# Artis zee biplane (Card)

## Basic Planning Information



SIEMENS Healthineers

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## Legend

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- Service area
- Floor mounted
- Ceiling mounted
- Wall mounted
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- Demolition

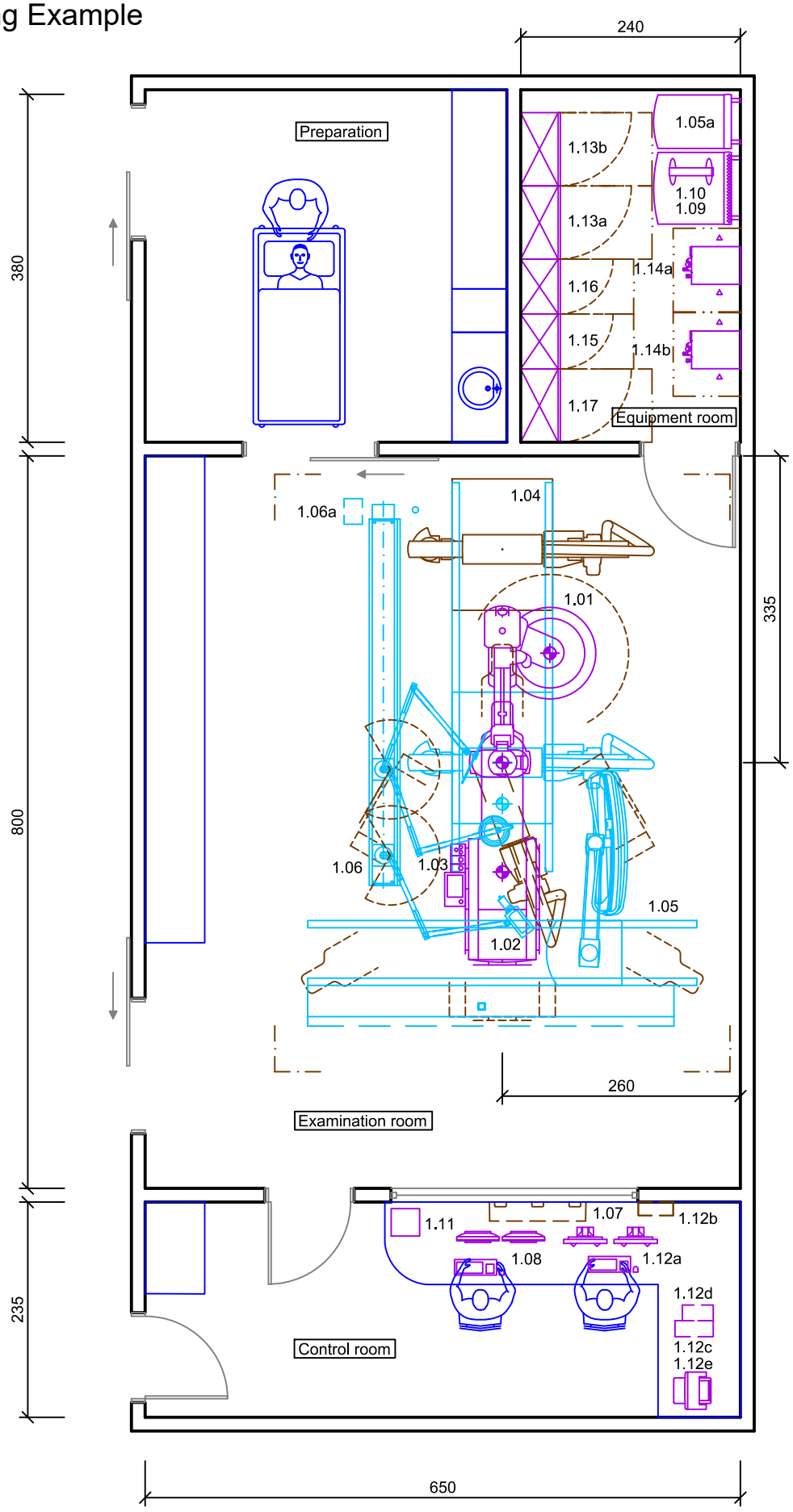
## Dimensioning

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 and injector, moveable (2. carriage) | 130 | | optional |
| 1.06a | Transformer for LED-light | | | optional |
| 1.07 | Control room distributor | 29 | 100 | |
| 1.08 | 2 Workplace displays with keyboard | 10 | 75 | |
| 1.09 | Image system AXIS | 200 | 1900 | |
| 1.10 | UPS for image system | 51 | 100 | optional |
| 1.11 | Archive Console Extension (ACE) | 6 | | |
| 1.12a | Sensis - 2x Display with mouse and keyboard | 21 | 150 | |
| 1.12b | Sensis - Control Room Cabinet CR2 | 20 | 1000 | |
| 1.12c | Sensis - Computer DMC | 10 | 275 | |
| 1.12d | Sensis - Tripplite SmartPro - UPS | 16 | 500 | |
| 1.12e | Sensis - Laser Printer | 26 | | option, #20 |
| 1.13a | Generator POLYDOROS A100 Plus | 300 | 1000 | 1200W for Artis Q |
| 1.13b | Generator POLYDOROS A100 Plus | 300 | 1000 | 1200W for Artis Q |
| 1.14a | Cooling unit - SMC one4all | 28 | 2400 | |
| 1.14b | Cooling unit - SMC one4all | 28 | 2400 | |
| 1.15 | System control cabinet 1 | 250 | 1600 | 80cm wide for Artis Q |
| 1.16 | System control cabinet 3 | 165 | 1200 | |
| 1.17 | Cable cabinet | 120 | | optional |
| | #6 Including 4.25 m longitudinal rails and system cable (with 3 m longitudinal rails weight is reduced by ca. 16kg)<br>#20 heat dissipation: printing 800W, standby 17W | | | |

## 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.

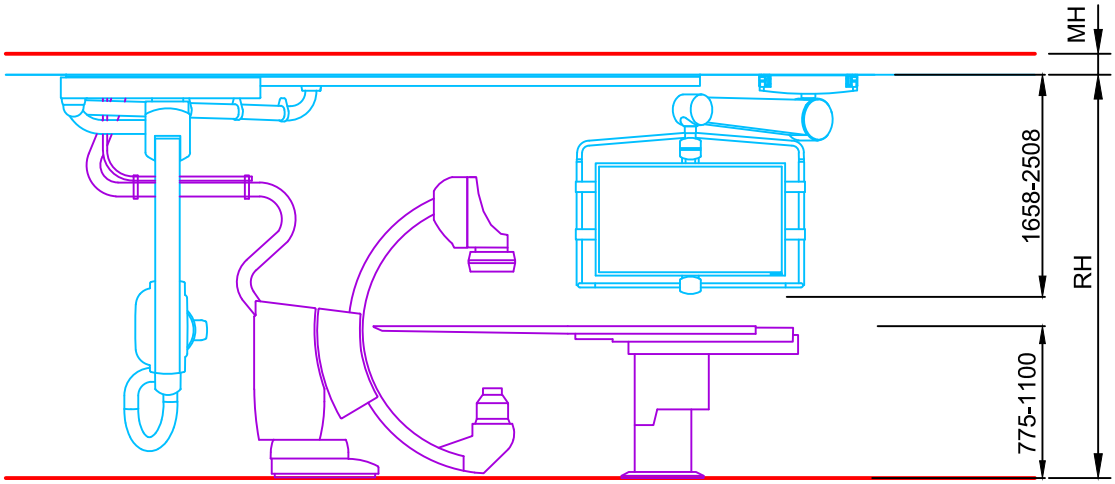
# Room Dimensioning

## 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

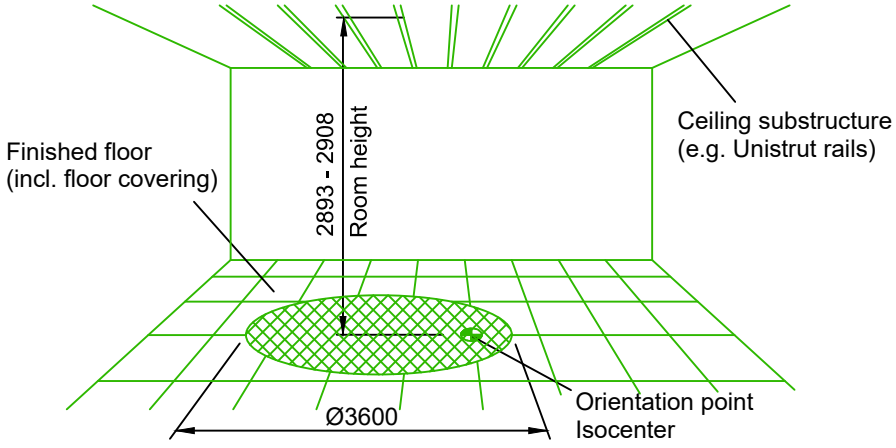



### Room height (RH) 2893 mm to 2908 mm

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

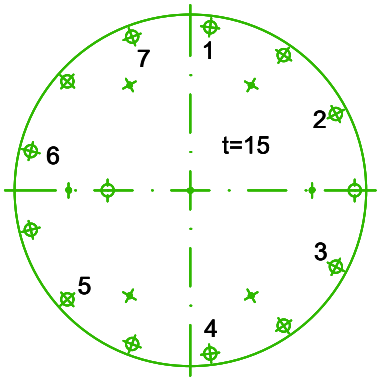
not to scale

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

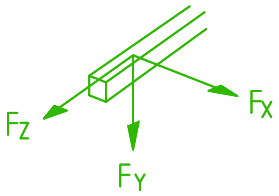
Load on each mounting point at the table foot-end:
max. tensile force equaling 4.5 kN

### 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 |

# Environment

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

| Environment | | |
|---|---|---|
| Examination and control room | Temperature range<br>Relative humidity | 15 to 30 °C (recommended 22 °C)<br>20 to 75 % non-condensing |
| Image system | Temperature range<br>Relative humidity<br>Max. temperature gradient<br>Air flow volume<br>Max. noise generation | 10 to 35 °C<br>20 to 75 % non-condensing<br>10 °C / h<br>850 m³ / h<br>53 dB(A) |
| Generator | Temperature range<br>Relative humidity<br>Max. temperature gradient<br>Air flow volume<br>Max. noise generation | 10 to 35 °C<br>20 to 75 % non-condensing<br>5 °C / h<br>160 m³ / h<br>55 dB(A) |
| System control cabinet | Temperature range<br>Relative humidity<br>Max. temperature gradient<br>Air flow volume<br>Max. noise generation | 15 to 30 °C<br>20 to 75 % non-condensing<br>5 °C / h<br>500 m³ / h<br>48 dB(A) |
| Cooling unit | Cooling air<br>Flow rate<br>Max. noise generation | 15 to 30 °C, frost-free room<br>4,2 l / min.<br>55 dB(A), 57 dB(A) at altitude > 3000m |
| Stand with flat panel detector | Max. temperature gradient<br>Air pressure<br>Schocks<br>Vibrations | 5 °C / h<br>70 to 104 kPa<br>max. 10 g / 16 ms<br>max. 0.1 g / 10 to 200 Hz |
| UPS 15 kVA | Temperature range<br><br>Relative humidity<br>Air change<br>Max. noise generation | 0 to 40 °C<br>20 to 25 °C recommended<br>5 to 95 % non-condensing<br>0,18 m³ / h<br>60 dB(A) |
| UPS 40 kVA | Temperature range<br><br>Relative humidity<br>Air change<br>Max. noise generation | 0 to 40 °C<br>20 to 25 °C recommended<br>5 to 95 % non-condensing<br>0,35 m³ / h<br>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 A100 Plus (2x): Power load 34.6 kVA
Line Impedance: ≤ 135 mΩ, Power Consumption - continuous: 8 kVA, momentary: 160 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. 161 kVA. System control cabinet: Power load 24.2 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 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.

## 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 Tilting table, 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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