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Nothing is more exciting than shaping your inspirations.

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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.

#### APPLICATIONS

## THE JEWEL

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## **3D PRINTERS AND MATERIALS**

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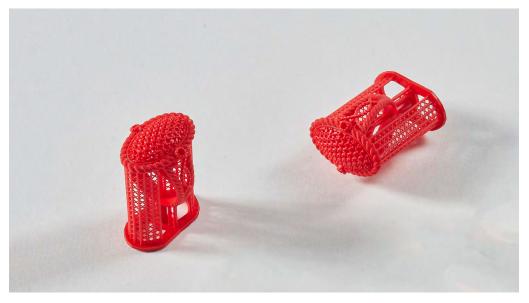
Accurate details, high definition, ideal angles, minimum thicknesses for your most detailed creations, for your desires of perfection. Laser precision, together with the resins' quality, allows the highest possible precision in printing and in casting. Undercuts, cavities, complex geometries are no longer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

## UNDERCUTS

## **IDEAL OUTLINES**

DIMENSIONAL RESPECT

REC



The ideal printer-resin solutions at page 32

#### THE JEWEL

#### The detail

## COMPLEX GEOMETRIES

## EASY TO REMOVE SUPPORTS

## **PRECISE CASTING**

## THIN THICKNESSES



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

## **PRECISE CASTING** COMPLEX GEOMETRIES INTERTWINED **TISSUE EFFECT** DIMENSIONAL RESPECT



The ideal printer-resin solutions at page 33

#### The chain jersey

## UNDERCUTS

## EASY TO REMOVE SUPPORTS

## **PRECISE AND INDEPENDENT LINKS**



The extreme dimensional precision, together with materials' quality, allows the 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

**IDEAL OUTLINES** 

## **PRECISE CASTING**

UNDERCUTS

## **EASY STONES AND MICROPAVE SETTING** DIMENSIONAL RESPECT

The ideal printer-resin solutions at page 34

#### THE JEWEL

#### The pave

CAVITIES

## EASY TO REMOVE SUPPORTS



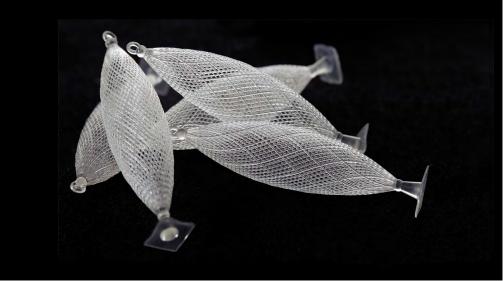


The filigrees



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





The ideal printer-resin solutions at page 35

THE JEWEL The filigrees

SMOOTH SURFACES

## PRECISE OUTLINES

## **EASY TO REMOVE SUPPORTS**

UNDERCUTS

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

## **HIGH PRODUCTIVITY**

EASY TO REMOVE SUPPORTS

**PRECISE OUTLINES** 



#### THE JEWEL

The cluster

CAVITIES

DIMENSIONAL RESPECT

## **PRECISE CASTING**

UNDERCUTS



The ceramic



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.

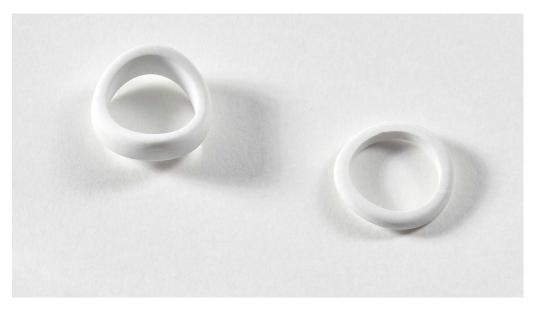
## DIMENSIONAL RESPECT

## **PLEASANT TO TOUCH**

EASY TO REMOVE SUPPORTS

RESISTANT

UNDERCUTS



The ideal printer-resin solutions at page 37

THE JEWEL

#### The ceramic

## CAVITIES

## PRECISE OUTLINES

## **HIGH QUALITY SURFACES**





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 EASY TO REMOVE SUPPORTS SM DIMENSIONAL RESPECT



The ideal printer-resin solutions at page 38

#### The master models

## PRECISE OUTLINES

## **SMOOTH SURFACES**

COMPLEX GEOMETRIES



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 SMOOTH SURFACES **INDEPENDENT AND** EASY TO REMOVE SUPPORTS **PRECISE CHAIN LINKS** PRECISE OUTLINES **PRECISE CASTING COMPLEX GEOMETRIES**



#### THE JEWEL

#### The chain

DIMENSIONAL RESPECT



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 PRODUCTIVITY CAVITIES

**DEDICATED MATERIALS** 



The ideal printer-resin solutions at page 40

#### The particular

## EASY TO REMOVE SUPPORTS

## UNDERCUTS

## **COMPLEX GEOMETRIES**

PRECISE OUTLINES



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.





The ideal printer-resin solutions at page 41

#### FASHION AND DESIGN

#### The colors

## UNDERCUTS

## EASY TO REMOVE SUPPORTS

## **COLORS AND SHADES**

## SMOOTH SURFACES

#### FASHION AND DESIGN

#### The molds



The ideal printer-resin solutions at page 42

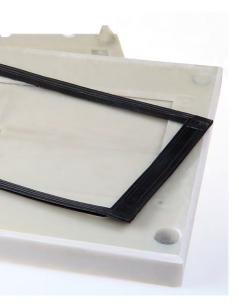
FASHION AND DESIGN

#### The molds

## EASY TO REMOVE SUPPORTS



## COMPLEX GEOMETRIES



The functional materials

and ready to join fashion creations ones. 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 CAVITIES **REBOUND EFFECT** PRECISE OUTLINES **HIGH TEMPERATURES MATERIALS** 

#### FASHION AND DESIGN

The functional materials

Printing highly rigid materials, flexible materials, resistant to high temperatures

UNDERCUTS

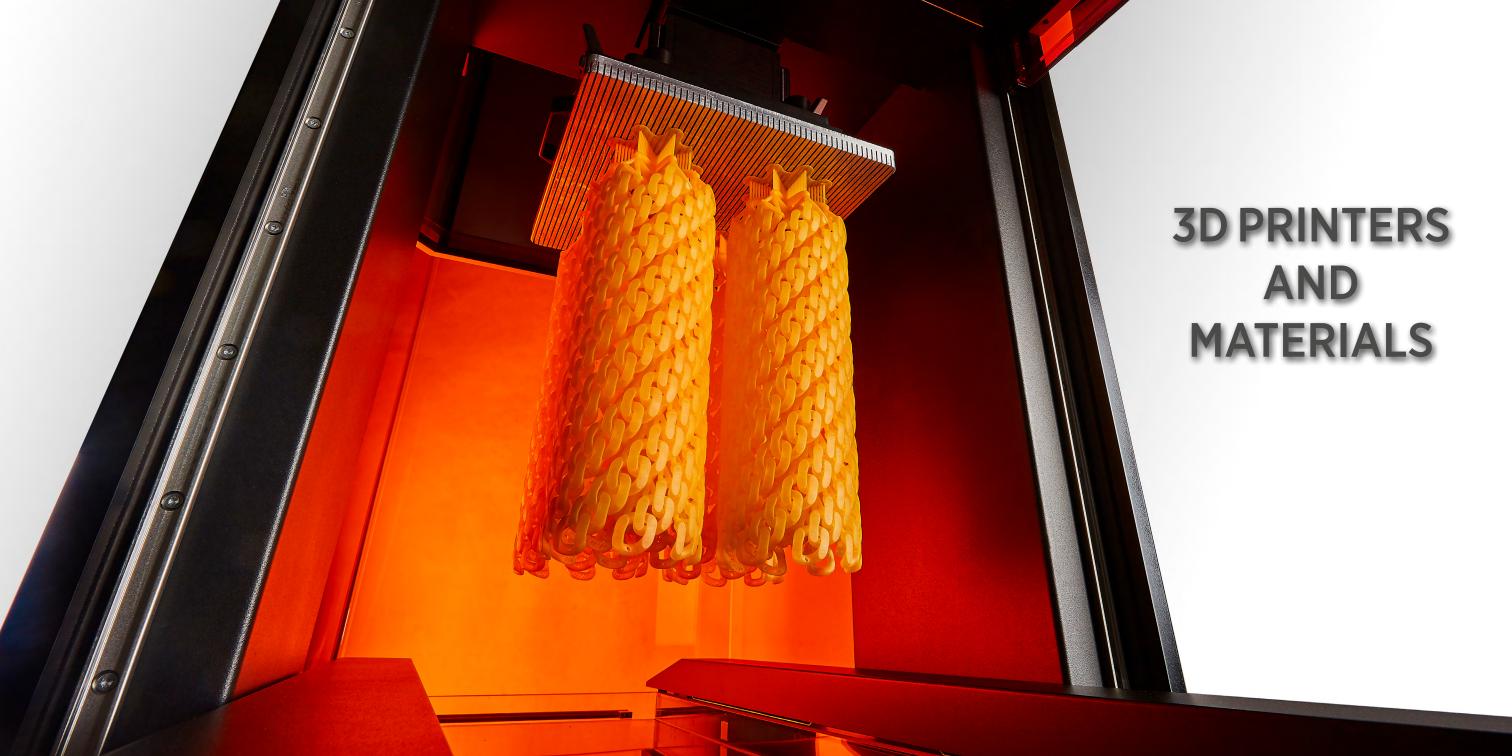
## PRODUCTIVITY

#### COMPLEX GEOMETRIES

## **RESISTANT MATERIALS**

DIMENSIONAL RESPECT







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

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

#### THE JEWEL

#### The chain jersey





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

DENSE ADI 

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

#### THE JEWEL

#### The filigrees



#### The cluster





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

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

#### THE JEWEL

#### The ceramic

#### The master models





Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Precisa 780	Moulding		-	-	_	-	_	-
Precisa DL260	Moulding	-						
Therma 289	Moulding		_	_	_	_	_	_
Therma 294	Moulding		-	_	_	_	_	_
Therma DM210	Moulding	-						
Therma DM220	Moulding	_						

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

#### THE JEWEL

#### The chain

#### FASHION AND DESIGN

#### The particular



Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Invicta 915	Functional material	-	-	-				
Invicta 917	Functional material	_	_	-				
Invicta DL370	Functional material	_	_	-				
Invicta DL380	Functional material	_	_	-				
Invicta DL385	Functional material	_	_	_				
Invicta DL390	Functional material	_	_	_				
Invicta DL395	Functional material	_	_	_				
Invicta DL405	Direct manufacturing	_	_	_				
Invicta DL406	Direct manufacturing	_	_	_				
Invicta 2020	End-use products	_	-	-				
Invicta AB001	ABS-like	_	_	-				
Invicta AB002	ABS-like	_	_	_				

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Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Irix	Digital Stone	-						
Irix V	Digital Stone							

#### FASHION AND DESIGN

#### The colors



#### FASHION AND DESIGN

#### The molds



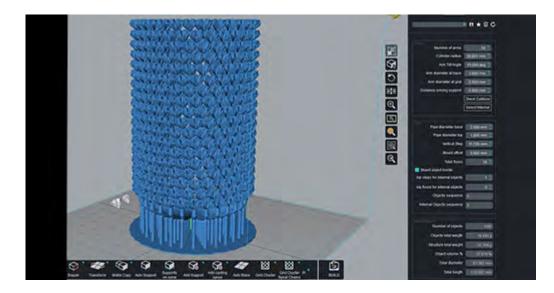
Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Therma DM500	Molds production	_	_	_				

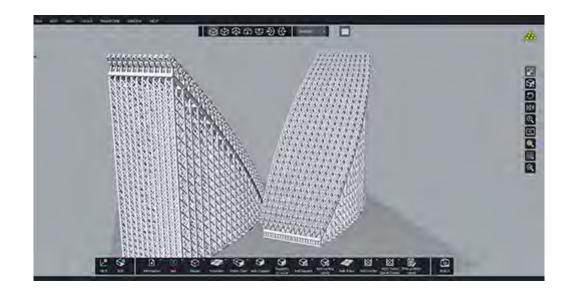


Materials	Feature	XFAB 2500HD	XFAB 3500HD	028J Plus	029JL2/X/XC	XPRO S	XPRO SL	XPRO Q
Invicta 915	Functional material	_	-	-				
Invicta 917	Functional material	_	-	_				
Invicta DL370	Functional material	_	-	_				
Invicta DL380	Functional material	_	_	_				
Invicta DL385	Functional material	_	_	_			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

#### FASHION AND DESIGN

#### The functionals materials





# 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.





	XFAB 2500HD	XFAB 3500HD
Technology	Laser Stereolithography	Laser Stereolithography
Working Area	Ø 180 x 180 mm	140 x 140 x 180 mm
Laser Source	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)
Scanning Method	Galvanometer	Galvanometer
Software	XFAB® Edition FICTOR® and NAUTA®+ included	XFAB® Edition 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
Machine Size	400 x 606 x 642 mm	400 x 606 x 762 mm
Weight	31 Kg	40 Kg
Operating Temperature and Humidity	20°-25°C / 60%	20°-25°C/60%
Power Supply	24V DC con AC 240/100V / 50-60 Hz External Supplier Included	24V DC con AC 240/100V / 50-60 Hz External Supplier Included
Electrical Consumption	160W	160W
PC Minimum Requirements	Windows 8 or Above*	Windows 8 or above*1
Memory	RAM 4GB*	RAM 4GB*1
Graphic Card	OpenGL 2.0 Compatible or Above*	OpenGL 2.0 Compatible or Above*1
I/O Interfaces	1 USB port	1 USB Port - 1 Ethernet TCP/IP Port
Connectivity	1 Active Internet Connection	1 Active Internet Connection

\* The recommended requirements may vary in accordance with the complexity of the file to be printed. <sup>1</sup>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.



	028J Plus Series
Technology	Laser Stereolithography
Working Area	90 x 90 x 90 mm
Laser Source	Solid State BlueEdge®
Layer Thickness	10-100 micron (mechanical resolution, the 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
Connectivity	1 Active Internet Connection

Technical specifications subject to change without notice.

#### TECHNICAL DATA SHEET

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#### **TECHNICAL DATA SHEET**





	029JL2	029X	029XC
Technology	Laser - Stereolithography	Laser - Stereolithography	Laser - Stereolithography
Working Area	110 x 110 x 200 mm	150 x 150 x 200 mm	170 x 170 x 200 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	Galvanometer
Software	FICTOR® and NAUTA®+ included	FICTOR® and NAUTA®+ included	FICTOR® and NAUTA®+ included
Input Files Format	stl, .slc, .nauta, .fi ctor, .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	610 x 660 x 1400 mm	610 x 660 x 1400 mm	610 x 660 x 1400 mm
Weight	150 Kg	150 Kg	150 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	External PC included	External PC included	External PC included
Memory	-	-	-
Graphic Card	-	-	-
I/O Interfaces	1 USB port - 1 TCP/IP ethernet port	1 USB port - 1 TCP/IP ethernet port	1 USB port - 1 TCP/IP ethernet port
Connectivity	1 Active Internet Connection	1 Active Internet Connection	1 Active Internet Connection

Technical specifications subject to change without notice.





	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

\* The recommended requirements may vary in accordance with the complexity of the file to be printed. <sup>1</sup>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.

#### **TECHNICAL DATA SHEET**







# UV Curing Units

#### FEATURES

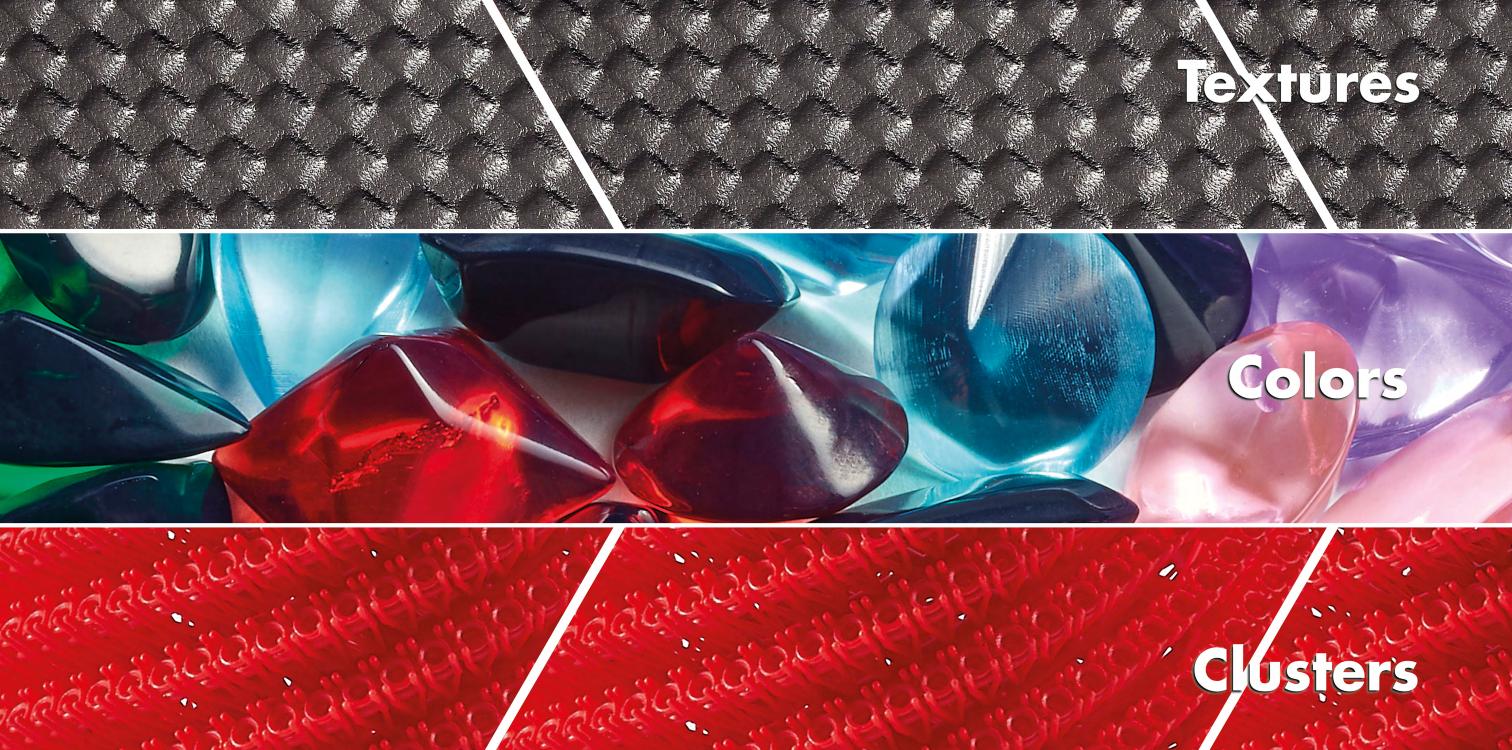
UV Curing Unit "S2"	UV Curing Unit "M"	UV Curing Unit "L"
Forced ventilation inside	Forced ventilation inside	Forced ventilation inside
On/Off button Timer Safety device on door opening	On/Off button Timer Safety device on door opening	On/Off button Timer Safety device on door opening
0 ÷ 30 minutes	0 ÷ 30 minutes	0 ÷ 30 minutes
160 x 160 x 160 mm	225 x 250 x 225 mm	300 x 300 x 300 mm
265 x 300 x 330 mm	370 x 330 x 480 mm	570 x 520 x 518 mm
11,8 Kg	20,5 Kg	26 Kg
35 W	120 W	70 W
90-264 V / 50-60 Hz	220 V / 5060 Hz	90-264 V / 50-60 HZ
	Forced ventilation insideOn/Off button Timer Safety device on door opening0 ÷ 30 minutes160 x 160 x 160 mm265 x 300 x 330 mm11,8 Kg35 W	Forced ventilation insideForced ventilation insideOn/Off button Timer Safety device on door openingOn/Off button Timer Safety device on door opening0 ÷ 30 minutes0 ÷ 30 minutes160 x 160 x 160 mm225 x 250 x 225 mm265 x 300 x 330 mm370 x 330 x 480 mm11,8 Kg20,5 Kg35 W120 W

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

Technical specifications subject to changes without notice.





#### DWS

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MADE IN ITALY