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stratasys J850 3D Printing System User Guide

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suggestions for future editions, please send a message to
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Contents

Introduction

About this Guide

The information and requirements provided in this document ensure proper installation and operation of the

Stratasys J850/J835 printing system. The customer is responsible for preparing the site as described in this document, and according to any applicable local regulations.

If you have any questions about the information in this document, contact your Stratasys representative.

All site requirements must be met before the installation date. The Site Preparation Checklist should be submitted to your Stratasys representative. Shipping will be arranged after the checklist is received by Stratasys. Non-compliance with requirements specified in this document may result in additional installation charges.

Installation and Training Schedule

- Basic installation and adjustment: 2 work days
- Operator training (operation and maintenance): 2 work days
- Product designer training (advanced features and work flow): ½ work day
- Practice under supervision: 1½ work days

Physical Description

The Stratasys J850/J835 printing systems consist of the following main components:

- printer
- material cabinet
- printer computer (built into the printer)
- client workstation provided by the customer

Figure 1 Stratasys J850/J835 printer

Size and Weight

Table 1 Size and weight

Unit	W × H × D (cm)	W × H × D (inch)	Weight kg (lb)
Printer	140 × 126 × 110	55.1 × 49.6 × 43.3	430 kg / 948 lb
Materials cabinet	67 x 110 x 64	26.4 x 43.3 x 25.2	152 kg / 335 lb

W = Width; H = Height; D = Depth

Shipment and Delivery

Shipping Information and Customer Responsibility

Shipment to the customer will be arranged by a Stratasys distributor as indicated in the "ship to" part of the invoice. The customer is responsible for providing detailed delivery information, including, whether or not there is loading dock at the delivery site.

The customer is responsible for transporting the printer to a suitable installation site, and for unloading, unpacking, and moving it to its final location. Upon request, your Stratasys service provider will advise regarding these matters.

Note:
Only Stratasys-certified Customer Support Engineers are authorized to unpack and install equipment supplied.

Shipping Pallet

The following table shows the approximate size and weight of the printing system mounted on a pallet.

Table 2 Size and weight of printer on shipping pallet

	W × H × D (cm)	W × H × D (inch)	Weight (kg/lb)
Printer	161 × 159 × 161	63.4 × 62.6 × 63.4	750 / 1654
Materials cabinet	109 × 139 × 94	42.7 × 54.7 × 37	300 / 661

W = Width; H = Height; D = Depth

Lifting Equipment
A forklift or hand-operated pallet truck with the following specifications is required:

- lifting capacity: 800 kg (1650 lb)
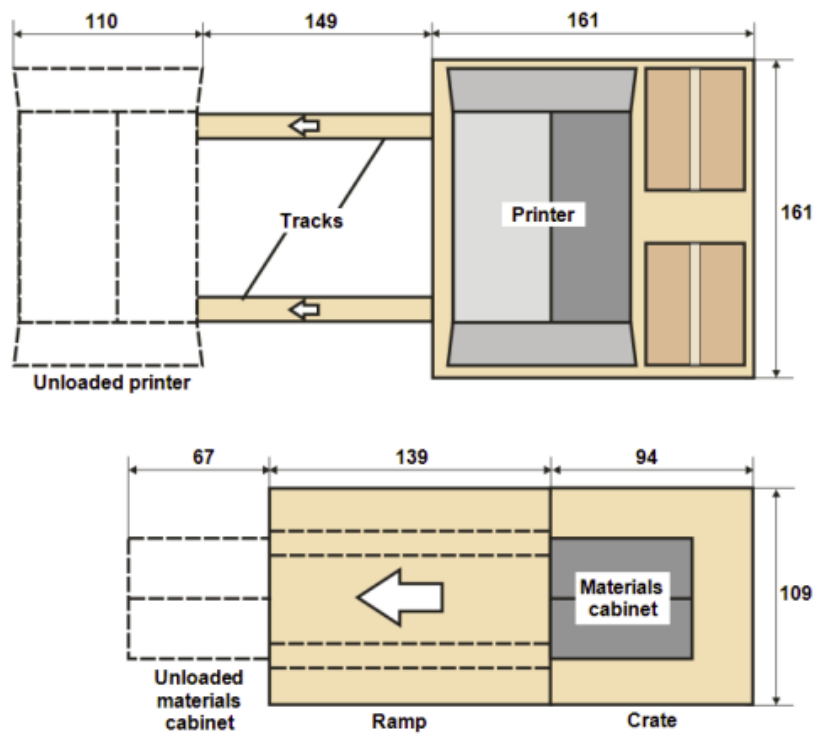- extension: 150 cm (60 in.)

Unloading

The unloading area should be a level surface.
An area of 10 m2 (108 sq ft) is required for the forklift to remove the printer from the delivery truck. A clearance of 120 cm (4 ft) around the back and sides of the packaging is required for unpacking the printer.

A clearance of 390 cm (13 ft) from the front is required for unloading the printer from the pallet.

The installation location must be accessible from the unloading area. The customer is responsible for unloading the printer from the truck and transferring it to the installation location. Minimum space Minimum space requirements for unloading the printer are shown in the figure below.
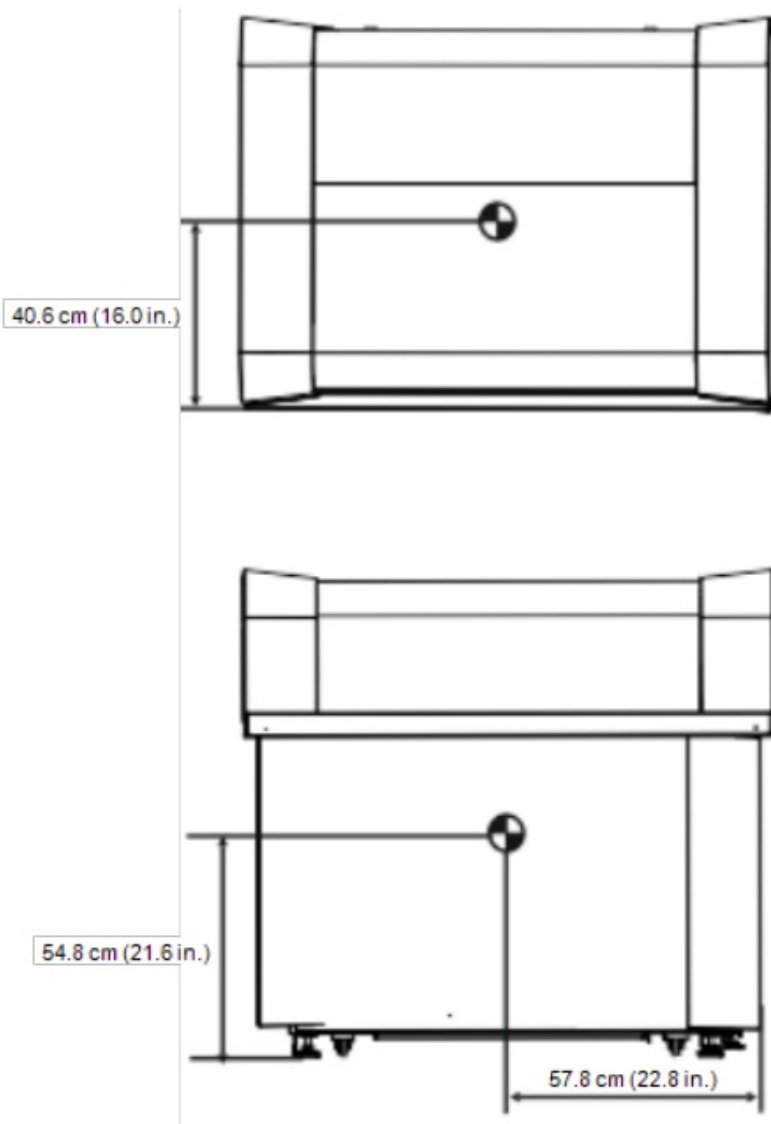
Figure 2 Unloading dimensions—top view

Note:
Dimensions are shown in centimeters

Stratasys J850/J835

Figure 3 Printer center of gravity

40.6 cm (16.0 in.)

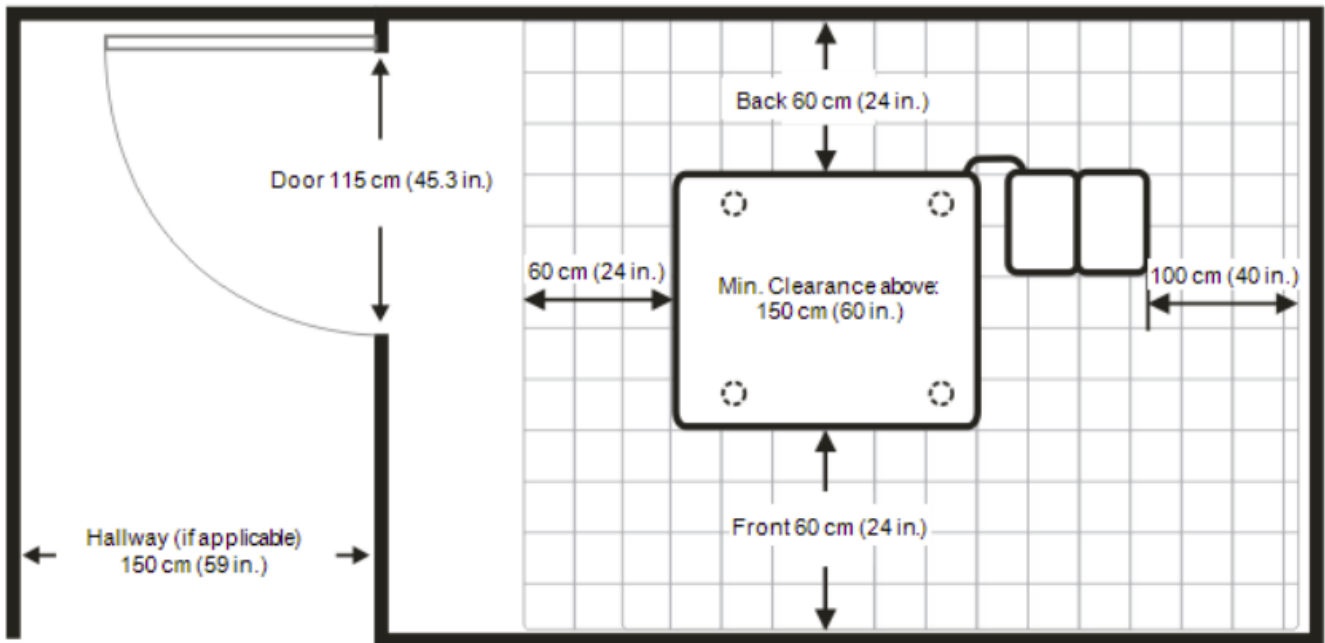54.8 cm (21.6 in.)

57.8 cm (22.8 in.)

Installation Area

- The installation area should be free of sources of vibration and electromagnetic interference that could affect the proper functioning of the printer.
- The floor gradient should be less than 0.5% (5 mm per meter).
- The floor should be stable and able to bear the load of the printer. The minimum floor load is 607 kg/m2 (125 lb/ft2).
- Clearance around and above the printer should ensure convenient access and servicing.
- The printer has not been designed to meet water-ingress protection standards, nor is it recommended for the printer to be in an area where there is a high relative humidity (see "Environmental Conditions" on page 16). Therefore, Stratasys recommends a distance of approximately 5 m between the printer and any source of water (such as a cleaning station). However, it is the customer's responsibility to ensure that this distance meets all local and/or regulatory requirements governing water-ingress protection and water-related electrocution hazards. Consult with an expert, as necessary.
- Shelves and cabinets are recommended near the printer for convenient storage of tools, parts, accessories, manuals, and materials.

Floor Plan (Printer Area)

The following is a sample floor plan, showing the 3D printing system—the printer and the materials cabinet. The dimensions shown in the figure are the minimum clearance requirements.

Figure 4 Printer floor plan (sample, not to scale)

GrabCAD Print Workstation

A computer with Grab CAD Print installed on it is necessary to interface with the printer. The workstation must have access to the internet and to the local network to which the printer is connected, and it must be prepared before installation.
To view the specifications for client workstations, go to: **http://help.grabcad.com/print/systemrequirements.**

GrabCAD Print Server

The GrabCAD Print Server is recommended and can be downloaded onto any computer within the same intranet network as the printer. The computer on which it is installed must have access to the Internet, and this must be prepared before installation.
To view the recommendations for GrabCAD Print Server, go to: **https://help.grabcad.com/article/201- printing-monitoring-remotely**

Electrical Requirements

The customer is responsible for ensuring that all tasks described in this section are performed by authorized personnel.

Power

A stable, reliable source of power is required. Power to the UPS (or printer) should be supplied directly from the main electrical panel. Other electrical outlets should not be connected to the line. Printer power rating:

- 100–120 VAC, 50–60 Hz, 13.5 A , 1 phase
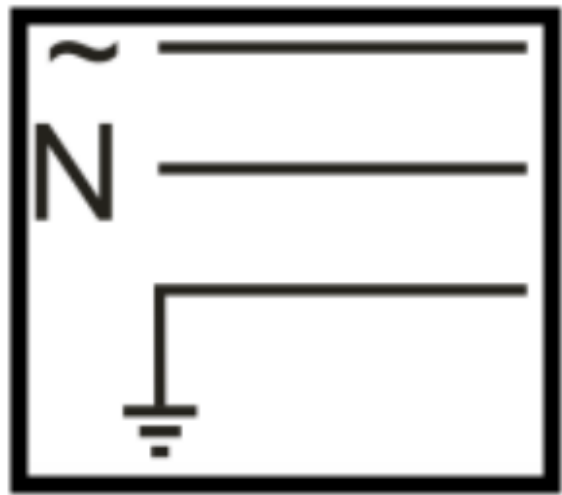- 220–240 VAC, 50–60 Hz, 7 A , 1 phase

Printer short circuit rating: 1000 A

If the power at the facility does not support the above specifications, contact your Stratasys specialist.

Important:
The diagram below shows the required connection to the power socket. Make sure that the electrician sees this before installing the printer.

Figure 5 Connection diagram

Grounding

The printer is grounded through a single-phase, AC plug. Make sure that the AC outlet is properly grounded, in accordance with local electrical codes.

Neutral to ground rating:

- 0 volts—not to exceed 3 volts

Circuit Breaker

A circuit breaker (Type-C) with the following specification is required (subject to the local electrical code).

Table 3 Circuit breaker

Voltage	Circuit Breaker
100–120 VAC	15 A or 16 A
220-240 VAC	10 A

Residual Current Device (RCD)
The wall outlet must be connected to a residual current device (RCD).

Power Connection
The customer must provide an AC power cable for the computer screen that can be used locally.
The following power cables are supplied with the printer:

- one 220-VAC cable

The customer must provide a suitable plug and have it connected by an electrician.

- one 110-VAC cable with a plug

The following electrical outlets are required:

- one outlet behind the printer
- three outlets close to the printer (for the workstation, monitor, and servicing equipment)

Table 4 UPS requirements

UPS (Uninterrupted Power Supply)
It is mandatory that the printer is powered through a UPS unit, provided by the customer. This ensures that—

- the quality of printing is not affected by power fluctuations from the mains.
- the printer computers can perform a "graceful shutdown" in the event of a power failure.
  The UPS specifications are listed below.

Table 4 UPS requirements

Voltage[1]	Current	Power	Power Factor[2]	Bridging Time	Interface	**Topology**
					USB port[3]	
100–120 VAC	22 Amps	1800 W	0.9	15 minutes	Compatible with Windows® 10and Windows® 7	Double conversion online
220–240 VAC	10 Amps	2700 W			Command-line	
					control[4]	

The following UPS systems meet the above requirements:

- Eaton 9SX3000G–220–240 VAC
- Eaton 9SX2000–100–120 VAC

Environmental Conditions

Temperature and Humidity

The temperature and relative humidity around the printer must be maintained within certain limits. Peak conditions occur when the printer draws maximum electrical power, resulting in the heat dissipation listed in the table below.

Table 5 Heat dissipation (peak conditions)

	Heat Dissipation
Printer	2200 W (7506 BTH/hr)

The room temperature and relative humidity should not exceed the limits listed in the table below.

Table 6 Room temperature and relative humidity specifications.

	Range
Temperature	18°C to 25°C (64.5°F to 77°F)
Relative humidity	30%–70% non-condensing

Air Quality

The system should be installed in an environment that is free from dust and debris.
The printer enclosure has been designed to meet ingress protection code level 4 (IP4X), according to standard IEC60529.
To ensure optimal air quality around the printer, a connection to an external ventilation duct is recommended (see "Accessories and Utilities" on the next page). Otherwise, the room ventilation system should change the air at least four times every hour.

Noise Level
The noise level around the printer is typically less than 65 dB during printing.
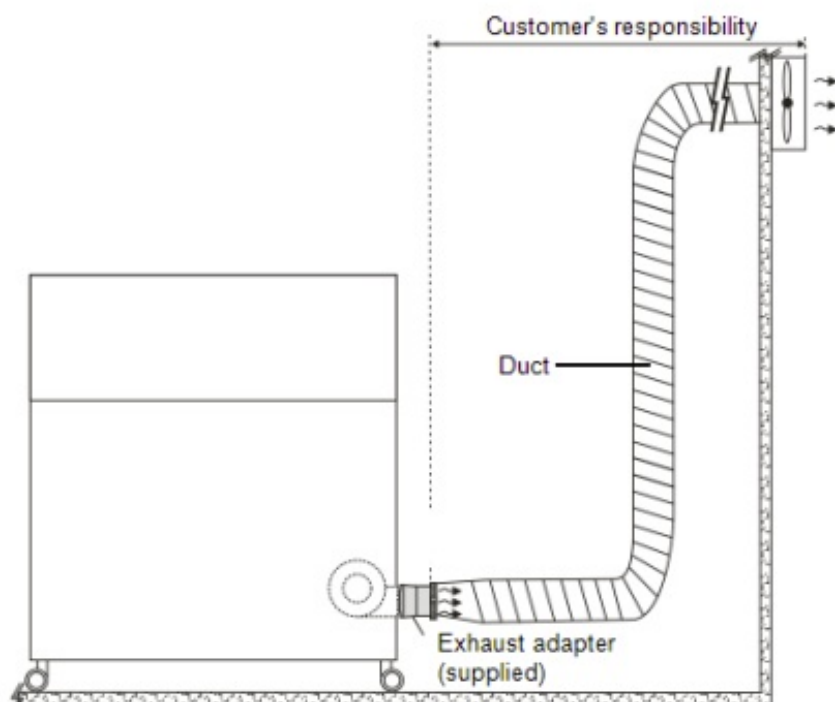
Accessories and Utilities

Start-Up Kit
The printer is supplied with a start-up kit, which includes tools and accessories. These tools and accessories should be available during printer installation and operation.

Exhaust Adapter
An exhaust adapter is supplied with the printer. When attached to the back of the printer and connected to an external ventilation fan with a duct, air expelled from the printer is discharged directly outdoors, as shown in the figure below.

	Required Suction at the Exhaust Adapter	
Duct Diameter	Minimum	Maximum
6 in (150 mm)	212 cfm (6 m3/min)	269 cfm (7.6 m3/min)

Figure 6 Printer exhaust system

Eyewash Station
It is recommended to install an eyewash station near the printer, for emergency use.

Compressed Air

Compressed air is useful for routine cleaning and maintenance activities. If a compressed air line is available at the site, it is recommended (but not required) that an outlet be installed near the printer.

Note:
If the compressed air line does not include an air-dryer unit, a water/oil trap must be installed on the air gun used for cleaning the printer. The recommended air pressure is 5-7 bar (70-90 PSI)

Fire Safety Equipment

A gas-based fire extinguisher is recommended in case of fire in or near the system. Some other fire extinguishers are also acceptable, but liquid fire extinguishers should not be used. Contact local fire authorities for specific recommendations.

Materials Handling and Storage

Printing Materials
Printing materials should be stored indoors, in a dry area with adequate ventilation. The following table lists general requirements for storage, inventory control, and disposal.

Table 7 Requirements for hazardous materials

Topic	Requirement
Storage	15°C to 27°C (59°F to 81°F)
Inventory control method	First In First Out (FIFO)
Disposal	In compliance with local regulations

These specifications are applicable for most printing materials. Requirements for handling and storing specific materials appear in the Material Safety Datasheet (MSDS) included with each material.

Note:

- Non-compliance with these recommendations might result in reduced shelf life.
- Disposal of all liquid and solid waste, cleaning cloths, gloves, and empty material containers must be done in accordance with local laws and regulations.

Cleaning Solvent
One liter of isopropanol (IPA) or ethanol (ethyl alcohol) should be available at all times for cleaning purposes. The customer is responsible for ensuring that the material storage area complies with local regulations.

Site Preparation Checklist

A checklist is provided by your Stratasys representative listing all of the tasks described in this document.

Fill in the information requested in the checklist, and submit it to your Stratasys representative. Once the checklist has been received, an installation date will be scheduled.

Documents / Resources

stratasys J850 3D Printing System [pdf] User Guide
J850, J835, J850 3D Printing System, 3D Printing System, Printing System

References

- [GC] **System requirements for GrabCAD Print - GrabCAD Help Center**
- ⬡ **Stratasys - Industrial 3D Printing Manufacturers**
- ⬡ **Stratasys - Industrial 3D Printing Manufacturers**
- ⬡ **Terms and Conditions of Sale**
- [GC] **Printing & monitoring remotely with GrabCAD Print Server - GrabCAD Help Center**
- **User Manual**