

# 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	800mm
Width	600mm
Height	800mm
Weight	49kg (empty)
Connection cable	1.000mm

### Temperatures

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

### Hot ends

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

<sup>1</sup> Installed on the left hot end at delivery and preset in the Slic3r profiles available at the [GitHub repository](#) for single and dual extruder prints.

<sup>2</sup> Installed on the right hot end at delivery and preset in the Slic3r profiles available at the [GitHub repository](#) for support material in dual extruder prints.

### Print

Print volume	200x185x280mm (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 / 0.75mm
Print bed	exchangeable 210x210mm PEI/glass fabric/carbon composite sheet
Layer height	min. 0.1mm
Reproduction accuracy	±0.1mm
Tolerance	±0.1mm

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

Drives	3x 1.2A stepper motor (XYZ positioning drives) 2x 1.2A 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	5x 15A MOSFET board
Power supply unit	

(AC), 13-6.5A, 50/60Hz |

Fans	3x 119x119x25mm, 12V, 140m <sup>3</sup> /h axial fan (heat chamber circulation and cooling system) 1x 80x80x25, 12V, 33m <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, PA12, PET
Filament diameter	2.85±0.1mm
Available filament qty.	0.75kg spool (200x55mm) 2.30kg spool (296x100mm)

## Closed loop water cooling system

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

## Air filter

Air filter	fan duct with exchangeable activated charcoal container
Fan	see <a href="#">electronics</a>
Filling	10g, Ø4mm 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)