



Latex 280 Printer
DESIGNJET L28500 printer series

Site preparation guide

© 2013 Hewlett-Packard Development
Company, L.P.

1st edition

Legal notices

The information contained herein is subject
to change without notice.

The only warranties for HP Products and
services are set forth in the express warranty
statement accompanying such products and
services. Nothing herein should be
construed as constituting an additional
warranty. HP shall not be liable for technical
or editorial errors or omissions contained
herein.

Table of contents

1 Overview	1
Introduction	1
Customer responsibilities	1
Installation time schedule	1
2 Site preparation requirements	2
Physical space requirements	2
Unloading route	2
Assembly area	2
Environmental specifications	3
Ventilation and air conditioning	3
RIP workstation characteristics	4
Networking	4
Printing supplies	4
Electrical configuration	4
Three-phase line specifications	5
Branch circuit breakers	6
Power cables	6
Jumper configuration, 380–415 V	7
Jumper configuration, 200–240 V	8
Powerline disturbances	8
Grounding	8
3 Site preparation checklist	9

1 Overview

Introduction

Your printer is supplied ready to use after a few simple installation procedures described in detail in the *Assembly instructions*. It is important to read the information provided in this guide thoroughly and to ensure complete compliance with all installation and operation requirements, safety procedures, warnings, cautions and local regulations. A well prepared site helps to provide a smooth and easy installation.

Customer responsibilities

You are responsible for preparing the physical site for the installation of the printer.

1. Prepare the building's electrical system to meet the printer's requirements and the Electrical Code requirements according to the local jurisdiction of the country where the equipment is installed, and power up the printer on the day of installation. See [Electrical configuration on page 4](#).

 **NOTE:** Make sure that a certified electrician reviews the setup and configuration of the electrical system used to power the printer. See [Electrical configuration on page 4](#).

2. Meet all requirements for RIP, networking and printing supplies. See [RIP workstation characteristics on page 4](#), [Networking on page 4](#) and [Printing supplies on page 4](#).
3. Meet temperature and humidity requirements and ensure proper ventilation for the printer. See [Environmental specifications on page 3](#).
4. Prepare the unloading route so the printer can be unloaded and maneuvered into place. See [Unloading route on page 2](#).

Installation time schedule

Allow a minimum of three hours for the installation.

 **NOTE:** The installer may require help from another person to perform certain tasks during installation.

2 Site preparation requirements

Physical space requirements

Unloading route

The route between the unloading area of the printer and the installation site, including any corridors and doorways through which the printer must be transported, is important and must be checked before the arrival of the printer. This pathway must be clear when the printer arrives.

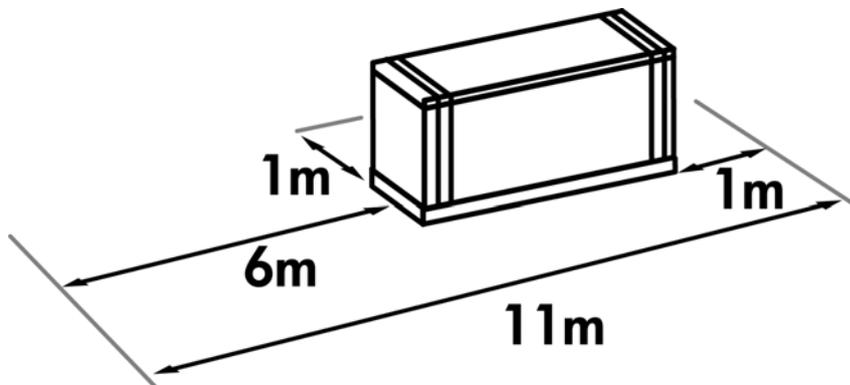
Table 2-1 Printer physical specifications

	Printer	With packaging
Length	3581 mm (141 in)	3850 mm (151.6 in)
Width	730 mm (28.7 in)	1100 mm (43.3 in)
Height	1377 mm (54.2 in)	1675 mm (65.9 in)
Weight	380 kg (837 lb)	645 kg (1422 lb)

Doorways: minimum width 1.54 m (60.6 in) × minimum height 2.1 m (82.7 in) required.

Assembly area

The space required for assembly is illustrated below: 1 m (39 in) on all sides of the box, except on the side where the printer will be wheeled out, where a space of 6 m (20 ft) is required.



Most of the installation process can be done by one person, but two people are required to perform certain tasks.

Environmental specifications

These environmental conditions must be kept within the specified ranges to ensure the correct operation of the printer. Failure to do so may cause print-quality problems or damage sensitive electronic components.

Table 2-2 Printer environmental specifications ^{1 2}

Relative humidity range for best print quality	20–80%, depending on substrate type
Temperature range for best print quality	18 to 25°C (64 to 77°F), depending on substrate type
Temperature range for printing	15 to 30°C (59 to 86°F)
Temperature range when not in operation	–25 to +55°C (–13 to +131°F)
Temperature gradient	no more than 10°C/h (18°F/h)
Maximum altitude when printing	3000 m (10000 ft)

¹ The above specifications are pre-conditioning requirements for printer usage, the printer should stabilize to these environmental conditions at least 1 hour before starting to print, or 2 hours if it is starting from a lower temperature.

² Some substrates may require longer pre-conditioning than the printer.

Further environmental requirements

- The printer must be kept indoors.
- Do not install the printer where it will be exposed to direct sunlight or a strong light source.
- Do not install the printer in a dusty environment. Remove any accumulated dust before moving the printer into the area.
- If the printer or ink cartridges are moved from a cold location to a warm and humid location, water from the atmosphere can condensate on the printer parts and cartridges and can result in ink leaks and printer errors. In this case, HP recommends that you wait at least 3 hours before turning on the printer or installing the ink cartridges, to allow the condensate to evaporate.

Ventilation and air conditioning

As with all equipment installations, to maintain comfortable ambient levels, air conditioning or ventilation in the work area should take into account the printer's heat dissipation. Maximum power dissipation is 8–10 kW (27.3–34.1 kBTU/h). Adequate conditions can be established by air renewal if the external temperature is cold enough.

Air conditioning and ventilation should meet with local environmental, health and safety (EHS) guidelines and regulations. Consult your usual air conditioning or EHS specialist for advice on the appropriate measures for your location.

For a more prescriptive approach to adequate ventilation, see the ANSI/ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) 62.1-2007 Ventilation for Acceptable Indoor Air Quality. As an example, a minimum exhaust rate of 2.5 L/s.m² (0.50 cfm/ft²) of freshly made air for "copy, printing rooms" is recommended.

 **NOTE:** The ventilation and air-conditioning units should not blow air directly onto the printer.

 **NOTE:** Some air-conditioning systems or air-humidity control systems merely recycle the existing air in the room, which could cause saturation and lead to condensation. For optimal reliability and print quality, ensure adequate ventilation with fresh air and proper pre-conditioning.

 **NOTE:** Maintaining positive air pressure in the print production room will help prevent dust from entering the room.

RIP workstation characteristics

The RIP computer and RIP software must be provided by the customer. Each RIP has specific requirements. Check with your RIP vendor to find out the requirements for the PC that you'll be using for the RIP station. Make sure that the RIP station is fully functional and ready for installation.

Networking

You are responsible for all networking requirements, and you must complete the following tasks:

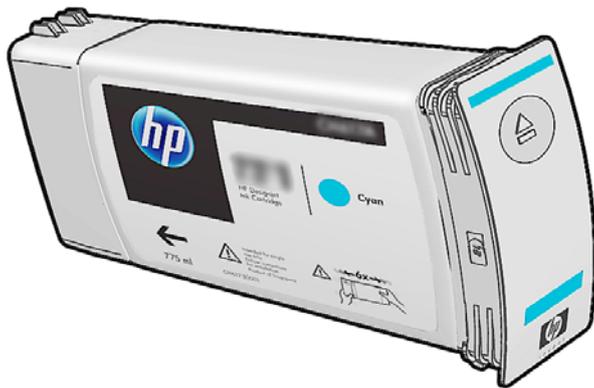
 **NOTE:** In order to perform remote support, the printer must have access to the Internet using the LAN connection.

- Have a Gigabit Ethernet network ready for the day of installation.
- Provide a CAT-6 LAN cable to connect the printer to your LAN and RIP workstation.
- Provide a Gigabit Ethernet switch.

Printing supplies

The following supplies should be purchased in addition to the printer and should be available on the day of installation:

- Six HP 792 ink cartridges, one for each color: black, cyan, magenta, yellow, light cyan and light magenta.



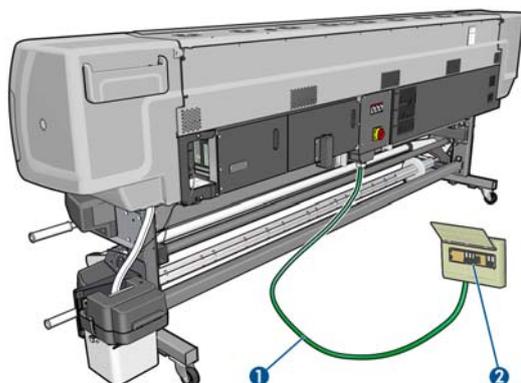
- At least one roll of substrate for printing.

Electrical configuration

 **NOTE:** An electrician is required for the setup and configuration of the building's electrical system used to power the printer and also for printer installation. Make sure that your electrician is appropriately certified according to local regulations and supplied with all the information regarding the electrical configuration.

Your printer requires the following electrical components to be supplied and installed by the customer, according to the Electrical Code requirements of the local jurisdiction of the country where the equipment is installed.

 **NOTE:** Remember that you are required to follow the local laws, regulations and standards that pertain to the electrical installation of your printer.



1. Three-phase power cable longer than 5 m (16 ft) (not supplied)
2. Power Distribution Unit (PDU) including three-phase branch circuit breaker

 **NOTE:** The PDU must be rated to meet the power requirements of the printer, and should be in accordance with the Electrical Code requirements of the local jurisdiction of the country where the equipment is installed.

Three-phase line specifications

The electrical specifications for the three-phase line are included in the following table, depending on the line-to-line input voltage available at the site. Use the appropriate specification for your site.

Table 2-3 Three-phase line specifications

Input voltage (line to line)	380–415 V~ (-10%+6%)	200–240 V~ (±10%)
Number of power wires	5 (3L N+PE)	4 (3L +PE)
Input frequency	50/60 Hz ± 3Hz	50/60 Hz ± 3Hz
Power consumption (warming up)	8 – 10 kW	8 – 10 kW
Power consumption (printing)	4.2 kW	4.2 kW
Power consumption (standby)	155 W	155 W
Power consumption (powersave)	< 64 W	< 64 W
Power consumption (turned off)	< 0.1 W	< 0.1 W
Maximum load current (per phase)	24 A	40 A

 **CAUTION:** Ensure that input voltage is within the printer's rated voltage range.

The printer requires three-phase power. Three-phase power provides a more efficient means of supplying large electrical loads than single-phase power, which is common in offices and homes. If only single-phase power is supplied to your facility, contact your HP support representative.

Branch circuit breakers



NOTE: The circuit breakers must meet the requirements of the printer and should be in accordance with the Electrical Code requirements of the local jurisdiction of the country where the equipment is installed.

The printer requires a branch circuit breaker for the three-phase line.

Table 2-4 Branch circuit breaker specifications

Input voltage (line to line)	380–415 V~ (-10%+6%)	200–240 V~ (±10%)
Three-phase	4 poles, 30/32 A	3 poles, 50 A

WARNING! Ensure that the printer's built-in Residual Current Circuit Breaker (also known as Ground Fault Circuit Interrupter) operates in the case of a leakage current fault to the product chassis, even when an isolation device (such as an isolating transformer) is used to supply power to the printer. An IT power distribution system should not be used.

WARNING! Ensure that mains fault current is adequate for proper operation of the supplementary circuit breakers incorporated in the printer (10 kA rated interrupting capacity).

CAUTION: Ensure that the input voltage is within the printer's rated voltage range.

Power cables

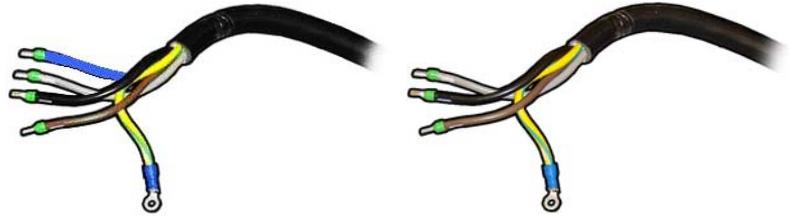
A three-phase power cable is not provided with the printer. The cables that you use must meet the following minimum specifications.

Table 2-5 Cable specifications

Input voltage (line to line)	380–415 V~ (-10%+6%)	200–240 V~ (±10%)
Configuration	5 wires, L1/L2/L3/N/PE	4 wires, L1/L2/L3/PE
Wire	Strained Cu, minimum 4 mm ² or 10 AWG	Strained Cu, minimum 6 mm ² or 8 AWG

Table 2-5 Cable specifications (continued)

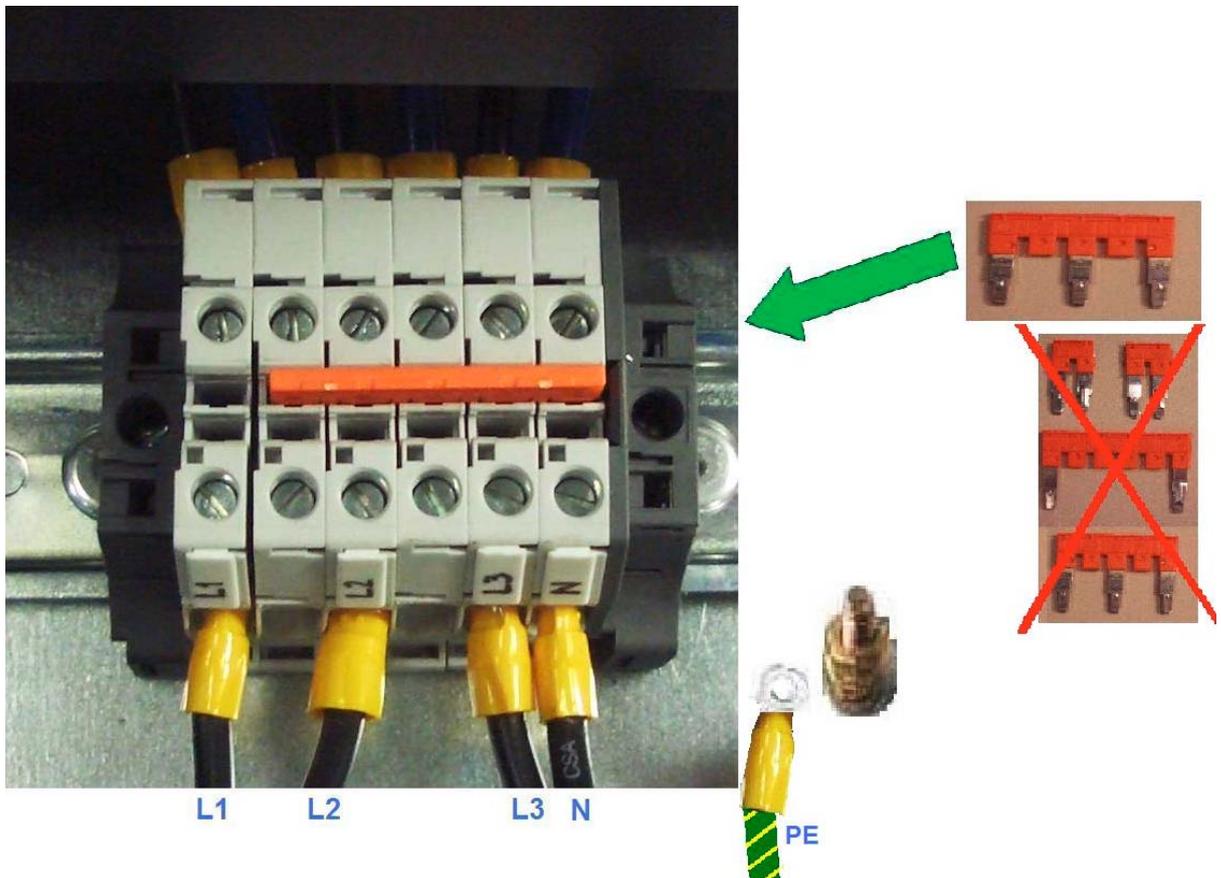
Input voltage (line to line)	380–415 V~ (-10%+6%)	200–240 V~ (±10%)
External diameter range	14–25 mm	14–25 mm



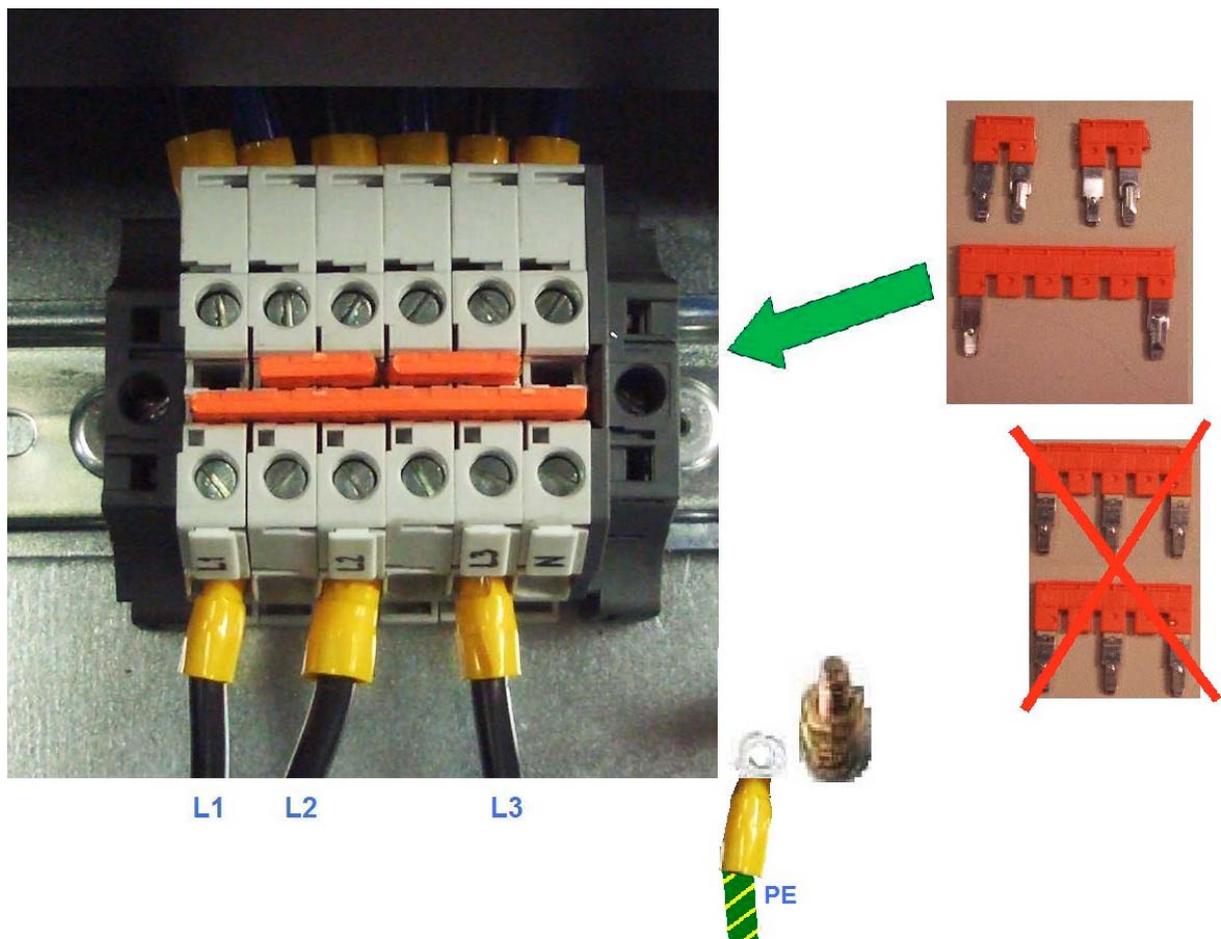
The L1, L2, L3 (& N if any) wires must end with Ferrule terminals.

The PE wire must end with a ring terminal (M6).

Jumper configuration, 380–415 V



Jumper configuration, 200–240 V



Powerline disturbances

As with all computer and electronic equipment, reliable operation of your printer depends on the availability of relatively noise-free AC power.

- In order to ensure optimum performance and reliability, your printer should be protected from variations in line voltage. Lightning, line faults or the power switching commonly found in machinery in factory environments can generate line transients that far exceed the peak value of the applied voltage. If not reduced, these microsecond pulses can disrupt system operation.
- It is recommended to include overvoltage (OVP) and transient protection in the power supply to the printer.
- All electrical noise-generating equipment, such as fans, fluorescent lighting and air-conditioning systems, should be kept separate from the power source used for your printer.

Grounding

The printer must be connected to a good-quality ground line in order to avoid electrical risk. Please note your obligation to comply with the Electrical Code requirements of the local jurisdiction of the country where the equipment is installed.

Grounding wires must be insulated and at least equal in size to the phase conductors.

3 Site preparation checklist

Safety requirements	Yes	No	Comments
Do those who will operate the printer have the technical training and experience necessary to be aware of hazards to which they may be exposed in performing a task, and to take appropriate measures to minimize the risks?	<input type="checkbox"/>		(Required)
Is there an emergency exit in the print production area, with easy access and free from any obstruction?	<input type="checkbox"/>	<input type="checkbox"/>	

Electrical installation requirements	Yes	No	Comments
Is the electrician aware of all requirements and specifications highlighted in this guide?	<input type="checkbox"/>		(Required)
Is the three-phase line voltage within the specified voltage range: 380–415 V~ (-10% +6%) or 200–240 V~ (±10%)?	<input type="checkbox"/>		(Required) Specify nominal mains voltage:
Have branch circuit breakers (4 poles, 30/32 A for 380–415 V; 3 poles, 50 A for 200–240 V) been correctly installed for each dedicated line?	<input type="checkbox"/>		(Required)
Is the Power Distribution Unit (PDU) correctly installed?	<input type="checkbox"/>		(Required)
Are the grounding conductors properly installed for each wall receptacle (wall socket)?	<input type="checkbox"/>		(Required)
Would the printer's built-in Residual Current Circuit Breaker (also known as Ground Fault Circuit Interrupter) operate in the case of a current leakage fault to the product chassis (even if an isolation device is installed)?	<input type="checkbox"/>		(Required)

Electrical configuration requirements	Yes	No	Comments
Do you need an Uninterrupted Power Supply (UPS) or step-up transformer? If so, is it correctly installed?	<input type="checkbox"/>	<input type="checkbox"/>	

Networking and computer requirements	Yes	No	Comments
Is the RIP computer and software ready for installation?	<input type="checkbox"/>	<input type="checkbox"/>	
Have network connections been supplied?	<input type="checkbox"/>	<input type="checkbox"/>	

Networking and computer requirements	Yes	No	Comments
Do you have a color sensor that is compatible with your RIP?	<input type="checkbox"/>	<input type="checkbox"/>	
Do you have a LAN cable long enough to connect the printer to the network?	<input type="checkbox"/>	<input type="checkbox"/>	

Environmental requirements	Yes	No	Comments
Have the temperature and humidity requirements been satisfactorily met in the print production area, and is there adequate ventilation or air conditioning?	<input type="checkbox"/>	<input type="checkbox"/>	
Have the temperature and humidity requirements been satisfactorily met in the storage area?	<input type="checkbox"/>	<input type="checkbox"/>	
Is the print production area free from dirt and dust?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the print production area have sufficient lighting?	<input type="checkbox"/>	<input type="checkbox"/>	

Other requirements	Yes	No	Comments
Have you arranged for supplies such as substrate and ink cartridges to be available on the day of installation?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there sufficient space for printer unloading and assembly?	<input type="checkbox"/>	<input type="checkbox"/>	
Have you met the requirements specified in this guide?	<input type="checkbox"/>		(Required)