AFINIA 3D™

H+1

VERSATILITY WITH PRECISION

- Three Material-Specific Print Heads Tailored for Better Material Compatibility
- Built-in Dual Filtration System
- Double-Sided Interchangeable Build Plate

ABS is known for its toughness and impact resistance, allowing you to print durable parts that will hold up to extra usage and wear. Due to its good mechanical properties, ABS material has been engineer's favorite material. But due to its sensitivity to environmental conditions and smell, it is very hard to be printed with desktop 3D printers.

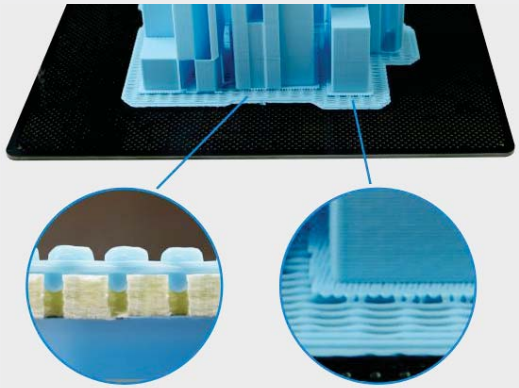
Afinia's Comprehensive Solution for Better ABS Print Quality

Better ABS Material

- ✓ Formulated ABS filament to take full advantage of your H+1, available in ABS and ABS+.
- ✓ ABS is printed at above 270℃ for uncompromised layer adhesion and part strength.
- ✓ Afinia has ABS+, a Pro ABS for better mechanical strength, offering stronger bond between layers and effectively resolve shrinkage-caused warping and splitting between layers.

Software Solution

- ✓ Printing Raft – Control quality of part adhere to the build plate by extruding 3 times more material than normal extrusion rate and effectively anchor the part to the build plate.
- ✓ Print Support – Control quality of part bottom finish by printing few layers of support in very dense lines between raft and the printed part



Hardware Solution

- ✓ Closed chamber + Heated platform heats up to 100 ℃.
- ✓ ABS specific print head, made of full metal and print ABS at above 270 ℃.
- ✓ Selection of removable build plate with different surface – Glass based removable build plate for even heat distribution, perforated surface is used to anchor ABS print firmly on the plate, Flex surface is used to hold up print on it firmly while print is still easy to be removed.
- ✓ Built-in dual filtration system, with HEPA Filter and Activated Carbon Filter effectively reduce UFP and VOC.

Out of the box you are provided with three material specific print heads. In contrast to the one-size-fits-all extruder, the interchangeable heads are made based on the material characteristics and allows for greater filament control and better finish.

Material Specific Print Heads Tailored for Better Material Compatibility, Not Only ABS

Full metal print head tailored to high temperature material

- ABS, ABS+
- ASA
- PETG
- Polycarbonate
- Polypropylene
- Nylon
- Carbon Fiber filled depends on base material

Effective cooling system and PTFE feed path tailored to low temperature material

- PLA
- Metal Filled PLA
- Wood Filled PLA
- Carbon Fiber filled depends on the base material

Spring loaded feed path, double gear, PTFE feed path and larger nozzle size tailored to flexible material

- TPU and flexible filament

On the H+1, the print profiles have been tuned and optimized for each nozzle size to offer uncompromising accuracy and print quality

A Selection of Nozzles for Any Possible Applications Using the Different Print Heads

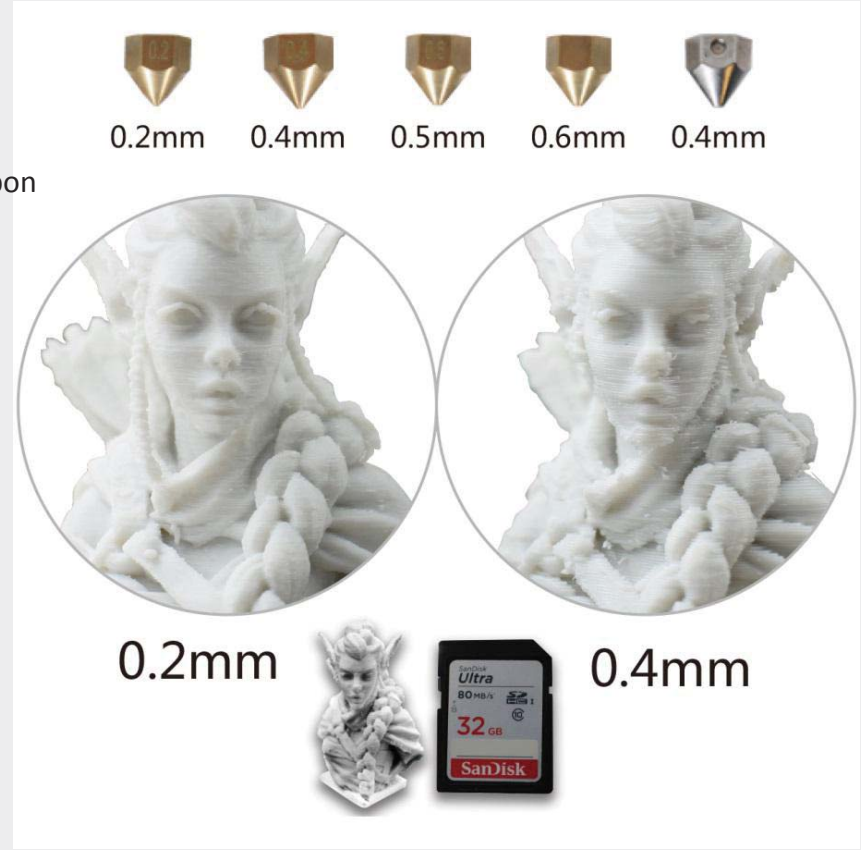
Print profiles tuned and optimized basis on nozzle sizes

0.4mm nozzle
- ✓ Default nozzle on ABS and PLA print head.
- ✓ Preset profile for printing from 0.1mm to 0.35mm layer thickness for the best quality
- ✓ **Hardened steel 0.4mm nozzle**, resist added wear from Carbon Fiber or Metal Filled material

0.5mm nozzle
- ✓ **Default nozzle on TPU print head**, relieving the burden on extruding flexible filament and reducing issue like clogging, stringing
- ✓ Preset profile for printing from 0.2mm to 0.35mm layer thickness for the best quality

0.2mm nozzle
- ✓ For printing high detail work
- ✓ Preset profile for printing from 0.05mm to 0.1mm layer thickness for the best quality

0.6mm nozzle
- ✓ For high speed printing
- ✓ Preset profile for printing from 0.35mm to 0.4mm layer thickness for the best quality

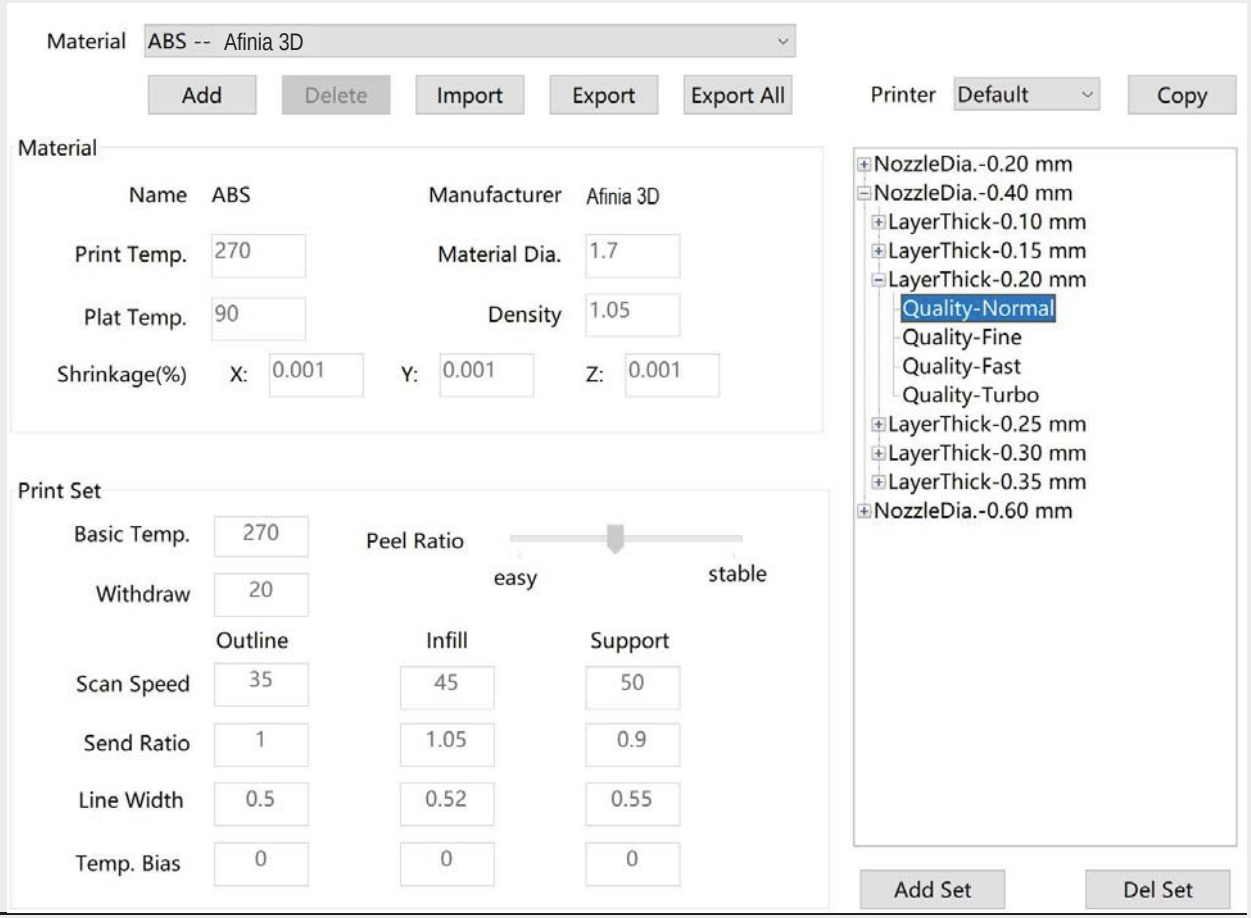


Customize Filament Profiles to Achieve the Best Multi-Material Print Quality

Software Solution for Multi-Material printing

Afinia Studio allows you more control over printing parameters for different materials.

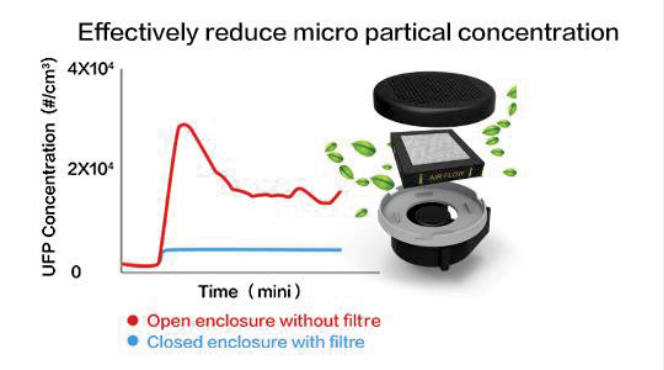
You can create customized filament profiles depending on the material's characteristics to achieve the best printing quality.



Studies have shown 3D printers are producing hazardous levels of ultrafine particles (UFPs) and volatile organic compounds (VOCs) when plastic materials were melted through the extruder.

Circulating Filtered Chamber Effectively Reducing UFP and VOC

The Illinois Institute of Technology conducted research to test how effective enclosed chamber and HEPA filters are in reducing UFP and VOC emission. The Afinia H800+ was included in their testing and scored a top of the class result: reducing UFP emissions by 91% and generating total VOC much lower than other 3D printers with ABS printing.



The H+1 has a much larger HEPA and separate Activated Carbon filter for ultimate air filtration.

- ✓ Built-in dual filtration system and closed chamber designed as standard
- ✓ In contrast to ventilate the air outside the printer, the H+1 uses a centrifugal fan to circulate air flow inside the enclosure and constantly purify the air through both filters
- ✓ Higher airflow capacity maintains minimal UFP and VOC density inside the printer through the HEPA filter and Activated Carbon filter

You have a variety of accessibility to the H+1, either through WIFI, USB cable, USB stick, or Ethernet.

3D Printing Workflow Redefined

Manage devices from one Screen

Afinia Connect makes it easier for you manage your 3D printers from one place of your desktop. You can easily switch between 3D printers, maintain 3D printers, monitor the printing progress, and schedule print jobs between the connected 3D printer for maximum uptime.

Afinia Print Queue

Afinia Print Queue allows more than one user to send print jobs to the printer continuously and simultaneously, without waiting the printing progress to complete. Afinia Print Queue makes it easier for you to schedule print jobs and manage your print jobs between connected 3D printer.

Current list | History list

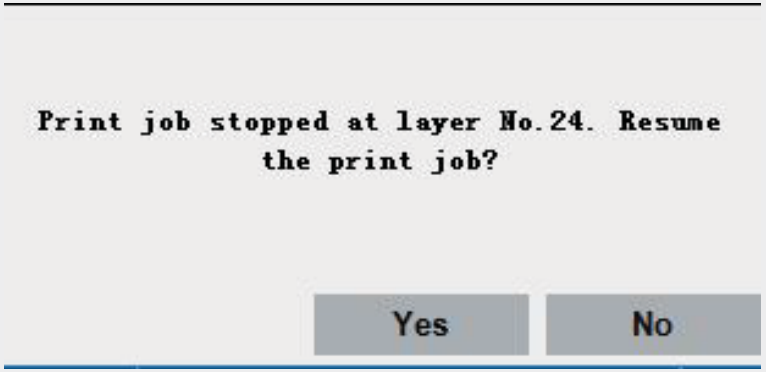
Print order	Name	Status	Task publisher	Upload time	Total print time	Operation
1	pyramid	Waiting	mba2	2018-10-24 18:02:19	1h40m	
2	prism	Waiting	mba2	2018-10-25 14:06:44	12m	
3	prism	Waiting	mba2	2018-10-25 14:07:39	12m	
4	Pumpkin-BEN	Waiting	tier	2018-10-29 18:29:15	6h8m	
5	Sphere	Waiting	tier	2018-10-29 18:31:28	9m	

The H+1 has a large build volume of up to 8 x 8.8 x 10 inch. You will never suffer from issues caused by power loss or filament run out, ruining your prints. The H+1 has you protected.

Large Build Volume with High Reliability & High Uptime

Power Loss Recovery

On the H+1, you will never lose a print due to power loss. If you encounter a power loss during a print, you are able to resume the last print from where it was stopped



Filament Run-Out Detection

The H+1 has a filament run-out sensor, which protects you from filament run-out headaches. Once filament runs out, the print will pause automatically. You are able to resume printing once new filament is added.

Extra USB Input for Add-on

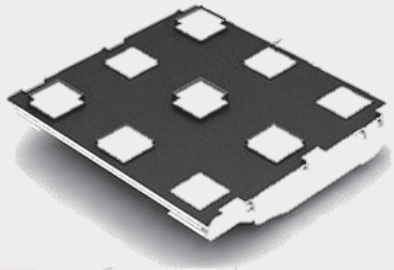
The H+1 has a 5V, 1A USB input for add-ons. Depending on your needs, you could add a WIFI camera to monitor the 3D printing process.

Afina Studio has a series of advanced calibration options for achieving higher accuracy prints on your H+1

Large Build Volume with High Reliability & High Uptime

Auto Leveling

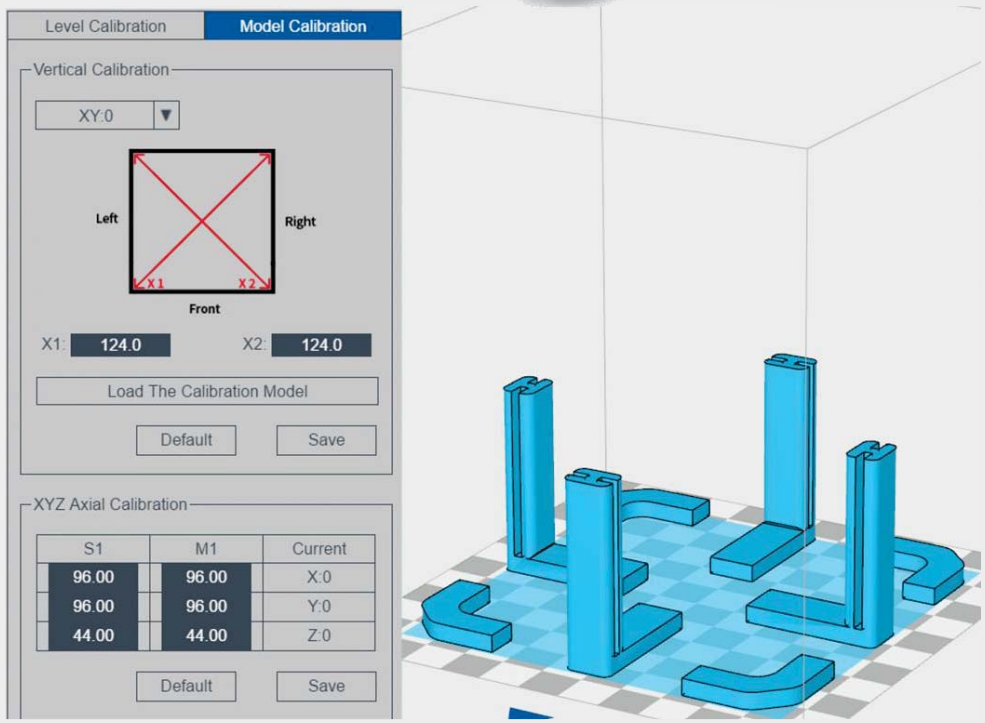
Afinia Studio sees the build platform in a matrix of 9 areas, by measuring the relative platform height at each area and printing a compensating raft, you will be able to get a completely flat surface for your final model and maximize the dimensional accuracy of your prints.



Dimensional Calibration

Why is Afinia's printing system special? It does not solely rely on the mechanical accuracy of the printer chassis to give accurate results. Instead, it provides an extra option to correct its prints with software calibration. Users are able to correct any dimensional discrepancy using Afinia Studio's dimensional calibration feature.

The software can also correct the squareness of printer axes, so even when the printer's mechanical structure is compromised, you are still able get accurate results easily without tinkering with the hardware.



Specifications

Printing technology	MEM (Melted Extrusion Modeling)
Extruder	Single (3 material-specific print heads)
Nozzle Diameter	0.2mm, 0.4mm, 0.5mm, 0.6mm
Extruder Maximum Temperature	299℃
Extruder Maximum Travel Speed	200 mm/sec
XYZ Position Accuracy	2, 2, 0.5 micron
Connectivity	USB cable, Wi-Fi, LAN and USB Stick
Display	4.3" LCD Touch Screen/ Linux based
Build Volume	205× 255× 225mm (8.07" x 10" x 8.8")(XYZ)
Printed Object Accuracy	±0.1mm/100mm
Layer Resolution	0.05/0.1/0.15/0.2/0.25/0.3/0.35/0.4mm
Calibration and Leveling	Automatic
Build Plate Maximum Temperature	100℃
Build Plate Surface	Borosilicate Glass, perforated, Flex, Heated
Enclosure	Full
Dual Filtration System	HEPA and Actived Carbon Filters V2
Supported Materials	Afinia ABS, ABS+, PLA , TPU and more
Filament Diameter	1.75mm
Filament Spool Compatibility	500 - 1000g
Print Queue	Yes
Power Loss Recovery	Yes
Out of Filament Detection	Yes

Software

Software:
Afinia Studio

Supported OS:
Windows 7 SP1 or later, Mac OS X, iOS 8.x/9.x

Supported File Formats:
.tsk,up3, .ups, .stl, .obj, .3mf, .ply, .off, .3ds

Print Preview
Yes

Editable Support Structures:
Yes

Dimensions

Machine Dimensions
500 x 523 x 460 (19.6" x 20.5" x 18.1")

Net Weight
30kg

Requirement

Power Input
110-240VAC, 50-60Hz, 220W

Extra USB Input for Add-on
5V, 1A