zortrax

Endureal
The real future of production lines

Jigs and fixtures for manufacturing lines

Large end-use parts

Chemical-resistant models

Functional aerospace & automotive prototypes

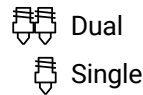Support tools for machines

Functional space parts

Zortrax Endureal 3D printer

Extrusion
Dual
Single

Resolution
200-250 microns
(for 0.4 mm nozzle)

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.

❯ High-temp polymers compatibility

The Endureal has been designed to work with a range of high-temp polymers. Z-PEI 9085, Z-PEI 1010, and blends of PEEK are all industrial materials with strength-to-weigth ratio comparable to metal alloys. Due to their uniqe properties, such materials are used in high tech fileds like aviation and space industry.

❯ 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 prinitng chamber designed for the most challenging materials like Z-PEI 9085, Z-PEI 1010, or different blends of PEEK. It can be heated up to 200 °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.

Housing for a pump used in oil industry 3D printed with Z-PEEK.

Temperature resistant thermostat housing 3D printed with Z-PEI 1010

Abrasion-resistant gears 3D printed with Z-PEEK

A turbo air intake manifold printed with Z-PEI 9085

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 plate 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

FILAMENTS

Dedicated for single extrusion	Z-PEI 9085, Z-ULTRAT Plus
Dedicated for dual extrusion	Z-PEEK, Z-PEI 1010, Z-PEI 9085, Z-SUPPORT ATP (soluble with Z-SUPPORT ATP Activator), Z-SUPPORT High-Temp (break-away), Z-ULTRAT Plus
External materials	Printing profiles available for filaments based on PEI 9085, PEI 1010 and ABS
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

PRINTING

Technology	LPD Plus (Layer Plastic Deposition Plus) – advanced technology depositing melted thermoplastics with break-away and dissolvable support structures
Layer resolution	200-250 microns (for 0.4 mm nozzle)
Minimal wall thickness	450 microns (for 0.4 mm nozzle)
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	200 °C (392 °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

SOFTWARE

Software bundle	Z-SUITE
Supported input file types	.stl, obj, .dxf, .3mf, .ply
Supported operating system	Mac OS Mojave*** / Windows 7 and newer versions

MAINTENANCE KIT CONTENTS

Material endstop (2 pcs.), extruder filament gear (2 pcs.), extruder, filters set (carbon & HEPA) (2 pcs.), PEI plate (2 pcs.), high-temperature hotend module (2 pcs.), extruder cable

*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.
**Remember to use a separate high-temperature hotend module with each high-temperature material type you use.
***Since the release of macOS Big Sur, we've been developing Z-SUITE's best possible operation on this system and all its future updates. The available version is fully functional, however minor bugs may occur.