



Jigs and fixtures  
for manufacturing  
lines



Large end-use  
parts



Chemical-resistant  
models



Functional aerospace  
& automotive  
prototypes



Support tools for  
machines



Sterilization-ready  
medical devices

# zortrax

## Endureal

### The real future of production lines



Zortrax Endureal 3D printer

#### Extrusion



Dual



Single

#### Resolution

200 microns (nozzle 0.4)



#### Build volume

400 x 300 x 300 mm  
15.7 x 11.8 x 11.8 in

#### › Easy to implement

Being a full-fledged industrial machine, Endureal is as fast to set up and easy to operate as Zortrax desktop-class 3D printers. Intuitive user interface and software with carefully tuned settings predefined for each dedicated filament make Endureal ready to work at full capacity from day one.

#### › Z-PEI 9085 compatibility

Z-PEI 9085 is a proven material widely adopted in the aerospace industry with strength-to-weight ratio comparable to aluminum. It is flame-retardant and does not release toxic fumes when fire is applied to it which makes it one of few 3D printing materials cleared for use onboard the International Space Station.

#### › Performance under control

Endureal's operation is monitored in real time by a wide array of sensors. Everything from air humidity in the filament's compartment, to temperatures in its critical modules is tightly controlled. The printer can detect multiple issues like overheating or filament shortages and notify the user. In emergencies, its operation can be immediately stopped by hitting a clearly visible safe button.

#### › Industrial printing chamber

Endureal has an enclosed printing chamber designed for the most challenging materials like flame-retardant Z-PEI 9085, or filaments based on PEEK. It can be heated up to 220° C. Such high temperatures are necessary to minimize shrinkage in large-format prints.

#### › High temperature build platform

A build platform in the Endureal is made of aluminum covered with PEI film to ensure proper adhesion for all supported filaments. The platform is designed to withstand temperatures reaching 220° C which are necessary to efficiently print high-performance polymers.

#### › Dual-extrusion capability

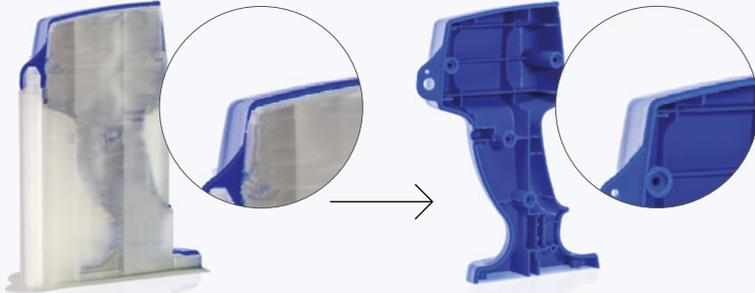
The printer can simultaneously work with two filaments, one for the model, and the other one for soluble or breakaway support structures. This makes it capable of fabricating models with complex internal geometries, movable mechanisms, and other shapes that would have been impossible to print in a single-extrusion mode.



An MTB shock absorber support 3D printed with Z-PEI 9085



Turbo air inlet manifold printed with PEI 9085



An end-use power tool handle before and after soluble support removal



A temperature-resistant U-shaped hydraulic connector 3D printed with Z-PEI 9085

### DEVICE

Build volume*	400 x 300 x 300 mm (15.7 x 11.8 x 11.8 in)
Nozzle diameter	0.4 mm (0.016 in)
Extruder	Dual material
Extruder cooling system	Two fans cooling the extruder, radial fan cooling the print
Hotend	High-temperature dual hotend
Platform	Heated, aluminum coated with PEI
Material Sensors	2 x Mechanical endstop, 2 x Material weight sensor
Connectivity	Wi-Fi, Ethernet, USB
Operating system	Android
Processor	Quad Core
Touchscreen	7" IPS 1024 x 600
Camera	Yes

### SOFTWARE

Software bundle	Z-SUITE
Supported input file types	.stl, obj, .dxf, .3mf
Supported operating system	Windows 7 and newer versions

### PRINTING

Technology	LPD Plus (Layer Plastic Deposition Plus) – advanced technology depositing melted thermoplastics with break-away and dissolvable support structures
Layer resolution	200 microns (nozzle 0.4)
Minimal wall thickness	400 microns (nozzle 0.4)
Platform levelling	Automatic measurement of platform points' height

### TEMPERATURE

Maximum printing temperature (extruder)	480° C (896° F)
Maximum platform temperature	220° C (428° F)
Maximum build chamber temperature	220° C (428° F)
Ambient operation temperature	17-30° C (63-86° F)
Storage temperature	0-35° C (32-95° F)

### ELECTRICAL

AC Input	120 V ~ 13 A 50/60 Hz 200 - 240 V ~ 9,5 A 50/60 Hz
Maximum power consumption	120 V - 1600 W 200 - 240 V - 2300 W

### FILAMENTS

Dedicated for single extrusion	Z-ULTRAT Plus, Z-ESD
Dedicated for dual extrusion	Z-ULTRAT Plus, Z-ESD, Z-PEI 9085, Z-SUPPORT High-Temp (break-away), Z-SUPPORT ATP (soluble with Z-SUPPORT ATP Activator)
Support	Mechanically removed – printed with the same material as the model  Break-away – printed with a different material than the model  Soluble – printed with a different material than the model
Filament container	Spool
Filament diameter	1.75 mm (0.069 in)

### IN THE BOX

3D Printer, Z-SUITE, Starter Kit, Maintenance Kit, spool of model material, spool of support material, spool of high-temperature model material, spool of high-temperature support material, USB memory stick

\*In dual-extrusion mode project's dimensions cannot exceed 390 mm [15.35 in] in the X axis and/or 290 mm [11.40 in] in the Y axis.