



# HP Jet Fusion 3D 3200, 4200, 4210 Printing Solution

Site Preparation Guide

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# 1 Overview

## System configuration

Your printer is supplied almost fully assembled and ready for the simple installation procedures performed by your support engineer. It comes complete with printheads and a printhead cleaning roll.

## Documentation

The following documents are available:

- Site preparation guide (this document)
- Introduction information
- User guide
- Legal information
- Limited warranty

## Site preparation overview

This guide should assist in the following planning considerations:

- Modifications to the installation area
- Site accessibility
- Emergency exits
- Planning the production area
- Mechanical, electrical and environmental specifications
- Computer and network connectivity
- Contracting a specialist mover with a forklift and/or suitable moving equipment
- Contracting an electrician
- Environmental, health, and safety

All information in this guide is provided on the assumption that installation planners and personnel are familiar with:

- Architectural and planning requirements
- Applicable laws, regulations, and standards



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**NOTE:** It is important to read the information provided in this guide thoroughly and ensure complete compliance with all installation and operation prerequisites, safety procedures, warnings, cautions, and local regulations.

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## Customer responsibility

### Planning the site and printer environment

You are responsible for all preparations of the physical site, and you must complete the following tasks:

- Prepare the site for unloading.
- Make sure the route from the unloading site to the installation site meets specifications. See [Unloading route on page 8](#).
- Make sure you have the necessary equipment to handle the printer, as well as a specialist mover who is familiar with your site and the information provided in this guide. Meet the requirements for second floor installations (if necessary). See [Moving equipment on page 9](#).
- Configure the building's electrical system used to power the printer to meet the printer's requirements and the Electrical Code requirements of the local jurisdiction of the country where the equipment is installed. A qualified electrician is required to power up the printer on the day of installation. See [Printer electrical configuration on page 13](#) and [Processing station electrical configuration on page 20](#).
- Provide an adequate air supply for the processing station's pneumatic circuit. See [Compressed air on page 24](#).
- Ensure that the room in which the system is installed meets local environmental, health, and safety (EHS) guidelines and regulations. See [Environmental specifications on page 10](#) and [Ventilation on page 11](#).
- Supply all necessary emergency equipment.
- Make sure the equipment is located in a restricted-access area, for authorized personnel only.
- The equipment is not intended for hazardous locations or ATEX-classified zones: ordinary locations only.
- Keep the equipment separated from other equipment that could create a combustible dust cloud or metallic dust during operation, and keep it away from effective ignition sources (open flames, sparks, heat, and so on). Do not place the equipment close to CNC, milling, cutting machines, or polishers, which may cause a significant risk of metallic dust in the air, electrical sparks that may cause ignition, or oil and dust in suspension in the air.
- Material storage, handling, and disposal should be performed as per local laws. See the Safety Data Sheets at <http://www.hp.com/go/msds> for adequate handling and storage. Follow your environmental, health, and safety processes and procedures.

### Post-processing of parts

After printing the parts and removing the material in the processing station, you must clean the parts to remove the thin layer of material attached to the surface. To do this, you need a bead-blasting machine. HP recommends a bead-blasting machine with the following specifications:

- Manual or automatic operation
- Air pressure in the range 2–5 bar (29–72.5 psi)
- Glass beads of 70–110  $\mu\text{m}$  diameter (0.00276–0.00433 in)

## Fire-fighting equipment

You must provide two fire extinguishers for the site. Make sure the extinguishers are placed where they are easily accessible in case of fire.

- A fire extinguisher certified for electrical fires must be in the print-production area.
- A fire extinguisher must be placed in the materials storage area, due to the large amount of combustible dust (material).

Emergency exits and first-aid stations should also be considered.

## Software installation

HP software available for your system can be found here:

- <http://www.hp.com/go/jetfusion3D3200/software/>
- <http://www.hp.com/go/jetfusion3D4200/software/>
- <http://www.hp.com/go/jetfusion3D4210/software/>
- <http://www.hp.com/go/jetfusion3Dprocessingstation/software/>

## Requirements

- You must ensure that a computer is available on which to install the HP 3D SmartStream Command Center server software (must be always powered on).
- This computer must be connected to the Internet and have access to the printer and processing station through the local area network.
- You must ensure that a network specialist is present on the agreed date of printer installation, as some IT configuration may be needed to connect the devices to the software and the software to the HP Cloud (firewall configuration, static IP addresses for devices, and so on).

If you have bought non-HP software for your printer:

- You must install the software on a suitable computer and ensure that it is fully functional by the agreed date of printer installation.
- This guide does not provide information about the non-HP software.

## Minimum requirements for computer and software

- Intel Core i3 2.4 GHz with four virtual cores/threads
- 4 GB of RAM
- 3.5 GB of free hard disk space, plus 100 MB for each additional printer added
- Ethernet, IPv4, 100 Mb/s
- Microsoft Windows 7, 8, or 10 (64-bit), or Microsoft Windows Server 2008 R2
- Internet connection, ADSL or better

## Minimum requirements for HP SmartStream 3D Build Manager

The following requirements apply if you intend to install HP Smartstream 3D Build Manager.

## Supported operating systems

- Microsoft Windows 7 SP1, 64-bit (32-bit not supported)
- Microsoft Windows 8, 64-bit (32-bit not supported)
- Microsoft Windows 8.1, 64-bit (32-bit not supported)
- Microsoft Windows 10, 64-bit (32-bit not supported)

## Minimum system specifications

- CPU: Intel Core i5 processor or equivalent (i7 or better recommended)
- Memory: 4 GB RAM (16 GB or more recommended)
- Dedicated graphics card with 2 GB VRAM minimum and DirectX 11 support
- 1 GB free disk space for installation
- Ethernet, IPv4 or IPv6, 100 Mb/s



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**IMPORTANT:** Running HP SmartStream 3D Build Manager in a virtual machine environment is not supported.

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## Networking

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

- Have an adequate network ready for the day of installation. See [Minimum requirements for computer and software on page 3](#).
- Provide shielded CAT-6 LAN cables to connect the printer and the processing station to your LAN.

To use your printer and to receive remote support, the computer in which the HP 3D SmartStream Command Center is installed must be permanently connected to the Internet and permanently powered on.



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**TIP:** If a Web browser on the same computer that will run the Command Center software can access the <https://hp.com> website, the Internet connection is working.

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HP SmartStream 3D Command Center server software needs to access the HP Cloud. It uses an outgoing HTTPS port (typically TCP 443), so the firewall need to be configured by your IT department to allow outgoing traffic from this port.

Also, the firewall needs to be configured to allow the following connections:

- [www.printos.com](http://www.printos.com), port 443
- [3dpconfig.heleni.me](http://3dpconfig.heleni.me), port 443
- [us-west-2.amazonaws.com](http://us-west-2.amazonaws.com), port 443

No incoming network ports need to be opened, as data connections are always initiated from HP SmartStream 3D Command Center.

The Command Center server needs access to the printer and processing station. It uses the HTTPS protocol to access the Web Services from the devices. Proxy settings are taken from the system configuration.

Communication between the Command Center server and Command Center clients (inside your network) uses HTTP.

You must assign static IP addresses or hostnames to the printer and processing station, as the software won't be able to discover the devices if they change their IP addresses.

## Required supplies and equipment

You are responsible for providing the following, which should be ready on the day of installation:

- One fusing agent cartridge
- One detailing agent cartridge
- Six material cartridges
- Sheets of A3 or tabloid paper
- An explosion-protected vacuum cleaner compliant with the following normative specifications:
  - Europe/IEC: Zone 22 or better, 200°C (392°F) or less
  - US/NEC: Class II, division 2, 200°C (392°F) or less

And with the following additional specifications:

- Air flow: 250 m<sup>3</sup>/h (147 ft<sup>3</sup>/min)
- Depression: 19.6 kPa (2.84 psi)
- Power: 18 W (2.4 hp)
- A ladder
- Personal protective equipment for users and service engineers, according to your environmental, safety, and regulatory guidelines
- 4200 and 4210: Lift trolley for moving external tanks and material loading tanks

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 **TIP:** The number of cartridges given above is the minimum required for installation. HP recommends purchasing more cartridges of each type so that you can continue printing after installation.

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### Extra requirements for the 4210

- Drum rotator
  - You are recommended to use a drum rotator ATEX-certified for zone 22.
  - The drum rotator is required to ensure proper grounding for the drum while rotating. It should be activated before the material loading tank is used to supply fresh material to the processing station.
  - The recommended rotation speed is 20 rpm (total rotation time for material loading tank preparation is 90 s).
- Interface to processing station
  - Fitting type: Metallic triclamp
  - Standard to meet: ISO 2852 or DIN 32676 or BS 4825 (ASME BPE)
  - Fitting diameter: 38 mm (1.5 in)
- Piping requirement (only if using the processing station as a material filling method for the material loading tank)
  - Flexible hoses should be suitable to transport combustible dust for Zone 20, 21, and 22. Follow manufacturer's instructions to earth the hoses to protect them against electrostatic charging.
  - Internal diameter of piping: approximately 36 mm.
  - Maximum length of pipe routing: 10 m.

- Keep the number of bends along the route to a minimum. Use as large a bending radius as possible. Hoses should be free from torsion in their routing and connection in order to avoid damage.
- Use metallic, rigid pipes where possible; and they should be properly grounded. Use piping with low roughness on its the internal surface.
- Joints between pipe sections must be constructed correctly so that material does not build up around the joints; you should ensure a good seal.
- Bulk discharging system
  - You are recommended to use a bulk discharging sytem ATEX-certified for zone 22.
  - Operating with a bulk discharging system can cause dust clouds. Keep an area of at least 2 m around the bulk discharging system clear of electric/electronic devices or any source of ignition.
  - An earth connection for the conveying pipes must be included in the bulk discharging system. Follow the recommendation of the bulk discharging system manufacturer.
  - Maximum material flow rate supplied by the system should be 5 kg/min.
- Static earthing clamps
  - You are required to use static earthing clamps when using material loading tanks

## Return the site preparation checklist

The checklist must be completed and returned to your reseller or service representative a minimum of two weeks before the day of installation.




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**NOTE:** Any delays during installation that are caused by an unprepared site will be charged to the customer. Take care that your site is properly prepared to ensure a smooth and easy installation.

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## Recycle the supplies

HP provides many free and convenient ways to recycle your used HP cartridges and other supplies; see <http://www.hp.com/recycle/>.

You can also consult the disposal instructions included in the user documentation.

For further details, see the Safety Data Sheets (SDS), which you can find at <http://www.hp.com/go/msds/>.

## Waste disposal

Dispose of all waste according to local regulations.

## Safety questions and answers

Read and follow the operating and safety instructions before turning on the equipment.

### Can the printer and processing station operate in unattended mode? Can they be unsupervised during operation?

The printer can operate in unattended mode in this sense: for operations that do not require any manual interaction, such as during the printing process, there is no need to have a trained operator close to the printer.

However, **the system requires its operation to be supervised at all times**. The reason for this requirement is that this equipment uses high power levels. Therefore, in order to protect the system and the customer's environment, in the unlikely event of unexpected environmental change, unexpected malfunction, anomaly, ESD (ElectroStatic Discharge), or electromagnetic interference, as explained in the user guide, someone needs to

press the emergency stop button and disconnect the equipment. For this reason, operation should be supervised in some way (periodic checks, security cameras, or equivalent). However, supervision can be done by someone who is not trained to operate the system, such as a standard security service.

## Are there any requirements for the room in which the printer and processing station are installed?

Both the printer and the processing station should be installed in **ordinary locations only**. An ordinary location is a location that is not expected to have combustible dust clouds, and therefore it does not need any specific protection against explosions. The opposite would be a hazardous location or ATEX-classified zone, in which you can expect to find combustible dust clouds, and which is therefore generally constructed to resist explosions caused by an ignition source close to the dust clouds.

The equipment should be installed in ordinary locations for these reasons:

- The equipment does not create a hazard in the area in which it is installed:
  - It has been designed to minimize material spillage, and we expect regular cleaning maintenance by the operators, therefore any spillage is unlikely to reach a concentration causing a potentially explosive atmosphere around the equipment.
  - There are no effective ignition sources inside the equipment.
- The equipment is not designed to be used in explosive atmospheres, therefore it should not be installed in a hazardous location or ATEX-classified zone.

Therefore, the printer and processing station do not require any specific setup in the room to make it safe against potential explosions, as they do not create such a risk; but they should be protected against any risks created by other equipment installed nearby.



**NOTE:** An explosion-protected vacuum cleaner certified for collection of combustible dust is required for cleaning. Take measures to mitigate material spillage and avoid potential ignition sources such as ESD (ElectroStatic Discharges), flames, and sparks. Do not smoke nearby. Do not manipulate covers, isolation and equipment filtering enclosures beyond what is specified in the maintenance chapter of the user guide.

## Can the printer and processing station be installed in the same room as other equipment?

The printer and processing station can be installed in the same room as other printers or equipment in general, but they should be installed **away from other equipment that could create a combustible dust cloud or metallic dust during operation**.

When installing the printer in a room with other equipment, it is important to know whether the other equipment requires an exclusion zone around it, as this is an indicator of a potential hazardous location or ATEX-classified location. In this case, follow the manufacturer's recommendations and material Safety Data Sheets about how much space needs to be left around the equipment, and do not locate the printer and processing station inside its exclusion zone. Follow your Environmental, health and safety processes and procedures.

Notice that we are referring to a combustible dust cloud. Operation does not need to be 100% dust free: any dust quantity under 30 g/m<sup>3</sup> is considered non-combustible. As a general indication, most market-available 3D printers do not create combustible dust clouds during normal operation, therefore most printers can be installed close to our system without any problem, following only the recommendations of both systems in terms of space needed for access to doors, maneuverability, and so on. Some material management systems can create a hazardous or ATEX-classified location, so always check the documentation of your other equipment to assess the potential risks and decide what is the best setup for all your systems.

## 2 Site preparation requirements for the printer

### 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 to proper site preparation and must be planned before the arrival of the printer. This pathway must be clear when the printer arrives.

#### Printer physical specifications with packaging

Width with packaging	2300 mm (90.55 in)
Depth with packaging	1325 mm (52.17 in)
Height with packaging	2068 mm (81.42 in)
Weight with packaging	945 kg (2083 lb)

For the specifications without packaging, see [Load bearing on page 9](#) and [Designing the optimal print-production area on page 10](#).

#### Doorway specifications

Minimum doorway width	2320 mm (91.34 in) with packaging
	1202 mm (47.32 in) without packaging
Minimum doorway height	2088 mm (82.20 in) with packaging
	1435 mm (56.50 in) without packaging
Minimum corridor width with right-angled bend	1520 mm (59.84 in) without packaging

The printer can be moved on the pallet up or down a ramp of no more than 10° inclination.

#### Unpacking and moving the printer

You are strongly recommended to unpack the printer where it will be used, or as close to that location as possible.



**IMPORTANT:** The printheads should never be moved inside the printer, they should always be moved in their original packaging and installed at the final location.

The space required for assembly is 5.5 × 3 m (217 × 118 in).

## Moving equipment

If you need to move the printer after unpacking, take into account the following considerations:

- Ground-floor installation: The printer can be moved on wheels up or down a ramp of no more than 10° inclination.
- Above-ground installation: Use an elevator if the printer can fit inside it while remaining horizontal (without tilting the printer), and if it can support the weight. Otherwise, you may need a crane; contact your reseller for more information.

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**⚠ CAUTION:** The printer is heavy and can easily fall over. Moving it over a ramp or tilted floor increases the risk. Move it smoothly, maintain safety precautions for people in the vicinity, and secure it against overbalancing. Always move it parallel to its length.

**CAUTION:** If you need to move the printer on its wheels to its final position, move it down from the pallet but do not remove all the transport protections and locks.

**CAUTION:** Unloading and moving the printer and all system components is the customer's responsibility and not HP's. Failure to provide the required moving and lifting equipment could result in personal injury or printer damage during installation.

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## Load bearing

The load-bearing characteristics of the floor in the print-production area must be sufficient to withstand the weight of your printer. To calculate the load-bearing characteristics of the print-production floor, consult a structural engineer.

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Printer weight	750 kg (1653 lb)
Build unit weight (full)	150 kg (331 lb)

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**📝 NOTE:** Take into account that the build unit will be inserted inside the printer while printing. Therefore, you must consider the sum of both weights inside the same footprint when the build unit is inserted.

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## Floor surface

The floor surface should have the following characteristics:

- Flat and horizontal
- Solid, smooth, and level

HP recommends  $F_f > 20$  and  $F_l > 20$ , measured according to ASTM E1155M, to ensure that the floor is sufficiently flat and level. Otherwise the printer could malfunction.
- No holes or indentations
- No static electricity
- Easy to clean
- Durable
- Non-combustible
- Free from floor vibration: for example, floor vibration is likely near a railway station, press machine room, construction site, or heavy industry. If such vibration cannot be avoided, suitable floor preconditioning to mitigate vibration may be needed for optimal printer performance.



**NOTE:** The floor surface over which the build unit will move between the printer and the processing station should have the same characteristics: it should be horizontal, free of steps, holes, and indentations, smooth to avoid transport vibrations, and far from any obstacle that might cause accidental shocks. It is vital to avoid damage to the contents of the build unit, both when it is full of fresh material and also after printing. Move the build unit slowly and with care.

## Designing the optimal print-production area

You will need enough space to perform the following tasks:

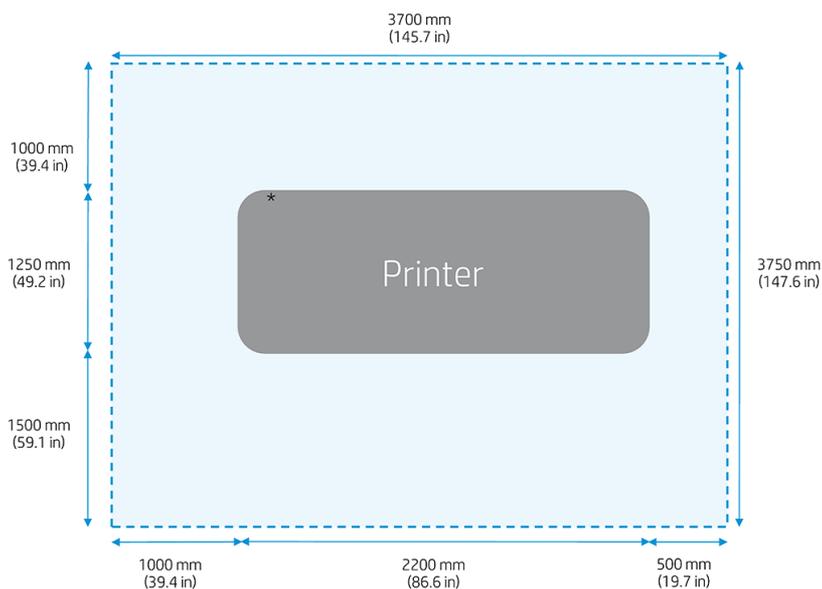
- Print
- Insert the build unit
- Service the printer and replace its components

The height of the room is recommended to be at least 2500 mm (98 in) to accommodate the printer and the processing station.

### Printer physical specifications

- Width: 2200 mm (87 in)
- Depth: 1250 mm (49 in) without front panel

When operating, the printer requires the following amount of space:



\* Location of the network and electrical connections

The height of the room should be at least 2500 mm (99 in).

The build unit measures 652 × 760 × 1050 mm.

## Environmental specifications

Temperature during installation	20–30°C (68–86°F)
Operating temperature	20–30°C (68–86°F)
Recommended operating temperature for best performance	20–30°C (68–86°F)

Storage and reshipping temperature	-25 to +55°C (-13 to +131°F)
Operating humidity	30–70% without condensation
Storage humidity	< 90% without condensation

## Notes

- The printer, build unit, and processing station should be kept at operating conditions if they contain material.
- The printer, build unit, and processing station should be kept indoors.
- If the printer or cartridges are moved from a cold location to a warm and humid location, water from the air could condense on the printer parts and cartridges, and could cause leaks and printer errors. In this case, HP recommends that you wait at least 4 hours before turning on the printer or installing the cartridges, to allow the water to evaporate. Check for condensation before turning on the printer.
- The build unit must remain in the same environmental conditions while moving to and from the printer. If it is exposed to different conditions at any time, the quality of its contents will be affected.
- The printer, build unit, processing station, and stored material should always be kept in the same environmental conditions; HP recommends keeping them in the same room.
- The room should be free from liquids and condensation.

## Ventilation

Ensure that the room in which the system is installed meets local environmental, health, and safety (EHS) guidelines and regulations.

Fresh air ventilation is needed to avoid exposure to health hazards, and to maintain comfort levels. For a more prescriptive approach to adequate ventilation, you could consult as guidance the latest edition of the ANSI/ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) document *Ventilation for Acceptable Indoor Air Quality*.

Adequate ventilation needs to be provided to ensure that potential airborne exposure to materials and agents is adequately controlled according to their Safety Data Sheets. In some cases, and depending on the material used with this equipment, local exhaust could be mandatory. Consult the Safety Data Sheets available at <http://www.hp.com/go/msds> to identify chemical ingredients of your consumables (material and agents), and adequate ventilation, in section 8 of the SDS “Appropriate engineering controls”.

Airborne materials can be readily identified and quantified by using established indoor air-quality testing protocols. HP performs these assessments during the development phase for all products.

HP testing shows that, during printer operation, the concentrations of airborne contaminants measured in the workspace are consistently well below key occupational exposure limits. This observation is based on exposure assessments that model very active productivity at customer facilities. Customers should recognize that actual levels in their facilities are dependent on workspace variables they control such as room size, ventilation performance, and duration of equipment use.

HP’s assessment concluded, based on the available scientific information, that airborne materials are not expected to present a health hazard when there is a minimum of 10 ACH (air changes per hour) of fresh air ventilation and a minimum room volume of 90 m<sup>3</sup>.

These specifications are valid for the following conditions: one HP printer, 20% of pack density, and 8 hours of printing exposition time a day. If there is more equipment in the room, or different conditions, the ventilation rate should be recalculated accordingly.

In addition to the workspace benefit provided by general room ventilation, intensive use of this printer system in some customers' facilities may necessitate the use of localized ventilation in order to provide a readily acceptable working environment. This installation of localized exhaust for a printer frequently enables the capture of airborne contaminants near their source of generation, and subsequently allows their efficient removal from the building through contained, and relatively low-volume air flow. A workspace health and safety professional can provide guidance on the design and use of this auxiliary ventilation equipment. See [Air conditioning on page 12](#).

## Air conditioning

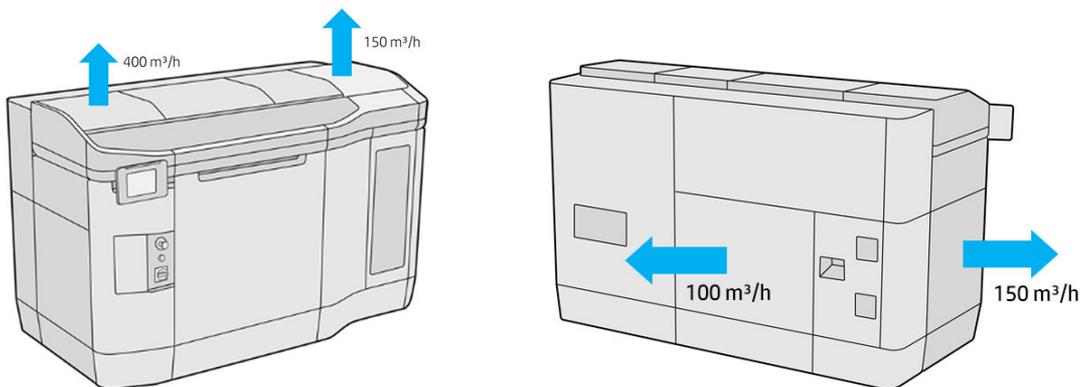
In addition to fresh air ventilation to avoid health hazards, consider also maintaining workplace ambient levels by assuring the climatic operating conditions specified in [Environmental specifications on page 10](#) to avoid operator discomfort and equipment malfunction.

Air conditioning in the work area should take into account that the equipment produces heat. Typically, the printer's power dissipation without local exhaust is in the range of 9 kW to 11 kW (30.7 kBTU/h to 37.5 kBTU/h). If local exhaust is installed, the power dissipation into the room decreases to 3 kW (10.2 kBTU/h).

Air conditioning should meet local environmental, health, and safety (EHS) guidelines and regulations.

 **NOTE:** The air conditioning units should not blow air directly onto the equipment.

 **NOTE:** If you intend to use an extractor hood, take into account the expected air flow around the printer (illustrated below).



## Local exhaust

As an alternative to air conditioning, you can install the HP Jet Fusion 3D Top Exhaust Kit (included with your printer) to remove hot air from the top of the printer and channel it outside the room. This accessory consists of two air exhaust points that are located at the left and right of the top cover and can be connected to your air extraction system. The air extraction system is customer-installed and should have the following characteristics:

- An inverted Y-connection to connect both air exhaust points to your extraction system, including the hoses to connect to the two exhaust points.
- Hoses of 200 mm (7.87 in) are supported.
- Connectors located 1435 mm from the floor. Calculate hose length taking into account the position of the connectors and leaving enough margin to allow opening the top cover.
- The air extraction system should be able to extract an airflow as follows:
  - Minimum: 550 m³/h (324 ft³/min)
  - Maximum: 650 m³/h (383 ft³/min)

The extracted air contains some material in suspension. If the air will be recirculated, consider equipping your extraction system with filters: grade M6/MERV 11–12 or finer recommended. Plan regular cleaning maintenance to avoid dust accumulation on external hoses and/or pipes.

 **NOTE:** If you install an extraction system connected to the exhausters, the diameter of the tubes should be 200 mm (7.87 in) on the left side, 120 mm (4.72 in) on the right side, and 230 mm (9.06 in) where they are together. An adapter is required, as the silencer kit output diameter is 200 mm (7.87 in).

## Printer electrical configuration

 **NOTE:** An electrician is required for the setup and configuration of the building 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.

The 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 of installation.

- Power Distribution Unit (PDU) with three-phase branch circuit breaker

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

 **NOTE:** The printer is not supplied with any power cable.

### Power distribution unit (PDU)

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.

### Circuit breaker (required)

The printer requires a circuit breaker, which 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 has built-in Residual-Current Circuit Breakers (RCCB), also known as Ground Fault Circuit Interrupters (GFCI), with 30 mA sensitivity. If local laws require an external RCCB or GFCI for earth fault protection, install a device with sensitivity of 100 mA or higher, with appropriate rated current for the supply configuration, and ensure that other protective devices for earth fault protection upstream from the one supplying the printer are always greater than the one selected for the printer.

 **WARNING!** Ensure that mains fault current is adequate for proper operation of the supplementary circuit breakers incorporated in the equipment (6 kA rated interrupting capacity).

 **WARNING!** Ensure that the printer's built-in Residual-Current Circuit Breakers (RCCB) or Ground Fault Circuit Interrupters (GFCI) operate in the case of a current leakage fault to the product chassis, even when an isolation device (such as an isolating transformer) is used to supply power to the printer.

### Power specifications

 **NOTE:** The printer supports two different electrical configurations. Select the right configuration based on the three-phase line-to-line voltage supplied by the PDU. Refer to the appropriate table of specifications according to the selected configuration.

#### Configuration 1: 380–415 V line-to-line three-phase configuration

##### Printer specifications

Number of power lines	3 lines + N + PE
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### Printer specifications (continued)

Input voltage (line to line)	380–415 V~ (±10%)
Input voltage (line to neutral)	220–240 V~ (±10%)
Input frequency	50/60 Hz
Power consumption (typical)	9–11 kW
Maximum load current (per phase)	30 A (up to 35 A repetitive peak current)

### Branch circuit breaker specifications

4 poles, 32/40 A
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### Power cable specifications

Configuration	3 lines + N + PE
Minimum cross-sectional area	6 mm <sup>2</sup> or 10 AWG
Terminals	Ferrule terminals, except the PE terminal, which uses the M8 ring type
External diameter range	18.0–25.0 mm

## Configuration 2: 200–240 V line-to-line three-phase configuration

### Printer specifications

Number of power wires	3 lines + PE
Input voltage (line to line)	200–240V (±10%)
Input frequency	50/60 Hz
Power consumption (typical)	9–11 kW
Maximum load current (per phase)	48 A (up to 60 A repetitive peak current)

### Branch circuit breaker specifications

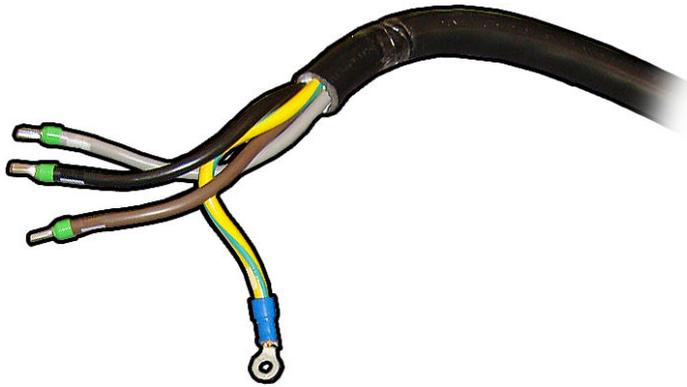
3 poles, 50/60 A
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### Power cable specifications

Configuration	3 lines + PE
Minimum cross-sectional area	10 mm <sup>2</sup> or 6 AWG
Terminals	Ferrule terminals, except the PE terminal, which uses the M8 ring type
External diameter range	18.0–25.0 mm

## Power cables

No power cable is provided with the printer. The cables that you use must meet the minimum specifications for the chosen configuration explained for each configuration, and must follow local laws. The example below is for configuration 2.



PE connections for mains power should be made through an M8 stub.

## Powerline disturbances

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, which are common to production printing environments. Lighting, 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 micro-second pulses can disrupt system operation.
- If the power line supplying the installation site is a public low-voltage line shared with other users, the power line impedance  $Z_{max}$  must be less than  $129\text{ m}\Omega$ , to comply with European standard EN/IEC 61000-3-11. If other users on the same power line report any flickering of incandescent light bulbs, contact your electricity supplier to verify that the power network has an impedance lower than that specified above.
- You are recommended to include overvoltage (OVP) and transient protection on 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.

If you have power quality issues when taking power from the grid, an external power supply such as the MX45 can be used in order to meet the requirements of your configuration.

## Grounding

The printer must be connected to a good-quality, dedicated ground line in order to avoid electrical risk. Note your obligation to comply with the National Electrotechnical Code (NEC) in the country of installation.

The following grounding tasks must be fulfilled to meet the site preparation requirements:

- Grounding wires should be insulated and at least equal in size to the phase conductors.
- Ground impedance must be less than  $0.5\ \Omega$ .
- The installation of a single point and dedicated ground.
- Power stabilizer equipment that is supplied by three uninterrupted phase wires and one uninterrupted copper ground wire from the main building service panel. These should run in the same conduit and should be at least equal in size to the phase wires.

# 3 Site preparation requirements for the processing station

## Physical space requirements

### Unloading route

The route between the unloading area of the processing station and the installation site, including any corridors and doorways through which the station must be transported, is important to proper site preparation and must be planned before the arrival of the station. This pathway must be clear when the station arrives.

**⚠ CAUTION:** For the 4210, check the measurements of the material supply that you are going to use, and bear in mind where you are going to use it.

#### Processing station physical specifications with packaging

Width with packaging	2384 mm (93.86 in)
Depth with packaging	1176 mm (46.30 in)
Height with packaging	2181 mm (85.87 in)
Weight with packaging	550 kg (1213 lb)

For the specifications without packaging, see [Load bearing on page 17](#) and [Designing the optimal print-production area on page 18](#).

#### Doorway specifications

Minimum doorway width	1196 mm (47.09 in) with packaging
	940 mm (37.01 in) before assembling the material cartridge support
	800 mm (31.50 in) without packaging and after disassembling some parts
Minimum doorway height	2201 mm (86.65 in) with packaging
	2000 mm (78.74 in) as removed from the packaging before starting installation
	2420 mm (95.28 in) without packaging and mixer upwards
Minimum corridor width with right-angled bend	1750 mm (68.90 in) with packaging
Length	2388 mm (94.02 in) with packaging
	2175 mm (85.63 in) without packaging

The processing station can be moved on the pallet up or down a ramp of no more than 10° inclination.

## Unpacking and moving the processing station

You are strongly recommended to unpack the processing station where it will be used, or as close to that location as possible.

The space required for assembly is 5.5 × 3 m (217 × 118 in).

## Moving equipment

If you are using the external tank and/or material loading tank, you will need a trolley to move it.

If you need to move the processing station after unpacking, take into account the following considerations:

- Ground-floor installation: The processing station can be moved on wheels up or down a ramp of no more than 10° inclination.



**NOTE:** Remove the material-cartridge platform before moving the processing station up or down a ramp.

- Above-ground installation: Use an elevator if the processing station can fit inside it while remaining horizontal (without tilting the processing station), and if it can support the processing station's weight. Otherwise, you may need a crane; contact your reseller for more information.



**CAUTION:** The processing station is heavy and can easily fall over. Moving it over a ramp or tilted floor increases the risk. Move it smoothly, maintain safety precautions for people in the vicinity, and secure it against overbalancing. Always move it parallel to its length.

**CAUTION:** If you need to move the processing station on its wheels to its final position, move it down from the pallet but do not remove all the transport protections and locks.

**CAUTION:** Unloading and moving the processing station and all system components is the customer's responsibility and not HP's. Failure to provide the required moving and lifting equipment could result in personal injury or damage to the station during installation.

## Load bearing

The load-bearing characteristics of the floor in the print-production area must be sufficient to withstand the weight of your processing station. To calculate the load-bearing characteristics of the print-production floor, consult a structural engineer.

Processing station weight	470 kg (1036 lb)
3200 processing station weight (loaded)	830 kg (1830 lb), including the fully loaded processing station with storage tank and mixer, two 13 kg (29 lb) material cartridges, and a full external tank weighing 200 kg (441 lb)
4200/4210 processing station weight (loaded)	1070 kg (2359 lb), including the fully loaded processing station with storage tank and mixer, one 300 L material cartridge, and a full external tank weighing 200 kg (441 lb)
Build unit weight (full)	185 kg (408 lb)
Build unit weight (empty)	135 kg (298 lb)
Material loading tank (empty)	25 kg (55 lb)



**CAUTION:** Take into account the weight of the material supply you intend to use.



**NOTE:** Take into account that the build unit will be inserted inside the processing station while unpacking and loading material. Therefore, you must consider the sum of both weights inside the same footprint when the build unit is inserted.

 **NOTE:** If you follow the recommendation to keep the printer, the processing station, and the build unit in the same room, then the load-bearing characteristics of the floor must be sufficient withstand the weight of all three devices when loaded.

---

## Floor surface

The floor surface should have the following characteristics:

- Flat and horizontal
  - Solid, smooth, and level
- HP recommends  $F_f > 20$  and  $F_l > 20$ , measured according to ASTM E1155M, to ensure that the floor is sufficiently flat and level. Otherwise the processing station could malfunction.
- No holes or indentations
  - Static-free surface
  - Easy to clean
  - Durable
  - Non-combustible
  - Free from floor vibration: for example, floor vibration is likely near a railway station, press machine room, construction site, or heavy industry. If such vibration cannot be avoided, suitable floor preconditioning to mitigate vibration may be needed for optimal performance.

 **NOTE:** The floor surface over which the build unit will move between the printer and the processing station should have the same characteristics: it should be horizontal, free of steps, holes, and indentations, smooth to avoid transport vibrations, and far from any obstacle that might cause accidental shocks. It is vital to avoid damage to the contents of the build unit, both when it is full of fresh material and also after printing. Move the build unit slowly and with care.

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## Designing the optimal print-production area

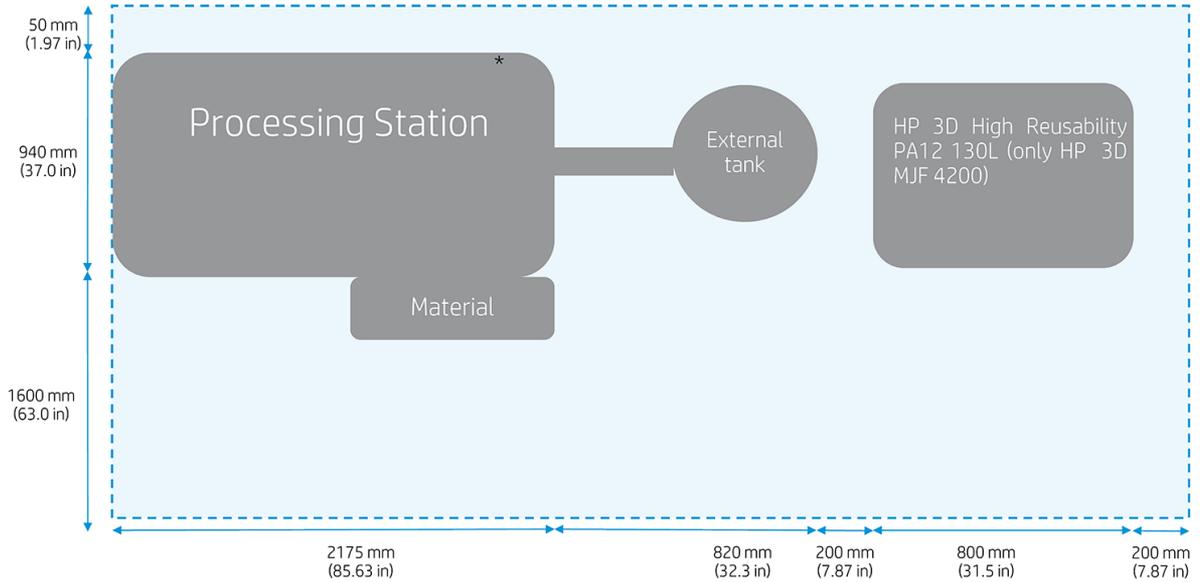
Your processing station requires enough space to perform the following tasks:

- Insert the build unit
- Load material
- Unpack
- Service the processing station and replace its components

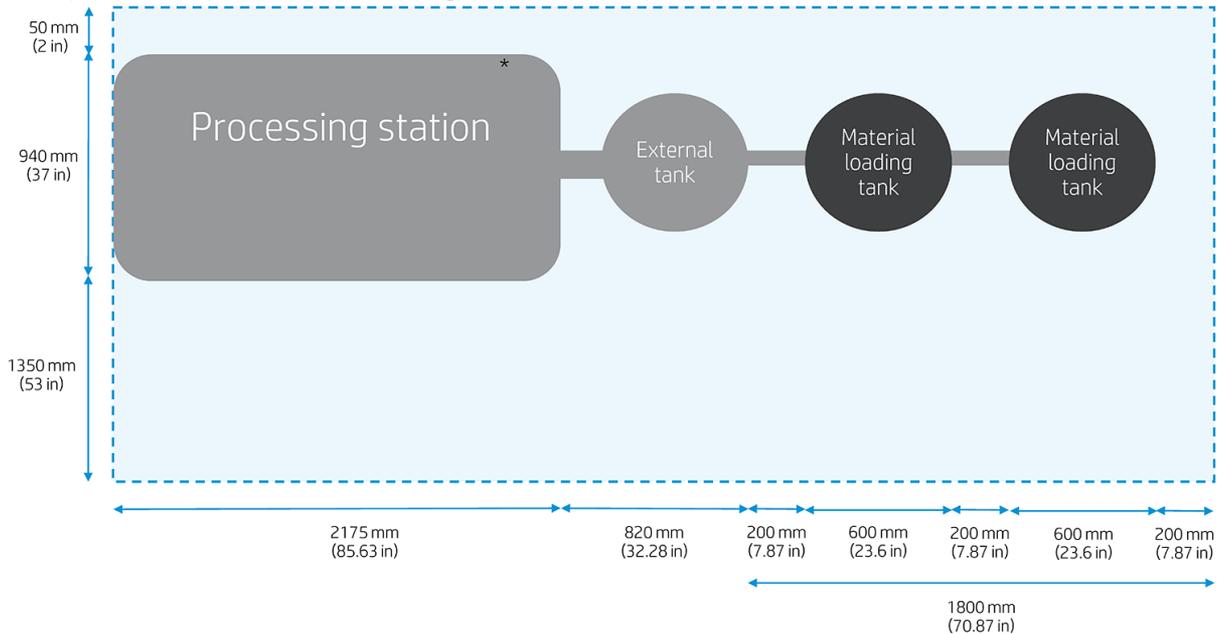
The height of the processing station is 2000 mm (79 in) when removed from the packaging, and 2420 mm (95 in) when fully installed. The height of the room should be at least 2500 mm (99 in).

When operating, the processing station requires the following amount of space:

Print-production area with external storage tank



Print-production area with external storage tanks (4210 only)



\* Location of the compressed air and electrical connections

 **NOTE:** The external storage tank is optional.

 **NOTE:** You may need more space for equipment to manipulate tanks and supplies.

## Environmental specifications

Temperature during installation	20–30°C (68–86°F)
Operating temperature	20–30°C (68–86°F)
Storage and reshipping temperature	–25 to +55°C (–13 to +131°F)
Operating humidity	30–70% without condensation
Storage humidity	< 90% without condensation

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 **CAUTION:** Check the operating and storage conditions for the material, as they may be different from those for the equipment.

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## Notes

- The printer, build unit, and processing station should be kept indoors.
- If the processing station or cartridges are moved from a cold location to a warm and humid location, water from the air could condense on the processing station parts and cartridges, and could cause leaks and errors. In this case, HP recommends that you wait at least 4 hours before turning on the processing station or installing the cartridges, to allow the water to evaporate. Check for condensation before turning on the system.
- The material must acclimatize to the environmental conditions of the room for at least two days.
- The build unit must remain in the same environmental conditions while moving to and from the printer and the processing station. If it is exposed to different conditions at any time, the quality of its contents will be affected.
- The printer, build unit, processing station, and stored material should always be kept in the same environmental conditions; HP recommends keeping them in the same room.
- The room should be free from liquids and condensation.

## Ventilation

Fresh air ventilation is needed to maintain comfort levels. For a more prescriptive approach to adequate ventilation, you could refer to the latest edition of the ANSI/ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) document *Ventilation for Acceptable Indoor Air Quality*.

Adequate ventilation needs to be provided to ensure that potential airborne exposure to materials is adequately controlled according to their Safety Data Sheets. Consult the Safety Data Sheets available at <http://www.hp.com/go/msds> to identify chemical ingredients of your materials.

Ventilation should meet local environmental, health, and safety (EHS) guidelines and regulations.

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 **NOTE:** The ventilation units should not blow air directly onto the equipment.

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## Air conditioning

As with all equipment installations, to maintain ambient comfort levels, air conditioning in the work area should take into account that the equipment produces heat. Typically, the processing station's power dissipation is 2.6 kW (8.8 kBTU/h).

Air conditioning should meet local environmental, health, and safety (EHS) guidelines and regulations.

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 **NOTE:** The air conditioning units should not blow air directly onto the equipment.

---

## Processing station electrical configuration

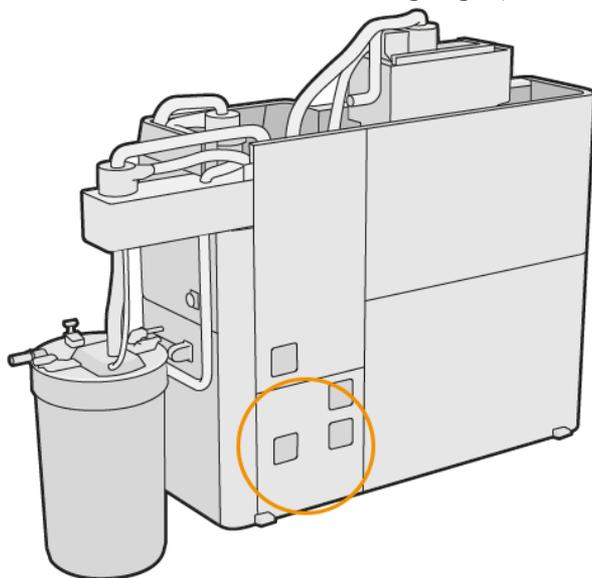
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 **NOTE:** An electrician is required for the setup and configuration of the building electrical system used to power the processing station, and also for the installation of the processing station. Make sure that your electrician is appropriately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

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The processing station 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 of installation.

Power Distribution Unit (PDU) including single-phase branch circuit breaker



The circle indicates the location of the compressed air and electrical connections.

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

 **NOTE:** The processing station is not supplied with any power cable.

## Power distribution unit (PDU)

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

## Circuit breakers (required)

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

The processing station requires one or two branch circuit breakers, depending on the installation.

The processing station has built-in Residual-Current Circuit Breakers (RCCB), also known as Ground Fault Circuit Interrupters (GFCI), with 30 mA sensitivity. If local laws require an external RCCB or GFCI for earth fault protection, install a device with sensitivity of 100 mA or higher, with appropriate rated current for the supply configuration, and ensure that other protective devices for earth fault protection upstream from the one supplying the processing station are always greater than the one selected for the processing station.

 **WARNING!** Ensure that mains fault current is adequate for proper operation of the supplementary circuit breakers incorporated in the equipment (5 kA rated interrupting capacity).

 **WARNING!** Ensure that the processing station's built-in Residual-Current Circuit Breakers (RCCB) or Ground Fault Circuit Interrupters (GFCI) operate in the case of a current leakage fault to the product chassis, even when an isolation device (such as an isolating transformer) is used to supply power to the processing station.

## Power specifications

### Configuration 1: 220–240 V line-to-neutral one-phase configuration

#### Printer specifications

Number of power lines	1 line + N + PE
Input voltage (line to neutral)	220–240V (±10%)

### Printer specifications (continued)

Input frequency	50 Hz
Power consumption (typical)	2.6 kW
Maximum load current (per phase)	14 A

### Branch circuit breaker specifications

2 poles, 20 A, type J
-----------------------

### Power cable specifications

Configuration	2 lines + PE
Cross-sectional area	4 mm <sup>2</sup> or 12 AWG
Terminals	Ferrule terminals, except the PE terminal, which uses the M6 ring type
External diameter range	5.0–11.0 mm



**NOTE:** The main disconnect and branch protection should be provided by the installer.

## Configuration 2: 200–240 V line-to-line one-phase configuration

### Printer specifications

Number of power lines	2 lines + PE
Input voltage (line to line)	200–240 V~ (±10%)
Input frequency	50/60 Hz
Power consumption (typical)	2.6 kW
Maximum load current (per phase)	19 A

### Branch circuit breaker specifications

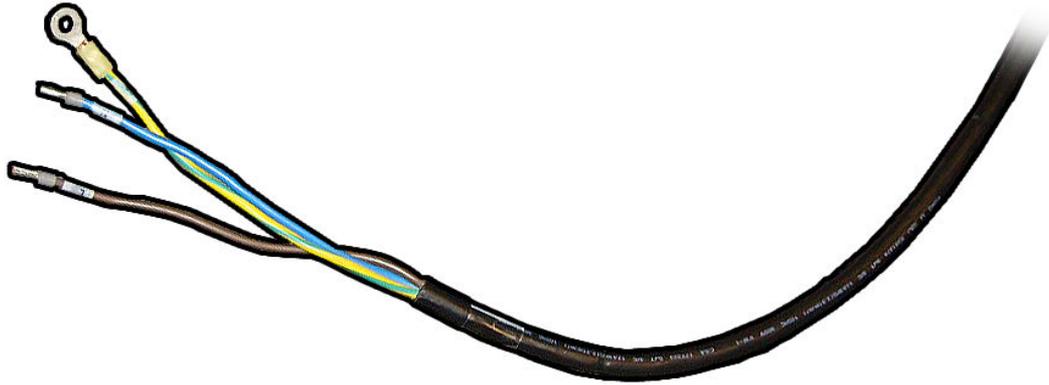
2 poles, 25 A, type J
-----------------------

### Power cable specifications

Configuration	2 lines + PE
Cross-sectional area	4 mm <sup>2</sup> or 12 AWG
Terminals	Ferrule terminals, except the PE terminal, which uses the M6 ring type
External diameter range	5.0–11.0 mm

## Power cables

No power cable is provided with the processing station. The cables that you use must meet the minimum specifications for the chosen configuration explained for each configuration.



PE connections for mains power should be made through an M6 stub.

## Powerline disturbances

Reliable operation of your processing station depends on the availability of relatively noise-free AC power.

- In order to ensure optimum performance and reliability, your processing station should be protected from variations in line voltage, which are common to production printing environments. Lighting, 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 micro-second pulses can disrupt system operation.
- The processing station is professional equipment with a total rated power greater than 1 kW, therefore it conforms with the EN 61000-3-2 standard.
- You are recommended to include overvoltage (OVP) and transient protection on the power supply to the processing station.
- 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 processing station.

## Grounding

The processing station must be connected to a good-quality, dedicated ground line in order to avoid electrical risk. Note your obligation to comply with the National Electrotechnical Code (NEC) in the country of installation.

The following grounding tasks must be fulfilled to meet the site preparation requirements:

- Grounding wires should be insulated and at least equal in size to the phase conductors.
- Ground impedance must be less than 0.5  $\Omega$ .
- The installation of a single point and dedicated ground.
- Power stabilizer equipment that is supplied by three uninterrupted phase wires and one uninterrupted copper ground wire from the main building service panel. These should run in the same conduit and should be at least equal in size to the phase wires.

## Compressed air

An air compressor or pressurized air line is required, and must be provided by the customer. It should provide an air pressure of at least 6 bar, which should be stable: within  $\pm 0.2$  bar.

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 **TIP:** HP recommends that you use an air compressor with a pressure gauge that measures in bars.

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A tube of 6 mm diameter should be connected from the air supply to the processing station.

The minimum air quality should be ISO8573-1:2010 Class 4.4.3.

Required air flow: 20 liters per minute as minimum flow available.

## 4 Site preparation checklist

Complete the following address information, contact information, and checklist. If a checklist item cannot be completed or is unnecessary, add a short explanation under 'Comments'. Once you have completed the checklist, sign it and send it to your reseller or HP sales representative a minimum of two weeks before the delivery date.



**NOTE:** Some checklist items are marked '(Required)', which means that you cannot proceed with installation until you have checked the 'Yes' box.

When you sign this document, you are confirming that the site has been prepared according to the specifications provided in the site preparation guide, that all checklist items have been completed, and that the site is prepared and ready for delivery and installation.

### Address information

Company name	Postal code
Street address	Telephone
City	Fax
Country	Email

### Contact persons

	Name	Telephone	Email
Company engineer or technician			
System administrator			
Operators to be trained in the use and maintenance of the system			

General access & equipment unloading	Yes	No	Comments
Is there an easily accessible unloading area, with sufficient space to unload and maneuver the equipment?	<input type="checkbox"/>	<input type="checkbox"/>	
Has the route to the installation area been checked to meet all requirements (height, width, and clearance of ceilings, doorways, ramps, and corridors) and is the conveyance route clear?	<input type="checkbox"/>	<input type="checkbox"/>	
Have specialist movers been contracted to unload and move the equipment on the date required?	<input type="checkbox"/>	<input type="checkbox"/>	
Are the specialist movers aware of the specifications provided in this document?	<input type="checkbox"/>	<input type="checkbox"/>	

General access & equipment unloading	Yes	No	Comments
Is there a pallet jack available to help position the crate?	<input type="checkbox"/>	<input type="checkbox"/>	
Will you install the printer/processing station on a second level or higher? If so, is there a suitable crane contracted for installation? Are the appropriate crane attachments available?	<input type="checkbox"/>	<input type="checkbox"/>	
Will the operator be available for the full amount of time required for the installation training (2 days)?	<input type="checkbox"/>	<input type="checkbox"/>	

Room layout and flooring	Yes	No	Comments
Is there sufficient space around the equipment?	<input type="checkbox"/>	<input type="checkbox"/>	
Has all room construction and painting been completed?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the floor load-bearing capacity meet the specifications in the site preparation guide?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the floor surface meet the specifications in the site preparation guide? If special reinforcements are necessary, are they completed?	<input type="checkbox"/>	<input type="checkbox"/>	
Is the floor surface free from static electricity?	<input type="checkbox"/>		(Required)

Safety requirements	Yes	No	Comments
Is there an emergency exit in the print production area, with easy access and free from any obstruction?	<input type="checkbox"/>	<input type="checkbox"/>	
Have the two fire extinguishers been fitted in the print production and storage areas? Is the print production fire extinguisher rated for electrical fire?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the area meet the Restricted Access Location requirements in the zone surrounding the system?	<input type="checkbox"/>		(Required)
Do the users who operate the system have appropriate technical training and experience necessary to be aware of the hazards to which they may be exposed in performing a task and to take appropriate measures to minimize the risks?	<input type="checkbox"/>		(Required)
Does the room meet the minimal ventilation (ACHs) standard required by local regulations and/or HP suggestion?	<input type="checkbox"/>		(Required)
Will printer operations be supervised at all times as recommended by HP in the user guide?	<input type="checkbox"/>	<input type="checkbox"/>	
If printer operations will not be supervised at all times, do you, as the Customer, acknowledge that you have read and understood HP's safety recommendations in the user guide?	<input type="checkbox"/>		(Required)
Is the equipment installed in a non-hazardous location or non-ATEX-classified zone?	<input type="checkbox"/>		(Required)
Do you have an explosion-protected vacuum cleaner compatible with the material that you intend to use?	<input type="checkbox"/>		(Required)
Is the equipment away from other equipment that could create a combustible dust cloud or metallic dust during operation?	<input type="checkbox"/>		(Required)
Is the equipment away from ignition sources (open flames, sparks, heat, and so on) such as CNC, milling, cutting machines, and polishers?	<input type="checkbox"/>		(Required)
Is your postprocessing equipment (such as sand blasting), if any, suitable for combustible dust?	<input type="checkbox"/>		(Required)
<b>4210 processing station only:</b>			

Safety requirements	Yes	No	Comments
Do you have an explosion-protected bulk discharging system and drum rotator suitable for combustible dust and compatible with the material that you intend to use?	<input type="checkbox"/>		(Required)
Have you kept an area of at least 2 m (79 in) around the bulk discharging system clear of electric/electronic devices and any sources of ignition ?	<input type="checkbox"/>		(Required)
Are you using properly grounded metallic pipes for material transport?	<input type="checkbox"/>		(Required)
Are you using flexible hoses that are suitable for transporting combustible dust and properly grounded at both edges?	<input type="checkbox"/>		(Required)
Do you have static earthing clamps to connect to material loading tanks?	<input type="checkbox"/>		(Required)

Electrical installation	Yes	No	Comments
Has the site been prepared to supply power to the printer? Configuration 1 branch circuit breaker: 4 poles, 32/40 A Configuration 2 branch circuit breaker: 3 poles, 50/60 A	<input type="checkbox"/>		(Required)
Has the site been prepared to supply power to the processing station? Configuration 1 branch circuit breaker: 2 poles, 25 A, type J Configuration 2 branch circuit breaker: 2 poles, 20 A, type J	<input type="checkbox"/>		(Required)
Is the chosen power system within its nominal range?	<input type="checkbox"/>		(Required)
Is the grounding conductor properly installed, as shown in the site preparation guide?	<input type="checkbox"/>		(Required)
Have you booked the services of a certified electrician for the day of installation?	<input type="checkbox"/>		(Required)
Is the electrician aware of all requirements and specifications highlighted in this document?	<input type="checkbox"/>		(Required)
Is the Power Distribution Unit (PDU) correctly installed?	<input type="checkbox"/>		(Required)
Are Residual-Current Circuit Breakers (RCCB), also known as Ground Fault Circuit Interrupters (GFCI), required by local laws? if so, have they a sensitivity of 100 mA or higher?	<input type="checkbox"/>	<input type="checkbox"/>	

Electrical configuration	Yes	No	Comments
No power cords are supplied with the printer/processing station; does the electrician understand that power cord(s) must be provided according to equipment specifications and local laws?	<input type="checkbox"/>		(Required)
If local regulations specify that you must use electrical plugs to connect the printer/processing station to the power supply, does the electrician have the required plugs ready for installation?	<input type="checkbox"/>		(Required)

Networking requirements	Yes	No	Comments
Have network connections been supplied?	<input type="checkbox"/>		(Required)
Do you have a LAN cable long enough to connect the printer and the processing station to the network?	<input type="checkbox"/>		(Required)

Networking requirements	Yes	No	Comments
Do you have a computer in which we can install the HP SmartStream Command Center?	<input type="checkbox"/>		(Required)
Will the above computer be permanently connected to the Internet and permanently powered on?	<input type="checkbox"/>		(Required)
Has the IT department configured the firewall to allow the Command Center server software access to the required connections to HP Cloud and ports?	<input type="checkbox"/>		(Required)
Can the IT department assign a static IP address or hostname to the printer and processing station?	<input type="checkbox"/>		(Required)
Do you have non-HP software that is compatible with the printer already installed in a computer; or, alternatively, do you have a computer in which we can install the HP SmartStream Build Manager?	<input type="checkbox"/>		(Required)
Will a network specialist be available during the printer installation?	<input type="checkbox"/>		(Required)

Equipment preparation	Yes	No	Comments
Is the air compressor or pressurized air line ready for the day installation?	<input type="checkbox"/>		(Required)
Is a bead-blasting machine available with the specifications explained above?	<input type="checkbox"/>		(Required)
Have the correct supplies been ordered for delivery on or before the date of the system's installation?	<input type="checkbox"/>		(Required)

Environmental requirements	Yes	No	Comments
Have the temperature and humidity requirements been satisfactorily met in the print production area, and is there adequate air conditioning?	<input type="checkbox"/>		(Required)
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"/>	
Have you met or exceeded all the requirements specified in the site preparation guide?	<input type="checkbox"/>		(Required)

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Date of site preparation completion

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Site preparation guide edition number or copyright date

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Customer signature

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