

# Technical Data

## Hardware revision v1.0

### General/dimensions/weights

Housing	aluminum-profile framework acrylic glass integrated LED lighting
Positioning system	extruder head mounted on belt driven H-frame (X/Y-axis) screw driven print table (Z-axis)
3D printing technology	Fused Filament Fabrication (FFF)
Length	800 mm
Width	600 mm
Height	800 mm
Weight	49 kg (empty)
Connection cable	1.000 mm

### Temperatures

Extrusion temperature	max. +300 °C
Print bed temperature	max. +130 °C
Print chamber temperature	max. +70 °C

### Hot ends

Nozzle sizes included in delivery	Bore diameter [mm]	Recommended layer height First layer / following
	2×0.25	0.25 / 0.10 - 0.20
2×0.35*	0.35 / 0.10 - 0.28	
1×0.50	0.50 / 0.20 - 0.40	
1×0.75	0.60 / 0.25 - 0.60	

\* Installed at delivery and preset in the Slic3r profiles available at the [GitHub repository](#).

### Print

Print volume	200 x 185 x 280 mm (10.4 liter)
Extruder head	dual extruder with two separate extruder nozzles for multi-colored and/or multi-material printing
Extruder nozzle diameters	0.25 / 0.35 / 0.5 / 0.75 mm
Print bed	exchangeable 210 x 210 mm PEI/glass fabric/carbon composite sheet
Layer height	min. 0.1 mm
Reproduction accuracy	±0.1 mm
Tolerance	±0.1 mm

Positioning step-width axes	X=0.028 mm Y=0.019 mm Z=0.003 mm
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## Electronics

Drives	3 x 1.2 A stepper motor (XYZ positioning drives) 2 x 1.2 A planetary gear drive stepper motor (extruder drives)
Stand-alone operating module	integrated capacitive 10" touchscreen controller
Integrated computer	BeagleBone Black
Machine control	RUMBA microprocessor board
Load switching	5 x 15 A MOSFET board
Power supply unit	1000 W with DC connector panel, power plug and main switch 110 ... 230 V AC, 13-6.5 A, 50/60 Hz
Fans	3 x 119x119x25 mm, 12 V, 140 m <sup>3</sup> /h axial fan (heat chamber circulation and cooling system) 1 x 80x80x25, 12 V, 33 m <sup>3</sup> /h axial fan (air filter)
Network	Ethernet 10/100, RJ45

## Sensor technology

Limit switch H-frame (X/Y) and print table (Z)	magnetic hall endstops
Filament end recognition	mechanic limit switch
Temperature sensors extruder nozzle, print table, print chamber	300 °C thermistors

## Material

Printable materials	ABS, PLA, HIPS, PVA, PC, PA and more
Filament diameter	2.85±0.1 mm
Available filament qty.	0.75 kg spool (200 x 55 mm) 2.30 kg spool (296 x 100 mm)

## Closed loop water cooling system

Pump	12 V DC circulation pump with integrated compensation reservoir
Throughput	approx. 210 l/h
Radiator	120 mm full copper radiator
Fan	see <a href="#">electronics</a>
Hose diameter	G1/4"
Coolant	Innovatek Protect IP ready-to-use
Coolant qty.	approx. 250 ml

## Air filter

Air filter	fan duct with exchangeable activated charcoal container
Fan	see <a href="#">electronics</a>
Filling	10 g, Ø4 mm activated charcoal granule

**Ambient conditions**

Operating temperature	+18 °C ... +27 °C
Storage temperature	+5 °C ... +35 °C
Rel. air humidity	max. 70 %
Setup site	no excessive formation of dust (e.g. near woodworks, CNC machining centers)