



**LAMBOO
MEDICAL**

**QUALITY
HEALTHCARE
AVAILABLE
EVERYWHERE**



SITE PLANNING GUIDE

Balan Palaniappan
Martin Hart

Siemens Aera MRI Trailer 1.5T
Type 1

Table of Contents

1. General	1
2. Ground requirements	1
3. Support Pad Requirements	2
4. Access route & turning Radius	2
5. Electrical Requirements.....	3
6. Magnetic Shielding	5
7. Computer – Fire alarm connection	5
8. Water connection	6
9. Airflow considerations	6
10. Tractor requirements.....	7

Important Notice.

The information in this document is subject to change without notice.
Lamboo Medical assumes no responsibility for any errors or omission appearing in this document. Contact Lamboo Medical for the latest planning information.

Lamboo Medical
Koperstraat 44
2718 RE Zoetermeer.
The Netherlands.

Tel.nr. 0031 79 3 63 83 83
Fax.nr. 0031 79 3 63 83 10
E-mail: info@lamboo-medical.com
Website: www.lamboo-medical.com

1. General

This medical trailer requires specific site preparations by the operator at each desired location.

This guide contains information about the necessary preparations of the site, before placement and connections of the medical trailer.

The site must meet these requirements before the mobile unit can function properly.

2. Ground requirements

The minimum area required for parking the trailer (without the tractor cab) is

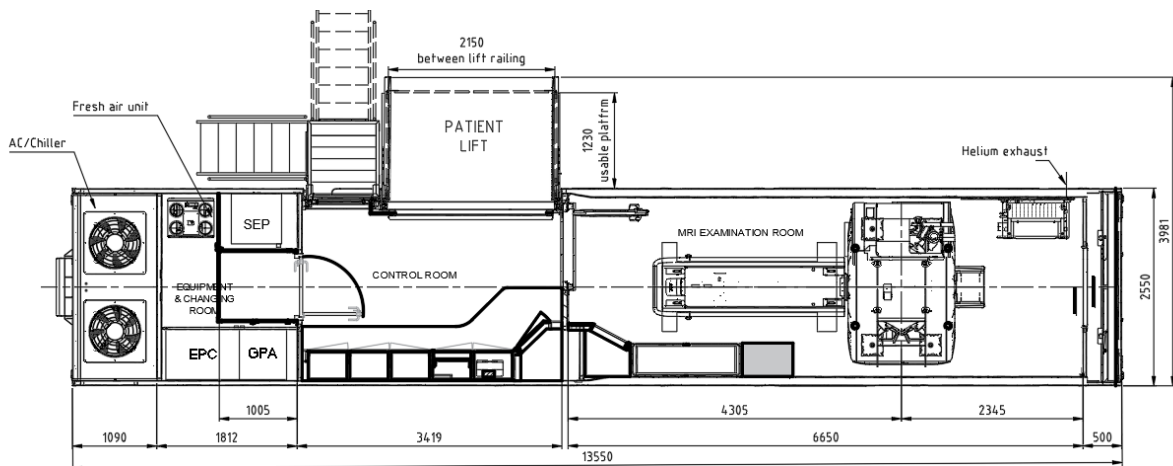
Length= 16,500 m

Width= 8,000 m

The ground and the access way must be clearly paved.

In order to ensure proper operation of the stabilizing system the ground must be level and the deviation must not exceed 1% (which is 0,6 degree!).

Make sure that that the patient lift, stairs and belly compartments are easily accessible for patient entry and services.



IMPORTANT NOTICE:

From side walls and back wall is a minimum clearance of 2,5 m required!

Otherwise the imaging can be affected by metal objects.

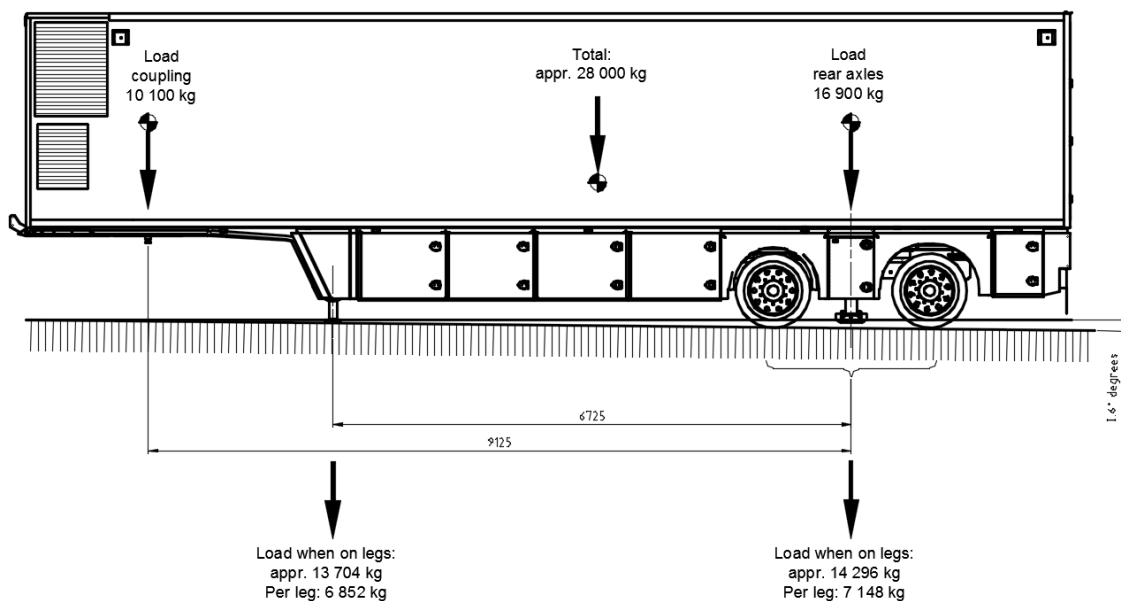


3. Support Pad Requirements

The ground and access way must be able to carry the weight of the trailer and tractor. The weight of the trailer is approximately 28 000 kg.

Under the support legs a nylon support block of 0,4 x 0,4 m must be placed (4 pieces supplied with the trailer).

Drawing below gives the positions of support legs of the trailer.

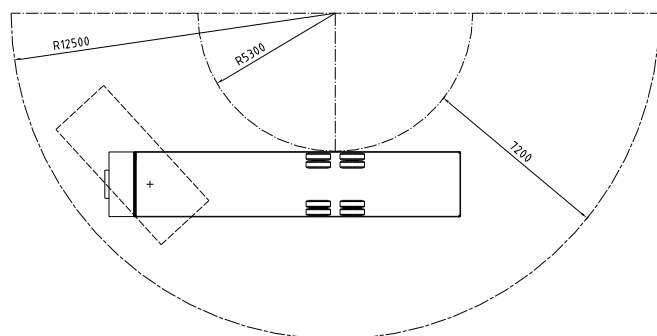


IMPORTANT NOTICE:

In order to ensure proper operation of the stabilizing system the ground must be level and the deviation must not exceed 1% (which is 0,6 degree!).

4. Access route & turning Radius

The access way must have a minimum width of 7,2 m. The radius of the turning circle should have an outer radius of 12,5 m and an inner radius of 5,3 m of the turning circles.



5. Electrical Requirements

The trailer is equipped with a 400 volt 3 phases 50 Hz electric system according to the TN-S system.

The electrical phase rotation of the supply should be L1 L2 L3.

	Siemens Aera MRI-trailer
Voltage	400 V 3 Phase – N - PE
Frequency	50 Hz
Required fuse rate at hospital	200 A
Required connector at hospital site	Marechal Female socket 400V-250A
Photo of connector on trailer	

A 15 meter shoreline cable, wired directly to the trailer, is provided for connecting the mobile unit to local power.

The mains lead is not intended to withstand the wear and tear of traffic passing over it. The site shall provide necessary protective ramps, catenary systems or other means to protect the cable where it traverses roads or pathways.

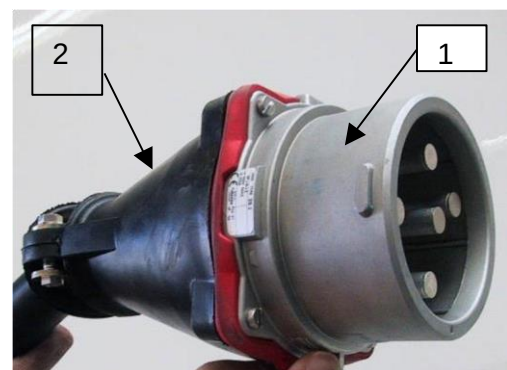
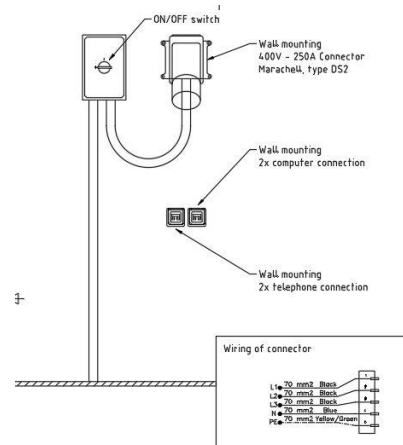
The shoreline cable is provided with a 400 V - 250 A Marachell DS2 male connector with 2 parts:

- 1) Marechal part # 39 28 017: Inlet (male)
- 2) Marechal part # 392A 013: Handle

The customer facility must have the female connector to match this connector.

The electric installation must provide a dedicated medical earth terminal for connecting of the earth connection of the trailer.

This earth cable shall be connected to the trailer and the main supply outlet before the mains cable is plugged in!



WARNING:

It's the user's responsibility to verify that the shore power is electrically compatible with the connector of the mobile trailer. Connecting the power to the wrong type of receptacle could cause serious injury or damage of the medical system.

6. Magnetic Shielding

The MRI unit is equipped with magnetic shielding. The shielding will keep the magnetic field outside the trailer walls below 0,5 mT. Only on the roof the field can be stronger. Inside the trailer, close to the magnet, the magnetic field is higher than 0,5 mT . These areas are restricted for people with pacemakers and magnetic items. These areas are marked with safety signs, provided by the MR manufacturer.



WARNING:

The roof has no shielding. On some parts of the roof the magnetic field can be higher than 0.5 mTesla.

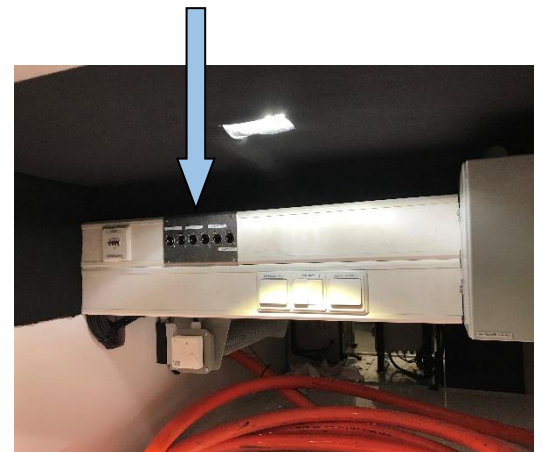
7. Computer – Fire alarm connection

The trailer is executed with 2 external computer connections (RJ-45) so the trailer can be connected to the hospital IT network.

On the right side is the terminal to connect the fire alarm system to the hospital.

The two left contacts are: NC fire alarm

The two right contacts are: NC fire alarm system error



8. Water connection

The trailer is equipped with a water tank for supply of the water to the air humidifier.

The tank is located inside the trailer

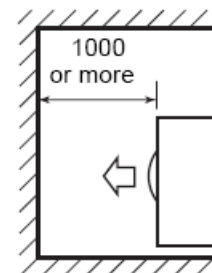
The water tank can be filled by the filler cap



9. Airflow considerations

The following clearances are acceptable for the airflow: 1000 mm from the grills of the outside airco unit and generator.

At the front side the condenser system is situated.
The grills for the condensor need the following clearance for the airflow:
-1000 mm for the front grills



A 0.6x0.44 m grille is located on the left side of the trailer above the landing gear.
This grille is for the exhaust of the helium gas of the magnet. The vent must remain unrestricted, allowing the helium gas to dissipate.

WARNING:

Keep away from the grille. Extremely cold gas may be exhausted with no warning.
Do not work on the venting if the magnet is at field!





10. Tractor requirements

The customer is responsible for providing a truck that has the towing capacity that is sufficient for the trailer; see dimensions & weight drawing.

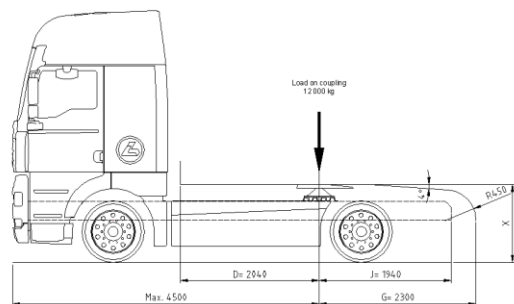
The coupling height of the tractor should match the coupling height of the trailer which is 1,20 m

The trailer is equipped with a 2" coupling pin. The tractor must have the matching fifth wheel coupling.

At the front side of the trailer are the connections points to the tractor for:

- Brake system – red coupling
- Brake system – yellow coupling
- ABS/EBS system
- Lights 24V ISO N
- Lights 24V ISO S

The couplings on the tractor should match the couplings of the trailer.



IMPORTANT NOTICE: :

Docking and undocking manoeuvres when coupling and uncoupling the tractor to and from the trailer must be completed at the lowest practicable speed to minimize shock inputs to the magnet