



LAB Z

FOR ALL DEMANDS

Suitable for both office and production use, it can handle any type of filament for prototyping and continuous production. **You can configure the printer to your needs**, choosing from: 4 different formats, one or more axes and one or more extruders.

Unique. LAB Z combines a solid construction with an integrated Z-axis to ensure precise movements and unprecedented printing speed. The automatic positioning and handling capabilities allow you to print sequential objects and mass production without worrying about plate layout. The system automatically optimises part positioning, efficiently manages the print queue and ensures consistent quality.

Extruder. Direct drive with force multiplier requires the use of 1.75 mm and 3 mm filaments with nozzles from 0.4 mm to 1.4 mm, with pellets with nozzles from 0.4 mm to 5 mm. Thanks to the quick couplings, extruder replacement is very fast.

Protect your investment. Whichever 3D printer model you purchase from 3DPRN, you can later upgrade to a higher model and/or the latest version.

Unbreakable. 3DPRN printers use extremely robust mechanics. They are built with aluminium and steel profiles, aluminium panels, aluminium composite and equipped with high-performance mechanical drives. They use professional, industrial-quality linear guides, guaranteeing unrivalled precision, reliability and durability.

Closed. Closed 3DPRN printers are characterised by an active, insulated and controlled hot chamber.

Smart HMI with Display Touch Screen. Proprietary embedded control system with 7" touch screen for advanced 3D printer management.



LAB Z

MAIN FUNCTIONALITIES

MultiX Each axis can be equipped with an extruder, a dispenser, a spindle with automatic tool change or other automatism, expanding the application possibilities (patent pending).

@Mill - Advanced 2.5D and 3D milling system

The integration of a milling machine with automatic tool changer, coupled with a patented technology that combines additive and subtractive processes in a single 3D printer, enables superior dimensional accuracy and a flawless finish. This advanced solution guarantees a significant improvement in print detail and final accuracy, delivering professional high-quality results in a single process (patent pending).

Two Stage Extruder Thanks to the two-stage extrusion system, the filament is heated at two different temperatures, optimising flow speed and improving control over the viscosity of the material, thus ensuring greater mechanical strength of the object.

Advanced Kinematics with Position Control

We have introduced new advanced kinematics that make the 3D printer up to 4 times faster than in the past. This system allows total control over movements, so in the event of axis slippage, the system will instantly recover its nominal position to continue printing correctly. To optimise processing at certain speeds, the system is supported by proprietary 3DPRN software, which is constantly updated. The system speeds reach 400mm/sec while the maximum accelerations reach 10,000mm/sec. In advanced kinematics, it is also possible to predict centesimal position mapping with magnetic rows.

Magnetic Rows Calibration system for more accurate objects.

@3DPRN-LOAD Thanks to the 3DPRN-LOAD sensor, it is possible to independently monitor the Z0 and flatness calibrations before each print (patent pending).

3DPRN-Weight System that automatically checks the availability of material and pauses if the coil becomes tangled.

Smart Power Integrated UPS management system. In the event of a power failure, the job is interrupted preventively during a filling phase and then resumed from the last point, in order not to compromise print quality.

@Precise Z Feature that eliminates approximations in positions and dimensions along the Z axis. Precise Z, improves height and detail accuracy in prints, contributing to more accurate and consistent dimensional results (patent pending).

@Print on Air System that allows the printing of inclined surfaces or subframes without the help of supports (patent pending).

Flatness Variable pitch plane levelling calculation procedure, performed automatically with 3DPRN-LOAD.

Heated Plate You can choose between different power settings and different surfaces depending on the types of materials you intend to use. The temperature is up to 100°C (may vary depending on the characteristics of the printer).

Touch Screen on Board

Heated environment Active, insulated and controlled hot chamber with a maximum temperature of 65°C. This configuration improves print quality, especially with technical materials that require a temperature-controlled environment.

Controlled environment An air extractor with an active carbon filter is available, which works efficiently to recycle the air inside the printer without cooling the environment or creating currents unsuitable for printing.

Flow Calibration Trough The Weight

It will recalibrate the flow rate trough the weight of a sample, in order to obtain perfect prints with the strength desiderated.

Speed Thanks to advanced components, lightweight and high-performance mechanics, you can print much faster without sacrificing quality.

Filament Encoder Innovative control system that allows real-time filament reading. By comparing the extruder and the encoder, we can detect any filament supply shortages.

MAIN FEATURES

Frame	Aluminium, Dibond panels			
Technology	FDM-FFF			
Plate	Aluminium, Glass, Polycarbonate, Carbon Fiber, Ultem			
Driver	Hybrid Step Servo, Closed Loop			
Axis	1-2 or more Extruders, Spindle			
Extruder Type	Steel ($\leq 300^{\circ}$) Aluminium ($\leq 500^{\circ}$)			
Filament Diameter	1.75mm, 3mm			
Nozzle	Steel, Brass			
Nozzle Diameter	Filament 0.4mm, 0.6mm, 0.8mm, 1.2mm, 1.4mm, 2.5mm Pellet 0.4mm, 0.6mm, 0.9mm, 1.2mm, 1.8mm, 2.5mm			
3DPRNWARE	Proprietary software optimized for 3DPRN printers management			
Print Area (mm)				
LAB Z 54	H5	500x450x500	H10	500x450x1000
LAB Z 1010	H5	1000x1000x500	H10	1000x1000x1000

COMPATIBLE MATERIALS

Pla, Pet, Pet with carbon fiber, Petg, Petg with carbon fiber, Pla-Flex, Tpe, Tpu (da 98 A a 60 A), Pva, Bvoh, Abs, Abs V0, Abs with carbon fiber, Asa, Porolay, Moldlay, Pc Abs, Pc Abs V0, Pc-Pbt, PPS, PPS with carbon fiber, PA 66, PA 66 with carbon fiber, PA 12 with carbon fiber, Hips, PP with carbon fiber, Iglidur...

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