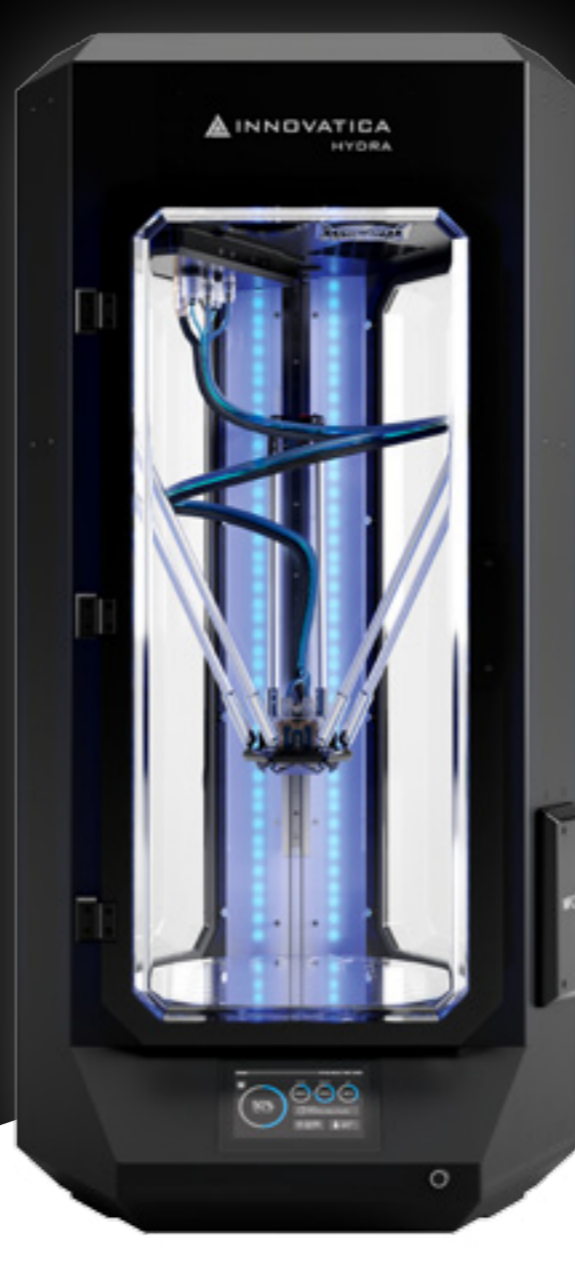# INNOVATICA

FDM/FFF 3D Printer

Hydra

WATCH OUR PROMO!

Why Hydra?

Hydra was created to meet the expectations of modern engineers, providing a great reduction in cost and time-to-market for your products. The whole variety of print bed surfaces and interchangeable print heads enable you to adapt the printer for your specific needs and meet all of the requirements for over 40 available materials. Print draft models from PLA, wear-resistant gears from Nylon, high-strength components from PEEK, chemically resistant parts from PPSF, and all of this in one printer.

About Innovatica

We are Innovatica - a company with a passion for innovations based in the southern part of Poland, in Central Europe. We started in 2014 initially as a provider of CNC machining services. We've expanded our activity into the 3d printing industry during the years, developing our own 3D printers. Years of experience, passion, and our own machine shop allows us to offer you versatile solutions for your business. Print your 3D parts for prototyping or manufacturing - right on your desktop.

Main features

TCMS - Technical Condition Monitoring System

Our proprietary Technical Condition Monitoring System ensures uninterrupted and trouble-free operation of the printer. It constantly monitors the operation of subsystems and informs about a failure or upcoming replacement. Our modular design allows the faulty module to be replaced toollessly, in minutes. The system monitors more than 10 operating subsystems, including: print head, water pump, air pump, extruders, filters and motion system.
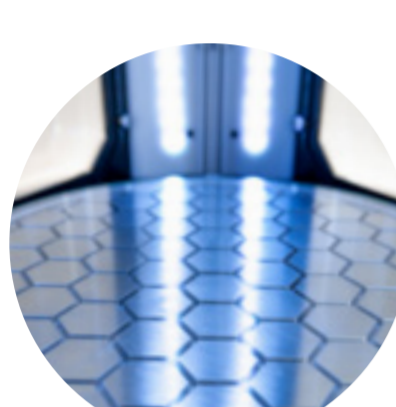
Vacuum printbed

Mechanical fasteners are no longer required when vacuum holds your plate with the force of over 500kg. The integrated vacuum system ensures silent, maintenance-free operation for a long time. Choose from a wide selection of print bed materials, including Glass, BuildTak and PEI.

45+ Compatible materials

There are 45+ compatible materials from which you can choose PLA or ABS for fast and cost-effective prototypes, Nylon for stiff, wear-resistant parts, PEEK for elements resistant to high heat, and many more. The possibilities are endless

Interchangeable liquid-cooled printheads

The system of interchangeable print heads allows for quick and tool-free module replacement in just a few minutes. The print head is adapted to print from a full range of materials, from basic ones such as PLA to engineering materials like Nylon or PEEK. Double printing nozzles and water-soluble supports enable you to print the most complex geometries. The inactive nozzle is lifted and closed by a special flap system, which prevents the filament from oozing out onto the model. Print cooling system delivers compressed air via a diaphragm pump, resulting in superb overhangs and bonding of the model layers. Automatic leveling system uses nozzle to probe the bed, and ensures perfect first layer every time.

Heated chamber for advanced polymers

Enclosed chamber, actively heated up to 80°C provides a proper environment for warp-free printing and maximum mechanical strength. When idle, DryingMode can be used to dehumidify filaments inside the print chamber. Advanced HEPA H13 and activated carbon filters ensure no harmful particles or odours escape from the inside.

### Filament monitoring system

Printer precisely monitors the amount of used filament based on the extruder moves, and stores this data on the NFC chip. Never wonder again how much filament you have left on the spool, or what type of material it is. Just scan the NFC tag directly in the printer or use our smartphone app and you will know all the details right away.
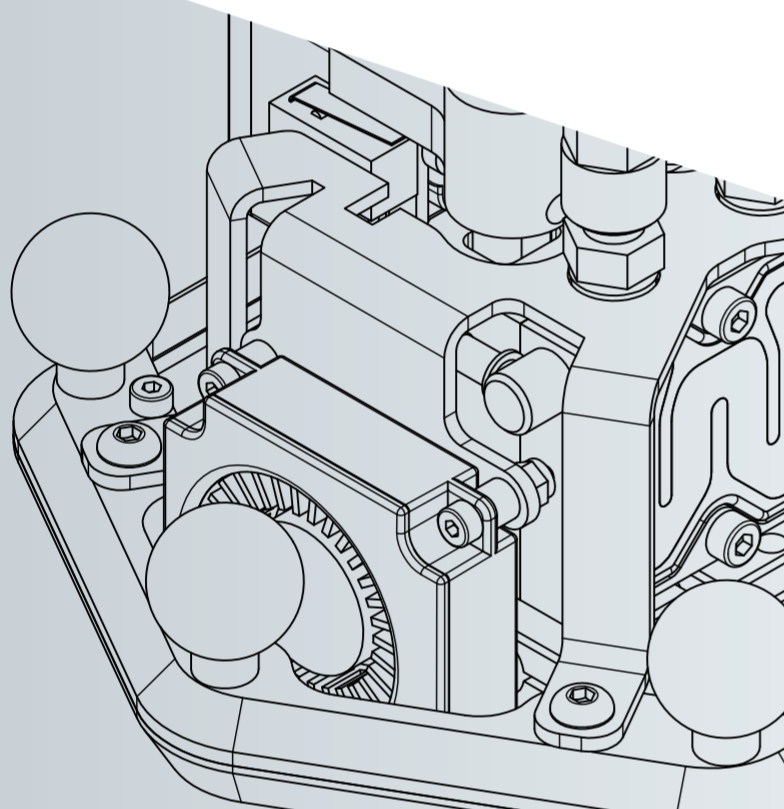
Other features

Modular design
Exchange the worn parts easily and get back to work in a few minutes thanks to the Hydra's modular design.
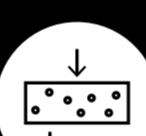
Extruders drawer
The heat does not affect the work of the extruders as they are mounted in a drawer outside the chamber with easy access.

Durable construction
Aluminum and stainless steel ensure maximum stiffness and precision of the whole machine.

AMOLED Touch screen
Capacitive 5.5" touch screen with a glass front allows you to easily control the device.

Advanced electronics
Dual 3 controller with a 300 MHz processor, supported by a Raspberry Pi computer ensures smooth operation.
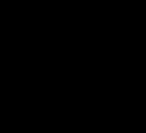
Filament sensors
Two optical sensors read the movement of the filament and inform about its absence or jams.

Motion components
HIWIN carriages and GATES belts guarantee the precision and reliability of the printhead motion.

Automatic calibration
Automatic calibration system of a print bed ensures the perfect first layer of print - every time!

Safety of use
Built-in safety relay mechanically cuts off heaters' power when failure of such elements occur.

RGB LED 360° lighting
Variable LED colors not only let you enjoy watching the printing process but they also inform about the device status.

Advanced print cooling
Two blowers ensure enormous model cooling capacity. The steel cover prevents heating blocks from cooling down also keeping them clean.

Magnetic joints
Magnetic force eliminates any motion backlash while allowing for easy, toolless changing of printheads.

Connectivity
Wi-Fi connection allows you to control the printer or send files from a computer or mobile devices. You can also connect via Ethernet or use USB stick.

Dust filters
All cooling fans are equipped with magnetically mounted dust filters, which can be easily washed with water.

Lifting nozzles
Inactive print nozzle is automatically lifted up by the printhead, which prevents contact with the model.

Gyroscope
MEMS gyroscope in the printhead detects the incorrect assembly or failed prints and automatically stops the device.
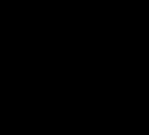
Drying of filaments
The heated chamber can be used to dry the moist filament spools, which is useful particularly for support materials.

Print heads

The system of interchangeable print heads allows for quick and tool-free module replacement in just a few minutes. The print head is adapted to print from a full range of materials, from basic ones such as PLA to engineering materials like Nylon or PEEK. Double printing nozzles and water-soluble supports enable you to print the most complex geometries. The inactive nozzle is lifted and closed by a special flap system, which prevents the filament from oozing out onto the model. Print cooling system delivers compressed air via a diaphragm pump, resulting in superb overhangs and bonding of the model layers. Automatic leveling system uses nozzle to probe the bed, and ensures perfect first layer every time.

Specifications

PHYSICAL DIMENSIONS	Printer incl. spool holders	710 x 670 x 1161 mm
	Shipping package	1250 x 850 x 1700 mm
	Product weight	72 kg
	Shipping weight	150 kg
AMBIENT CONDITIONS	Operating temperature	15-32°C 10-90RH non-condensing
	Storage temperature	5-32°C
POWER REQUIREMENTS	Input voltage	220-240V 50 Hz or 110-120V 60Hz
	Power (max)	1425 W
	Operating power (average)	970 W
PRINTING SPECIFICATIONS	Technology	FDM/FFF (Fused Filament Fabrication)
	Print head	Liquid-cooled, dual-extrusion with lifting nozzles and closed by a special flap system
	Build Volume	Ø 350x300 mm 28.6L
	Filament diameter	1.75 mm
	Nozzle diameter	0.2 mm, 0.3 mm, 0.4 mm, 0.5 mm, 0.6 mm, 0.8 mm
	Nozzle type	Vanadium Wear-resistant, Copper carbide-coated
	Nozzle temperature (max)	450°C
	Build plate temperature (max)	175°C
	Build plate heat up time	20-100°C < 6min
	Filament flow sensor	Dual Optical System
	Filament amount control system	Integrated, with NFC system and built-in filament database
	Print chamber	Enclosed Actively heated
	Print chamber temperature (max)	80°C
	Air filtration	Hepa H13 + Activated Carbon
	Build plate base	Stress-relieved, precision-ground aluminium casting, 8 mm thick
	Build plate type	Vacuum, with built-in vacuum pump
	Interchangeable surfaces	Glass, Buildtak, PEI, FR4, PP Tape & Sheet, PET Tape & Sheet
	Supported materials	47
	Soluble support	Yes, 3 types
	Additional features	High power RGB LED lights for perfect chamber illumination, Exchangeable extruder drives, Technical condition monitoring sysem, Automatic sleep mode (turns off the printer after finished print), filament drying mode
ADDITIONAL INFORMATIONS	Touch screen	Capacitive 800x480 px IPS with wide viewing angles
	Connectivity	WiFi, LAN, USB (Pendrive)
	Internal memory	10 GB
	Safety features	Gyroscope inside the printhead to detect disconnected pushrods, Mechanical relay for power disconnection, Emergency switch and stuck light (detachable)
SOFTWARE	Supplied software	Innovatica Slicer (Cura based)
	Supported OS	Windows, MacOS, Linux
	File types	.stl, .3mf, .amf, .dae, .zae, .ctm, .ply, .bmp, .jpg, .png,
SUPPORTED MATERIALS		PLA, PLA Pro, PLA Matt, PLA Metalic, PLA Thermoactive, PLA Glitter, PLA Tough, PLA Cork-filled, PLA Wood-filled, PLA Stone-filled, ABS, TPU, ABS Premium, ABS Flame retardant, ABS Translucent, ABS ESD, ABS Carbon-filled, ABS Glass-filled, PC-ABS, PETG, PETG Carbon-filled, PETG ESD, Nylon PA-12, Nylon PA616, Nylon PA618 Carbon-filled 10%, Nylon PA6, ASA, HIPS, PVDF Arkema Fluinx™, PP/S, PEEK, PEEK Color, PEEK Carbon-filled, PEEK Glass-filled, PEEK ESD, PEEK-C, PEKK-A, Carbon-filled, PEKK-C, Carbon-filled Aerospace Grade, PEKK ESD, IGUS® igldur® I150-PF, IGUS® igldur® I180-PF, PVA Formfutura® Aquasolve™, PVA Formfutura® Atlas Support™, PVA Formfutura® Helios Support™, HT Breakaway Support, 3DXTech® HT Thermal™ High-temp BAS, PVA 3DXTech® Aquatek™ X1, Anti-bacterial PLA, Bone-imitating

Reliable tool is fundament of your success.

WATCH OUR TIMELAPSE!

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