

Matrix Vapor Deposition System
iMLayer
Pre-Installation Requirements
(Installation Preparations/Confirmation)

 **SHIMADZU CORPORATION**
KYOTO JAPAN

ANALYTICAL & MEASURING INSTRUMENTS DIVISION

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1. Introduction

These Pre-Installation Requirements describe the requirement to facilitate installation of the iMLayer. To keep the instrument stable, please make prior arrangement in accordance with these requirements. They can also be used for routine maintenance. This instrument consists of a main unit used for vapor deposition of the matrix, a deposition power supply used to supply power to the boat for vapor deposit, and a vacuum pump used to evacuate the inside the chamber of iMLayer.

2. Installation Conditions

Be sure to read the installation precautions described below to keep the instrument stable. Also, follow the precautions given in the Safety Precautions of the instruction manual that came with the instrument.

2.1 Carrying-in

The instrument can be carried on a hand truck. Check the following points so that delivery can be carried out without problems.

- 1) Check that there is no step the passage.
- 2) When lifting the iMLayer, be sure to wear non-slip gloves and to work by more than two persons.

2.2 Example Installation (dimensions indicated in mm)

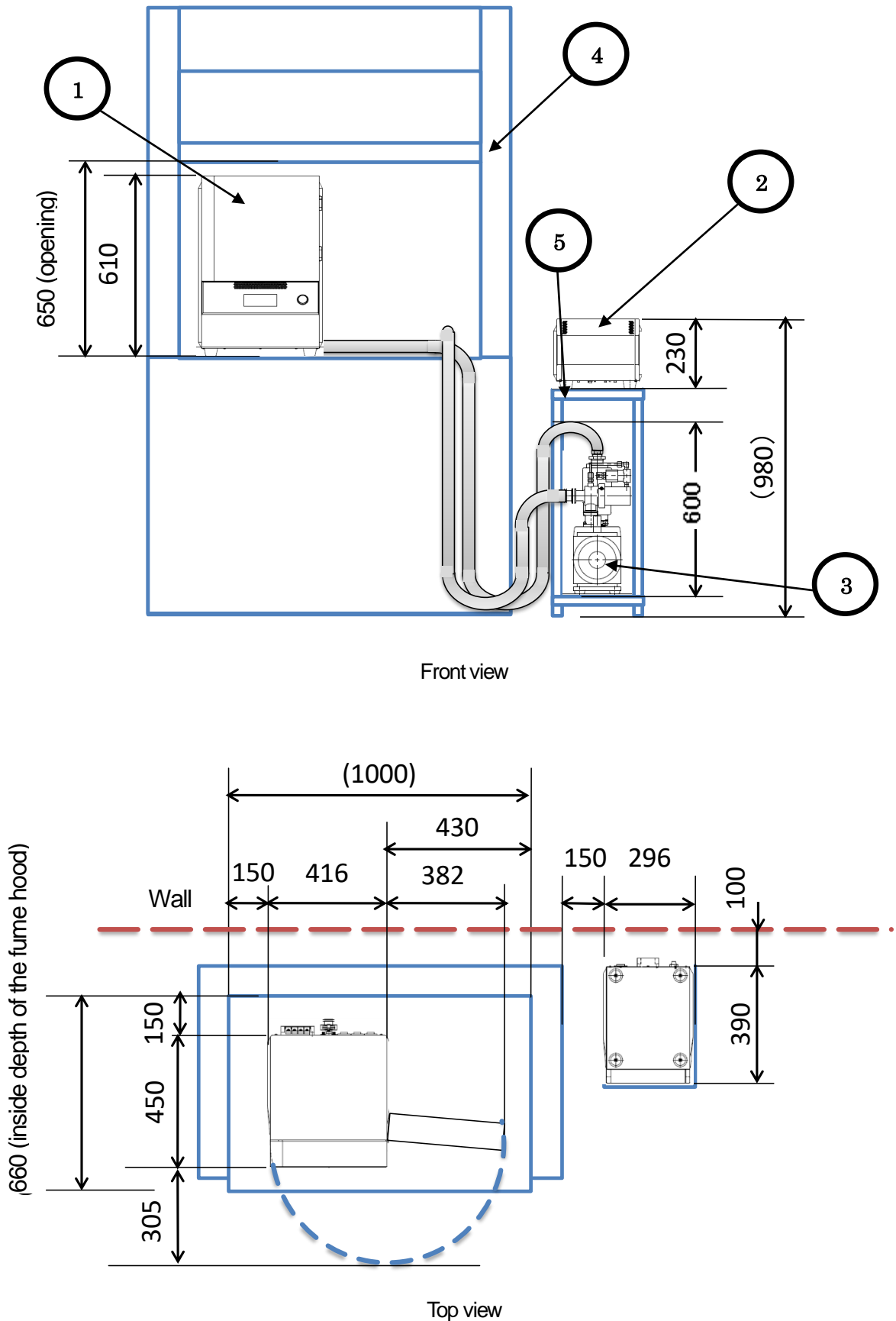


Fig.1 Typical Layout Using a Typical Draft chamber.

Table.1 Dimensions and Weight

Item number	Item name	Dimensions(mm)			Weight(kg)
		Width	Depth	Height	
1	Main iMLayer unit	416	450	610	80
2	Deposition Power supply(EVC)	296	390	230	28
3	Rotary pump	163	431	230	30
4	Draft chamber (typical)*	-	-	-	-
5	Table(for reference)	300	500	750	-

* The opening needs to be 650mm or more.

Projection is not included in the dimensions.

In the example installation given in Fig. 1, iMLayer is installed on the existing draft chamber, and the deposition power supply and the rotary pump are placed on the table which has been prepared separately. The specifications required for the table is as follows.

- Width : 500mm or more
- Depth : 300mm or more
- Height : 750mm or more
- Load limit : 40kg or more (Each step)

Distance between iMLayer and **deposition power supply** must be within approx. 2.8 m.

Distance between iMLayer and **rotary pump** must be within approx. 2 m.

The specifications required for the draft chamber is as follows. See also Fig 1 Example Installation.

- Inside depth of the draft chamber : 660mm or more
- Inside width of the draft chamber : 1000mm ore more
- Height of opening (front glass) : 650mm ore more
- Load limit (Inside floor) : 100kg ore more
- Minimum local exhaust air velocity : 1m/s ore more

A certain amount of space is required around the iMLayer for installation and maintenance. The space required is as follows. See also Fig 1 Example Installation.

- Space behind the iMLayer : 150mm or more
- Space to right of the iMLayer : 430mm or more
- Space to left of the iMLayer : 150mm or more
- Space in front of the iMLayer : 305mm or more
- Space behind the deposition power supply : 100mm or more
- Space to right and left of the deposition power supply : 100mm or more

Place rotary pump on a firm floor surface or on a low working surface at a distance where it can be connected to the iMLayer by attached piping. (Extending piping to a distance greater than this will prevent assurance of unit performance.) The rotary pump will be placed on the side of or under the draft chamber on which iMLayer is installed. When placing the rotary pump on the side of the draft chamber, for wiring and piping, ensure a distance of 150 mm or more between the side of the rotary pump and the side of the draft chamber.

2.3 Wiring and Piping

Connection of power supply, cables, etc. of the iMLayer, is shown in Fig 2.

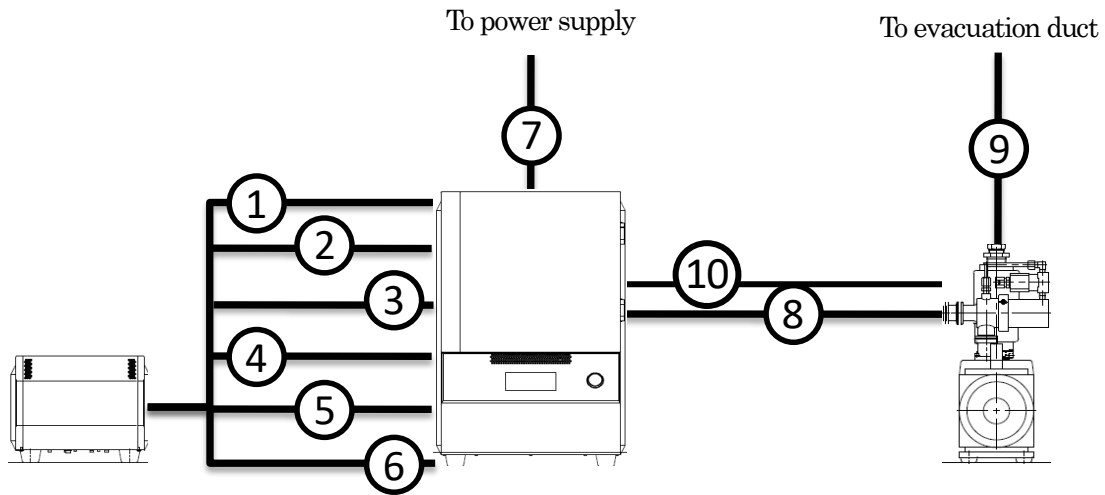


Fig 2 iMLayer cable connection

Table2 cable connection information

Item number	Description	Length(m)
1	Power supply cable (To the deposition power supply)	2.8
2	Interface cable	2.8
3	RS-422/485 cable	2.8
4	Deposition boat temperature signal cable	2.8
5	Heater cable No1 (Red)	2.8
6	Heater cable No1 (Blue)	2.8
7	AC cable	2.5
8	RP power supply cable	2.0
9	RP evacuation hose	3
10	RP suction hose	3

2.4 Ambient Requirements

To ensure safe use of the product, sufficient consideration must be given to preparing its installation environment

Temperature : 18 to 28°C

Humidity : 40 to 70% (with no condensation)

Draft chamber : Prepare a draft chamber or equivalent exhaust equipment in the room the instrument is installed. Failure to do so may cause dispersion of the matrix when opening the equipment to the air after vapor deposition. Also wear safety gear during the process.

Safety gear	Some matrices used contain toxic materials. Wear safety glasses, face shield, protective gloves, mask and protective clothing such as a white coat during the process. Use a Dustproof / Gasproof mask to prevent inhaling the matrix dust.
Exhaust	Be sure to discharge the evacuation gases from the rotary pump into a duct system such as a draft chamber.
Other	Be sure to read “Safety Instructions” of the instruction manual before using this instrument.

2.5 Required Power Supply

- For safety reasons use a power supply equipped with a ground fault interrupter.
- The iMLayer uses 100 V AC, 15 A, 50/60 Hz (single phase). Avoid sharing power source with other equipment.
- To avoid electric shock, ensure grounding at power supply ground terminal has a resistance of 100 ohm or less.
- To assure performance, keep voltage fluctuation within $\pm 10\%$ and frequency stability within ± 1 Hz.
- In the country where power supply voltage is not AC100V, use a step-down transformer on the AC100V power-supply line. Refer Fig.4 to install the step-down transformer.

If power supplies of the above specifications are not available, alterations to room power supply capacity will be necessary.

<Step- down transformer>

Part number	Description	Remarks
225-25315-41	STEP- DOWN TRANSFORMER 1.5KVA	The Step- down transformer and cables are included. (Please prepare a plug.)

*The number 225 - 25315 -41 refers to the Shimadzu Corporation part number

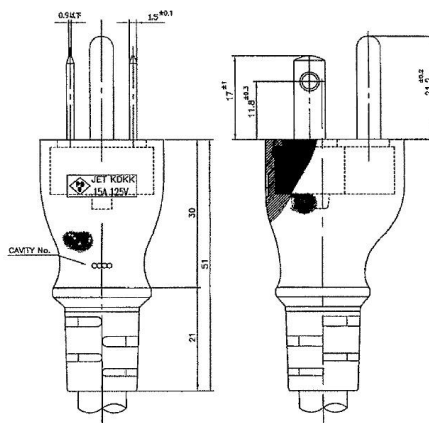


Fig 3 Configuration of AC100V power supply cable terminal

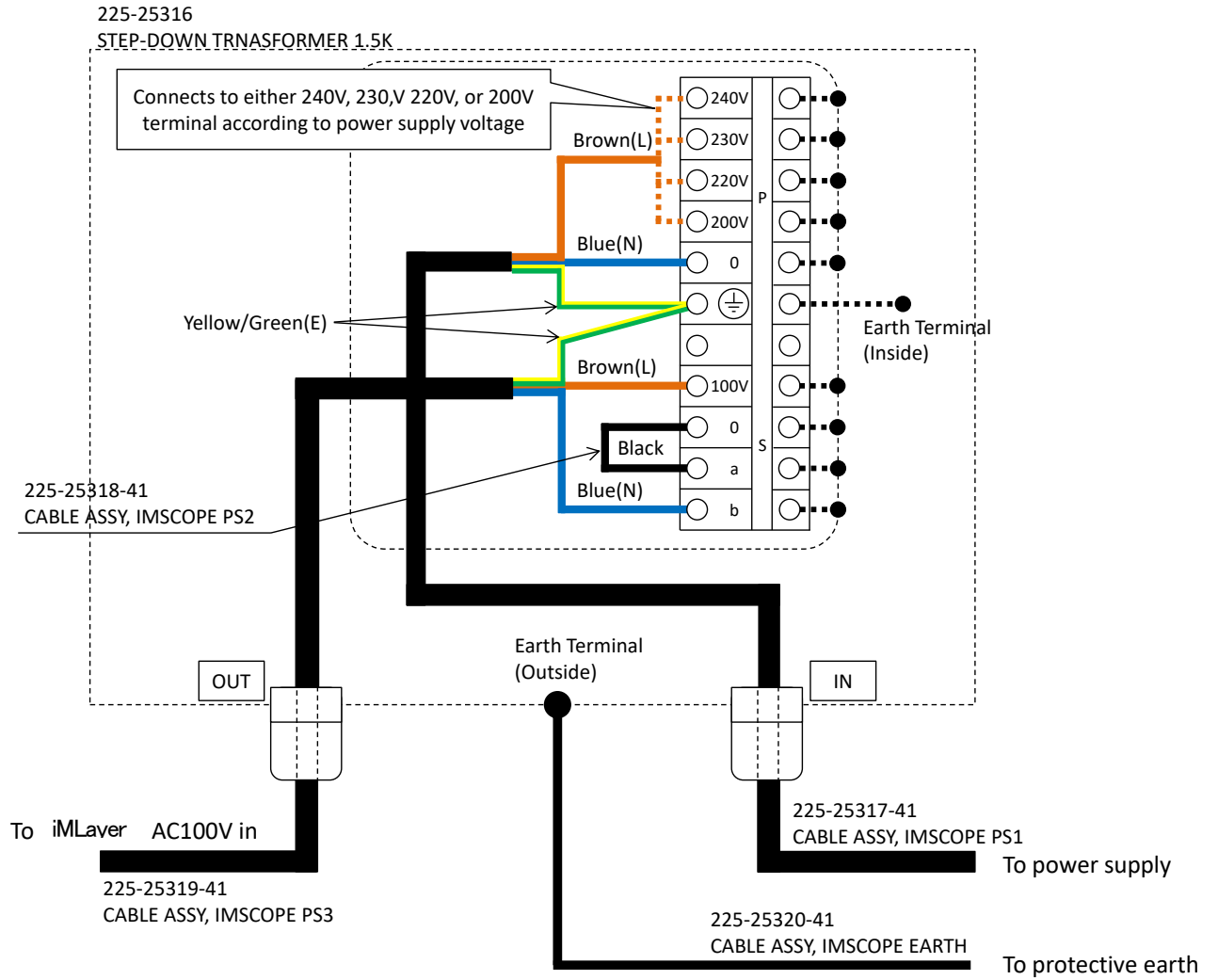


Fig 4 How to install the step- down transformer, TBX - 1.5KVA

Customer pre-check list

_____ (YYYY) _____ (MM) _____ (DD)

The sheets on the following pages are a checklist for each of the installation conditions that have been described in this document. Please fill out the checklist yourself and pass it on to the appropriate personnel at Shimadzu.

Customer: _____

Address: _____

TEL: _____

FAX: _____

Checked by Shimadzu

Name: _____

Item	Condition	Required itme (* refers to Shimadzu part number)	Check	
1. Carry-in route	<ul style="list-style-type: none"> The instrument must be movable in the building. There is no step in the passage. 		<input type="checkbox"/>	
2. Installation room	Temperature	18 to 28°C	<input type="checkbox"/>	
	Humidity	40 to 70% (with no condensation)	<input type="checkbox"/>	
	Installation space <input type="checkbox"/> Space for iMLayer <input type="checkbox"/> Load limit <input type="checkbox"/> Table for deposition power supply	<ul style="list-style-type: none"> W D H 1000 mm ×905 mm ×610 mm Ability to withstand weight loads adequately. (80kg) The table must be wide enough so that the equipment can be placed according to the example installation. 	<ul style="list-style-type: none"> Table for deposition power supply 	<input type="checkbox"/>
	Facilities <ul style="list-style-type: none"> Evacuation Draft chamber 	<ul style="list-style-type: none"> Draft chamber or equivalent exhaust equipment is required Requires meeting the following specifications. Inside depth of the draft chamber : 660mm or more Inside width of the draft chamber : 1000mm ore more Height of opening (front glass) : 650mm ore more Load limit (Inside floor) : 100kg ore more Minimum local exhaust air velocity : 1m/s ore more 	<ul style="list-style-type: none"> Draft chamber 	<input type="checkbox"/>
Power supply	Power supply fluctuation (guaranteed performance) <ul style="list-style-type: none"> Voltage fluctuation Frequency fluctuation 	<ul style="list-style-type: none"> Within ±10% of voltage rating 50/60Hz, ±1 Hz 		<input type="checkbox"/>
	Power capacity <ul style="list-style-type: none"> For iMLayer Ground (ground resistor) 	<ul style="list-style-type: none"> AC100V 15A 50/60Hz (single phase) * Avoid sharing power source with other equipment. Less than 100 ohms 	(Depending on the situation) <ul style="list-style-type: none"> Transformer on the AC100V power-supply line for oversea use. STEP-DOWN TRANSFORMER 1.5KVA P/N 225-25315-41* Plug for Step-down transformer. 100 V AC extension cable (For oversea use, prepare what is appropriate based on the local power supply condition) 	<input type="checkbox"/>
	Terminal <ul style="list-style-type: none"> For iMLayer 	<ul style="list-style-type: none"> AC100V: 2.5m 		<input type="checkbox"/>