

Artis Q / Q.Zen biplane (Card)

Basic Planning Information

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Legend

- Motion area / Swivelling range / Minimal room size / Safety distance
- Service area
- Additional equipment
- Ceiling mounted
- Wall mounted
- Floor mounted
- New construction
- Demolition

Dimensioning

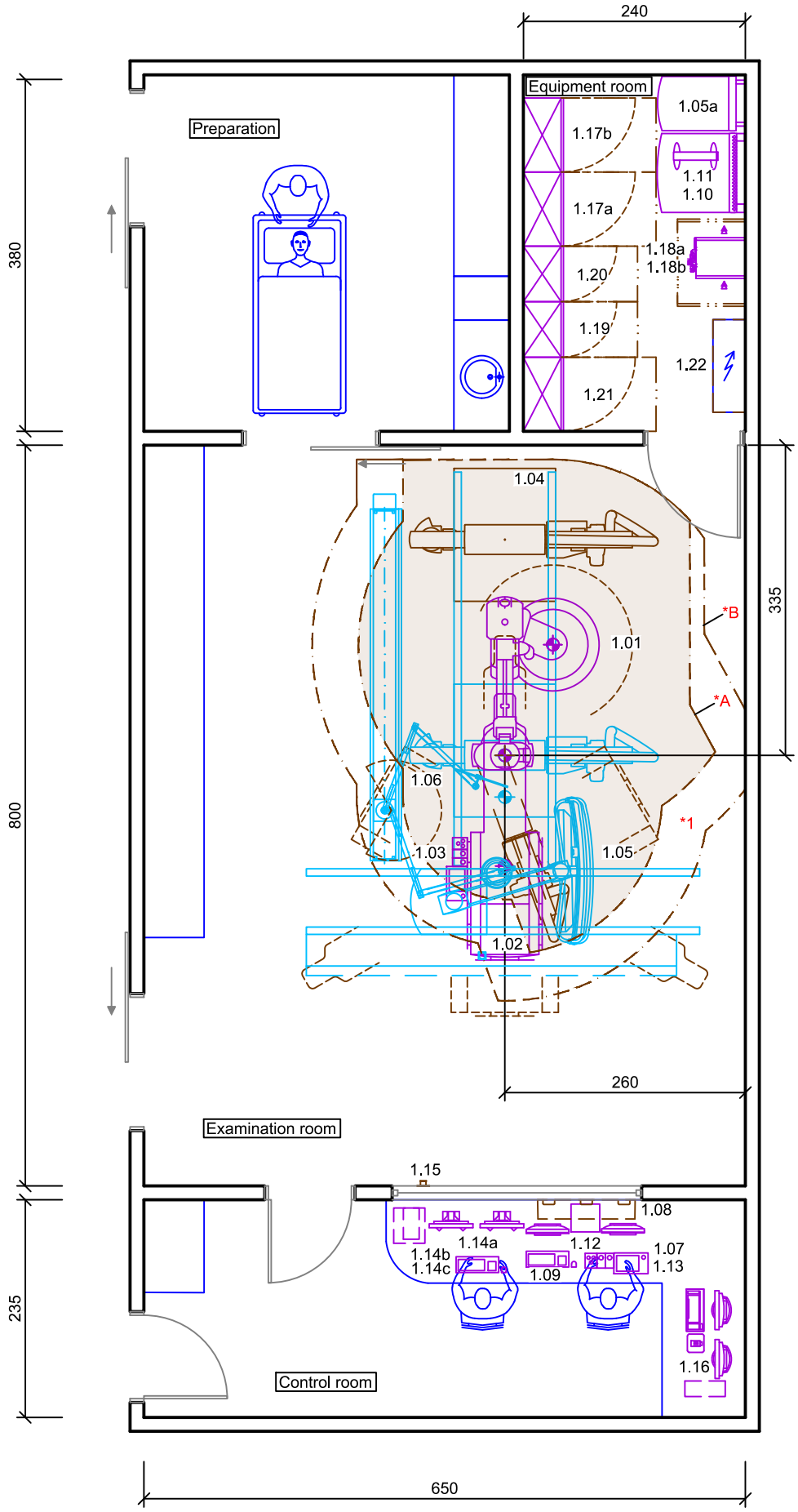
All installation measurements apply to finished wall/floor/ceiling and are to be checked prior to assembling the unit.



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



Artis zee biplane (Cardio) - Equipment Legend

		Weight (kg), Heat dissipation to the air (W)		
Pos.	Description	kg	W	Remark
1.01	Floor stand	665	200	
1.02	Basic table narrow	452	200	
1.03	Control console and ECC I on patient table	4		optional
1.04	Ceiling stand	566	200	
1.05	DCS Large Display (55" Display)	235	500	#6
1.05a	LDC (Large Display Container)	115	450	
1.06	Upper body radiation shield with Examination light LED, moveable	85		optional
1.07	Control module			optional
1.08	Control room distributor	29	100	
1.09	Workplace display with keyboard	10	75	
1.10	Image system AXIS	200	1900	
1.11	UPS for image system	51	100	optional
1.12	Archive Console Extension (ACE)	6		
1.13	Control console ECC II	3		optional
1.14a	Sensis Vibe - 2 x 19" Display with mouse and keyboard	14	150	optional
1.14b	Sensis Vibe - Computer DMC	4	39	optional
1.14c	Sensis Vibe - Tripplite SmartPro - UPS	16	650	optional
1.15	Wireless Footswitch (Foot switch and charging station)	1	10	optional, #3
1.16	syngo-X Workplace with monitor and keyboard	33	375	optional
1.17a	Generator POLYDOROS A100 Plus	300	1000	
1.17b	Generator POLYDOROS A100 Plus	300	1000	
1.18a	Cooling unit - SMC one4all	28	2400	#23
1.18b	Cooling unit - SMC one4all	28	2400	#23
1.19	System control cabinet 1	250	1600	
1.20	System control cabinet 3	165	1200	
1.21	Cable cabinet	120		optional
1.22	Power distributor			by customer
	#3 charging station; comprised of: wall holder and plug-in power supply max distance 5 m from patient table, not in the control room #6 Including 4.25 m longitudinal rails and system cable (with 3 m longitudinal rails weight is reduced by ca. 16kg) #23 Without coolant (tank contents approx. 6,5 l coolant)			

Notes

All components that do not belong to the Siemens Healthineers system are labeled as external system components.

*1 - Collision Area for “non-system Components”

Zone *A - No external system components may be installed.

Zone *B - Represents the safety distance of 500 mm between motor-driven parts and personnel as defined by EN 60601. No external system components may be installed whose fixed part (e.g. support arm column) is less than the clear minimum height of 2000 mm to the finished floor. Moving parts (e.g. support arm) of the components that are below the minimum height of 2000 mm must be able to perform evasion to outside of the safety area if there is a collision with the c-arm.

If this information is not observed, there is a risk of crushing for personnel or a risk of property damage.

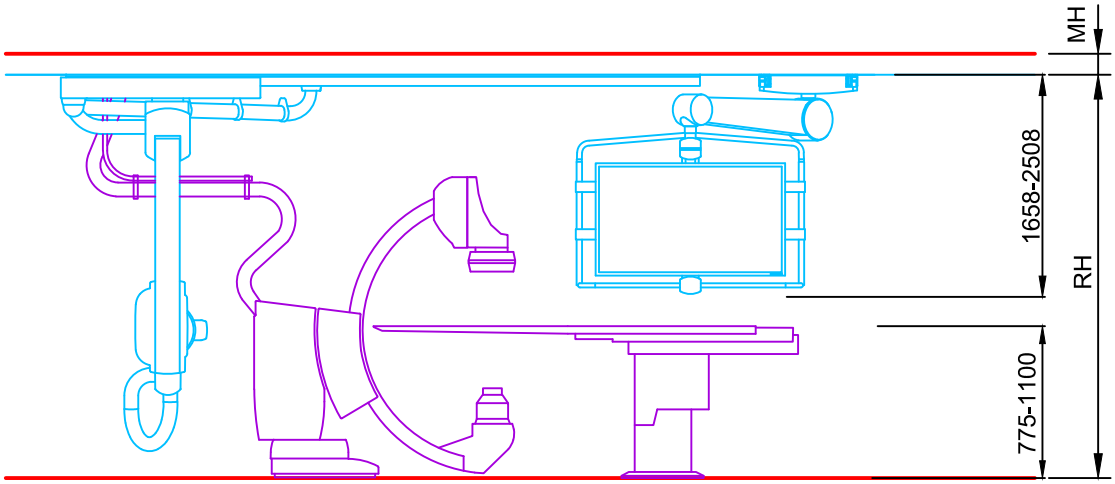
Room Dimensioning

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

not to scale

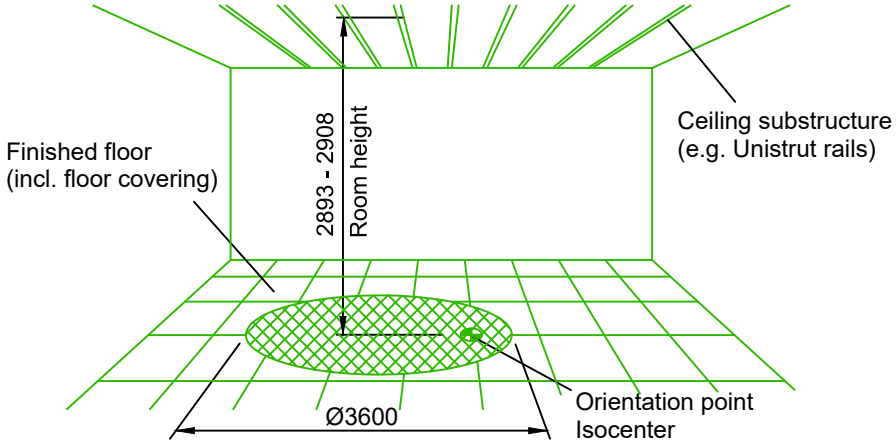


Room height (RH) 2893 mm to 2908 mm

Measured from the highest point of the finished floor (incl. floor covering) to the lowest point of the ceiling substructure. Here, the area of the ceiling substructure in which the longitudinal rails for the ceiling stand are installed is the determing factor.

Required minimum height (MH) 150 mm in suspended ceiling for corrugated hose holder and cable routing.

The cross-hatched area corresponds to the rotation area (or pivot range) of the floor stand, as well as to the C-Arm movement range. Max. admissible floor unevenness of the subfloor in the cross-hatched area is 8 mm.



Statics and Transport

Statics

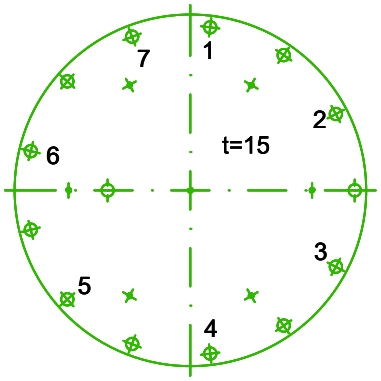
not to scale

All specified load values are without safety loading.

Floor Stand

Mounting holes 1 to 7 for installation directly on the floor. The other holes are spare mounting holes.
Max. tension forces 3.9 kN at fastening points 1 to 7.

This maximum value does not appear simultaneously on all mounting points. Tensile forces depend on the operating position and on the unit movement.



Patient Table

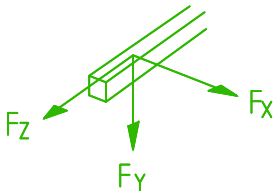
Load on each mounting point at the table foot-end:
max. tensile force equaling 4.5 kN

Ceiling Stand

F_X = 2 kN Maximum transverse force
$F_{Y\ max}$ = 3 kN Vertical ceiling load, dynamic load is exerted on each mounting point, because this is a floating single load.
$F_{Z\ max}$ = 3 kN Maximum longitudinal force

DCS-Stand

ceiling mounted for Displays (DCS PRO, DCS Large Display)
$F_{Y\ max}$ = 3,6 kN vertical ceiling load, floating single load
dynamic load per mounting point
(2 screws; the screws are subject to different loads, max. 2.9 kN per screw)



For a combined mounting of a DCS extended togehter with a ceiling stand in the longitudinal rail:
$F_{Y\ max}$ = 7,4 kN vertical ceiling load, floating single load
dynamic load per mounting point
(2 screws; the screws are subject to different loads, max. 5.9 kN per screw)

Display Booms from non-Siemens Healthineers Manufacturers

In case of the use of Display Booms from non-Siemens Healthineers Manufacturers the static information must be requested from the manufacturer.

Transport

The transport route (doors and hallway) needs sufficient dimensions for the following parts:	
Largest single part with transport carriage: (min door width)	290 x 108 x 195 cm (B x T x H), weight 900 kg
Largest crate with packaging:	305 x 125 x 215 cm (B x T x H), weight 1115 kg
The door must have a final clearance of 125 cm if bed entrance is requested.	
Mechanical impacts: max. 10 g / 16 ms	Vibrations: max. 2 g / 58 to 150 Hz

Environmental conditions

Environmental conditions for transport / storage	
Temperature range Relative humidity Barometric pressure	-20° to 70 °C 10 to 95 % without condensation 50 to 106 kPa
Acceleration	There must be absolute compliance with the following transport conditions to prevent damage to the system: Maximum acceleration spectral density according to DIN EN 60721-3-2 class 2M2 1 m^2/s^3 (0.01 g^2/Hz) for oscillation frequencies from 10 to 200 Hz Maximum acceleration according to DIN EN 60721-3-2 class 2M2 Permissible peak acceleration â (full shock response spectrum type I): Horizontal shock (longitudinal / transverse): 40 m/s^2 (corresponds to the shunting of a train car) Vertical shock: 100 m/s^2

Environment		
Examination and control room	Temperature range Relative humidity	15 to 30 °C (recommended 22 °C) 20 to 75 % non-condensing
Image system	Temperature range Relative humidity Max. temperature gradient Air flow volume Max. noise generation	10 to 30 °C 20 to 75 % non-condensing 10 °C / h 850 m^3 / h 53 dB(A)
Generator	Temperature range Relative humidity Max. temperature gradient Air flow volume Max. noise generation	10 to 30 °C 20 to 75 % non-condensing 5 °C / h 160 m^3 / h 55 dB(A)
System- control cabinet 1	Temperature range Relative humidity Max. temperature gradient Air flow volume Max. noise generation	15 to 30 °C 20 to 75 % non-condensing 5 °C / h 500 m^3 / h 48 dB(A)
Cooling set	Cooling air Flow rate Max. noise generation	15 to 30 °C, frost-free room 4,2 l / min. 55 dB(A), 57 dB(A) at altitude > 3000m
Stand with flat panel detector	Max. temperature gradient Air pressure Schocks Vibrations	5 °C / h 70 to 104 kPa max. 10 g / 16 ms max. 0.1 g / 10 to 200 Hz
UPS 15 kVA	Temperature range Relative humidity Air change Max. noise generation	0 to 40 °C 20 to 25 °C recommended 5 to 95 % non-condensing 0,18 m^3 / h 60 dB(A)
UPS 40 kVA	Temperature range Relative humidity Air change Max. noise generation	0 to 40 °C 20 to 25 °C recommended 5 to 95 % non-condensing 0,35 m^3 / h 60 dB(A)

Electrical Installation

Electrical Data

Power line: TN-S 3/N/PE AC 50/60 Hz ± 1%, Line voltage: 400 V ± 10%
Cable cross section is to be determinded by calculation!

POLYDOROS A100G (2x): Power load 34.6 kVA Line Impedance ≤ 135 mΩ ,
Power consumption - continuous: 14 kVA, momentary160 kVA
Since triggering of exposure from the two generators takes place alternately in the biplane mode, the total power consumption of both generators is max. 162 kVA.

System control cabinet: Power load 24.2 kVA, Power Consumption - continuous: 14 kVA

Room lighting

Ambient lighting in rooms with diagnostics or with workstations must comply with the respective local and national regulations.
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 10 Mbit/s down- and upstream, optimum 50 Mbit/s down- and upstream) without time or volume limitations
- The computer hosting of the Teamplay Receiver requires access to the hospital intranet and the internet. It should have a at least 6 Mbits/s upstream to the internet and at least 100 Mbits/s downstream from the internet.
- 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 EN ISO 13854.

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

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.

UPS - Notes

In case of a power failure no moving of the system and motorized table is possible. For all Artis systems with Artis table with tilting function, Artis OR table or Artis zee Multipurpose an UPS is mandatory.

Minimum 15 kVA UPS for system and table movement e.g. Eaton Powerware 15 kVA. If customer already has an on-site Full Power UPS, this can be used, if it fulfills this requirement.

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