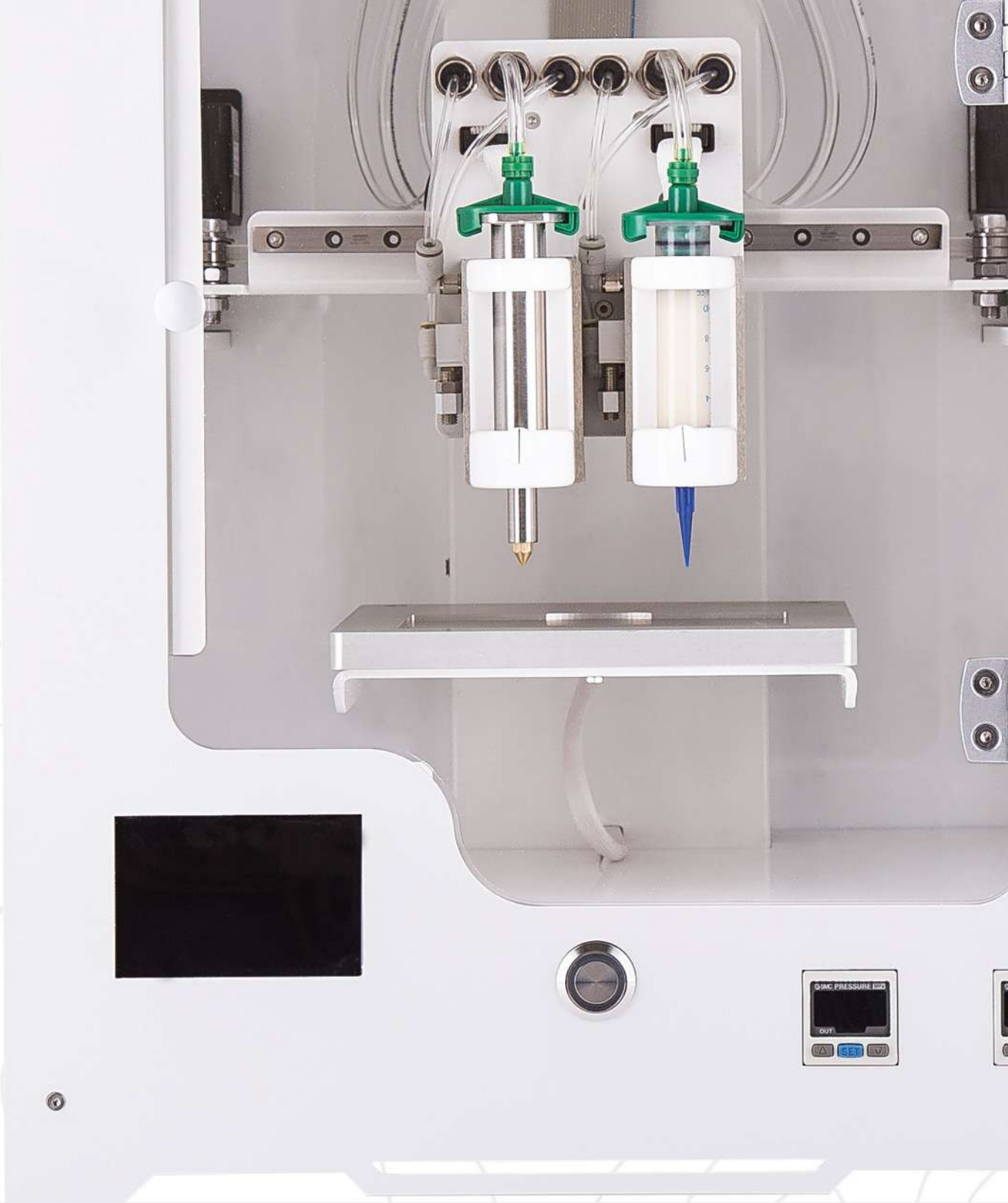
3DPL

IT'S YOURS TO REGENERATE LIFE

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About 3DPL

Focused on design and manufacturing of high-quality yet affordable 3D bioprinters, 3DPL was born in 2017 as a small team of experts getting together from all over the world. In less than two years, our single-nozzle prototype was manufactured in-house. Today, 3DPL manufactures several types of single and multi-nozzle 3D bioprinters for different purposes and various tastes. 2021 was marked with our latest model 3DPL-N2 Plus which is equipped with a live camera to capture high-quality images and movies while printing. Currently, 3DPL is a major international provider of 3D bioprinters and multiple types of bioinks.

Why bioprinting?

Tissue engineering and regenerative medicine are relying more on 3D bioprinting to conduct non-invasive research. Generating live tissues offers a unique opportunity for studying effects of medications and treatments in an isolated environment. Soon 3D bioprinting will assist us in replacing damaged organs with lab-grown printed ones.

What is a bioink?

Bioinks are the “inks” of 3D bioprinters. They are composed of bio-compatible, synthetic materials that provide an environment for cell proliferation and differentiation in an extra-cellular matrix. Bio-inks are based on bio-polymers such as gelatin, collagen, and alginate. Recent advancements in design and fabrication of novel bio-inks have set the stage for generating various tissues with complicated geometries.

What is a bioprinter?

Bioprinters use a combination of biomaterials, in which living cells are embedded, to create 3-dimentional structures of cell-embedded gels/liquids and scaffolds. These structures are pre-programmed for the printer and are printed layer by layer.

MAIN FEATURES

CLEAN CHAMBER

Bioprint at ease with UV-C sterilization lighting and HEPA H12 air filter, both available to provide a clean environment for your cells.

PRECISION

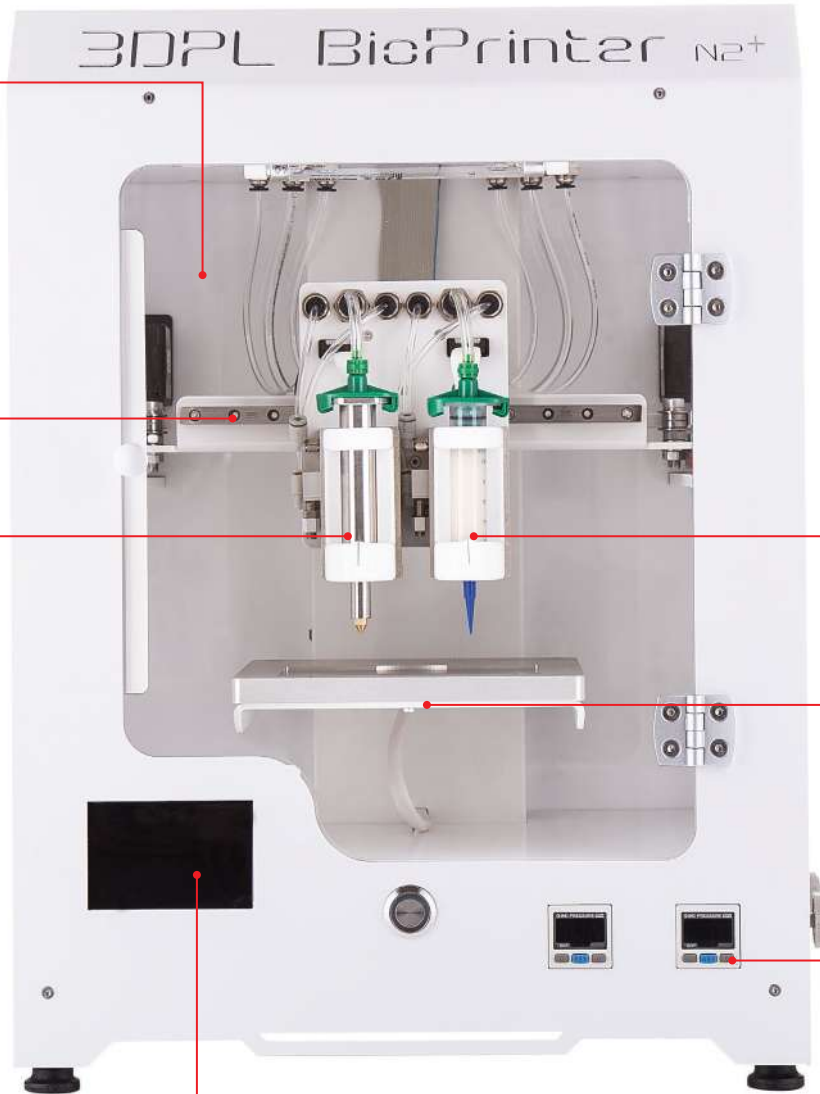
3DPL Bioprinters uses high precision linear rails for x,y and z axis to guarantee 5 micron precision on printing.

MODULAR PRINT HEAD

With modular design of 3DPL print heads, this device is able to print a wide range of bioinks with different physical properties. You can use heating, cooling and photocuring module to print everything that you need. Also, the camera module allows you to capture images from process of printing.

USER-FRIENDLY CONTROLLER

The touch-screen controller with user-friendly interface helps you control bioprinting parameters easily and use all features of the device.



TEMPERATURE CONTROL

All 3DPL bioprinters have the system of controlling and monitoring the temperature of print heads and print bed. You can set the temperature of print heads from 4°C to 175°C with cooling and heating module.

PRINT BED

The print bed of 3DPL Bioprinters is designed to fit various types of plates and petri dishes such as tissue culture plates ranging from 6 to 384 well, glass slide and Petri dishes.

PNEUMATIC DRIVEN

The device is equipped with digital pressure gauges and high precision regulators in order to control bioink extrusion pressure. A range of 0 to 120 PSI (0 to 8 bars) can be applied, making it suitable for printing viscous fluids as well.

3DPL Bioprinter N1

If you are looking for an affordable bioprinter that you can quickly operate to print a wide range of matrix structures and hydrogels, N1 is for you! 3DPL-N1 is a single-extruder bioprinter that controls the nozzle head temperature and syringe pressure to materialize your image precisely. 3DPL-N1 is an excellent start if you have no idea how bioprinting works!

3DPL Bioprinter N1 Specification

Print:

- Build volume: 55*85*125 mm
- Resolution: 10 microns
- Clean chamber equipped with UVC lamp and HEPA filter
- Usable nozzles: Brass nozzle for thermoplastic printing, conical and stainless-steel nozzle for hydrogel printing
- Printing mechanism: Pneumatic
- Pressure range: 0.2 to 700 kPa
- Printable materials: PCL, PCL Composite, PU, GELMA, Silk, Hydrogel Solutions with cells, Alginate ,etc.

Head and Bed:

- Number of extruders: 1
- Head temperature: RT to 140°c
- Bed temperature: RT to 65°c
- Extruder and Bed materials: Powder-Coated Aluminum
- Print Head: Heating

Software:

Input file type: .gcode , .stl
Connectivity: USB
Software Bundle: 3DPL-Software, Simplify3D

Display:

3.5 Inch character based

Physical:

Frame: Powder-Coated Aluminum Alloy
Dimensions: 350*400*520 mm
Weight: 18 kg

3DPL Bioprinter N2

3DPL-N2 is a flexible and powerful machine, equipped with at least two extruders which is capable of printing a variety of scaffolds, gels, cell-embedded hydrogels, and much more. Designed for hybrid printing, N2 prints sophisticated patterns composed of layers of polymers, hydrogels, and live cells while accurately controlling the syringe pressure, nozzle head and device bed temperature. N2 is an independent unit that works even outside of a clean bench because it is equipped with built-in Hepa filters and UV lights. Additionally, 3DPL-N2 doesn't need to be connected to an external computer to operate.

3DPL Bioprinter N2 Specification

Print:

- Build volume: 55*85*125 mm
- Resolution: 5 microns
- Clean chamber equipped with UVC lamp and HEPA filter
- Usable nozzles: Brass nozzle for thermoplastic printing, conical and stainless-steel nozzle for hydrogel printing
- Printing mechanism: Pneumatic
- Pressure range: 0.2 to 700 kPa
- Printable material: PCL, PCL Composite, PU, GELMA, Silk, Hydrogel Solutions with cells, Alginate, etc.

Head and Bed:

- Number of extruders: 2
- Head temperature: RT to 175°c
- Bed temperature: RT to 65°c
- Photocuring: UV (365nm), Blue Light (405nm)
- Extruder and Bed material: Powder-Coated Aluminum
- Print Head: Heating, Cooling, Photocuring

Software:

- Input file type: .gcode , .stl
- Connectivity: USB
- Software Bundle: 3DPL-Software, Simplify3D

Display:

- 3.5 Inch character based

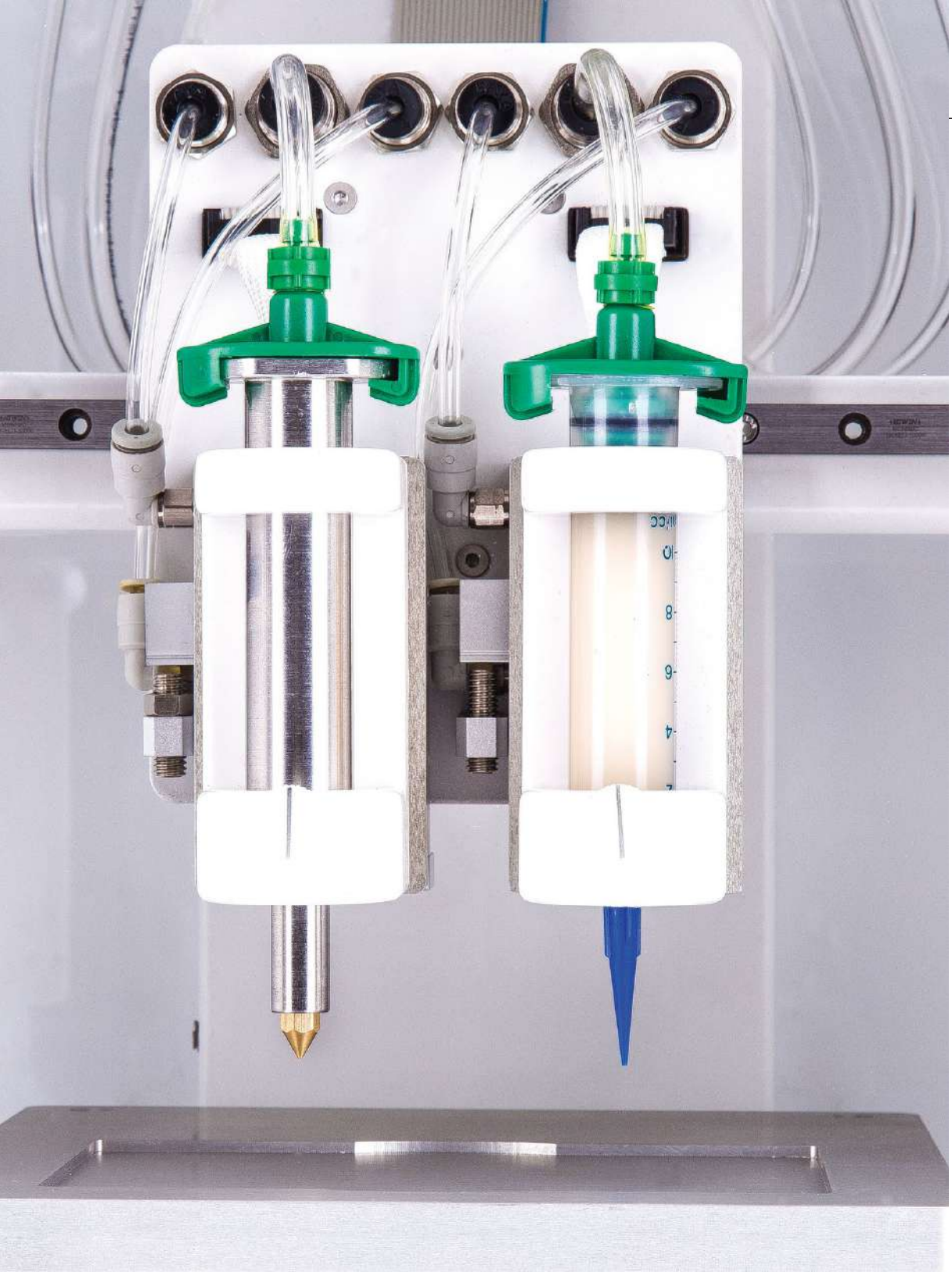
Physical:

- Frame: Powder-Coated Aluminum Alloy
- Dimensions: 350*400*520 mm
- Weight: 20 kg

3DPL Bioprinter N2 Plus

3DPL-N2 Plus is a hi-tech, professional bioprinter. It is equipped with two extruders that are capable of printing a variety of biomaterials and hydrogels. 3DPL-N2 users control the printer by a touch-screen controller and the evolved user interface of the device creates a pleasing experience. Multiple technical capabilities have been added to this device such as a live camera module to closely monitor and capture the printing process.

N2 Plus meets all you needs from a state-of-the-art bioprinter, creating a wide range of artificial tissue and scaffolds for research and even tissue replacement.



3DPL Bioprinter N2 Plus Specification

Print:

- Build volume: 55*85*125 mm
- Resolution: 5 microns
- Clean chamber equipped with UVC lamp and HEPA filter
- Usable nozzles: Brass nozzle for thermoplastic printing, conical and stainless-steel nozzle for hydrogel printing
- Printing mechanism: Pneumatic
- Pressure range: 0.2 to 700 kPa
- Printable material: PCL, PCL Composite, PU, GELMA, Silk, Hydrogel Solutions with cells, Alginate, etc.

Head and Bed:

- Number of extruders: 2
- Head temperature: RT to 175°c
- Bed temperature: RT to 65°c
- Photocuring: UV (365nm), Blue Light (405nm)
- Extruder and Bed material: Powder-Coated Aluminum
- Print Head: Heating, Cooling, Photocuring, Camera

Software:

- Input file type: .gcode , .stl
- Connectivity: USB
- Software Bundle: 3DPL-Software, Simplify3D

Display:

- 3.5 Inch Touch Screen

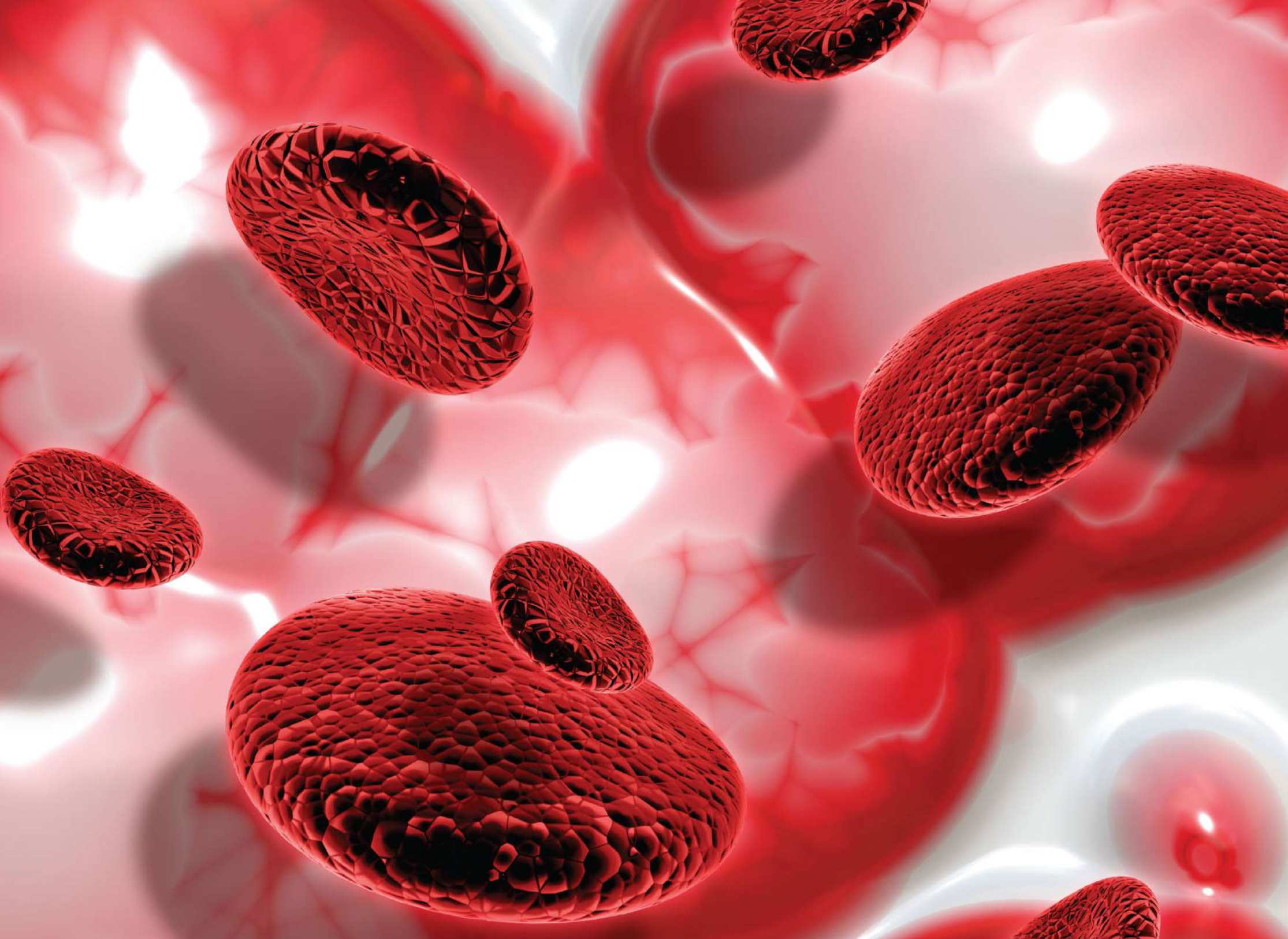
Physical:

- Frame: Powder-Coated Aluminum Alloy
- Dimension: 350*400*520 mm
- Weight: 23 kg

Bioinks

Bioink is the main component of bioprinting. Bioinks are compounds of biomaterials used to fabricate artificial live tissue and scaffold. By controlling two main parameters of temperature and pressure, 3DPL bioprinters are able to print multiple types of bio-inks. 3DPL also offers several types of bioinks for different applications, as shown in the table below.

	Cartilage	Skin	Bone	MSCs
PCL			×	×
Alginate	×	×		×
3DPL Skin A,B		×		×
3DPL Cartin A,B	×		×	×
3DPL Bone A,B			×	
PLGA	×		×	
GelMA		×	×	×



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