

DESIGN | PRINTING & MANUFACTURING



## TOTAL PRODUCT CATALOGUE

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**01**  
3D PRINTER

**02**  
MATERIAL

**03**  
OTHER



# THE FASTEST WAY TO DREAM

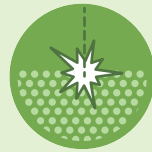
## PRODUCTS CATALOGUE

### 3D Printer

Klabs	FFF	SHARK PRO   SHARK MEGA   SHARK PLUS	10
		ECOBEEES   COBEEESIII	12
	PME	SHARK-D      PE SHARK-P	
Carima	DLP	IMD   IMC   TM200   DM4K   DM400   EM	14
	LCD	LM1 / CL1800	
Cubicon	FFF	Dual Plus-S30i   Style NEO-A31C   Style NEO-A22C	16
		Style Plus-A15D   Single Plus-320C   Style Plus-A15CR Style-220C   MAX600	
L.Corporation	SLS	Fuse 1	18
	SLA	Form 3B/B+   Form 3BL   Form 3/3+   Form 3L	
	FFF	Onyx One   Onyx Pro   Mark Two   X3   X5   X7	
	SLA	EP-A350   EP-A450   EP-A650	20
	SLS	EP-P420	
	SLM	EP-M150   EP-M150 Pro   EP-M260 EP-M300   EP-M450   EP-M650	
Prototech	LMF	Truprint 1000   Truprint 2000   Truprint 3000	22
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Daegun	PBF	Dpert M200   M270(PLUS)   M135B   M500	24
Hephzibah	PBF	Veltz-M120   Veltz-M140   Veltz-M160-VM	26
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Scanner	Atolab	ATOS Q	28
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		GP20 hybrid plastic shredder Aird polymer dryer	
3D printing service	Klabs	3D printing PROCESS	54
		Comparison of services	

# AM FIELD GUIDE POLYMER



## PBF

Powder Bed Fusion

Fused with  
agent + energy

## MJF

Multi Jet Fusion

Fused with  
Laser

## SLS

Selective Laser  
Sintering



## MEX

Material Extrusion

Material extrusion  
Filament

## FDM

Fused Deposition  
Modeling

Material extrusion  
Granulate

## PEM

Pellet Extrusion  
Modeling



## MJT

Material Jetting

Cured with  
UV light

## MJ

Material Jetting



## VPP

Vat Photopolymerization

Cured with  
laser

## SLA

Stereo Lithography

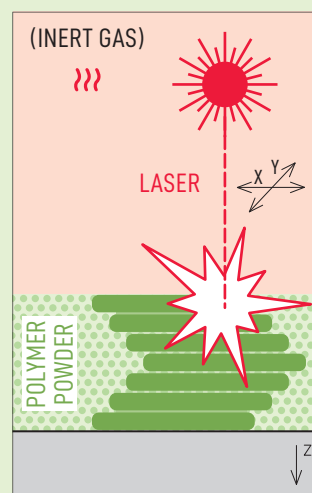
Cured with  
projector

## DLP

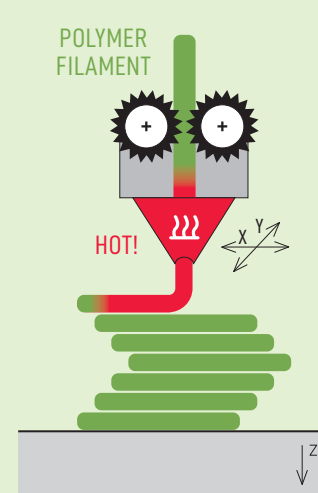
Direct Light Processing



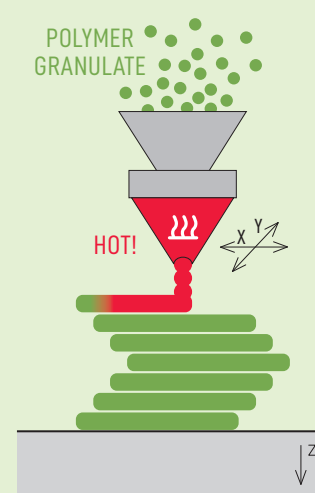
Tiny liquid droplets are applied locally to a layer of polymer powder. They increase or suppress the heat absorption of the powder. An integrally acting infrared source melts the material respectively.



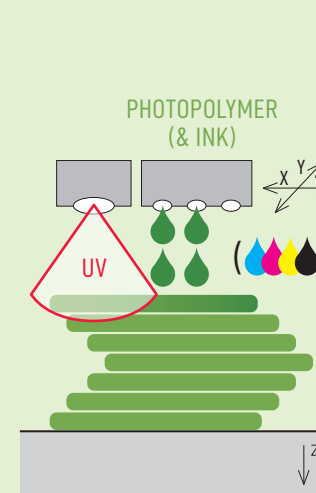
By means of a movable laser beam, a polymer powder is selectively sintered locally layer by layer and thus solidifies a cross-section of the component.



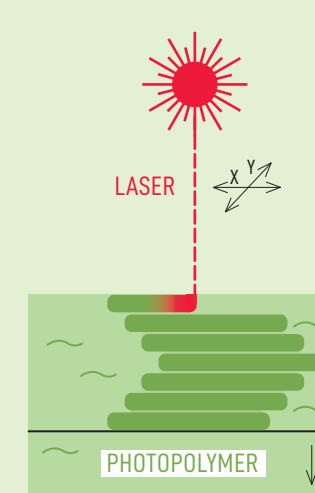
Wire-shaped plastic, so-called filament, is plasticized in a nozzle unit and selectively dosed locally layer by layer.



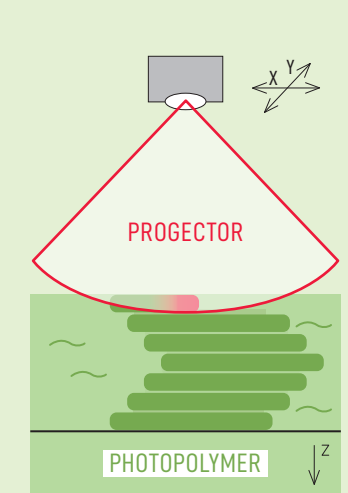
Plastic granulate is plasticized in a nozzle unit and selectively dosed locally layer by layer.



Small droplets of photopolymer are applied locally and layer by layer through many nozzles. The viscous photopolymer is then cured instantly by UV-light.



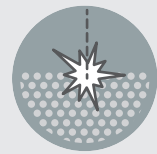
By means of a movable laser beam, a viscous photopolymer is selectively cured locally in layers and solidifies there.



A photopolymer is exposed layer by layer using a projector. The exposed material is polymerized locally and solidifies.



# AM FIELD GUIDE METAL



**PBF**

Powder Bed Fusion



**DED**

Directed Energy Deposition



**MEX**

Material Extrusion



**BJT**

Binder Jetting



**MJT**

Material Jetting

Fused with  
laser

**SLM**

Selective Laser Melting

Fused with  
electron beam

**EBM**

Electron Beam Melting

Fused with  
laser

**LENS**

Laser Engineering  
Net Shape

Cold contact  
welding

**MPA**

Metal Powder  
Application

Fused with  
electric arc

**WAAM**

Wire and Arc  
Additive Manufacturing

Green part is printed to  
be **sintered** afterwards

**FDM**

Fused Deposition  
Modeling

Joined with bonding agent  
to be **sintered** afterwards

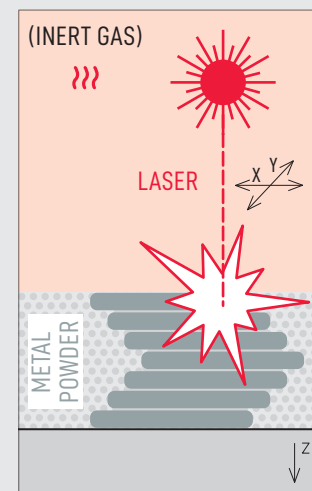
**BJ**

Binder Jetting

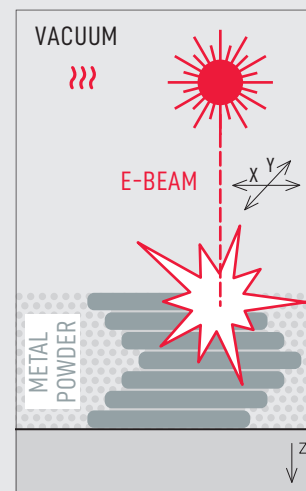
Cured with heat to  
be **sintered** afterwards

**NPJ**

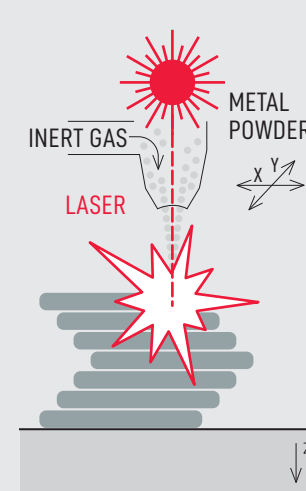
Nano Particle Jetting



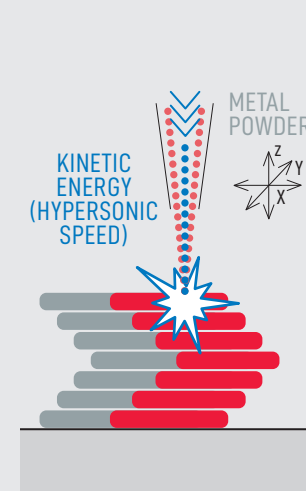
by means of a movable laser beam, metal powder is selectively melted locally layer by layer, thus solidifying a cross-section of the component.



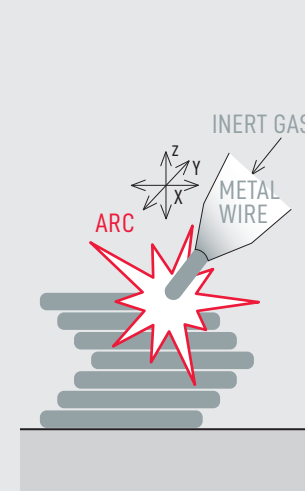
by means of a movable electron beam, metal powder is selectively melted locally layer by layer, thus solidifying a cross-section of the component.



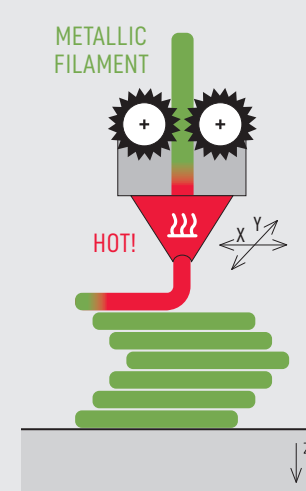
material is applied and melted simultaneously by a laser beam. The following solidification of the melt generates new layers which are arranged above and next to each other.



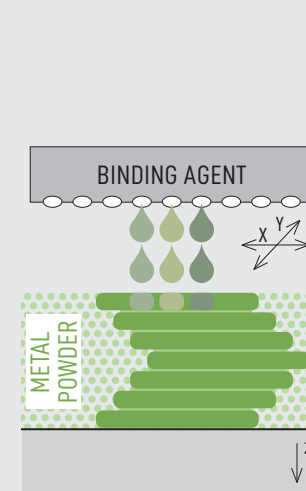
Material powder is applied in layers with very high kinetic energy. Components close to the final contour are produced. Material combinations are possible.



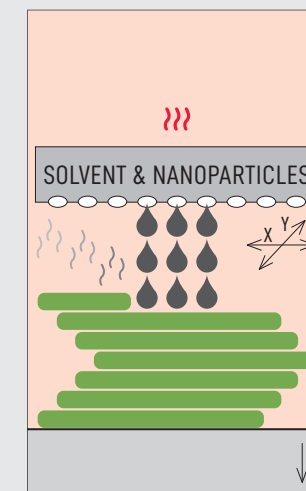
metal wire is melted by arc welding and applied locally in layers to quickly produce large near-net-shape metal structures.



Wire-shaped metal-containing plastic, so-called filament, is plasticized in a nozzle unit and selectively dosed locally layer by layer.



Tiny binder droplets are selectively applied locally through many nozzles and in layers onto metal powder. They stick the powder material together.



A metal particle solvent fluid is selectively dosed locally by a nozzle unit. The solvent evaporates and the nano particles bond together.

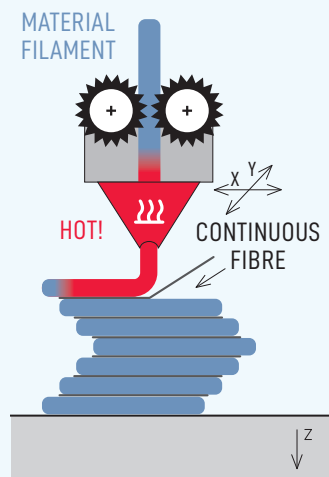
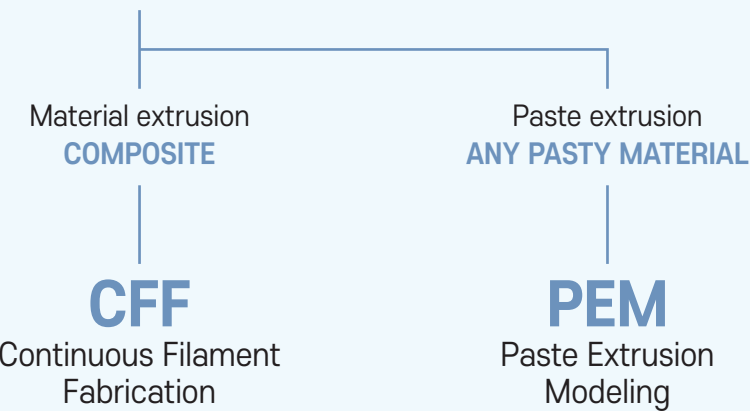


# AM FIELD GUIDE OTHER MATERIALS



## MEX

Material Extrusion

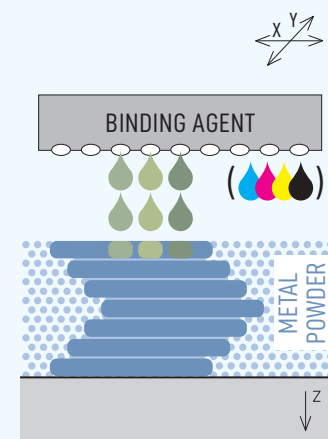
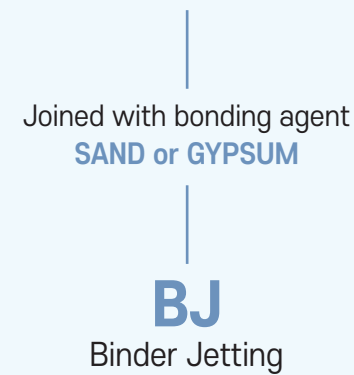


Wire-shaped plastic(filament) is plasticized in a nozzle unit and selectively dosed layer by layer locally around continuously deposited reinforcing fibers.



## BJT

Binder Jetting

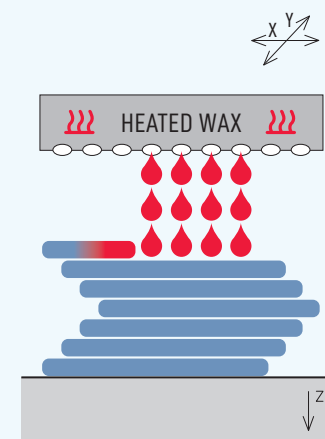
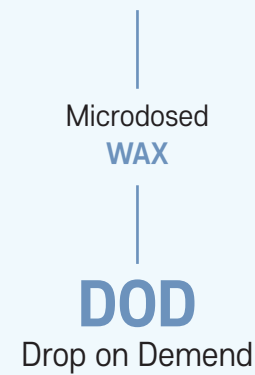


Tiny binder droplets are selectively applied locally through many nozzles and in layers onto the powder bed. They stick the powder material together.



## MJT

Material Jetting

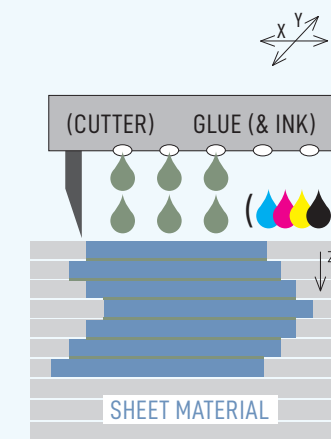
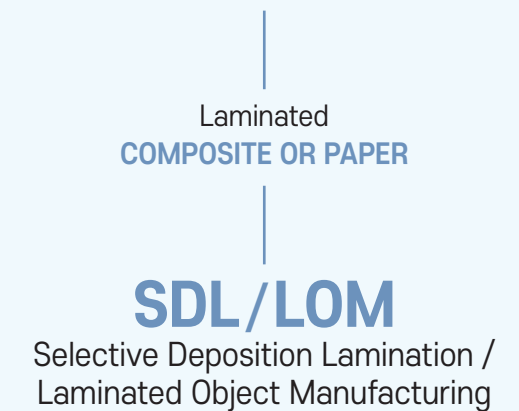


Through many nozzles, heated wax droplets are applied locally selectively and layer by layer. The wax solidifies through cooling.



## SHL

Sheet Lamination



Nozzles are used to selectively apply locally adhesive to the respective material layer. The individual construction levels are stacked and laminated directly or subsequently, the component is cut out along the contour and/or subsequently uncovered.

Industrial 3D Printer

# SHARK PRO

### High Temperature

#### Engineering plastic stackable

Unique heat-resistant nozzle technology enables the use of high-strength plastic materials that require high temperature melting such as PEEK and ULTEM.

#### Improving material shrinkage problems

The dual chamber structure of the outside air shut-off system enables complete internal temperature management.



Standard	
Product Size	690 x 684 x 650mm
Product Weight	80kg
Package Size	710 x 780 x 851mm
Package Weight	85kg
Temperature	
Operating Temperature	10 ~ 40℃
Electricity	
Power	1kW (MAX) / AC 220V
Memory Type	USB
Software	
Slice Software	Cura, Simplify 3D, Studio K
Input File Type	STL
Operating System	Windows XP and up / mac OS
Printing	
Option	High Temperature
Nozzle Temperature	MAX 450℃
Heating Bed Temperature	MAX 150℃
Chamber Temperature	150℃
Filament Type	PLA, HIPS, ABS, PC, PEI(ULtem), PEEK, etc.
Printing Method	FFF (Fused Filament Fabrication)
Printing Object Size	MAX : 200 x 300 x 200mm
Print Speed	20mm/sec ~ 150mm/sec
Filament Diameter	1.75mm
Nozzle Size	0.4mm (0.6mm add option)

# SHARK

Large 3D printer MEGA

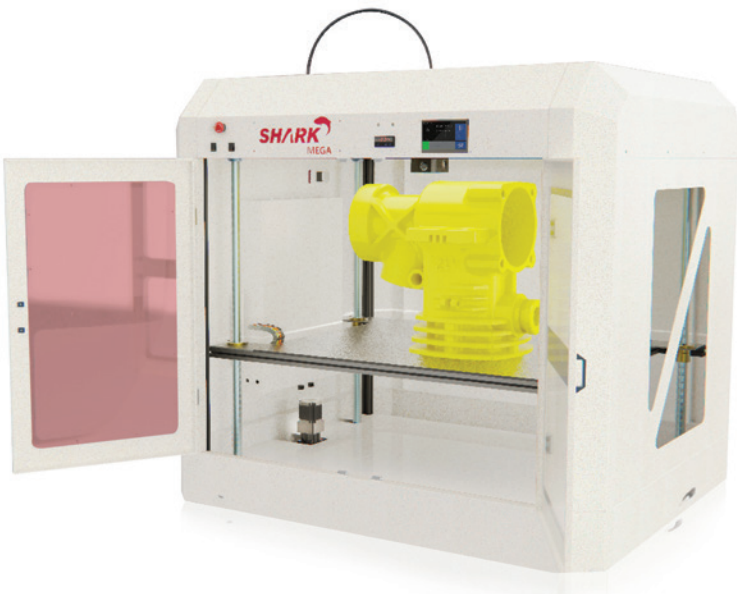
### Up to 1M output size

Prints up to 1,000 x 1,000 x 1,000 mm at a time.

#### Smart Output Bed System

The self-developed heat bed, auto-reveling system, and special coating make it easy to remove and attach outputs.

Method	FFF	Nozzle diameter	0.6mm (Max 1.4mm)
Build size	1,000x1,000x1,000mm	Nozzle temp.	Max 250℃
Product size	1,735x1,560x1,700mm	Bed temp.	Max 80℃
Print speed	10 ~ 100mm/sec	Chamber temp.	Max 120℃(Option)
Accuracy	0.05 ~ 0.8mm	Work temp.	10 ~ 40℃



# SHARK PLUS<sup>+</sup>

### One-touch nozzle replacement

It is a direct discharge system with less nozzle clogging, which can be easily replaced by removing the four nozzle replacement bolts.

#### Ease of operation

It is easy to operate using the touch panel, and you can check the output in real time. After printing with a special coating bed, the output can be easily removed and difficult bed horizontal tasks can be performed automatically for beginners.

Method	FFF	Weight	20kg
Build size	200 x 200 x 200mm	Nozzle temp.	Max 250℃
Product size	400 x 490 x 460mm	Bed temp.	Max 100℃
Print speed	20 ~ 150mm/sec	Work temp.	10 ~ 40℃
Accuracy	0.05 ~ 0.3mm	Compatible	PLA, ABS, Flexible Filament





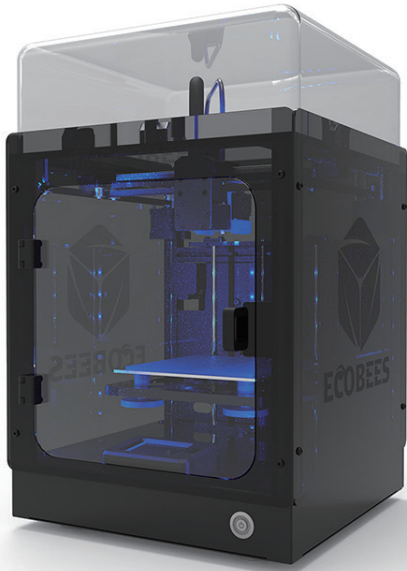
Eco-friendly 3D Printer

ECOBEEES provides a smart clean 3D printing environment with a three-step hazardous material protection system.

Stage 3 Prevention System

- Chamber type case | Block ultra-fine dust from spreading to the outside
- Nozzle suction filtering | Inhale fine dust immediately after filament output!
- Ventilation fan filter | 13th grade Dual filter to filter harmful substances

Method	FFF	Weight	8kg
Build size	150 x 150 x 150mm(옵션)	Nozzle temp.	Max 250℃
Product size	340 x 340 x 520mm	Bed temp.	Max 80℃
Print speed	20 ~ 150mm/sec	Work temp.	10 ~ 40℃
Nozzle size	0.4mm (0.6mm 옵션)	Material	PLA, HIPS, ABS



Ideal solution for liquid printing

Pneumatic Material Extraction (PME) allows the use of all viscous materials such as ceramics, gypsum, and bio-ink.

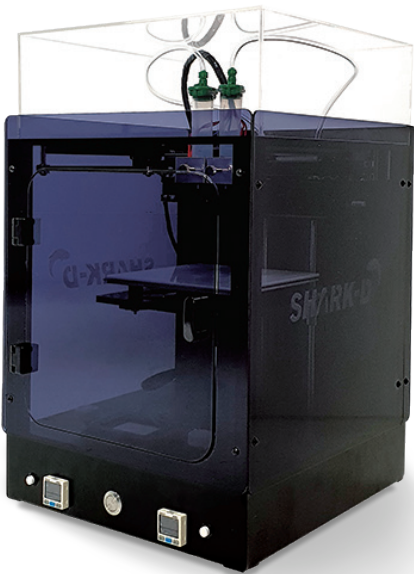
Free pressure regulation

The pressure can be adjusted from 0.1 to 9 bar, so it can be freely set according to the viscosity and nozzle specification of the material used.

Nozzle, material capacity free

The nozzle can be used from 0.3mm and the material can be used from 3cc, so the nozzle and material capacity are free and the material can be customized.

Method	PME	Nozzle size	0.3mm ~
Build size	150 x 150 x 150mm	Nozzle temp.	Max 250℃ (option)
Product size	336 x 370 x 540mm	Bed temp.	Max 80℃
Print speed	10 ~ 150mm/sec	Work temp.	10 ~ 40℃
Layer thickness	0.05mm ~	One-time capacity	3 ~ 50cc



Easy to use

The touch screen and auto-leveling function enable easy and stable output in any situation.

Smart maintenance

The direct ejection type nozzle provides almost no nozzle clogging. It is easy to change the nozzle, so maintenance is easy to maintain.

Affordable price

We have maintained a reasonable price, despite the full upgrade.

Method	FFF	Weight	5kg
Build size	120 x 120 x 120mm	Nozzle temp.	Max 250℃
Product size	315 x 345 x 325mm	Bed temp.	Max 70℃
Print speed	20 ~ 150mm/sec	Work temp.	10 ~ 40℃
Layer thickness	0.05 ~ 0.3mm	Material	PLA, HIPS, PLA, etc.



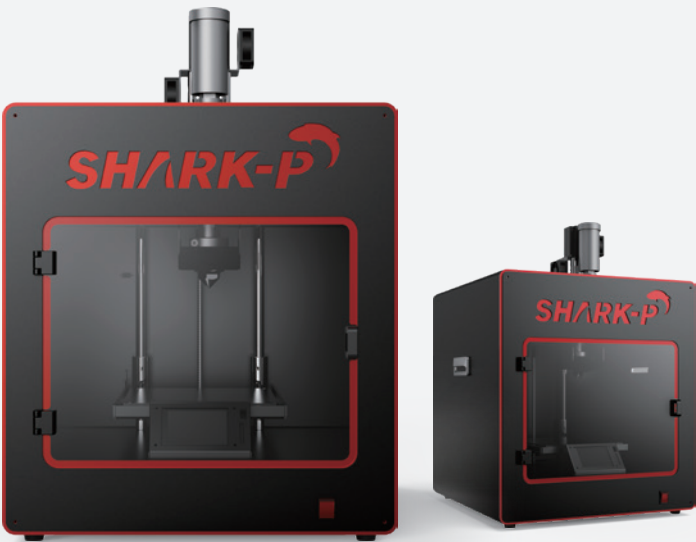
Pellet 3D Printer

The pellet feed method (PE) allows you to test and output the desired combination of materials using pellets, a plastic raw material.

Nozzle, material capacity, color freedom

The nozzle can be used from 0.4mm and the material can be used continuously with an automatic supply, so the amount of pigment can be adjusted to achieve the desired.

Method	PE (Pellet Extrusion)	Layer thickness	0.4mm ~
Build size	200 x 160 x 150 mm	Nozzle temp.	Max 250℃
Product size	500 x 530 x 560 mm	Bed temp.	Max 80℃
Print speed	10 ~ 100mm/sec	Work temp.	10 ~ 40℃







IMD



IMC



TM200

Printing method	DLP (Digital Light Projector)		
Build size	124 x 70 x 140mm	57 x 32 x 130mm 외	192 x 108 x 200mm
Pixel size(X/Y)	65µm	30, 40, 50, 57µm	100µm
Layer thickness	25, 50, 100, 150µm	25, 50, 100µm	25, 50, 100µm
Light source	365, 385, 405nm UV LED	405nm UV LED	385, 405nm UV LED
Engine resolution	FHD 1920 x 1080	FHD 1920 x 1080	FHD 1920 x 1080
Product size	391 x 405 x 589mm	400 x 390 x 570mm	540 x 390 x 780mm
Product weight	18.5kg	34kg	44kg
Power	DC 24V 5A with Adapter	DC 24V 5A with Adapter	AC100 - 220V ~ 50 - 60Hz 2.0A



EM



DM4K



DM400

Printing method	DLP (Digital Light Projector)		
Build size	128 x 80 x 170mm	192 x 108 x 350mm	400 x 330 x 500mm
Pixel size(X/Y)	100µm	50µm	133µm
Layer thickness	25, 50, 100µm	30, 50, 100µm	50, 100, 125, 150µm
Light source	405 nm UV LED	385, 405nm UV LED	405nm UV LED
Engine resolution	WXGA 1280 x 800	4K UHD 3840 x 2160	Dual 2K 2560 x 1600
Product size	400 x 340 x 650mm	800 x 660 x 1,750mm	1,050 x 1,210 x 1,881mm
Product weight	20kg	160kg	1,000kg (장비 750kg / 레진 220kg)
Power	DC 24V 5A with Adapter	AC100 - 240V ~ 50 - 60Hz 4.0A Max	AC100 - 240V ~ 50 - 60Hz 4.0A Max

LCD

Easy to use

It is a 3D printer that is easy to use even for beginners by applying a user-friendly UI, easy resin tank replacement, and pre-leveling.

Carbon filter pan

Use two carbon filters to remove VOCs that occur during the 3D printing process.

Reliable performance

Reliable performance reduces maintenance costs.

Method	LCD	
Build size	130 x 80 x 150mm	File Format
Layer thickness	25, 50, 100µm	stl, obj, 3mf, nmk
Light source	405nm UV LED	Product size
Resolution	2K 2560 x 1620	240 x 250 x 430mm
		Weight
		9.5kg
		Power
		AC100-240V / 50-60Hz / 2.0A



LM1



UV Curing machine

Curing machine optimized Industry

It has an easy-to-use touch button structure that supports fast curing with 1800W UV LED light with adjustable steps 1 to 20 (recommended steps 1-9).

Fast Curing

High reflective panels provide high efficiency.

Curing size	Φ520 x 450mm
Product size	876 x 777 x 817mm
Product weight	120kg
Light source	1800W UV LED
Power	110 ~ 240V 60Hz 10A
Cooling system	Air cooling
Control type	Touch screen



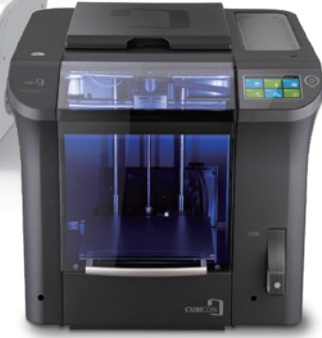
CL1800



Dual Plus-S30i

Industrial grade dual nozzle 3D printer able to print PEEK

Printing method	FFF (Fused Filament Fabrication)
Build size	300 x 300 x 300mm
Product size	830 x 810 x 720mm
Product weight	120kg
Layer height	0.1 ~ 0.3mm
Number of the nozzle	Dual (Switching Type)
Extruder temp.	Main nozzle temp. 500℃
	Sub nozzle temp. 260℃
Motion	Max printing speed 200mm/s
	Max moving speed 500mm/s
	Max acceleration 1,000mm/s²
Bed temp.	150℃ (Metal bed coated with special chemicals)



	Single Plus-320C	Style Plus-A15CR	Style-220C
Printing method	FFF (Fused Filament Fabrication)		
Information	The most advanced desktop 3D printer	The best output quality ever	Red-dot Calm and stylish desktop 3D printer
Build size	240 x 190 x 200mm	150 x 150 x 150mm	150 x 150 x 150mm
Product size	554 x 579 x 524mm	322 x 350 x 486mm	322 x 350 x 486mm
Product weight	25kg	16kg	16kg
Layer height	100 ~ 300µm	100 ~ 300µm	100 ~ 300µm
Extruder temp.	Max 260℃	Max 260℃	Max 260℃
Bed temp.	Max 120℃	Max 120℃	Max 120℃



	Style NEO-A31C	Style NEO-A22C	Style Plus-A15D
Printing method	FFF (Fused Filament Fabrication)		
Information	Industrial 3D Printer	Experience high-quality output	Innovation in dentistry
Build size	310 x 310 x 310mm	220 x 220 x 220mm	150 x 150 x 150mm
Product size	505 x 560 x 765mm	405 x 451 x 597mm	322 x 350 x 486mm
Product weight	58kg	32kg	15kg
Layer height	100 ~ 300µm	100 ~ 300µm	100 ~ 300µm
Extruder temp.	Max 260℃	Max 260℃	Max 260℃
Bed temp.	Max 120℃	Max 120℃	Max 120℃

SLA



- [Tilting Calibration](#)
- [Recoater Auto Leveling](#)
- [Laser Spot Size Variable System](#)

	MAX600
Printing method	SLA (Stereolithography)
Information	The highest speed and precision
Build size	600 x 600 x 400mm
Product size	1,150 x 1,250 x 1,920mm
Product weight	70kg
Beam size	80µm to 700µm (Adjustable spot size)
Scanning speed	6 ~ 10m/s
Layer thickness	0.05 ~ 0.25mm
Laser	Solid-state frequency tripled Nd:YVO4, 3W
Wavelength	355nm





# Fuse 1



## Intuitive

Fuse 1 is designed to minimize maintenance. The full-color touch screen interface guides you through the entire relationship between printing and maintenance.



## cheap

Delivering lower equipment costs, lower materials and efficient powder recycling, Fuse 1 is a smart choice for industry-quality SLS 3D printing.



## competent

From power settings to powder recovery, easy-to-use hardware and software are designed to maximize efficiency at all stages of the process.

Components

Basic

  
Fuse1

  
Fuse Sift

  
Nylon 12 powder

  
Build Chamber

  
Powder Cartridge

Consumables

  
Printer stand



  
Intake Air Filter

  
Exhaust Air Filter


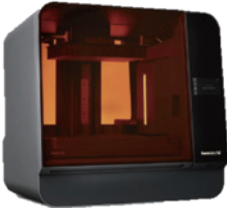


  
Fuse Sift 150 Sieve

  
Fuse Sift HEPA Air Filter

  
Optical Cassette

			
	Fuse 1		Fuse Sift
Printing method	SLS (Selective Laser Sintering)	Available Printer	Fuse 1
Build size	165 x 165 x 295mm	Product size	991 x 610 x 1,888mm
Layer thickness	110micron	Build chamber size	279 x 342 x 489mm
Printing speed	10mm/h	Min Possible Dimensions	2,211 x 1,220 x 2,180mm
Lasdr type	Ytterbium Fiber 10W	Product weight	93kg (Exclude Build Chamber, powder)
Laser spot size	200 micron	Build chamber weight	11 kg (17.6kg, Full with 20% packed powder)
Material reuse rate	30~50%	Build size	165 x 165 x 300mm (radiused corners)
Hopper Capacity	8.5kg Nylon 12	Powder Hopper Capacity	10.7kg Nylon 12
Product size	685 x 645 x 1,065mm	Used powder Hopper Capacity	9.8kg Nylon 12

## formlabs

				
	Form 3B/B+	Form 3BL	Form 3/3+	Form 3L
Printing method	SLA (Stereolithography)			
Build size	145 x 145 x 185mm	335 x 200 x 300mm	145 x 145 x 185mm	335 x 200 x 300mm
XY Resolution	25 micron	25 micron	25 micron	25 micron
Laser spot size	80 micron	80 micron	80 micron	80 micron
Laser Power	One 250mW laser	Two 250mW lasers	One 250mW laser	Two 250mW lasers
Resin cartridge	1	2	1	2
Product weight	17.5kg	54kg	17.5kg	54kg
Heating system	Air-heated print chamber	Air-heated print chamber	Air-heated print chamber	Air-heated print chamber
Bio-materials	Available		Impossibility	

## Markforged

						
	Onyx One	Onyx Pro	Mark Two	X3	X5	X7
Printing method	FFF (Fused Filament Fabrication) / CFF (Continuous filament Fabricaion)					
Build size	320 x 132 x 154mm	320 x 132 x 154mm	320 x 132 x 154mm	330 x 270 x 200mm	330 x 270 x 200mm	330 x 270 x 200mm
Weight	16kg	16kg	16kg	46kg	48kg	48kg
Product size	584 x 330 x 355mm	584 x 330 x 355mm	584 x 330 x 355mm	584 x 483 x 914mm	584 x 483 x 914mm	584 x 483 x 914mm
Layer height	100µm default, 200µm maximum	100µm default, 200µm maximum	100µm default, 200µm maximum	100µm default, 50µm minimum	100µm default, 50µm minimum	100µm default, 50µm minimum
Tensile strength	36MPa (1.2 x ABS)	590MPa (19 x ABS, 16.4 x Onyx)	700MPa (22.6 x ABS, 19.4 x Onyx)	36MPa (1.2 x ABS)	590MPa (19 x ABS, 16.4 x Onyx)	700 MPa (22.6x ABS, 19.4 x Onyx)
Max bending strength	3.6MPa (1.7 x ABS)	22GPa (10.7 x ABS, 7.6 x Onyx)	51 GPa (24.8x ABS, 17.6 x Onyx)	3.6 GPa (1.7 x ABS)	22 GPa (10.7 x ABS, 7.6 x Onyx)	51 GPa (24.8 x ABS, 17.6 x Onyx)





SLA



	EP-A350	EP-A450	EP-A650
Printing method	SLA (Stereolithography Apparatus)		
Build size	350 x 350 x 300mm	450 x 450 x 350mm	650 x 600 x 400mm
Build Accuracy	±0.08mm (L<100mm); ±0.08%×L ((L≥100mm)	±0.1mm (L<100mm); ±0.1%×L ((L≥100mm)	±0.1mm (L<100mm); ±0.1%×L ((L≥100mm)
Product size	1,100×950×1,640mm	1,350×1,200×2,050mm	1,500×1,300×2,200mm
Product weight	440kg	900kg	1,050kg
Layer thickness	0.05mm ~ 0.25mm to choose		
Spot Size	0.08mm ~ 0.2mm (standard) 0.08mm ~ 0.8mm (optional Variobeam)		
Laser	Diode-pumped solid-state laser Nd : YVO4 / Wavelength : 355nm		
Scanning speed	6m/s ~ 10m/s		

SLM



	EP-M150	EP-M150 Pro	EP-M260
Printing method	SLM (Selective Laser Melting)		
Build size	Φ150 x 120mm	Φ153 x 240mm	266 x 266 x 390mm
Product size	1,750 x 800 x 1,830mm	2,120 x 800 x 2,000mm	2,800 x 1,300 x 2,410mm
Product weight	900kg	1,500kg	2,300kg
Optical System	Fiber Laser, 200W/500W (single/dual)	Fiber Laser, 500W (single/dual)	Fiber Laser, 500W/1,000W (single/dual)
Spot Size	40 - 70μm	70μm	80 - 120μm
Max. scan speed	8m/s	8m/s	8m/s
Build speed	Single laser : 5 ~ 7.5cm/h Dual laser : 8.5 ~ 12.75cm/h	Single laser : 5 ~ 7.5cm/h Dual laser : 8.5 ~ 12.75cm/h	Single laser : 15 ~ 35cm/h Dual laser : 25 ~ 55cm/h

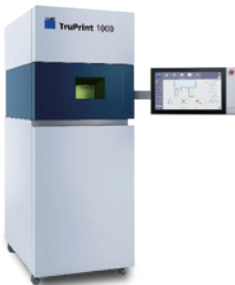
SLS



	EP-P420
Printing method	SLS (Selective Laser Sintering)
Build size	420 x 420 x 465mm
Product size	5,700 x 3,000 x 4,500mm
Gas supply	N <sub>2</sub>
Weight	약 2,500kg
Scanning speed	Max. 13m/s, sky-writing
Max chamber temp.	260℃
Layer thickness	0.06mm ~ 0.3mm
Layer power	CO <sub>2</sub> laser, 120W
Scanning system	Dynamic scanning focus + High-precision galvo system
Thermal field control	Independent four-zone temperature control system
Temp. regulation	Continuous real-time building surface temperature monitoring



	EP-M300	EP-M450	EP-M650
Printing method	SLM (Selective Laser Melting)		
Build size	305 x 305 x 450mm	455 x 455 x 500mm	655 x 655 x 800mm
Product size	2,990 x 1,320 x 2,590mm	5,700 x 3,220 x 3,090mm	5,700 x 3,000 x 4,500mm
Product weight	2,900kg	10,000kg	16,000kg
Optical System	Fiber Laser, 500W/1,000W (single/dual)	Fiber Laser, 500W/1,000W (single/dual)	Fiber Laser, 4x500W
Spot Size	90 - 130μm	90 - 130μm	90 - 130μm
Max. scan speed	8m/s	8m/s	8m/s
Build speed	Single laser : 15 ~ 35cm/h Dual laser : 25 ~ 63cm/h	Single laser : 15 ~ 35cm/h Dual laser : 35 ~ 65cm/h	120cm/h



	TruPrint 1000	TruPrint 2000	TruPrint 3000
Printing method	LMF (Laser Metal Fusion)		
Printing size	Φ100 x 100mm	Φ200 x 200mm	Φ300 x 400mm
Product size	780 x 2,050 x 1,160mm	2,180 x 2,030 x 1,400mm	3,385 x 1,750 x 2,070mm
Product weight	900kg	3,200kg	4,300kg
Laser	200Watt (1 laser, optional 2 laser)	300Watt (1 laser, optional 2 laser)	500Watt (1 laser, optional 2 laser)
Laser diameter	80μm	55μm	80μm
Layer thickness	20 ~ 100μm	20 ~ 100μm	20 ~ 150μm (Industry's largest variable range)
Scan speed	Max 2m/s	Max 3m/s	Max 3m/s
Pre-heating		build plate max. 200°C preheating (Mini. deformation of products in the stacking process)	build plate max. 200°C preheating (Mini. deformation of products in the stacking process)
Key customer	Small Parts Manufacturing, Dental technician	Medical, dental, aviation industry, Heavy Machinery Parts	Aviation, automotive, medical implants, industrial machinery, and defense industries.



	TruPrint 5000	TruPrint 5000 Green Edition
Printing method	LMF (Laser Metal Fusion)	
Printing size	Φ300 x 400mm	Φ300 x 400mm
Product size	4,616 x 1,645 x 2,038mm	4,616 x 2,038 x 4,234mm
Product weight	7,085kg	7,007kg
Laser	500Watt x 3 lasers	800Watt (515nm Wavelength green laser)
Laser diameter	80μm	210μm
Layer thickness	30 ~ 150μm (Industry's largest variable range)	30 ~ 150μm (Industry's largest variable range)
Scan speed	5 ~ 180cm/h	8 ~ 100cm/h
Pre-heating	build plate max. 500°C preheating (Mini. deformation of products in the stacking process)	build plate max. 200°C preheating (Mini. deformation of products in the stacking process)
Key customer	Aviation, automotive, medical implants, industrial machinery, and defense industries.	Manufacture of high-performance heat exchangers and high-conductivity parts in aviation, automotive, industrial machinery, and defense industries

Use Cases of Metal 3d Printers ▾

Dental prosthetics



Materials  
Cobaltchrome  
CoCr

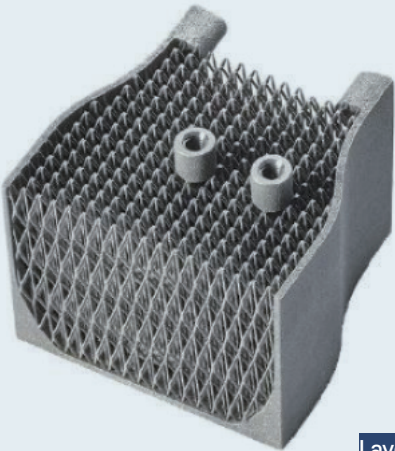
Weight  
96g  
Includes support structure

Input Amount  
11.3cm<sup>3</sup>  
Printing speed : 2.13 cm<sup>3</sup>/h

Build time  
5.3h (dual laser)  
9h (single laser)

Layer height  
20μm  
Number of layers : 1,284

Heat exchanger



Materials  
Stainless Steel  
SUS 316L

Weight  
156g

Input Amount  
18.6cm<sup>3</sup>  
Printing speed : 1.50 cm<sup>3</sup>/h

Build time  
13.1h

Layer height  
20μm  
Number of layers : 2,144

Bracket for fixing aircraft part



Materials  
Titanium  
TiAl6V4

Weight  
64g

Input Amount  
14.5cm<sup>3</sup>  
Printing speed : 1.88 cm<sup>3</sup>/h

Build time  
7.7h

Layer height  
30μm  
Number of layers : 2,668

Cylindrical grinding machine



Materials  
Stainless Steel  
SUS 316L

Weight  
31g

Input Amount  
8.0cm<sup>3</sup> (4.0cm<sup>3</sup>/ea)  
Printing speed : 1.08 cm<sup>3</sup>/h

Build time  
7.5h  
(Time to make 2 parts)

Layer height  
20μm  
Number of layers : 4,998



# Dpert M200

Equipment optimized for industrial products  
High-performance laser and scanner  
Various alloy materials are available



Printing method	PBF (Powder Bed Fusion)
Printing size	200 x 200 x 135mm
Product size	1,300 x 1,400 x 2,150mm
Product weight	850kg
Laser	Fiber laser
Lasdr power	200w (Optional : 400w)
Use scanner	F-theta lens; high-speed scanner
Scan speed	7m/s
Laser beam size	50µm
Layer thickness	20 ~ 60µm
Operating temp.	15 ~ 25℃
Power	2.2kW
Material(powder)	Stainless steel, Option : Co-Cr, Aluminium alloy, Titanium alloy, Inkel alloy

# Dpert M135B

Suitable for industrial & medical prototyping/research products  
Bed Heating System  
Chamber Type Door



Printing method	PBF (Powder Bed Fusion)
Printing size	140 x 140 x 150mm
Product size	870 x 1,180 x 1,880mm
Product weight	700kg
Laser	Fiber laser
Lasdr power	400w
Use scanner	F-theta lens; high-speed scanner
Scan speed	7m/s
Laser beam size	45µm
Layer thickness	20 ~ 60µm
Operating temp.	15 ~ 25℃
Power	1.54kW
Material(powder)	Stainless steel, Option : Co-Cr, Nickel alloy, Aluminium alloy, Titanium alloy, Maraging steel

# Dpert M270(PLUS)

Equipped with technically proven high-performance lasers and scanners  
- Ytterbium CW Laser Type [Maker : IPG]  
- Power : 500w

Optimal Industrial Equipment

Printing method	PBF (Powder Bed Fusion)
Printing size	270 x 270 x 300mm
Product size	1,400 x 1,680 x 2,100mm
Product weight	5,000kg
Laser	Fiber laser
Lasdr power	500w
Use scanner	F-theta lens; high-speed scanner
Scan speed	7m/s
Laser beam size	70 ~ 100µm
Layer thickness	20 ~ 60µm
Operating temp.	15 ~ 25℃
Power	3.3kW
Material(powder)	Stainless steel, Option : Co-Cr, Aluminium alloy, Titanium alloy, Inconel alloy



# Dpert M500

Large-scale industrial product production [Aeronautics, Space, Automotive]  
- Automatic powder supply and automatic resupply system after seaving  
- Large parts can be manufactured continuously  
- Chamber-replaceable for maximum efficiency

High-performance lasers and scanners  
- IPG Laser(500w) / Precision Optical Parts Mounting

Printing method	PBF (Powder Bed Fusion)
Printing size	500 x 500 x 500mm
Product size	3,980 x 1,936 x 3,751mm
Product weight	8,000kg
Laser	Fiber laser
Lasdr power	500w x 4 (Optional : 1kW x 4)
Use scanner	F-theta lens; high-speed scanner
Scan speed	11m/s
Laser beam size	70 ~ 100µm
Layer thickness	20 ~ 150µm
Operating temp.	15 ~ 25℃
Power	380V Max 20kW(Bed heating), AV 10kW Inconel 625 / Inconel 718, Co-Cr / Ti-alloy, Stainless steel [SUS316L/SUS304], Al-alloy [AlSi7Mg / AlSi10Mg]
Material(powder)	

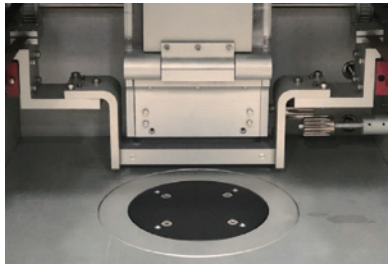
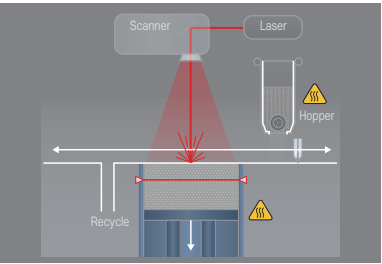
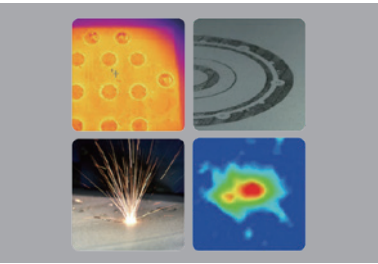




HEPHZIBAH® | Veltz

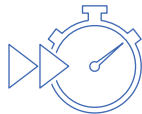
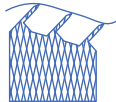


PBF



	Veltz-M120	Veltz-M140	Veltz-M160-VM
Printing method	PBF (Powder Bed Fusion)		
Infomation	 Open metal additive manufacturing solutions	 Customizable additive manufacturing solutions	 Various monitoring options
Printing size	Φ120 x 120mm	140 x 140 x 140mm	140 x 140 x 160mm
Product size	1,695 x 840 x 1,865mm	1,500 x 1,000 x 1,910mm	1,500 x 1,000 x 1,910mm
Product weight	600kg	600kg	600kg
Layer thickness	20 ~ 100μm	20 ~ 100μm	20 ~ 100μm
Laser	200W Yb-Fiber (IPG社)	200W Yb-Fiber (IPG社)	200W Yb-Fiber (IPG社)
Laser spot	50 ~ 100μm (Dynamic Focusing)	60μm	50 ~ 100μm (Dynamic Focusing)
Scanner	Digital, high-precision F-theta lens application (SCANLAB)		
Max. scan speed	5.0m/s		
Software	Magics RP / MS Windows10		
Material	SUS316L, SUS630, CoCr, Ti64		
Other Specifications	<ul style="list-style-type: none"><li>- Gas used: argon or nitrogen</li><li>- Powder supply method: hopper method</li><li>- HMI software : Beam Path, 3D Display support (In-building parmeler Modification)</li><li>- Oxygen control level : 1,000ppm(M120) / 50ppm(M140) / 25ppm(M160)</li></ul>		

SLA



	Veltz-140P		Veltz-600P	
Printing method	SLA (Stereo Lithography Apparatus)			
Infomation				
	<b>Fast shaping speed</b> ✓ Up to 400g output per hour	<b>Easy post-processing</b> ✓ Tight, thin support ✓ Easy to remove support	<b>high economic efficiency</b> ✓ Up to 1/10th the price of traditional wood-up production costs	<b>Excellent Curved Description</b> ✓ Unstructured or complex shapeless ✓ Complete implementation of design drawings
Printing size	450 x 450 x 350mm		600 x 600 x 400mm	
Product size	1,300 x 1,100 x 1,900mm		1,450 x 1,250 x 1,940mm	
Product weight	800kg		850kg	
Layer thickness	0.05 ~ 0.2μm		0.05 ~ 0.2μm	
Laser	Solid state laser(AOC/USA)		Solid state laser(AOC/USA)	
Laser spot	≤0.15mm		≤0.15mm	
Scanner	SCANLAB, Germany			
Max. scan speed	10.0 m/s			
Software	RPmanager 1.0 / RPdata 10.6.1 / MS Windows 7			
Material	ABS-LIKE, Transparent material			
Other Specifications	- Maximum printing speed : 130 g/h - Precision : ±0.01mm(L≤100mm) or ±0.1%(L > 100mm)			



THE NEW ATOS COMPACT CLASS

Quality starts  
with a Q  
An ATOS Q

ATOS performance

High-speed fringe projection  
Fast data processing  
High data throughput

ATOS technology

Triple Scan Principle  
Blue Light Equalizer  
Self-monitoring system

ATOS design

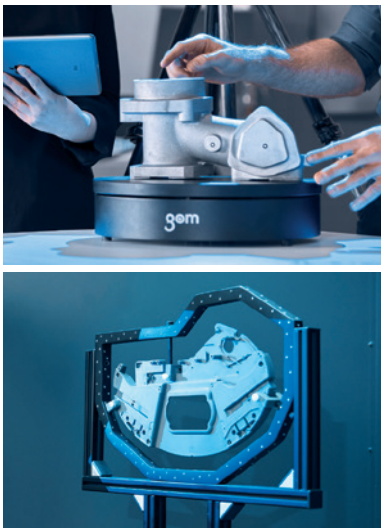
Simple operation  
Protected optics  
For industrial use



8  
MEGAPIXEL

One series  
Two versions

12  
MEGAPIXEL



	ATOS Q 8M	ATOS Q 12M
Light source	LED	LED
Points per scan	8 million	12 million
Measuring area	100 x 70 - 500 x 370mm <sup>2</sup>	100 x 70 - 500 x 370mm <sup>2</sup>
Point distance	0.04 - 0.15mm	0.03 - 0.12mm
Working distance	490mm	490mm
Weight	approx. 4kg	approx. 4kg
Dimensions	approx. 340 x 240 x 83mm	approx. 340 x 240 x 83mm
Cable length	10m fiber optic cable	10m fiber optic cable
Operating system	Windows 10	Windows 10
Measuring volumes	100, 170, 270, 350, 500	100, 170, 270, 350, 500





**ATO LAB Plus**  
ATO Metal Powder Manufacturing System

	ATO Lab plus
Process	Metal powders production
Technology	Ultrasonic atomization
Melting method	TIG / Induction
Sonotrode type	Half-wave nanoalloy sonotrode - patent pending
Inert gas flushing method	Vacuum pump
Cooling method	Liquid
Processable materials	Non-reactive & reactive alloys (e.g. Ti, Al, Zr-based alloy, intermetallics and refractory metals)
Powder quality	High flowability, spherical particles shape, narrow PSD, low oxygen content
PSD (particle size distribution)	20 - 120µm
Powder collecting system	Cyclone
Protective atmosphere preparation time	↓ 5 min.
Input material	Any shape (SRFS, MRFS, IMFS modules)
Certification	CE



**ATO Ultrasonic Sieving Station**  
ATO Ultrasonic powder separator

The compact size makes it easy to move around, making it easy to use in a typical laboratory environment.

- Key Features**
- ▶ separate the powder in an argon atmosphere.
  - ▶ Compatibility with ATO Lab Series
  - ▶ Compact size
  - ▶ A fast and effective system for screening small amounts of powder
  - ▶ Selective powder size selection of choice (1~150µm)

**ATO LAB Plus Key Features**

**Compact size**

Ultrafine Metal Powder Ultrasonic Spray System

**Manufacturing various alloys**

Optimization System for Metal Powder Production, Relatively small space installation of space

Manufacture of reactive and non-reactive powder alloys such as steel, aluminum, titanium, and special alloys

**Manufacturing flexibility**

No quantity limit, replace quickly with other materials

**Ultrasonic grinding method**

Ultrasonic atomization/half-wave nanoalloy sonotrode - **patent pending**

**Competitive system**

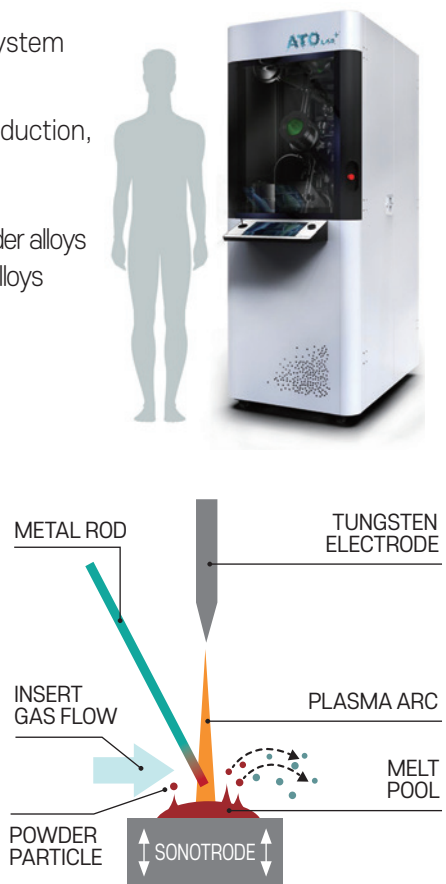
First ultrasonic powder manufacturing technology & Price competitiveness

**Min. manufacturing costs**

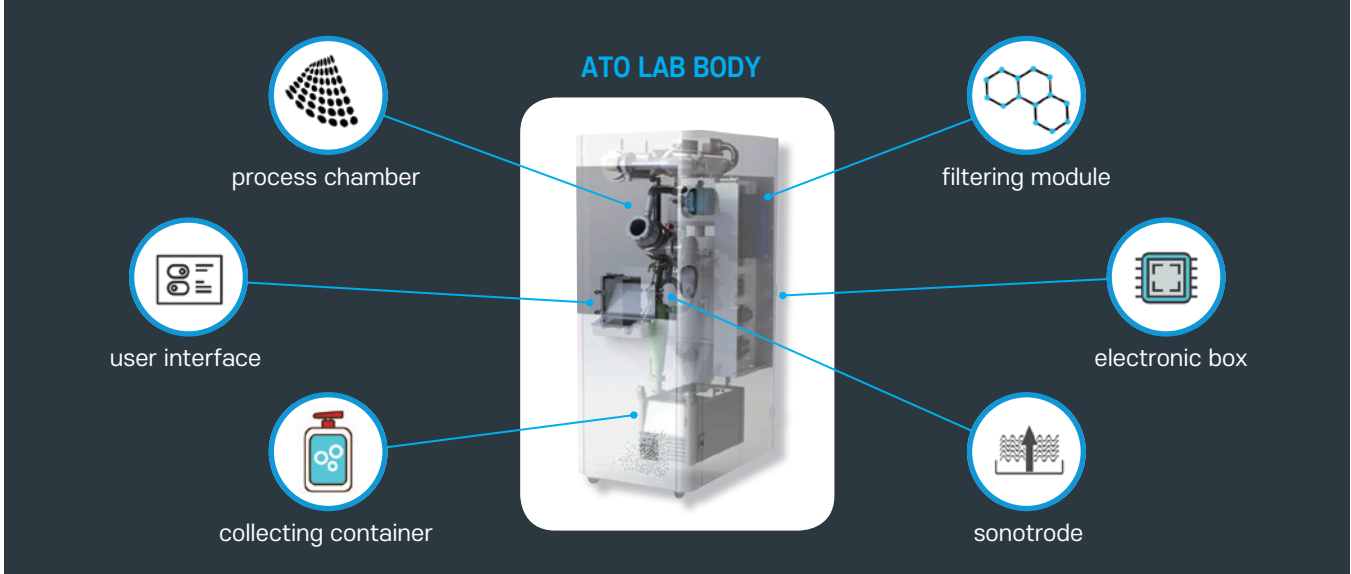
Minimum Operating Costs & Highest quality manufacturing without quantity limit

**Highest powder quality**

High powder efficiency : 95%  
Ultrafine particle distribution :  
Average 40~60µm / 35kHz  
25~40µm / 52kHz



**ATO Lab Plus**

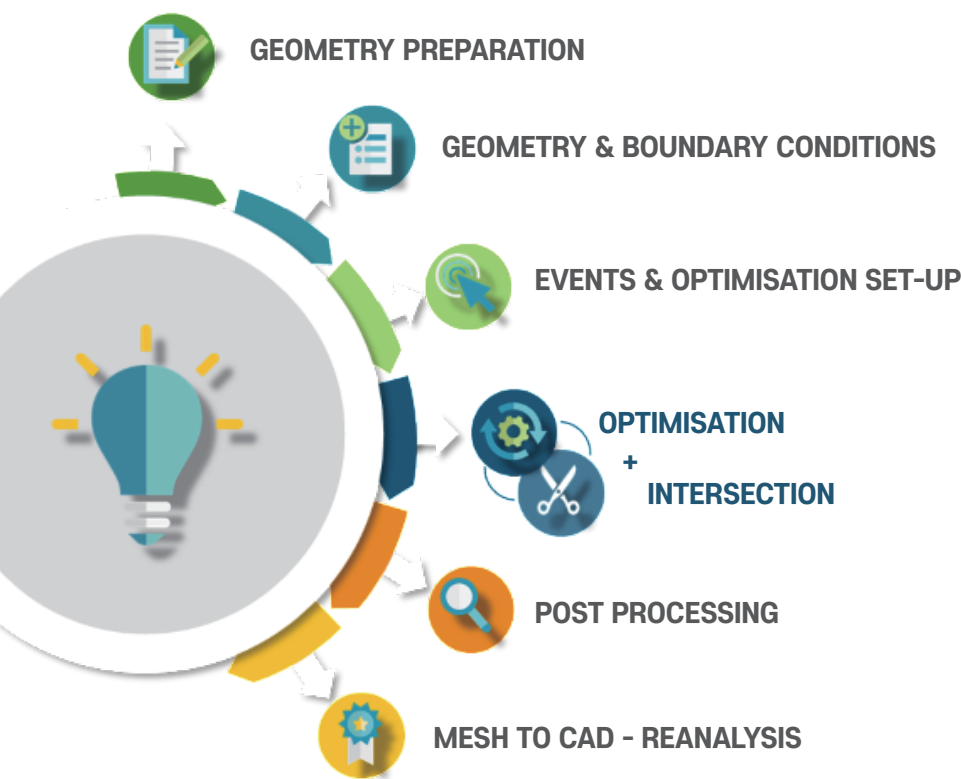




Design & Engineering simulation solutions

Smart CAE, Solutions for Virtual Manufacturing and Cost Savings

DfAM



**MSC Apex | Generative Design**  
Fully automated Generative Design solution

- Derive Optimal Lightweight Design Based on Density/Weight
- Deriving the Optimal Design Considering the Manufacturing Properties
- Enhanced User Interface with Fast and Easy GUI Delivery

Case study: Wheel Carrier Formula Student

- 40% weight reduction
- 80% time reduction for design
- Very equal stress distribution

upb

Case study: Gripper for Packaging Machine

- 50% weight reduction
- 12 mm calculation time
- As before

HEXAGON

Case study: Satellite Bracket

Mounting of drives for regulating microwave filters  
To be used in the German communications satellite Hevelius 1e

- 50% weight reduction
- 31% stress reduction
- 75% stiffness increase

TESAT

3D Printing Process Interpretation



**Di** Digimat Additive Manufacturing  
Polymer & Composite AM process simulation

**FFF process**

Radiation and Convection

Part material

Support material

Build plate

Nozzle

**Designing tool path considering relative density**

Relative density 25%

Relative density 50%

**SLS process**

Laser heat source

Radiation and Convection

Printed part

Conduction

Powder bed

Lateral face

Powder bed bottom

**Review the manufacturing process using 3d printing simulation**

- Temperature Field
- Porosity
- Residual Stress
- Warpage
- Cost Analysis

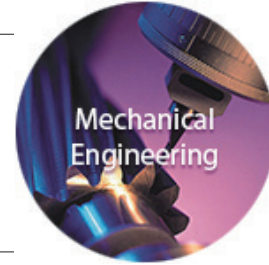
**Digmat AM Workflow**

1. Import CAD & Select process method
2. Material Definition
3. Import Tool path
4. Define process parameters
5. Mesh settings
6. Simulation results
7. Export results



## MIDAS MTS MECHANICAL TOTAL SOLUTION

midas MTS is a support service package that provides everything you need from the introduction of the program to the operation.



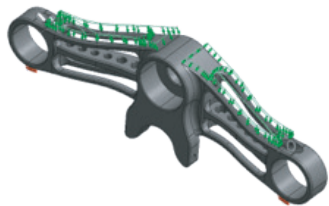
Structural Analysis Solution based on Elementless Method

### Easy 3-Step Interpretation Process

#### STEP 1

#### Import CAD

- Import the material exactly as entered in the CAD
- User can specify materials

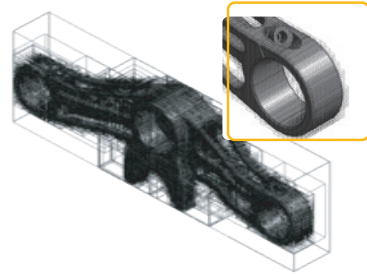


[ Grant interpretation conditions to the original CAD model ]

#### STEP 2

#### Restraint, load input

- Enter directly into the cad model
- [Select → Specify] Easy and intuitive input

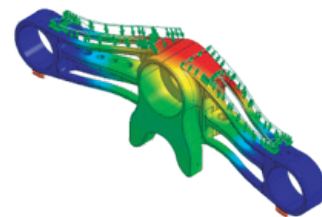


[ Alignment Grid Generation and Analysis (High Performance Parallel Computation) ]

#### STEP 3

#### Analysis of results

- 차별화된 해석 기법을 통한 계산시간 감소
- 해석 성공률 및 정확도 향상



[ Volume Rendering postprocessing ]

### Interpretable on 3D CAD models

### Fast and accurate interpretation using the latest technology

### Configuring menus for user convenience

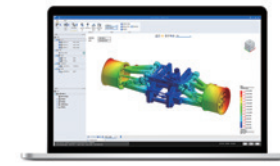
- A menu composition system based on a 3-step analysis process.
- Provides only available conditions for each analysis type, making it easy for each type of analysis

### Quick response to design changes

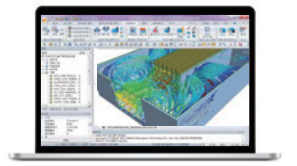
- Auto-Update to apply the same analysis conditions to the changed design-changed models



Midas uses optimal design automation technology to deliver a **new paradigm of engineering solutions**



Structural Analysis Solution



Multi-disciplinary Integrated Analysis Solution



Multi-disciplinary Integrated Analysis Solution based on Finite Element (FEM)

## Reasons to choose NFX

### NFX Ease of use

Artificial intelligence-class automation enables fast and efficient design

### Facilitation of NFX analysis

Provides a wide range of features for professional engineering for ease of use

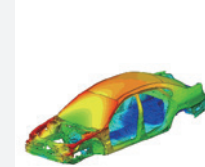
### Affordable operating costs

secure your own technology at a reasonable price.

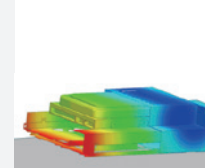
### Various analysis functions

#### Structural analysis

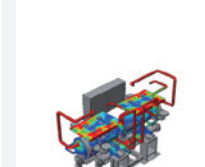
##### Strength/Stiffness



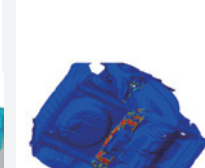
##### Collision and Drop



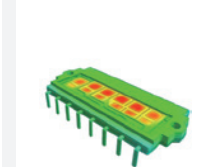
##### Vibration Performance



##### Product Life



##### qHeat dissipation

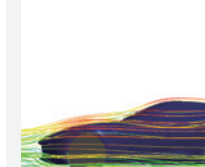


##### Material reduction

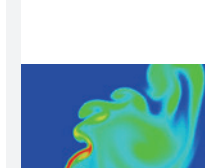


#### Flow analysis

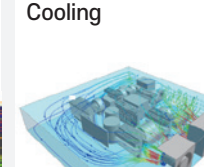
##### Fluid Flow



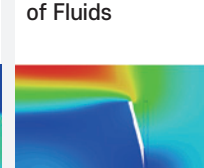
##### Mixing performance



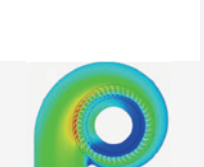
##### Heat dissipation, Cooling



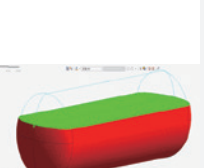
##### Structural Effects of Fluids



##### Rotating Body



##### multiphase flow





smart **K-CAD**

K-CAD is the pride of Korean software that our technology makes and the world uses.



INTRODUCTION



Complete file compatibility

Not Import/Export,  
Use existing DWG files



Convenient use

Same screen configuration  
and shortcut commands  
as traditional CAD



Fast working speed

Unparalleled stability  
and speed of operation



Additional Application Features

[K-PLUS] Equipped with  
user-centric applications



Various Import

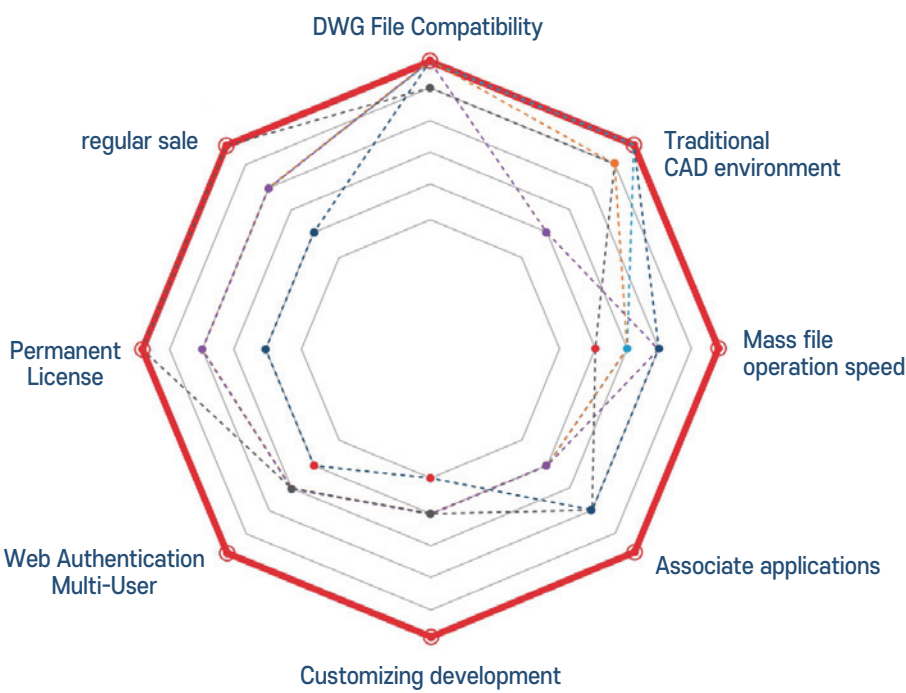
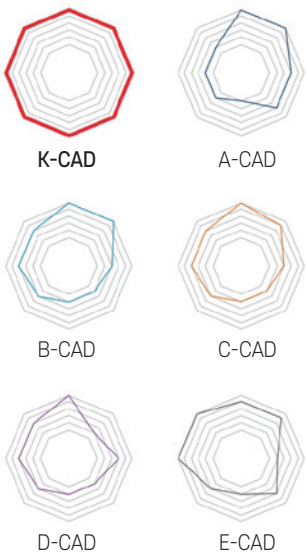
Various types of import  
PDF, EXCEL, DXF etc.



License Policy

Multi-user usage and  
perpetual licensing policies

Key differentiation



K-CAD cost-effectiveness

Through continuous research and development, K-CAD seeks full compatibility with existing CAD. We have launched a semi-annual upgrade program to increase customer satisfaction. We will create products with customers through technical support through remote support.

'Initial cost' on deployment	'Five-Year Cost' After Deployment
<div><div>\$980</div><div>K-CAD</div></div> <div><div>\$1,500</div><div>Existing CAD</div></div>	<div><div>\$1,700</div><div>K-CAD</div></div> <div><div>\$7,500</div><div>Existing CAD</div></div>

- **competitive cost** Traditional CAD has to be used at an annual cost, but 'K-CAD' is permanent.
- **Maintenance/Upgrade** 'K-CAD' maintenance is provided free of charge for one year after purchase, and after one year.

CARBON FIBER



CarbonX™ PEI+CF  
1.75mm - 500g



CarbonX™ PC+CF  
1.75mm - 500g



CarbonX™ PP+CF  
1.75mm - 750g



CarbonX™ PA6+CF  
1.75mm - 500g



CarbonX™ PA12+CF  
1.75mm - 500g



FIBREX™ NYLON+GF30  
1.75mm - 750g



CarbonX™ HTN+CF PPA  
1.75mm - 500g



Essentium HTN CF25  
1.75mm - 750g/1.75mm - 2.5kg

PEKK



ThermaX™ PEKK-C  
1.75mm - 500g



ThermaX™ PEKK-A  
1.75mm - 500g/1.75mm - 250g



CarbonX™ CF PEKK-A  
1.75mm - 500g/1.75mm - 250g



Kimya PEKK CARBON  
1.75mm - 500g/2.85mm - 500g



Kimya PEKK-A  
1.75mm - 500g/1.75mm - 250g  
2.85mm - 500g

PEEK



ThermaX™ PEEK  
1.75mm - 500g



CarbonX™ PEEK+CF10  
1.75mm - 500g/1.75mm - 100g



CarbonX™ PEEK+CF20  
1.75mm - 500g



FiberX™ PEEK+GF20  
1.75mm - 500g

More Information and Datasheets

<https://smartstore.naver.com/cobees>



CARBON FIBER

CarbonX™ PEI+CF, Made using ULTEM 9085

High thermal properties, Tg of 186°C and an HDT of 165°C, Inherent flame resistance due to Ultem™ 9085 base resin

Extruder temp	217 C°	Tensile Strength, Break	145 MPa
Flexural Strength	120 MPa	Tensile Elongation, Break	1.5 %

CarbonX™ PC+CF

high-performance carbon fiber reinforced PC filament. Polycarbonate rovides the highest thermal performance in the 3D market.

Extruder temp	280-310 C°	Tensile Strength, Break	70 MPa
Flexural Strength	90 MPa	Tensile Elongation, Break	2 %

CARBONX™ PP+CF

Does not absorb moisture, Excellent chemical resistance, Low density/light weight, High strength and stiffness

Extruder temp	220-250 C°	Tensile Strength, Break	78 MPa
Flexural Strength	68 MPa	Tensile Elongation, Break	1.5 %

CarbonX™ PA6+CF(Gen3)

Gen 3 CarbonX™ CF-Nylon Filament is an advanced semi-aromatic polyamide copolymer reinforced with high-modulus carbon fiber.

Extruder temp	240-270 C°	Tensile Strength, Break	63 MPa
Flexural Strength	84 MPa	Tensile Elongation, Break	3 %

PEKK

ThermaX™ PEKK-C

ThermaX™ PEKK has a lower rate and degree of crystallinity than PEEK, which aids in its ease of printing.

Extruder temp	345 - 375 C°	Tensile Strength, Break	105 MPa
Flexural Strength	134 MPa	Tensile Elongation, Break	10 %

ThermaX™ PEKK-A

ThermaX™ PEKK-A (PolyEtherKetoneKetone) is one of the highest performance materials in the plastics business.

Extruder temp	345 - 375 C°	Tensile Strength, Break	105 MPa
Flexural Strength	95 MPa	Tensile Elongation, Break	5 %

CarbonX™ CF PEKK-A

CarbonX™ PEKK has a lower rate and degree of crystallinity than PEEK, which aids in its ease of printing.

Extruder temp	345 - 375 C°	Tensile Strength, Break	126 MPa
Flexural Strength	178 MPa	Tensile Elongation, Break	3.15 %

Kimya PEKK CARBON

PEKK) is a thermoplastic polymer reinforced with carbon fiber. This combination gives it a high level of rigidity and heat-resistance.

Extruder temp	370-380 C°	Tensile Strength, Break	39.1 MPa
Flexural Strength	39.1 MPa	Tensile Elongation, Break	3.2 %

Kimya PEKK-A

Excellent filament in technical applications requiring high temperature resistance (up to 150°C).

Extruder temp	370-380 C°	Tensile Strength, Break	65 MPa
Flexural Strength	94.9 MPa	Tensile Elongation, Break	5 %

CarbonX™ PA12+CF

PA12 is widely used in a variety of industries due to its excellent chemical resistance, low moisture absorption.

Extruder temp	265-285 C°	Tensile Strength, Break	72 MPa
Flexural Strength	90 MPa	Tensile Elongation, Break	2.1 %

FIBREX™ NYLON+GF30

Exceptionally stiff and strong, Excellent chemical resistance, High thermal properties, Improved dimensional stability

Extruder temp	260-280 C°	Tensile Strength, Break	62.8 MPa
Flexural Strength	72 MPa	Tensile Elongation, Break	6 %

CarbonX™ HTN+CF PPA

CarbonX™ CF-HTN is an advanced semi-aromatic polyphthalamide (PPA) reinforced with high-modulus carbon fiber.

Extruder temp	285-315 C°	Glass Transition	125 C°
Bed Temp	110 - 120 C°	Heat Deflection Temp	220 C°

Essentium HTN CF25

HTN-CF25 is the highest strength and stiffness material in the Essentium portfolio.

Extruder temp	270 - 290 C°	Tensile Strength, Break	148 MPa
Flexural Strength	184 MPa	Strain at Break	1.4 %

PEEK

ThermaX™ PEEK

PEEK has exceptional mechanical, thermal, and chemical resistance properties making it a go-to material in some of the most demanding applications.

Extruder temp	375 - 410 C°	Tensile Strength, Break	100 MPa
Flexural Strength	130 MPa	Tensile Elongation, Break	28 %

CarbonX™ PEEK+CF10

CarbonX™ PEEK+CF10 is one of the premier polymers in FFF/FDM 3D Printing. Made using 10% high-modulus chopped carbon fiber for exceptional stiffness, strength, and dimensional stability.

Extruder temp	390 - 450 C°	Tensile Strength, Break	105 MPa
Flexural Strength	136 MPa	Tensile Elongation, Break	3 %

CarbonX™ PEEK+CF20

CarbonX™ PEEK+CF20 is one of the premier polymers in FFF/FDM 3D Printing. Made using 20% high-modulus chopped carbon fiber for exceptional stiffness, strength, and dimensional stability.

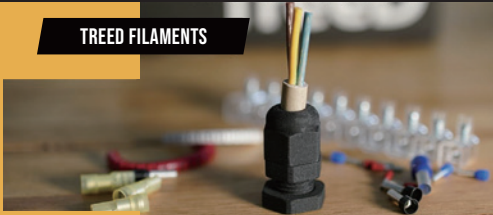
Extruder temp	390 - 450 C°	Tensile Strength, Break	126 MPa
Flexural Strength	145 MPa	Tensile Elongation, Break	1.9 %

FiberX™ PEEK+GF20

PEEK+GF20 Glass Fiber Reinforced PEEK 3D Printer Filament. Now reinforced 20% with glass fibers, PEEK+GF20 has exceptional mechanical, thermal, and chemical resistance properties along with its low warp, increased stiffness, and improved dimensional stability.

Extruder temp	270 - 290 C°	Tensile Strength, Break	148 MPa
Flexural Strength	184 MPa	Strain at Break	1.4 %





TECHNICAL



**ABS ESD**  
1.75mm - 750g / 2.85mm - 750g



**ABS FOOD**  
1.75mm - 1kg



**ABS MED**  
1.75mm - 1kg



**T-MAT**  
1.75mm - 1kg



**TENAX PC+ABS**  
1.75mm - 500g



**UV729 ASA**  
1.75mm - 1kg



**ABS ZX**  
1.75mm - 800g



**B-MAT PCPBT**  
1.75mm - 1kg / 1.75mm - 2kg



**G-PET**  
1.75mm - 1kg



**PC ABS V0**  
1.75mm - 1kg



**Performance ABS**  
1.75mm - 1kg



**STIRON HIPS**  
1.75mm - 1kg



**HIRMA**  
1.75mm - 500g



**LONGCHAIN NYLON**  
1.75mm - 500g



**P51 POLYCARBONATE**  
1.75mm - 500g

INDUSTRIAL



**E-lene**  
1.75mm - 750g



**P-LENE T15**  
1.75mm - 750g



**P-LENE4**  
1.75mm - 750g



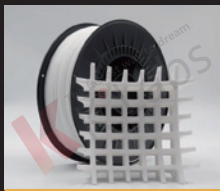
**PEEK natural**  
1.75mm - 500g



**P-LENE5**  
1.75mm - 750g / 2.85mm - 750g



**PAHP natural**  
1.75mm - 750g



**PAKK**  
1.75mm - 750g



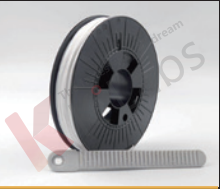
**PPS CF**  
1.75mm - 750g / 2.85mm - 750g

PNEUMATIQUE



**PNEUMATIQUE**  
1.75mm - 500g

FLEXIBLE



**FLEXABILITY**  
1.75mm - 500g



**FLEXABILITY+**  
1.75mm - 500g



**FLEXMARK 7~9**  
1.75mm - 500g



**ULTRAFLEXX**  
1.75mm - 500g

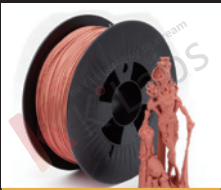


**ULTRAFLEXX+**  
1.75mm - 500g

ARCHITECTURAL



**CAEMENTUM**  
1.75mm - 750g



**CLAY**  
1.75mm - 750g



**CLAY EVOLUTION**  
1.75mm - 500g



**DARK STONE**  
1.75mm - 750g



**HERITAGE BRICK**  
1.75mm - 750g



**MONUMENTAL**  
1.75mm - 750g



**Monumental Evolution**  
1.75mm - 500g



**SANDY**  
1.75mm - 750g

WONDERFIL



**ECOGENIUS PLA**  
1.75mm - 1kg



**FUSION PLA**  
1.75mm - 750g



**GONZALES PLA**  
1.75mm - 1kg



**KYOTOFLEX**  
1.75mm - 500g



**SHOGUN PLA**  
1.75mm - 1kg

CARBON FIBER



**CA-PET**  
1.75mm - 750g / 2.85mm - 750g



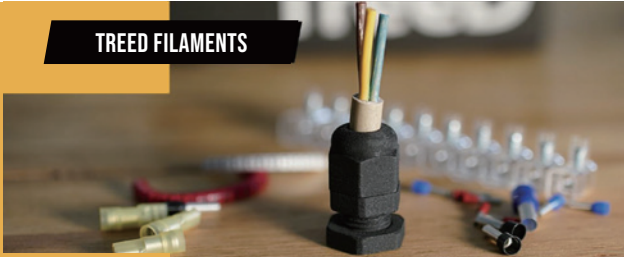
**Carbonio Nylon**  
1.75mm - 750g / 2.85mm - 750g



**PAHP CARBON**  
1.75mm - 750g



**PP-CARBON**  
1.75mm - 750g



TECHNICAL

ABS ESD

This is an advanced and truly exceptional filament used in the electrical sector due to its property of isolating circuits and components

Extruder temp	240-260 C°	Tensile stress	30 MPa
Plate temp	90 C°	Tensile elongation	50 %

ABS FOOD

ABS Food is certified to be in contact with food

Extruder temp	235-250 C°	Tensile strength	47 MPa
Plate temp	90 C°	Tensile elongation	30 %

ABS MED

ABS MED is the ideal filament for medical devices.

Extruder temp	235-250 C°	Tensile strength	46 MPa
Plate temp	90 C°	Tensile elongation	31 %

ABS ZX

ABS means Acrylonitrile Butadiene Styrene, and it is a polymer known for its toughness, brilliance and tactile feeling.

B-MAT PCPBT

B-MAT Polycarbonate Charged Polybutadiene Terephthalate

Extruder temp	235-250 C°	Tensile stress	52 MPa
Plate temp	70-90 C°	Tensile elongation	44 %

G-PET

G-PET is an exceptional filament that encloses the characteristics of strength and resistance equal to an ABS and the high stability.

Extruder temp	240° +/-10°	Tensile stress	26 MPa
Plate temp	100° +/-10°	Water Absorption	0.13 %

HIRMA

This is polymethyl methacrylate PMMA filament. Suitable for industrial and technical applications.

Extruder temp	230° +/-10°	Tensile Strenght	51 MPa
Plate temp	100° +/-10°	Water Absorption	0.4 %

LONGCHAIN NYLON

Longchain is a technopolymer ideal for metal replacement. Its outstanding characteristics are the best for industrial applications.

Extruder temp	240° +/-10°	Tensile Modulus	1440 MPa
Plate temp	95° +/-10°	Yield Stress	43 MPa

P51 POLYCARBONATE

Due to its strength and stability it is one of the most used and exploited polymers in the industry for 3D printing of technical parts.

Extruder temp	245° +/-10°	Tensile stress	71 MPa
Plate temp	100° +/-10°	Water Absorption	0.15 %

PC ABS V0

PC ABS dedicated polymer alloy and Filament certified UL94 V0 used also in railway application

Extruder temp	260-280 C°	Tensile strength	54 MPa
Plate temp	90-110 C°	Tensile elongation	120 %

Performance ABS

ABS means Acrylonitrile Butadiene Styrene, and it is a polymer very tough, brilliance and tactile feeling.

Extruder temp	230° +/-10°	Tensile strength	2.6 %
Plate temp	100° +/-10°	Tensile Modulus	2300 MPa

STIRON HIPS

Filament designed to create media that will be removed from printing in ABS or other material being soluble in limonene.

Extruder temp	220° +/-10°	Tensile Modulus	1800 MPa
Plate temp	85° +/-10°	Water Absorption	0.1 %

T-MAT

The T-mat is an ABS alloy with improved performance for characteristics such as heat resistance, extreme lightness.

Extruder temp	235-250 C°	Tensile Modulus	2200 MPa
Plate temp	90 C°	Tensile stress	47 MPa

TENAX PC+ABS

Developed specifically for 3d printing, with odourless composition and low warping.

Extruder temp	250° +/-10°	Tensile Modulus	2000 MPa
Plate temp	100° +/-10°	Water Absorption	0.9 %

UV729 ASA

The UV729 has the advantage of its excellent mechanical strength, enabling robust and reliable printing.

Extruder temp	245° +/-10°	Tensile Strength at Yeld	410 kg/cm²
Plate temp	100° +/-10°	Flexural Modulus	19,500 kg/cm²

INDUSTRIAL

E-lene

E-LENE is a professional material consisting of high density HDPE polyethylene, a thermoplastic polymer.

Extruder temp	235-250 C°	Tensile modulus	1450 MPa
Plate temp	30-60 C°	Tensile Strength at Yeld	30 MPa

P-LENE T15

P-LENE T15 Pure PolyPropylene, keeps up to 95% of the characteristics of an injection molded part.

Extruder temp	260-5+5 C°	Tensile modulus	1950 MPa
Plate temp	70 C°	Tensile stress	20 MPa

P-LENE4,5

Very high mechanical strength and toughness, wear proof, resistant to chemicals.

P-LENE4	Extruder temp	245° +/-10°	Bed Temperature	100 C°
P-LENE5	Extruder temp	265-5+10°	plate temp	80 C°

Pahp natural

Polymers with no moisture problems, no distortion problems

Extruder temp	240-270 C°	Tensile strength	85 MPa
Plate temp	50-80 C°	Tensile elongation	3.5 %

PAKK

Pakk is an advanced and truly exceptional filament capable of self-extinguishing in the event of fire. and resistant to shocks and high temperatures and does not deform if exposed to UV rays.

Extruder temp	240-270 C°	Tensile strength	55 MPa
Plate temp	80-90 C°	Tensile elongation	1.2 %

PEEK natural

PEEK natural the most performance polymer today. Best performance also with aneeling cycle. For engineering components with high level functionality.

Extruder temp	390-420 C°	Tensile strength	97 MPa
Plate temp	90 C°	Water Absorption	< 0.1 %

PP-CARBON

The right balance with carbon fibers and polypropylene to obtain a good material print.

Extruder temp	255-270 C°	Tensile strength	54 MPa
Plate temp	50 C°	Water Absorption	< 0.3 %

PPS CF

same base of PPS natural added with 15% carbon fibre inside.

Extruder temp	305-320 C°	Tensile stress	125 MPa
Plate temp	100 C°	Tensile elongation	1.2 %

FLEXIBLE

FLEXABILITY

Highly technical flexible material. Perfect for any situation.

Extruder temp	230-250 C°	Tensile strain at break	32 MPa
Plate temp	85-100 C°	Water absorption	0.4 %

FLEXABILITY+

Very high abrasion and scratch resistance. It's truly wear-proof.

Extruder temp	230-250 C°	Tensile strain at break	40 MPa
Plate temp	85-100 C°	Water absorption	0.5 %

FLEXMARK 7,8,9

The TPUs are highly resistant to chemical agents, wear-proof and with good elastic comeback.

FLEXMARK 7	Extruder temp	225° +/-10°	Tensile strength	40 MPa
	Plate temp	cold to 45 C°	Tensile elongation	750 %

FLEXMARK 8	Extruder temp	225° +/-10°	Tensile strength	50 MPa
	Plate temp	cold to 45 C°	Tensile elongation	750 %

FLEXMARK 9	Extruder temp	225° +/-10°	Tensile strength	55 MPa
	Plate temp	cold to 45 C°	Tensile elongation	600 %

ULTRAFLEXX

Super Flexible TPE 3D Printing Filament

Extruder temp	215-235 C°	Tensile strain at break	>200 %
Plate temp	45-90 C°	Water absorption	0.8 %

ULTRAFLEXX+

UltrafleXX+ is very easy to print, thanks to our particular formulation

Extruder temp	215-235 C°	Tensile strain at break	>825 %
Plate temp	45-90 C°	Water absorption	0.8 %





## ARCHITECTURAL

### CAEMENTUM

CAEMENTUM is 3D filament for architectural models, archeology and design.

Extruder temp	220-240 C°	Tensile modulus	2500 MPa
Plate temp	90-110 C°	Water absorption	0.2 %

### CLAY

Clay 3D Printing for Architectural Use. CLAY is developed specifically for architecture, design and archeological fields.

Extruder temp	220-240 C°	Tensile modulus	2500 MPa
Plate temp	90-110 C°	Water absorption	0.2 %

### CLAY EVOLUTION

Evolved clay 3D Printing for Architectural Use. It's developed specifically for architecture, design and archeological fields.

Extruder temp	220-240 C°	Tensile modulus	2500 MPa
Plate temp	90-110 C°	Water absorption	0.2 %

### DARK STONE

Architectural Stone 3D Printing Filaments

Extruder temp	220-240 C°	Tensile modulus	2500 MPa
Plate temp	90-110 C°	Water absorption	0.2 %

### HERITAGE BRICK

Polymers are mixed with special powders to realize architectural brick 3D printed objects with ease.

Extruder temp	220-240 C°	Tensile modulus	2500 MPa
Plate temp	90-110 C°	Water absorption	0.2 %

### MONUMENTAL

Architectural Marble 3D Printing Filament. Monumental is specifically for architecture, design and archeological fields for 3d printing.

Extruder temp	220-240 C°	Tensile modulus	2500 MPa
Plate temp	90-110 C°	Water absorption	0.2 %

### Monumental Evolution

The new Monumental is tougher, UV resistant and with less warping.

Extruder temp	220-240 C°	Tensile modulus	2500 MPa
Plate temp	90-110 C°	Water absorption	0.2 %

### SANDY

Architectural Sandy 3D Printing Filament. Best polymers mixed with stone powders to 3d print architectural objects with ease.

Extruder temp	220-240 C°	Tensile modulus	2500 MPa
Plate temp	90-110 C°	Water absorption	0.2 %

## WONDERFIL

### ECOGENIUS PLA

Truly Ecologic 3D Printing Filament. Eco because it is obtained exclusively from plants, eco because it is totally recyclable and it gets back to the earth.

Extruder temp	185-210 C°	Tensile modulus	65.5 MPa
Plate temp	cold to 80 C°	Melting point	144 %

### FUSION PLA

Fusion PLA is specific for 3d printing, with odourless composition.

Extruder temp	190° +/-10°	Tensile strain at break	65.5 MPa
Plate temp	cold to 70 C°	Melting point	144 %

### GONZALES PLA

GONZALES PLA is a 3D filament specifically developed for high speed 3d printing with maximum precision.

Extruder temp	185-210 C°	Tensile strain at break	65.5 MPa
Plate temp	cold to 90 C°	Tensile elongation break	> 10 %

### KYOTOFLEX

Kyotoflex is an eco-friendly, stretchable, flexible polymer that biodegrades completely.

Extruder temp	200° +/-10°	Tensile strength	19.6 MPa
Plate temp	cold to 40 C°	Elongation at F max	450 %

### SHOGUN PLA

It can withstand high temperatures, up to 90°C without losing its shape.

Extruder temp	215-235 C°	Tensile strain at break	>825 %
Plate temp	45-90 C°	Water absorption	0.8 %

## CARBON FIBER

### CA-PET

The easiest printable CA-PET carbon fiber PET filament. No moisture inside CA-PET filaments, warrant of repeatability.

Extruder temp	230-250 C°	Tensile strength	80 MPa
Plate temp	30-60 C°	Tensile elongation	2.5 %

### Carbonio Nylon

Carbonio Nylon. We use only fibers, not powders. Because it's not 'Powder Carbon' but 'Fiber Carbon' use.

Extruder temp	230-250 C°	Tensile modulus	120 MPa
Plate temp	90-110 C°	Tensile elongation	5.3 %

### PAHP CARBON

Super charged carbon fiber. No others polymers can reproduce the same high modulus, working temp. and high stress resistance.

Extruder temp	240-270 C°	Tensile strength	170 MPa
Plate temp	50-80 C°	Tensile elongation	2 %

### PP-CARBON

The right balance with carbon fibers and polypropylene to obtain a good material print.

Extruder temp	255-270 C°	Tensile strength	54 MPa
Plate temp	50 C°	Tensile elongation	1.2 %

## PNEUMATIQUE

### PNEUMATIQUE

Thermoplastic elastomer and reactive rubber of recycled tires. From one single tire it is possible to obtain enough pellet for the extrusion of 9 pneumatique filament spool of 500gr each.

Extruder temp	215 C°	Elastic modulus	26.7 MPa
Plate temp	30 C°	Stress at break	14.5 %

## ECOGENIUS PLA

### Eco-friendly 3D Printing Special Filaments

- Biodegradable, petroleum-free, **eco-friendly filaments** that process ingredients obtained **only from plants**

- **Eco-friendly Filament** with Non-petroleum Components

It is recyclable and eco-friendly because it is oil-free obtained as an eco-plant. The Ecogenius PLA has a natural glossy finish that makes the object shine naturally.

### SUGGESTED PRINT SETS

Suggested print sets	unit	value	test method
Extruder temp	°C	185-210	internal
Plate temp	°C	cold to 80	internal
Min. nozzle diameter	mm	0,3	internal
Fan	%	50-100	internal
Print speed	mm/s	60-80	internal

### PROPERTY

#### Physical

Specific gravity	g/cm³	1.24	ASTM D792
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#### Mechanical at 23°C / 50% rh

Tensile modulus	MPa	65.5	ASTM D882
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#### Thermal

Melting point	°C	144	ASTM D3418
Vicat softening temp.	°C	55-60	ASTM D3418





NANO POLYMER ADHESIVE

HIGH-TEMPERATURE BUILDPLATE GLUE  
THE LAST BUILD PLATE GLUE YOU'LL EVER NEED



UNMATCHED  
BED ADHESION

Designed for PEEK, ULTEM™, PPSU, and other high-performance FDM polymers, this build plate glue works for nearly every filament - Nylon, ABS, PLA, PETG, PEI, PSU, and almost every filament we've tested.

**WORKS ON MULTIPLE SURFACES:**  
Borosilicate glass, ceramic glass, PCB board, FR4, Carbon Fiber, Fiberglass, Aluminum, BuildTak™, PEI, Kapton tape, and more.

100ml / Sample 10ml

ITEMS PER UNIT



- Instructions
- Branded Bag
- Applicator Brush
- 100ml Adhesive in Container

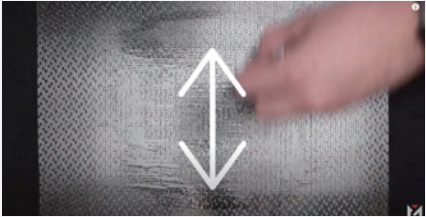
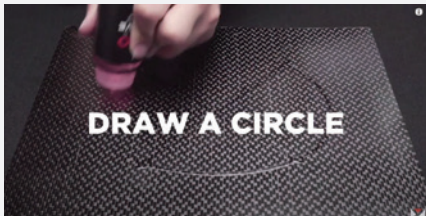
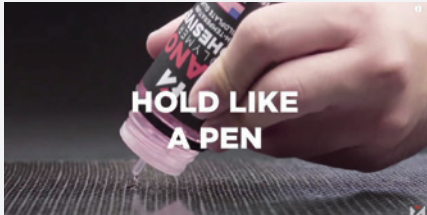
PRODUCT FEATURE



- Designed for PEEK, PEI, and high-temp materials
- Works on Many Surfaces (glass, carbon, resins, etc)
- Easy to clean and re-apply
- Made from safe, non-toxic, organic compounds

HOW TO USE  
NANO POLYMER ADHESIVE

- Clean your buildplate (water, windex or alcohol)
- Apply Adhesive (spread evenly on Build Area)
- Calibrate your first layer height and print your part



CAUTION  
CAUTION

HIGH  
TEMP

When you're extruding over 300°C, remove the part as quickly as possible. You want the build plate and part to be HOT when you remove it -- high-temp materials contract extremely quickly when cooling, and parts can shatter glass in less than 30 seconds.

LOW  
TEMP

When you're extruding below 300°C, generally you can remove the part as soon as the plate cools. With materials like PLA or PETG, it usually pops itself off the plate. If it sticks too much, you can apply water around the base of the part, which will help it release. Make sure your first layer is PERFECT.

CAUTION when using ABS & PETG on Glass

Even without adhesives, ABS & PETG are well known to break and chip glass.

ABS contracts very quickly when it cools; because of this, the risk of chipping, chunking, or breaking glass is higher with ABS. We recommend using Kapton Tape, PEI, or some other type of protective surface on top of glass when printing ABS.

Make sure your first layer is PERFECT -- if it is too close, you risk breaking your glass. Especially when your first layer is smashed into the plate. Many people have set an extra-close z-offset to stick their filament to the bed -- with our adhesive, this is unnecessary.

ENSURE PROPER LEVELING. High-temp materials must be removed extremely quickly. High Performance Polymers cool faster than glass, which can cause chipping. Prevent this by removing parts quickly.





## SZS-50B BIO ceramic



### Features

- 1. Optimized design with bioceramics
- 2. Excellent accuracy of printouts

### Specification

Product name	3D MAGIC
Model name	SZS-50B
Material	Liquid resin
Equipment used	OCTAVE ONE / ZETA
purpose	Artificial teeth, artificial bones, dental implants, etc.
capacity	1kg



## SZS-50D INDUSTRIAL ceramic



### Features

- 1. Excellent physical and chemical properties for use in a wide range of industries
- 2. Ceramic molds for precision casting applicable
- 3. Excellent accuracy of printouts

### Specification

Product name	3D MAGIC
Model name	SZS-50D
Material	Liquid resin
Equipment used	OCTAVE ONE / ZETA
purpose	Industrial parts, heat-resistant parts
capacity	1kg

## PA6-CF FILAMENT



High strength carbon filament mixed with PA6 nylon and Carbon Fiber (23%).

The PA6-CF is a carbon fiber reinforced nylon filament with the highest strength, shock resistance and thermal deformation temperature (load deflection temperature).  
For best print results, it is recommended to keep the material dry at all times (relative humidity of 20% or less).

The PA6-CF is a nylon/polyamide based filament product and is a carbon fiber reinforced PA6 filament that combines unique engineering properties with ease of printing.

### Features 1 High thermal deformation temp

It is also suitable for automotive manufacturing applications that require strength and heat resistance because it features a temperature of 215°C thermal deformation.

### Features 3 Excellent interlayer adhesion

The strength of the Z-axis of the sculpture is strong, and the adhesion between layers is excellent.

### Features 2 Safe material

It is also safe for electrostatic discharge (ESD), making it suitable for printing electronic jigs or electronic components.

### Features 4 High performance features

It has excellent stiffness, strength and heat resistance.

### Specification

Print Settings	mechanical setting	thermal properties	Remark
Nozzle temp : 280°C ~ 300°C	Young's modulus : 7453 ± 656 MPa	Thermal deformation temp (ISO 75 1.8MPa) :196°C	Dry Settings : 100°C 8hours
Printing speed : 30mm/s ~ 60mm/s	Tensile strength : 105 ± 5.0 MPa	Thermal deformation temp (ISO 75 0.45MPa) : 215°C	Recommended Support Materials : PolyDissolve™ S1
Ben temp : 25°C ~ 50°C (Do not exceed 50°C)	bending strength : 169 ± 4.7 MPa	Melting temp : 220°C	Other : Annealing 80°C 6h
Based on 0.4mm nozzle and Simplicity 3D v.3.1. Printing conditions may vary depending on printer and nozzle diameter.	Charpy impact strength : 13.34 ± 0.52(kJ/m <sup>2</sup> )		Seat resistance in water conditions : (ASTM D991, GB/T 2439, ISO 1853) 1-10(1080/sg)



Properties	GENERAL								ENGINEERING		JEWELRY	
	Nontoxic		Standard						Tough	Rigid	Wax	Castable
	CMYK	Clear	Black	Gray	Green	Yellow	Ivory	Beige	Black	Black	Deep Green	Yellow
	CUKL89C/M/Y/K/W/CL		3DKBLK	CEK004G	3DK83G	3DK83Y	3DK83I	3DK83B	CUKT05B	CUKR03B	CAM004	CJA011Y
Viscosity @ 25°C [cP]	1100-1200	1000-1200	110-130	200-250	110-130	180-200	220-250	220-250	365	300	N/A	180
Viscosity @ 40°C [cP]	N/A	N/A	80-110	130-150	80-100	130-150	150-170	150-170	N/A	N/A	N/A	N/A
Density [g/cm³]	1.1	1.1	1.13	1.12	1.13	1.13	1.18	1.18	1.10	1.08	N/A	1.11
E Modulus [MPa]	1140	N/A	2700	2000	2700	4000	2200	4000	1200	1920	N/A	600
Ultimate Tensile Strength [MPa]	50-55	28	84	52	84	70	88	64	59	62	N/A	26
Elongation at Break [%]	7	7	4	10	5	2.3	5	3.2	30	5	N/A	8
Notched Izod(Machined), 25°C [J/m]	23	12.5	18	23	19	19	16	19	40	23	N/A	N/A
HDT @ 0.45MPa [°C]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	57	71	N/A	N/A
HDT @ 1.82MPa [°C]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	48	56	N/A	N/A
Shore Hardness	83D	84D	87D	85D	87D	87D	87D	87D	81D	84D	N/A	73D
Die C Tear Specimen [kN/m]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ash Content [%]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0-0.01

Properties	FUNCTIONAL		CERAMIC	
	Super Clear	Professional	Model	Mold
	Clear	Gray	Off White	Off White
	CIK014C	CUKH17G	CCTP17W	CCTC18W
Viscosity @ 25°C [cP]	590-600	180	500-1000	500-1000
Viscosity @ 40°C [cP]	N/A	N/A	N/A	N/A
Density [g/cm³]	1.094	1.09	1.08	1.08
E Modulus [MPa]	1140	1700	N/A	N/A
Ultimate Tensile Strength [MPa]	50	55	N/A	N/A
Elongation at Break [%]	7	4	N/A	N/A
Flexural Modulus [MPa]	N/A	N/A	N/A	N/A
Flexural Strength [MPa]	57	N/A	N/A	N/A
Notched Izod(Machined), 25°C	23KJ/m²	N/A	N/A	N/A
HDT @ 0.45MPa [°C]	66	N/A	N/A	N/A
HDT @ 1.82MPa [°C]	56	N/A	N/A	N/A
Shore Hardness	88D	82D	N/A	N/A
Specific Gravity @ 23°C [g/cm³]	N/A	N/A	1.08	1.08
pH in Water [pH]	N/A	N/A	7	7
Odour	N/A	N/A	Acrylic-like	Acrylic-like
Appearance	N/A	N/A	opaque	opaque
Total Transmittance / Haze [%]	91 / 0.61	N/A	N/A	N/A

Properties	DENTAL			
	Model	C&B	SG	Cast
	Caramel	Natural Tooth	Clear	Pistachio
	CDO010B	CDV020W	CDO030C	CDO040G
Viscosity @ 25°C [cP]	220-220	1100-1300	800-900	200-300
Density [g/cm³]	1.09	N/A	N/A	N/A
E Modulus [MPa]	1400	1500	N/A	N/A
Ultimate Tensile Strength [MPa]	67	50	N/A	N/A
Elongation at Break [%]	10	N/A	N/A	N/A
Flexural Modulus [MPa]	N/A	N/A	N/A	N/A
Flexural Strength [MPa]	N/A	N/A	N/A	N/A
Bi-Axial Flexural Strength [MPa]	N/A	N/A	N/A	N/A
Hardness	80D(Shore)	80-90D(Shore)	85-90D(Shore)	N/A
Notched Izod(Machined), 25°C [J/m]	N/A	N/A	N/A	N/A
Burnout Conditions / Ash After Burnout	N/A	N/A	N/A	850°C 45mins / <0.1%



# 3devo's Filament maker

## COMPOSER AND PRECISION DESKTOP FILAMENT MAKERS

A COMPLETE FILAMENT PRODUCTION LINE, PACKED  
INTO ONE MACHINE



Our filament makers are specialized, result-oriented machines with industrial quality power. Making materials simpler than ever to work with, while offering even more possibilities in manufacturing and innovation.

Give yourself the freedom to create your own custom filament. Increase control over your filament and minimize material waste and shorter time leads.

### Temperatures

Handles temperatures up to 450°C

### Advanced heating system

Each heater is hand-crafted in-house to ensure top quality.

### Neatly spooled filament

Create custom spool dimensions with neatly rolled filament - every time

### Control Panel

Easily accessible display settings with standard material pre-sets

## DEVOVISION

Visually understand your material.

DevoVision takes desktop-extrusion to a whole new level. Now, it's possible to analyze your industry-quality filament in real-time through software integration. Simplifying your workflow while maximizing productivity.

With an overview of your extrusion history, you can say goodbye to having to estimate and predict certain settings - simply retrieve old logs and replicate the same outcome.

Desktop extrusion has never been easier.

# 3devo's Plastic grinder

## GP20 HYBRID PLASTIC SHREDDER

THE SMARTEST PLASTIC SHREDDER

The functionality of the GP20 hybrid gives you the freedom & flexibility to fit into any project within any industry. With an automated system, sit back as the shredder and granulator's hardware and software work together to get your material to your desired size.

### EFFORTLESS RECYCLING

Convert plastic waste into high-quality 3D printing granules of any desired size in just one run. Designed for effortless operations, the GP20 features customizable components like the shredder blades or filter screen size. These accessible compartments facilitate cleaning and eliminating the contamination of materials.

### 4kg / HOUR

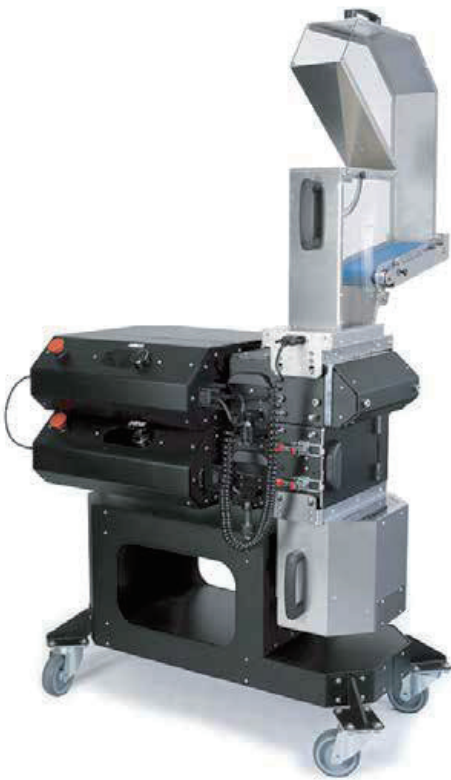
PET water bottles

### 8.6kg / HOUR

ABS injection molded parts

### 29kg / HOUR

Pre-shredded PLA filament



# 3devo's Polymer dryer

## AIRID POLYMER DRYER

ELIMINATE MOISTURE COMPLICATIONS

Humidifying plastics easily absorb moisture from the air and take a long time to dry. Depending on the humidity and the type of plastic, drying may take several hours. 3devo의 3 Delvo's fast drying system can dry 1kg of pellets within 3 hours.

### CUSTOMIZE

Air flow, temperature and stirring speed

### PRESETS

Available for standard materials

### 4 LITERS

Hopper volume

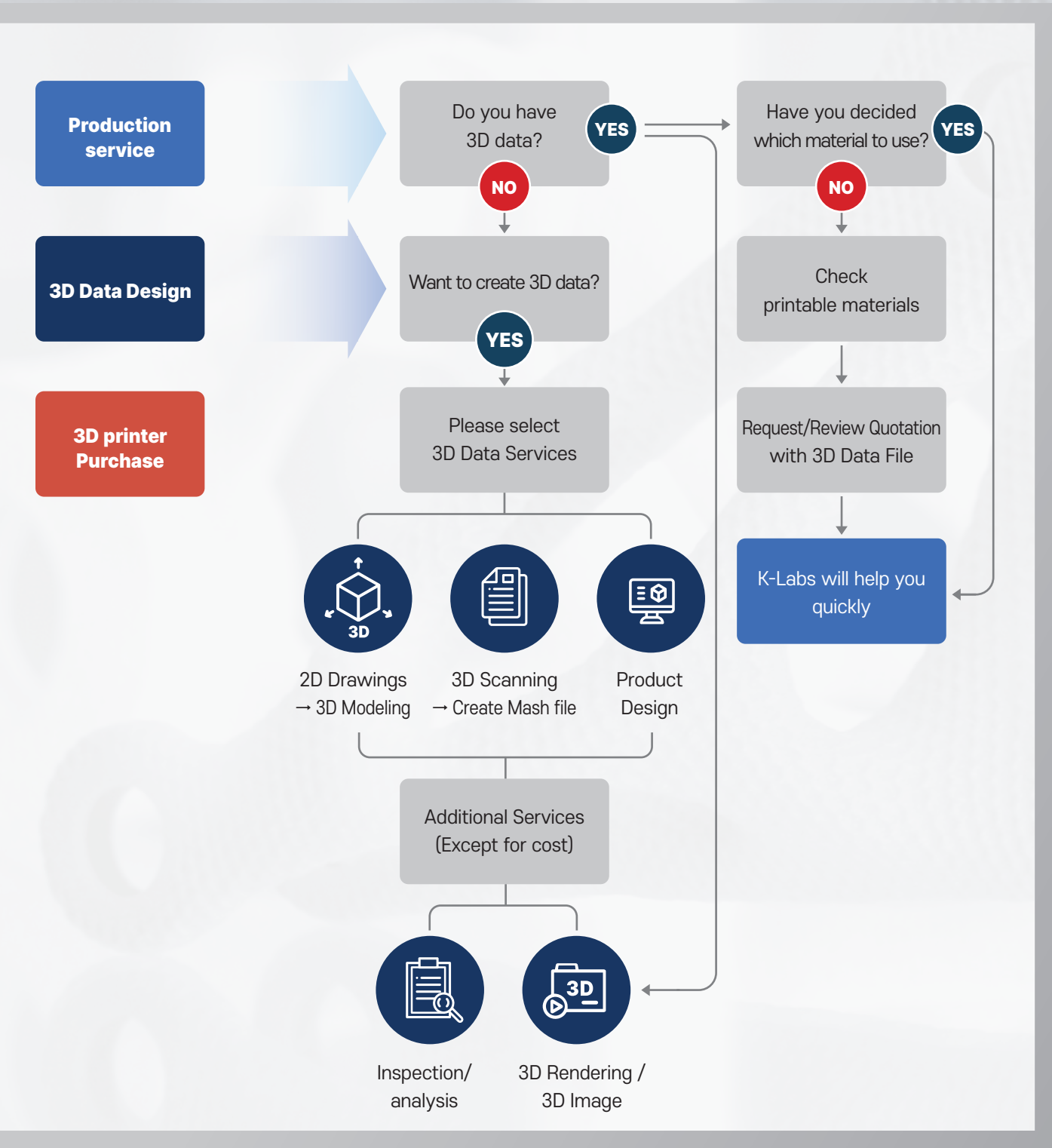
### 1 KG / 3 HRS

Drying capacity for PA6





3D printing **PROCESS**



**Comparison of production services**

	FDM	Polyjet	SLA	SLS	CNC	Metal
Features	- Filament stacking - Use a wide range of thermoplastic for complex, durable shapes	- Photocurable liquid - Color, overmoldable - 16µ additive thickness for complex and fine shapes	- Photocurable liquid - Suitable for smooth surface concept models and precision casting	- Powder type - Suitable for complex shapes - Using heat-resistant nylon materials	- Cutting processing - Ideal for prototypes, production parts, accuracy critical areas	- Metal powder - Complex parts, medical, aerospace parts and functional prototypes
Material	ABS, PC, Nylon12, Ultem	Full color plastic, Transparent, rubber-like material	ABS-like, Transparent	PA(Nylon)	ABS, PC, POM	Titanium, SUS(Stainless)
Color	ABS : Ivory PC : White Nylon12 : Black Ultem : Amber	Plastic: Full color Rubber: Black, etc. Translucent: yellow transparent, milky transparent	ABS-like : Ivory Transparency : Blueish translucent, milky transparent	PA : Ivory	ABS : Ivory PC : White, transparent POM : Ivory	Grey
Strength	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Surface Illumination	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Tensile	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Transparency	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Thermal deformation temp	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
post processing	Surface treatment Painting	Surface treatment Painting Transparency	Surface treatment Painting Transparency	Surface treatment Painting	Surface treatment Painting	x