# Nothing is more exciting than shaping your inspirations.

Welcome to digital printing. The ultimate frontier of integrated 3D printing solutions for jewellery and fashion design.





DWS develops high-tech solutions for jewellery and the fashion sector.

High resolution, definition, accuracy, details' precision. DWS 3D printers have no rivals in the sector, thanks to the continuous research conducted by R&D department, who not only designs the 3D printers, but also the materials (castable and functional) and the proprietary software: a fully integrated system that guarantees the complete control over all processes and the necessary components for the realization of the objects.

Among the new applications and technologies, innovative concepts stand out: the 3D printing cluster for direct investment casting (XCLUSTER), the printing of already linked chains (XCLUSTER Chain) and the printing of finished products featuring transparent textures and surfaces, reproducing natural ceramic or suitable for customization with traditional treatments.

Thanks to the combination of materials, stereolithographic 3D printer and a specially designed software, the workflow becomes fully digital and automated. This increases companies' productivity, reducing time to market and decreasing production times and costs.

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### **3D PRINTERS AND MATERIALS**

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The detail

The detail

Accurate details, high definition, ideal angles, minimum thicknesses for your most detailed creations, for your desires of perfection. Laser precision, together with the resins' quality, allows the highest possible precision in printing and in casting. Undercuts, cavities, complex geometries are no longer an issue and the supports' easy removal completes an approach that helps the user in expressing his creativity.

UNDERCUTS

COMPLEX GEOMETRIES

### **IDEAL OUTLINES**

EASY TO REMOVE SUPPORTS

DIMENSIONAL RESPECT

**PRECISE CASTING** 

### **SMOOTH SURFACES**

THIN THICKNESSES



The ideal printer-resin solutions at page 32





The chain jersey

THE JEWEL

It is no longer a mirage obtaining already linked objects without the need of welding.

The realization of bracelets, necklaces, accessories resembling a jersey that, once cast, presents the precision and the flexibility of a knitted tissue. An amazing result, free from link-by-link welding.

SMOOTH SURFACES

UNDERCUTS

**PRECISE CASTING** 

EASY TO REMOVE SUPPORTS

COMPLEX GEOMETRIES

PRECISE AND INDEPENDENT LINKS

INTERTWINED TISSUE EFFECT

DIMENSIONAL RESPECT



The pave

The pave



stones' pre-set before investment casting.

Smooth surfaces and no need for manual finishing ensure a result optimizing production procedures. Stones' setting is easy, even with complex housings, and the casting precise, also thanks to the memory form effect of DWS materials.

SMOOTH SURFACES

CAVITIES

**PRECISE CASTING** 

EASY TO REMOVE SUPPORTS

UNDERCUTS

**EASY STONES AND MICROPAVE SETTING** 

**IDEAL OUTLINES** 

DIMENSIONAL RESPECT



THE JEWEL The filigrees

The thinnest thicknesses at the highest definition. Filigrees' direct casting has never been so precise. Complex geometries, intertwined threads, precise casting.

DIMENSIONAL RESPECT

SMOOTH SURFACES

THE HIGHEST PRECISION

PRECISE OUTLINES

PRECISE CASTING

**EASY TO REMOVE SUPPORTS** 

**COMPLEX GEOMETRIES** 

UNDERCUTS



The ideal printer-resin solutions at page 35

The cluster

The cluster



Productivity at the service of precision. A unique system. DWS cluster system allows to preserve the highest definition and dimensional respect, increasing the productivity by making the most of Z axis stroke. The system uses sprues as supports, being it able to vary their dimensions and diameters to optimize production. Thanks to NAUTA XCLUSTER software, the maximum definition joins a high productivity.

SMOOTH SURFACES

CAVITIES

HIGH PRODUCTIVITY

DIMENSIONAL RESPECT

EASY TO REMOVE SUPPORTS

PRECISE CASTING

**PRECISE OUTLINES** 

UNDERCUTS





A nanoceramic material to create objects recalling the same properties of artisan ceramics: a blank canvas where unleashing your chromatic creativity. The material resists at 180° C, and, after the coating in enamel, in various customized colors, must be placed in an oven to obtain a result identical to porcelain.

DIMENSIONAL RESPECT

CAVITIES

**PLEASANT TO TOUCH** 

PRECISE OUTLINES

EASY TO REMOVE SUPPORTS

**HIGH QUALITY SURFACES** 

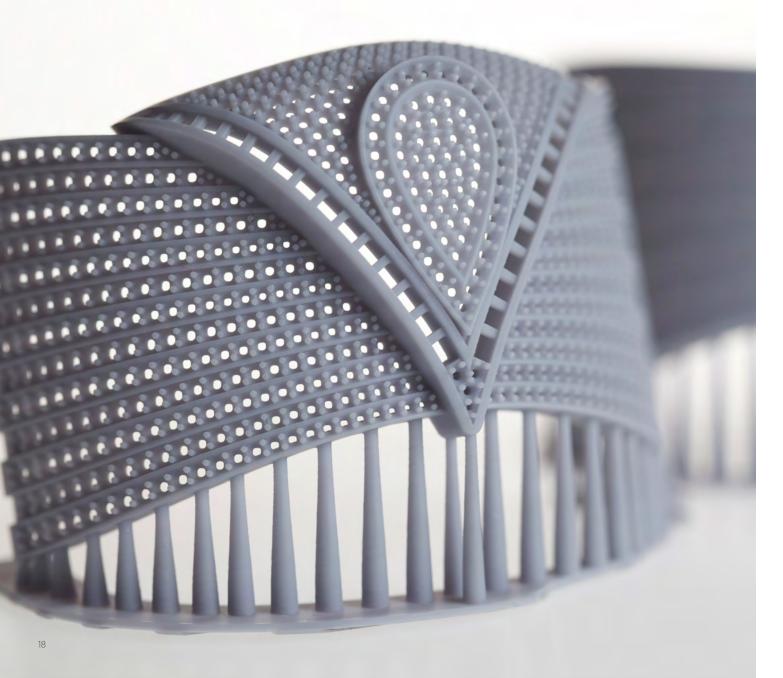
**RESISTANT** 

UNDERCUTS



The master models

The master models



The best resolution for master models dedicated to vulcanized rubber molding (RTV or HTV).

Detailed and thin models at the service of jewellery.

DWS resins for master models are also ideal for molds to be vulcanized to produce objects in zamac.

UNDERCUTS

THIN

PRECISE OUTLINES

EASY TO REMOVE SUPPORTS

**SMOOTH SURFACES** 

**DIMENSIONAL RESPECT** 

COMPLEX GEOMETRIES



The ideal printer-resin solutions at page 38

The chain

The chain

With the cluster system (NAUTA XCLUSTER Chain software), DWS allows the printing of chains with different dimensions and design with castable material. They can be reproduced complete of clasps and terminals, already linked, with no need for welding and internally empty. Supports working as sprues, high definition, high productivity, and low costs.

CAVITIES

INDEPENDENT AND PRECISE CHAIN LINKS

PRECISE OUTLINES

**COMPLEX GEOMETRIES** 

SMOOTH SURFACES

EASY TO REMOVE SUPPORTS

**PRECISE CASTING** 

DIMENSIONAL RESPECT



The particular

The particular

Shoulder bag, buckles, clasps, stoppers, cord locks, logos, finishings... All details of the fashion world can be realized both in functional and castable resins. These are ideal solutions to produce cast metal details and those in elastic materials, in textured resins and in resistant materials to be customized in color.

High productivity and maximum flexibility for pre-productions and productions dedicated to the most valuable creations.

SMOOTH SURFACES

EASY TO REMOVE SUPPORTS

**PRODUCTIVITY** 

UNDERCUTS

CAVITIES

**COMPLEX GEOMETRIES** 

**DEDICATED MATERIALS** 

PRECISE OUTLINES



The ideal printer-resin solutions at page 40

The colors

Printing digital stones, transparent or translucent, and potentially in any color, is everyday normality for DWS. Faceted or smooth stones, with no geometrical limits, ideal for the creation of accessories and applications in all the fields of fashion.

DIMENSIONAL RESPECT

**TRANSPARENCIES** 

PRECISE OUTLINES

**COMPLEX GEOMETRIES** 

UNDERCUTS

EASY TO REMOVE SUPPORTS

**COLORS AND SHADES** 

SMOOTH SURFACES



The ideal printer-resin solutions at page 41

FASHION AND DESIGN

The colors

The molds

The molds



Free to print molds and always be in time to market, even on remarkable dimensions. Materials are suitable for resisting high temperatures, accurate printing processes able to replace traditional molds, the highest quality surfaces.

CAVITIES

EASY TO REMOVE SUPPORTS

**SMOOTH SURFACES** 

**UNDERCUTS** 

PRECISE OUTLINES

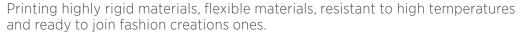
COMPLEX GEOMETRIES

### **DIMENSIONAL RESPECT**



The functional materials

The functional materials



The available range of functional resins, together with the precision and high productivity of the printers, allows the realization of final and ready to use details or suitable to the finish.

SMOOTH SURFACES

UNDERCUTS CAVITIES

**REBOUND EFFECT** 

**PRODUCTIVITY** 

PRECISE OUTLINES

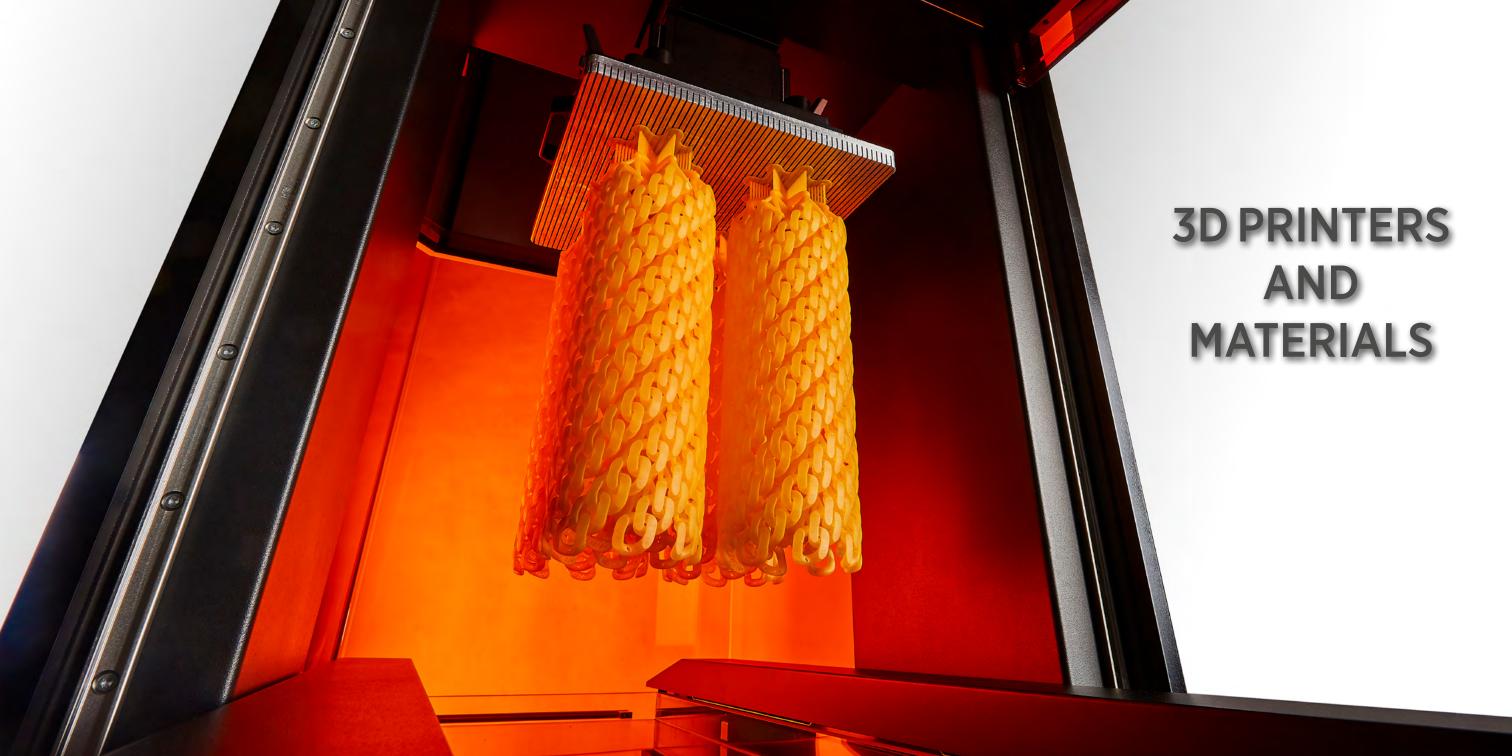
COMPLEX GEOMETRIES

RESISTANT MATERIALS

**HIGH TEMPERATURES MATERIALS** 

DIMENSIONAL RESPECT





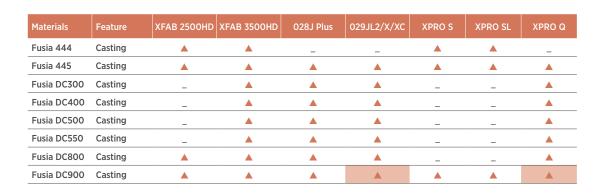


Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Fusia 444	Casting	<b>A</b>	<b>A</b>	_	_	<b>A</b>	<b>A</b>	_
Fusia 445	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Fusia DC300	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC400	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC500	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC550	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC800	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<u> </u>	_	_	<b>A</b>
Fusia DC900	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>



Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Fusia DC300	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC400	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC500	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC900	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>







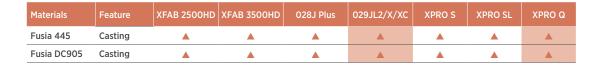
Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Fusia 444	Casting	<b>A</b>	<b>A</b>	_	_	<b>A</b>	<b>A</b>	_
Fusia 445	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Fusia DC300	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC700	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC710	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC800	Casting	_	<b>A</b>	<b>A</b>	<b>A</b>	_	_	<b>A</b>
Fusia DC900	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Fusia DC905	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>

The cluster

The ceramic

37







Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Irix A	Ceramic-like	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	_	<b>A</b>

Most performing solution

### The master models

The chain





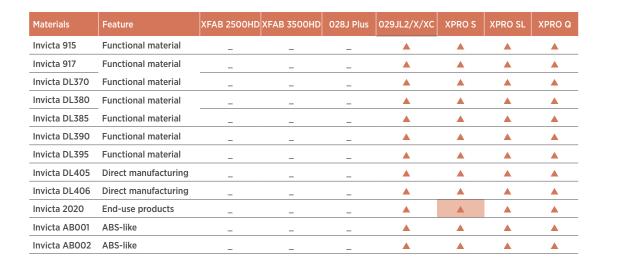


Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Fusia 445	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Fusia DC900	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Fusia DC905	Casting	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>

### The particular

The colors







Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Irix	Digital Stone	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Irix V	Digital Stone	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>

Most performing solution

43

The functionals materials

### The molds



Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Therma DM500	Molds production	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>

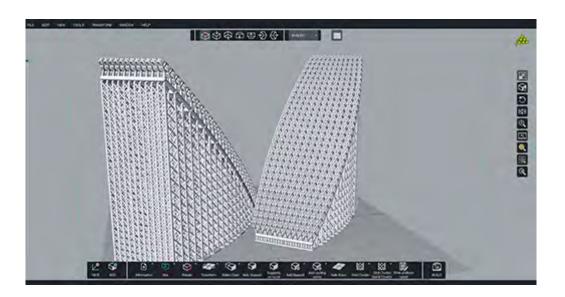


Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Invicta 915	Functional material	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta 917	Functional material	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta DL370	Functional material	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta DL380	Functional material	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta DL385	Functional material	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta DL390	Functional material	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta DL395	Functional material	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta DL405	Direct manufacturing	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta DL406	Direct manufacturing	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b> .
Invicta 2020	End-use products	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta AB001	ABS-like	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Invicta AB002	ABS-like	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Flexa GM08	Rubber-like	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Flexa GM08B	Rubber-like	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Flexa GM010	Rubber-like	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
Vitra DL375	Transparent	_	_	_	<b>A</b>	<b>A</b>	<b>A</b>	_

Most performing solution

Tost performing solution





### NAUTA® SOFTWARE SUPPORTS THE MODEL, NO MATTER THE SHAPE

### NAUTA® software creates super light supports and replicates.

Developed in-house, this DWS parametric software prepares the file to be 3D printed, allowing to put in place the whole set of supports and the positioning of the models on the virtual platform before the file is sent to FICTOR, the printer management software.

NAUTA+ offers automatic functions optimizing: the supports' number, the orientation of the object to be printed and the platform filling made easier thanks to istancing. The supports created by NAUTA+ have a patented break point in order to remove them easily without the use of specific tools. Moreover, the innovative lattice function, also patented by DWS, allows the creation of an extremely light set of supports.

The software also estimates the object's weight and the expected resin consumption.

**NAUTA® XCLUSTER®** and **NAUTA® XCLUSTER® CHAIN** represent additional modules, and they allow, respectively, to develop the printing phase along the whole Z axis stroke and to build already linked chains made by independent elements, exploiting the cluster concept patented by DWS.

Both the modules have been developed in order to obtain the maximum productivity by exploiting both vertical construction and cluster concept, that allows to apply the least possible number of supports, which provides a completely usable structure during the casting phase, as sprues are used as supports.

TECHNICAL DATA SHEET







* The recommend	led requirem	ents may var	y in accordance	with the co	omplexity of the	file to be printed.

Built-in PC, the minimum requirements are expressed in order to operate NAUTA®+ with an external PC (not included). Technical specifications subject to change without notice.



Technology	Laser Stereolithography	
Working Area	90 x 90 x 90 mm	
Laser Source	Solid State BlueEdge®	
Layer Thickness	10-100 micron (mechanical resolution, the actual value depends on the material used)	
Scanning Method	Galvanometer	
Software	FICTOR® and NAUTA®+ included	
Input Files Format	.stl, .slc, .nauta, .fictor, .mkr, .3dm, .3ds, .ply, .obj, .lwo, .x	
Machine Size	380 x 515 x 733 mm	
Weight	56 Kg	
Operating Temperature and Humidity	20°-25°C / 60%	
Power Supply	AC 230V / 50 Hz	
Electrical Consumption	400 W	
PC Minimum Requirements	External PC included	
Memory	-	
Graphic Card	-	
I/O Interfaces	1 USB port - 1 TCP/IP ethernet port	

1 Active Internet Connection

028J Plus Series

Technical specifications subject to change without notice..

Connectivity

















	XPRO S	XPRO SL	XPRO Q
Technology	Laser - Stereolithography	Laser - Stereolithography	QUAD Laser - Stereolithography
Working Area	300 x 300 x 300 mm	300 x 300 x 500 mm	300 x 300 x 300 mm
Laser Source	Solid State BlueEdge®	Solid State BlueEdge®	Solid State BlueEdge®
Layer Thickness	10-100 micron (mechanical resolution, the actual value depends on the material used)	10-100 micron (mechanical resolution, the actual value depends on the material used)	10-100 micron (mechanical resolution, the actual value depends on the material used)
Scanning Method	Galvanometer	Galvanometer	Quad-Galvanometer
Software	FICTOR® and NAUTA®+ included	FICTOR® and NAUTA®+ included	FICTOR® and NAUTA®+ included
Input Files Format	.stl, .slc, .nauta, .fictor, .mkr, .3dm, .3ds, .ply, .obj, .lwo, .x	.stl, .slc, .nauta, .fictor, .mkr, .3dm, .3ds, .ply, .obj, .lwo, .x	.stl, .slc, .nauta, .fictor, .mkr, .3dm, .3ds, .ply, .obj, .lwo, .x
Machine Size	704 x 1446 x 2048 mm	704 x 1446 x 2420 mm	704 x 1446 x 2048 mm
Weight	500 Kg	550 Kg	500 Kg
Operating Temperature and Humidity	20°-25°C / 60%	20°-25°C / 60%	20°-25°C / 60%
Power Supply	AC 230V / 50 Hz	AC 230V / 50 Hz	AC 230V / 50 Hz
Electrical Consumption	500W	500W	500W
PC Minimum Requirements	Windows 8 or Above*1	Windows 8 or Above*1	Windows 8 or Above*1
Memory	RAM 4GB*1	RAM 4GB*1	RAM 4GB*1
Graphic Card	OpenGL 2.0 Compatible or Above*1	OpenGL 2.0 Compatible or Above*1	OpenGL 2.0 Compatible or Above*1
I/O Interfaces	1 USB Port - 1 Ethernet TCP/IP Port	1 USB Port - 1 Ethernet TCP/IP Port	1 USB Port - 1 Ethernet TCP/IP Port
Connectivity	1 Active Internet Connection	1 Active Internet Connection	1 Active Internet Connection

<sup>\*</sup>The recommended requirements may vary in accordance with the complexity of the file to be printed.

Built-in PC, the minimum requirements are expressed in order to operate NAUTA®+ with an external PC (not included). Technical specifications subject to change without notice.



### **FEATURES**

	UV Curing Unit "S2"	UV Curing Unit "M"	UV Curing Unit "L"
Ventilation	Forced ventilation inside	Forced ventilation inside	Forced ventilation inside
User controls	On/Off button Timer Safety device on door opening	On/Off button Timer Safety device on door opening	On/Off button Timer Safety device on door opening
Timer setting	0 ÷ 30 minutes	0 ÷ 30 minutes	0 ÷ 30 minutes
Curing volume	160 x 160 x 160 mm	225 x 250 x 225 mm	300 x 300 x 300 mm
Machine size	265 x 300 x 330 mm	370 x 330 x 480 mm	570 x 520 x 518 mm
Weight	11,8 Kg	20,5 Kg	26 Kg
Power consumption	35 W	120 W	70 W
Power supply	90-264 V / 50-60 Hz	220 V / 5060 Hz	90-264 V / 50-60 HZ

Technical specifications subject to changes without notice.

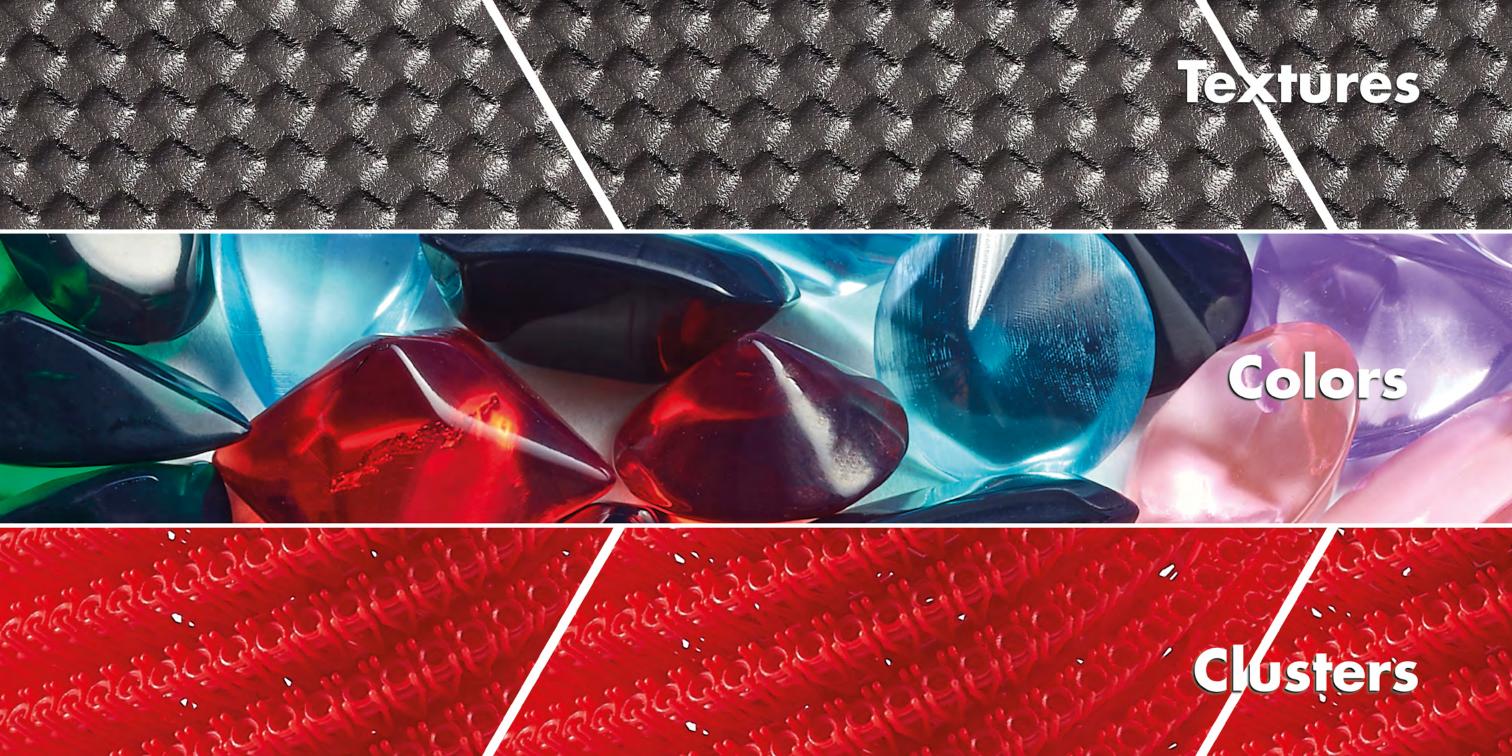
## UV Curing Units

UV polymerization devices complete the secondary solidification of the models built with DWS 3D printers.

Even if perfectly formed, models need a further exposition to a UV light source so to complete the polymerization and the stabilization of their structure.

"S2" model is suitable for the polymerization of single models, while "M" model can host a complete platform belonging to the 029 or XFAB range of printers. "L" model is specifically produced for hosting the XPRO Q and XPRO S large platforms.

- High uniformity of exposure
- Easy to use and in maintenance
- Timer settings





### DWS

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MADE IN ITALY



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