



TRS100 Rapid Assay System Pre-Installation Guide





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1. Introduction

1.1. Delivery

When the system arrives, check that there is no visible damage, with the delivery driver present. If damage has occurred contact the carrier and Agilent immediately. **Make a photographic record where appropriate.**

Check that shock-watch and tilt indicators, if fitted to the outside of the packing cases, have not been activated. If the indicators have been activated notify Agilent immediately.

The system is supplied as a single unit in a number of possible of packaging types depending on customer location:

- Overseas customers requiring airfreight; the system will be externally crated in accordance with ISPM15 UK WMMP. The case dimensions will be approximately 1.45 x 0.91 x 0.89m. The weight of the case will be approximately 240kg.
- UK and some European customers may have the unit delivered by the installation engineers. This will be secured and protected either with simple re-usable plastic bubble wrap and pallet, or within a dedicated hard flight case as shown in
- Figure 5.



Figure 5 - TRS100 Shown in Flight Case Base with Lid to Side

Note that the design of the product and the design or material of the shipping crate could change.



A forklift, or similar, will be required to off load palletised or crated shipments and position the system near to its final installation position.

Note: If the system has to be unpacked before being transported to its final installation position, e.g. if it is to be installed in a clean room, a sturdy trolley, skates or other suitable mechanism will be required to move the system over a distance.



WARNING

The packing crates are heavy and could cause serious injury and / or damage to the equipment if not handled correctly. Use suitable lifting equipment and procedures. Only lift the packing cases from the base.

1.2. Unpacking

Do not remove the TRS100 from its packaging if it has been freight shipped for a minimum of 24 hours to allow the unit to acclimatise.



CAUTION

Do not remove the equipment from the packing crates until they have been moved to their designated installation site. The equipment has been carefully packed to protect the equipment from damage in transit. Removal of the packing equipment could make the equipment vulnerable to damage during transit.

The TRS100 should only be lifted from its packaging case base using the lifting handle frames. These mount into the four M10 tapped holes on each dark grey end cover at either end of the TRS100. A four-man lift is recommended to manoeuvre and carry the TRS100 into its final installation position and the installation engineer(s) may require some assistance from the customer for this operation.



1.3. TRS100 Mechanical Installation

The TRS100 weighs approximately 160kg and has the dimensions shown in Figure 6.

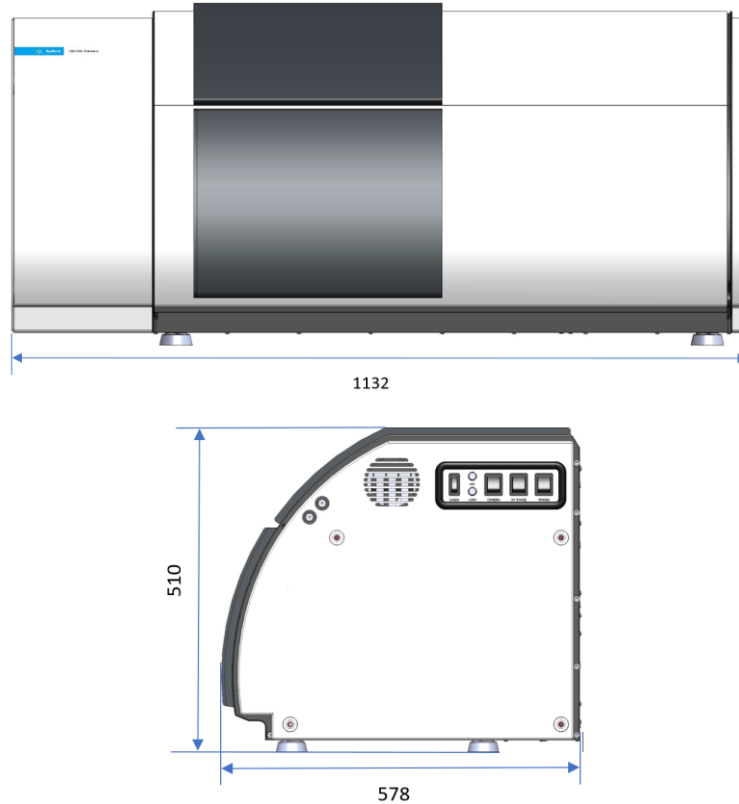


Figure 6 - TRS100 Overall Dimensions

It is recommended that the TRS100 is positioned on a stable bench or table which is capable of supporting loads up to 300kg. A standard cantilever style table should not be used.

Certain routine maintenance activities require the front (laser enclosure) and occasionally the top (electrical enclosure) doors to be open as shown in Figure 7. It is recommended that this space is left clear.

100mm minimum should be left at the rear of the system to provide clearance for the cooling fans and cable entry, 160mm minimum should also be left at the right of the TRS100 to allow clearance for the right air input and access to the electrical isolation switches.



The left cover can be removed by an Agilent engineer for maintenance and spectrograph / CCD calibration purposes. 250mm is the recommended minimum space to allow for removal of this cover.

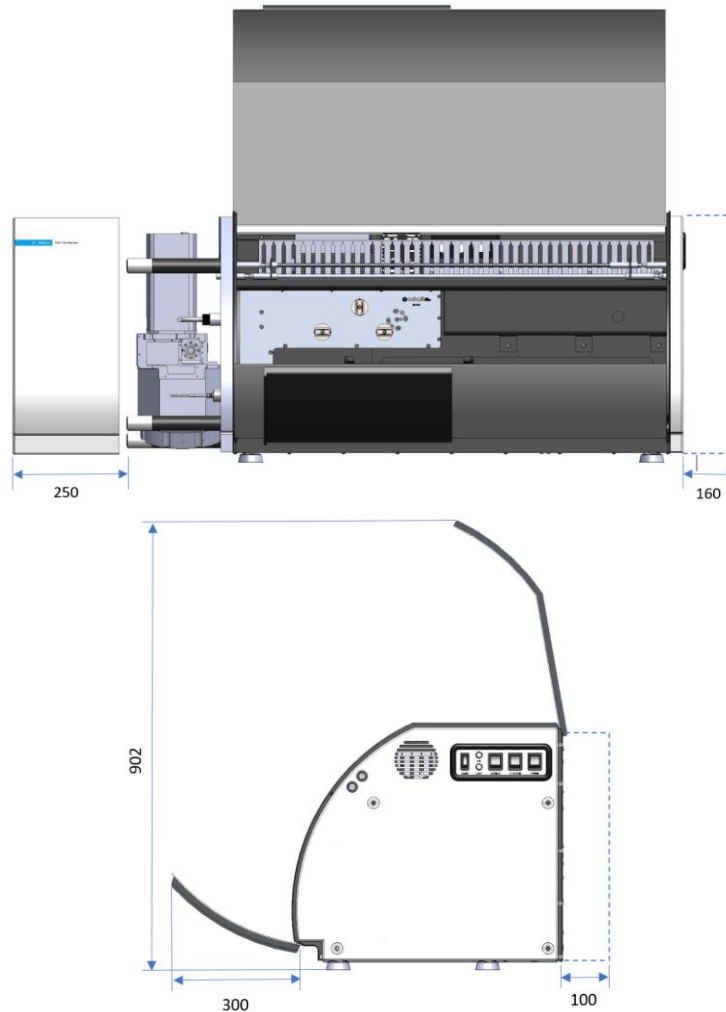


Figure 7 - Maintenance and Facilities Clearances

The TRS100 can be supplied on an optional scissor lift trolley, the approximate dimensions are shown in Figure 8.

Note: The optional trolley adds a further 60kg to the total system weight.

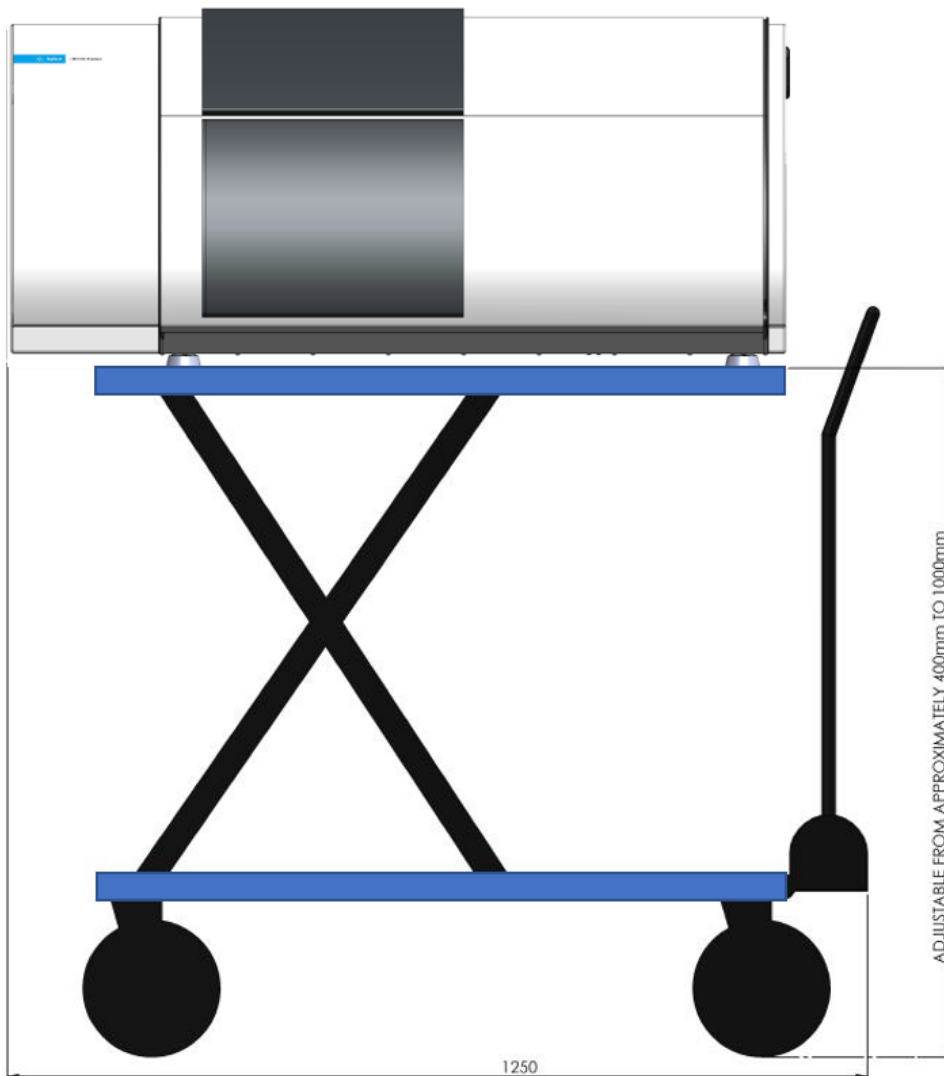


Figure 8 - TRS100 on 3rd Party Scissor Lift Trolley Shown at Maximum Height



2. Specifications

2.1. Environmental Requirements

The system should be installed in an environment as detailed here.

It is essential that the climate of the laboratory is controlled to ensure the stability of the system and to ensure that the maximum range of CCD detector temperature control is available. Typically air-conditioning would be installed to maintain the temperature and humidity within the ranges listed below.

Recommended ambient temperature during operation	21 ± 3 °C
Recommended stability of ambient temperature during operation	± 1 °C
Storage temperature	>10°C <40°C
Relative humidity	<80 % non – condensing
Location	Clean, dust free environment, free of substantial sources or shock and vibration >2m from air conditioning ducts or heating units
Floor strength	Able to bear the system weight of about 160kg (220kg including trolley).

Table 4 - Environmental Requirements

Note: Temperature fluctuations can affect the electrical stability of various components such as the laser. Accuracy and repeatability of measurements is achieved by: allowing the instrument a warm up period prior to use; reducing the ambient temperature fluctuations below the limits described above. Systematic fluctuations from heating and cooling ducts should be reduced by moving the TRS100 further away from these sources.

2.2. Minimum Computing Requirements (if customer supplied PC)

Processor	i5 processor
Memory	8Gb. 64 bit
Hard Disk	500Gb
OS	Windows 10 Pro

Table 5 - Minimum Computer Requirements

2.3. Electrical Services

The electrical system has been designed meet BS EN 61010-1 2001 standards and checked against US regulations. All installed wiring and electrical components have been selected to comply with European standards and are UL recognized.

The mains electrical input, laser, camera CCD, motion control system, DC power supply units inputs and outputs are all protected by separate magnetic circuit breakers (MCB).

There are no high voltage circuits accessible in the sample measurement area, and all low voltage circuits, such as interlocks and door locks, in this region are double insulated or enclosed in trunking.

Number of outlets required.	1 x single-phase outlet for the TRS100 Additional outlets may be required for computer control system and monitor
Location of inlet on TRS100	Rear panel towards top centre of TRS100
Type of electrical inlet	IEC C13 An IEC 10A mains lead with either a BS1363 (fused British plug), a CE22 (European plug) or CEE22 (USA plug) as required.
Voltage requirements	Between 220-240VAC and 110VAC 10A
Current Requirements	10A maximum
Line Frequency	50/60Hz
Voltage fluctuation	< ± 10 %

Table 6 - Electrical Supply Requirements

2.4. Laser Safety and Room Interlocks

The TRS100 contains a Class IV laser within an interlocked Class I enclosure specified by BS EN 60825-1 2007 Safety of Laser Products. A four-pin XLR socket can be found at the rear of the system; this provides one part of the override to the dual channel interlock circuit. Interlocks should only be overridden in a laser-safe environment and the TRS100 should have both interlock channels connected to the room and door interlock. If only a single channel room interlock is available the second channel can be shorted: this will not provide a level of redundancy and will cause the system to fault if only one channel is open.

Note: Routine and annual maintenance does not require that the system interlocks are overridden. Repair or realignment of the system requiring interlocks to be overridden would normally require the system to be returned to Agilent or authorised service centres unless appropriate facilities are available.

2.5. Consumables

The system does not require replacement of any consumable items, however it is recommended that a supply of reagent grade Isopropyl Alcohol and/or Methanol and lens tissues is used to maintain cleanliness of the laser aperture window



3. Support Contact Details

3.1. Contact Details

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