

envisionTEC

Technical Guide

D4K Pro: Site Preparation

The instructions below show how to put together the physical space and computer requirements for the D4K Pro and its accessories. This document must be fulfilled before the printer is un-crated. Please keep on hand for reference.

Fig. 1 D4K PRO FRONT VIEW



The printer must be installed on a surface that can comfortably hold over 123.5 pounds (56 kg). Confirm that the destination meets this requirement before unpacking the printer.

Make sure the D4K Pro is placed on a sturdy surface. Avoid locations with:

- | Heavy foot traffic
- | Nearby construction
- | Vibrations
- | Uneven tables
- | Soft-topped tables

Avoid Sunlight and Water Sources

Do not expose the printer to any direct sunlight or UV radiation. Keep the D4K Pro away from windows whenever possible. Windows invite direct sun exposure and temperature fluctuation.

Keep the printer away from water sources, such as sinks, tubs, and wash stations.

Refer to the DLP Local Light Sources Technical Guide for information on protecting your printing workspace from potentially damaging effects caused by local lighting. Contact EnvisionTEC support, or an authorized distributor, to obtain the technical guide.

Temperature

Ensure that the room temperature remains within the following range:

- | Minimum temperature of 73° F (23° C)
- | Maximum temperature of 86° F (30° C)

Follow the temperature instructions for each material that is being used. These instructions can be found -

- | On the label of the material bottle
- | Extended instructions are located in the best practices guide for that material

The ideal working temperature is 73° F or 23° C.

Air Quality Considerations

Use the D4K Pro in a calm atmosphere. High levels of impurities in the air may find their way into printed models. Maintain a space with little or limited:

- | Humidity: Must be below 60%
- | Dust
- | Smoke
- | Steam

Distance the printer from climate control systems. Direct airflow onto or within the printer's footprint are not allowed. This includes:

- | Air conditioning (window, wall, or otherwise). The air conditioner must be at least 10' (3 meters) from the printer.
- | Fans (ceiling, tabletop, or similar)
- | Heaters (space heaters or otherwise)

Heat near or created by the printer must be allowed to dissipate. Humidity will be especially detrimental to casting workflows.

Footprint

The physical dimensions of the D4K Pro are -

- | 19.7 inches (50 cm) across
- | 22.4 inches (57 cm) deep
- | 23.2 inches (59 cm) in height, including adjustable feet

Electrical Requirements

All electrical requirements must be met to ensure the most stable setup. Use a battery backup whenever possible.

D4K Pro - 19V DC / 4.73A

With Adapter (included) - 100~240V AC, 1.5A, 50Hz/60Hz

Plug the printer into a separate surge protector or battery backup. If your electrical line is prone to spikes and dips, you will need to use a UPS battery backup system for the printer with a switch changing time of less than 1 millisecond.

Do not plug any additional equipment into the power circuit.

The warranty does not cover damage caused by brown outs, black outs, or electrical surges. EnvisionTEC offers a battery backup for purchase that meets these requirements.

Ensure there is a sufficient clean electrical socket that fluctuates no more than +/-3% from its baseline.

Creating a Workspace

Printing Zone

The D4K Pro requires a minimum amount of space for operation, maintenance, and heat dissipation.

- A Minimum of **4 inches / 10.16 cm** behind the printer
- A Minimum of **4 inches / 10.16 cm** on the right and left sides of the printer
- A minimum of **28 inches / 71.12 cm** above the table-top

This minimum distance allows:

- Full operation of the printer
- Access to the power, Ethernet, and USB ports
- Space for heat dissipation
- Space for maintenance

Processing Zone

This space is located in a separate space from the printing zone. The **PWA 2000** (parts washer) and the 99% IPA, tools, and air system will be in this space. If the PWA 2000 was not purchased, two or more containers for the 99% IPA can be used instead.

- Situate the PWA2000 in a well ventilated place away from sources of heat with at least **8 inches (20 cm) of space between the parts washer and any walls, curtains, or other obstructions.**

Refer to the PWA 2000 User Manual for more detailed information. This technical guide is located on the USB drive that ships with every D4K Pro printer. The guide is also available to download by contacting EnvisionTEC support, or an authorized distributor.

After models are cleaned, they are post-cured. The **PCA 2000** is the recommended curing unit for the D4K Pro.

- Situate the PCA 2000 in a well ventilated place away from water sources, and sources of heat. Leave at least **8 inches (20 cm) of space between the curing unit and any walls, curtains, or other obstructions.** To avoid damaging the apparatus, do not obstruct in any way the cooling ducts, their openings to the outside, the fans on the rear panel, and fan on the base of the PCA 2000.

Refer to the PCA 2000 User Manual for more detailed information. This technical guide is located on the USB drive that ships with every D4K Pro printer. The guide is also available to download by contacting EnvisionTEC support, or an authorized distributor.

System Requirements

Every D4K Pro printer includes a USB drive with complimentary computer software that processes models digitally for 3D printing. The software is called Envision One RP. This software is required for printing.

The software works with Windows operating systems exclusively.

Envision One RP

- Operating System:** Windows 10 or higher
- RAM:** ≥ 8 GB RAM
- Hard Drive:** 400 MB of free space
- CPU:** Multi-Core Processor e.g. Core i5, ≥ 3 GHz, ≥ 6 MB Cache
- Graphics:** Dedicated 3D graphics card with ≥ 1 GB memory and OpenGL 4.3 support and higher. It is recommended to use Nvidia graphics card
- Network:** Gigabit Ethernet

The D4K Pro does not require a dedicated server. It can be connected wirelessly, hard-wired into the network, or directly connected to a computer.

Packaging Storage

The D4K Pro will arrive in cardboard packaging on a wooden pallet. The owner of the printer is responsible for keeping the shipping packaging for warranty purposes. Do not throw away shipping packaging. It is important to mark out a space for storage before the printer arrives. The packaging is needed for -

- Relocation of the printer
- To ship the printer back to factory for upgrades or service needs

Once the Printer is Removed from the Packaging

The fully packaged printer weighs 167.54 pounds (76 kg) and will require a dolly to move. The cardboard packaging consists of three main parts - an outer cardboard box, an inner cardboard box, and foam padding. This should be stored fully assembled. When it is time to move the packaging into storage, reinsert the inner box into the outer box, then add the foam padding. Break down any additional boxes that arrived with the printer, fold them, and insert them into the inner box. Close the inner and outer boxes using the accompanying cardboard lids.

- Place the package in storage with a *“Please do not discard, this box accompanies 3D printer”* sign attached to the sides.

Accessories

A second box may arrive containing the curing unit and parts washer if purchased. To store, remove the padding and place into the printer's inner box along side of the foam padding. Cut the tape, flatten the cardboard, and set in or near the printer's box for safe keeping.

Shipping Specs

General weight and dimensions of the delivery are listed below. These are estimations and will vary with each shipment. Plan to move the box and / or printer with at least two individuals to decrease the chance of personal injury.

Box 1:

- Printer Box:** 167.54 lbs (76 kg) **Dimensions:** 31.5 x 31.5 x 36.6 inches (80 x 80 x 93 cm)
- Printer:** 123.5 lbs (56 kg) **Dimensions:** 19.7 x 22.5 x 24 inches (50 x 57 x 61 cm)
- Starter Kit:** 1.5 lbs. **Dimensions:** 10.75 x 7.25 x 6.5 inches (25.4 x 17.78 x 15.24 cm)

Box 2 (Optional):

- PCA 2000 (curing apparatus):** 23 lbs. **Dimensions:** 14.33 x 15.9 x 12.55 inches (36.4 x 40.4 x 31.9)
- PWA 2000 (parts washer):** 14 lbs. **Dimensions:** 12.6 x 13 x 9.69 inches (32 x 33 x 24.6 cm)

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