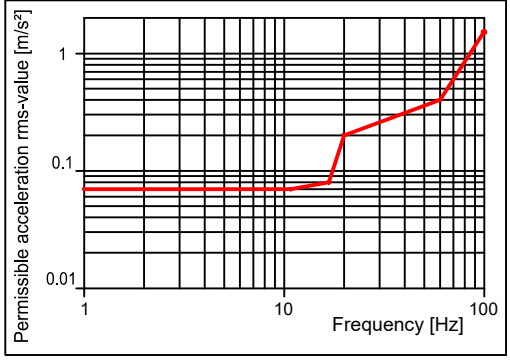
## Floor- and building vibrations

Floor- and building vibrations can reduce image quality!

Sources that produce vibrations are, e.g.:
Railroad routes, subways, roads, road works and construction sites, hospital power plants, mines, open-cast minings, quarries (explosions), ferry moorings, any other sources of striking vibrations. Any transient vibration has to be less than 0.5 m/s² peak-to-peak in the time domain. The vibrations have to be measured with a sampling rate of 1000 Hz.

The CT system is not sensitive to common vibrations. If the CT is away from vibrational sources, or the CT is replacing a CT system that to date has not shown image quality problems due to vibrations, it is usually not necessary to execute vibrational measurements.

Permissable continuous floor vibrations

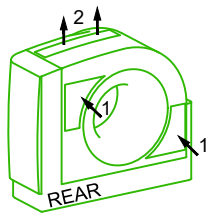



It is the customer's responsibility to contract a qualified specialist. The specialist must implement site modifications to meet the specific limits, and to design structural solutions in case of deviations.

If there are any doubts, the following thresholds have to be verified by measurement:
In the three spatial directions, acceleration in vibrations at the mounting points of the computer tomograph (Gantry and Patient Handling System PHS) must not exceed the thresholds as described in the above shown diagram.

# Environment

| Environment | | |
|---|---|---|
| All CT components | Temperature<br>Relative humidity<br>Absolute humidity<br>Barometric pressure<br>Temperature gradient | 18 to 30 °C<br>20 to 75 %<br>max. 30 g/m³<br>800 to 1060 hPa<br>6 K/h |
| Transport / storage | Temperature<br>Relative humidity<br>Absolute humidity<br>Barometric pressure<br>Temperature gradient<br>Maximum storage period | -20 to 50 °C<br>10 to 95 %<br>max. 30 g/m³<br>700 to 1060 hPa<br>10° K/h<br>2 months |
| If it is not possible to maintain these ranges, an air conditioning system with or without humidifier / dehumidifier should be installed. By intake of outside air it is recommended to install air filters (Class EU3 to EU4) for filtering dust particles of > 10 µm (DIN EN 779). | | |

| On-site cooling requirements | | | not to scale |
|---|---|---|---|
| Workload CT-system [%] | 100 (maximum power) | 0 (stand-by) |  |
| Heat dissapation to ambient air | 7.1 kW | 2.25 kW | |
| Air temperature (air intake) | 18 °C to 30 °C | | |
| Temperature gradient (air intake) | max. ± 1 K/min; max. < 6 K/h;<br>max. ± 4 K/h in 24 h | | |
| Humidity (air intake) | 20 % to 75 % | | 1) air intake 2) exhaust air |
| The climatic room conditions for all air-cooled CT system components are influenced by design room conditions (e.g. windows, large glass areas, building and room insulation, room size and volume, etc.) and must be observed in the case of a new or existing air conditioning system in the examination room. | | | |

# Electrical Installation

| Power requirements | | | |
|---|---|---|---|
| Power Line: TN-S | 3/N/PE AC 50/60 Hz ± 3Hz | Connection value | 69.2 kVA |
| Line Voltage: | 400 V ± 10 % | Power consumption: | |
| Line impedance: | ≤ 250 mΩ | Stand-by: | ≤ 3 kVA |
| | | System off: | 0 kVA |
| | | for the time up to 4 s: | max. 115 kVA |
| Cable cross section is to be determined by country regulation and calculation. | | | |
| Size of connector terminals in the gantry is 25 to 70 mm². | | | |

| Room lighting |
|---|
| Ambient lighting in rooms with diagnostics or with workstations must comply with the respective local and national regulations.<br>General requirements like the needed intensity of illumination - adjustable, reproducible, flicker-free or a limitation of dazzlings and reflections etc. have to be observed (EN 12464-1, DIN 5035-7). |

# General Information

## Display screen workstations

For setting up display screen workstations, take account of the guidelines in the Display Screen Workstation directive as well as any national regulations (e.g. EN ISO 9241-5).

## Smart Remote Services (SRS)

Smart Remote Services (SRS) is used for remote diagnostics as well as remote service to provide highest system availability.
Requirements:
- Broadband connection (minimum 4 MBit/s down- and 768 kBit/s upstream, optimum 30 MBit/s down- and 2 MBit/s upstream) without time or volume limitations
- Router (for exclusive use with SRS)

Data protection and security is defined in the Smart Remote Services security concept.

## Network Integration

The Siemens Healthineers components are using TCP/IP Protocol, a 100/1000 Mbit/s switched Ethernet network and static IP addresses.
The required network cabling (min. CAT 5 TP) has to be provided on site. Media converters, which are needed for using fibre optic cabling, are not in scope of delivery.
To prepare the implementation of the new system into the existing network environment, the availability of the needed network data at least two weeks before starting the installation is mandatory.
This is the only way to ensure a seamless integration of the new system into the workflow of the department.

## Notes on preparations for installation

Contracts for performing and supervising on-site installation preparations should be concluded with technically competent companies by the customer. The customer is responsible for timely and proper completion and supervision of all preparations for installation at the construction site in observance of all applicable legal regulations (e.g. X-ray regulations, radiation protection regulations) and all applicable general recognized rules of technology (e.g. VDE regulations, DIN standards).
Execution and supervision of installation preparations at the construction site and later observance of the standard operating conditions are not included in our duties. The customer is responsible for checking the static calculations and, where applicable, the air conditioning in the building to be equipped.

## Safety distances

Distances from moving parts of the medical device to walls, furniture and other equipment have to be kept to avoid injuries by crushing in compliance with local regulations, e.g. a minimum distance of 50 cm according to DIN EN ISO 13854.

It is the customer's responsibility to ensure the above requirements are followed.
This is to avoid the risk of injury.

If safety distances are not maintained appropriate on-site safety measures have to be put in place.
Clear visible markings according to national guidelines, e.g. crushing warning signs, hazard warning tape, hazard area cordon, safety mats, may be required.

## Radiation protection

The structural radiation protection depends on the location of the unit and the function of the surrounding rooms. By order, the planning departments of Siemens Healthineers prepare radiation protection calculation and radiation protection plan.

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