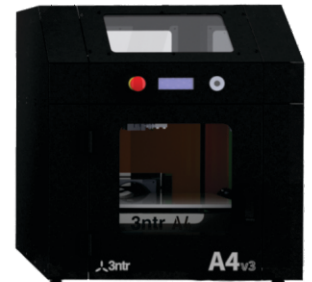


The Cost Effective Industrial Engine for **Serious** Additive Manufacturing



Advanced Capabilities

Plural's A4 and larger A2 FFF 3D printers offer a wide range of advanced functions and materials:

- 3 Print nozzles for multi-material and soluble support printing
- Liquid cooled print nozzles enable the widest range of materials
- HEPA filtration for healthy, particle & odor-free production
- Temperature controlled build chamber to optimize layer-to-layer adhesion and surface finish

Primary Print Materials

- | | |
|---------------|--------------------------------------|
| ▪ ABS | ▪ IGLIDUR (self lubricating polymer) |
| ▪ PC ABS | ▪ PETG |
| ▪ PC | ▪ PLA |
| ▪ HIPS | ▪ TPU |
| ▪ Nylon | ▪ SSU01 (soluble support) |
| ▪ NylonCarbon | |
| ▪ Pa66 | |



Gear printed with IGLIDUR & ABS

Additive Manufacturing Changes the Game

Can reduce low volume parts cost by ~50%

Plural introduces additive manufacturing machines, materials and processes that deliver a wide range of end-use parts in low- to mid-volumes* at game changing costs.

Historically these parts would be manufactured using hard tooling and plastic injection molding, CNC machining, or fabricated from less-than optimal materials.

While conducting a number of case studies with companies using traditional methods for the production of less-than-high volume parts, it was found that savings of 50% or more was the norm. This cost savings is inclusive of amortized 3D printer(s) and materials.

AM enables the manufacture of complex parts directly from CAD models without the NRE** costs of CAM programming, fixturing, setup, potential errors, lead time and machine run time costs or hard tooling, making the process ideal for small production runs and mass customization.

*from 10's to 1,000's per month, depending on part size and geometry

**non-recurring engineering

In addition to the cost savings, other AM benefits include:

- Elimination of tooling
- Inventory on demand
- Spare parts on demand
- Supply chain lag-time elimination
- Elimination of obsolete inventories
- Part design geometries not manufacturable with traditional methods

For details on the studies, or to have one done for your company, visit pluralam.com today to connect with us. We'll work with you to determine exactly what AM can (or can't) do for you.



Nylon Impeller

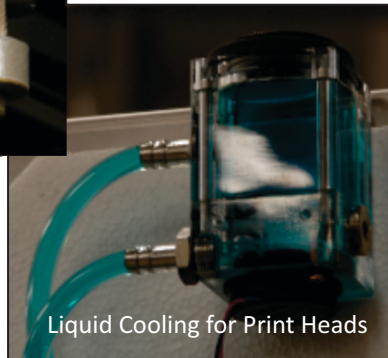
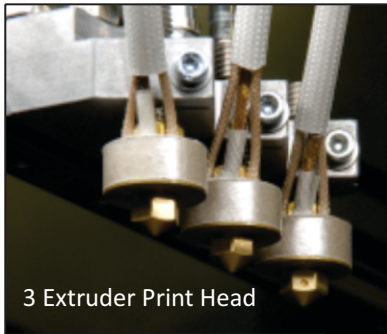
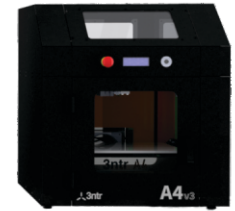
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ADDITIVE MANUFACTURING

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A2/A4 Specifications

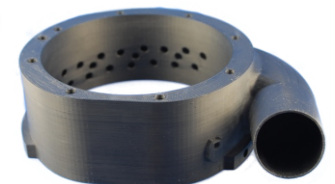
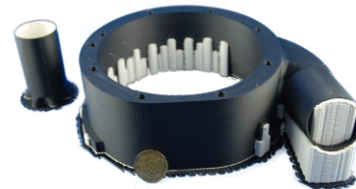


| Dimensional Data | A2 | A4 |
|---------------------|---|--|
| Printer Dimensions | 940 x 715 x 1125mm 37 x 28.2 x 44.3" | 528 x 515 x 615mm 20.7 x 20.2 x 24.2" |
| Printer Weight | 110 kg — 243 lbs. | 32 kg — 70 lbs. |
| Shipping Dimensions | 1041 x 831 x 1321mm 41 x 32.7 x 52" | 681 x 620 x 920mm 26.8 x 24.4 x 36.2" |
| Shipping Weight | 173.2 kg — 382 lbs. | 69 kg — 152 lbs. |



| Electro/Mechanical Data | A2 | A4 |
|----------------------------------|--------------------------|---------------|
| Ambient Operating Temperature | 16 - 32°C — 61 - 90°F | Same |
| Storage Operating Temperature | 5 - 40°C — 41 - 104°F | Same |
| AC Input | 220/230 Vac - 12A | 110 Vac - 15A |
| Power Supply | 24 Vdc - 13A | Same |
| Connectivity | USB, Micro SD Card, LAN | Same |
| Steel Cabinet/Frame Construction | 2mm (.08") Powder Coated | Same |
| Clear Panels | Polycarbonate | Same |
| Heated Print Bed | Anticorodal 6082 | Same |

| Printing Specifications | A2 | A4 |
|-----------------------------------|---|--|
| Printer Technology | FFF/FDM | Same |
| Number of Extruders | 2 or 3 | Same |
| Maximum X-Y Axis Speed | 300mm/sec — 11.8"/sec | Same |
| Maximum Z Axis Speed | 2mm/sec — .08"/sec | Same |
| Maximum Extruders Speed | 43mm/sec — 1.7"/sec | Same |
| Build Envelope - W x D x H | 610 x 350 x 500mm 24 x 13.77 x 19.7" | 300 x 200 x 190mm 11.8 x 7.9 x 7.5" |
| Positioning Precision - X-Y | 11 Microns — .000433" | Same |
| Positioning Precision - Z | 5 Microns — .0002" | Same |
| Positioning Precision - Extruders | .9 Microns | Same |
| Filament Diameter | 2.85mm +/- .1mm | Same |
| Standard Nozzle Diameter | .4mm — .01575" | Same |
| Maximum Extruder Temperature | 410°C — 770°F | Same |
| Maximum Heated Bed Temp | 135°C — 275°F | Same |
| Maximum Heated Chamber Temp | 80°C — 176°F | 70°C - 158°F |
| Mechanical Resolution | 15 Microns — .00059" | Same |
| Minimum Layer Thickness | 50 Microns — .00197" | Same |



What's in the box?

- HEPA filtration system
- Wireless 3D print server with web cam & software
- Model preparation software
- Tool kit
- The printer
- Plural's expert team to insure that your AM investment pays!