



www.dwssystems.com

Behind every great piece of art lies a great work.

Welcome to Digital Jewellery.
The ultimate generation of 3D printers and state of the art materials for jewellery industries and goldsmiths.





DWS designs and manufactures 3D printing systems, along with software and specific materials, for an ideal use in fast production and rapid prototyping for goldsmiths and manufacturers of jewels and fashion accessories.

DWS continuously innovates and integrates its advanced solutions, so to help industries and laboratories undertaking or completing their digitalization processes. Using 3D technologies and optimizing resources, DWS helps keeping costs minimized, accelerating time to market and increasing competitiveness.



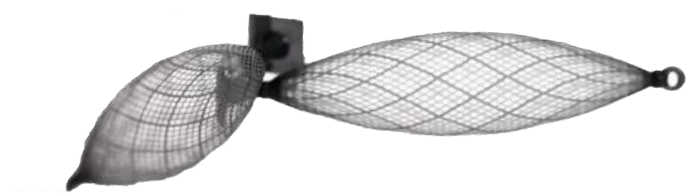


FILIGREE MODELS

The Highest Precision
At The Lowest Thickness

Precise details, high definition and low thicknesses. These are the qualities obtainable from DWS materials for direct casting of filigrees. The materials are easy to burn out and allow the creation of very complex patterns and tangled twines for the most demanding jewellery.

- Jewellery models with filigrees
- Ultra high definition and precision
- Easy to burn out wax-like materials



Materials	Filigree's Rate	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Fusia 444	**	▲	▲	▲	▲	▲	▲
Fusia 445	****	–	–	▲	▲	▲	▲
Fusia DC300	****	–	–	–	▲	▲	▲
Fusia DC700	****	–	–	▲	▲	▲	▲
Fusia DC710	****	–	▲	▲	▲	▲	▲
Fusia DC800	****	–	▲	▲	▲	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.



FINE DETAILED MODELS

No Limits In Designing Very Complex And Detailed Models

DWS materials easily allow the creation of jewellery pieces with complex textures and patterns, undercuts, carved models and with reliefs. The possibilities in the design are limitless and the materials are stable even in those models that combine different features. Easy to burn out, the models require very easy cleaning procedures after the printing.

- Fine detailed models with undercuts, cavities and complex patterns
- Ultra high definition and precision
- Easy to burn out wax-like materials
- Flexible, robust, hassle-free during washing and micro-casting

Materials	Fine Detail's Rate	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Fusia 444	****	▲	▲	▲	–	–	–
Fusia 445	*****	–	–	▲	▲	▲	▲
Fusia DC300	****	–	–	–	▲	▲	▲
Fusia DC400	*****	–	–	▲	▲	▲	▲
Fusia DC500	****	–	–	▲	▲	▲	▲
Fusia DC550	****	–	–	▲	▲	▲	▲
Fusia DC800	*****	–	▲	▲	▲	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.

MODELS FOR PAVÉ AND STONE SETTING

Pavé beads

The materials used to build detailed parts for pavé beads and micro pavé pieces have high quality resolution, stable dimensional accuracy and smooth surfaces. They do not require any other manual finishing. The materials for direct casting are wax-like and, therefore, easy to burn out. The Fusia series for micro pavé allows the pre-set of the stones before casting.

- Models and pieces with pavé and micro pavé
- Models with the setting-in of stones before direct casting
- Optimization of production procedures
- Easy to burn out wax-like materials

Materials	Pavé's Rate	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Fusia 444	****	▲	▲	▲	–	–	–
Fusia 445	*****	–	–	▲	▲	▲	▲
Fusia DC300	****	–	–	–	▲	▲	▲
Fusia DC400	*****	–	–	▲	▲	▲	▲
Fusia DC500	*****	–	–	▲	▲	▲	▲
Fusia DC800	****	–	▲	▲	▲	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.



SOLID DESIGN MODELS

Detailed Texture And Ultra-smooth
Surfaces For Thick And Solid Models

DWS technology and know-how on direct casting procedures make possible to easily cast solid models such as miniatures, thick ring models, charms, pendants, earrings as well as arms and hinges for eyeglasses. The materials are suitable for both ultra-smooth surfaces and thick components with complex textures.

- Solid, thick, complex models
- High resolution and accuracy
- Precise details
- Easy to burn out wax-like materials

Materials	Solid Design's Rate	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Fusia 444	****	▲	▲	▲	▲	▲	▲
Fusia 445	*****	–	–	▲	▲	▲	▲
Fusia DC400	*****	–	–	▲	▲	▲	▲
Fusia DC500	*****	–	–	▲	▲	▲	▲
Fusia DC550	*****	–	–	▲	▲	▲	▲
Fusia DC800	****	–	▲	▲	▲	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.



MASTER MODELS

Materials That Withstand Temperatures And Pressures For Vulcanized Rubber Moulding

Thanks to the high resolution of DWS 3D printers, it is possible to create detailed and precise master models for rubber moulding. DWS’ nanoceramic materials are suitable for RTV or HTV moulding, dedicated to the production of 3D printed masters for detailed and fine jewellery models. These allow industries, artisans and goldsmiths to leverage digital technology directly in the production processes.

- Smooth surface models, fine and detailed models
- High resolution and accuracy
- Stable materials, high temperature resistance
- Vulcanized rubber moulding

Materials	Temperature	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Precisa 779	max 90°C	▲	▲	▲	▲	▲	▲
Precisa DL260	max 90° C	–	–	▲	▲	▲	▲
Therma 289	max 180° C	▲	▲	–	–	–	–
Therma 294	max 90° C	▲	▲	–	–	–	–
Therma DM210	max 90° C	–	–	▲	▲	▲	▲
Therma DM220	max 180° C	–	–	▲	▲	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.



FASHION ACCESSORIES

Smoothness And Precision
For The Fashion Industry

The high temperature resistance materials are suitable for the creation of fashion accessories such as cufflinks, zip pullers, eyewear, key chains, studs, brooches and others.

- High detailed models for fashion accessories
- Ultra-smooth surfaces
- Stable materials, high temperature resistance
- Materials for spin-casting

Materials	Temperature	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Precisa 779	max 90°C	▲	▲	–	–	–	–
Therma 289	max 180° C	▲	▲	–	–	–	–
Therma 294	max 90° C	▲	▲	–	–	–	–
Therma DL260	max 90° C	–	–	▲	▲	▲	▲
Therma DM210	max 90° C	–	–	▲	▲	▲	▲
Therma DM220	max 180° C	–	–	▲	▲	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.



FROM PRINT TO JEWEL, DIRECTLY

With Irix Digital Stone New Boundaries
Are Set For Creativity

Thanks to nanotechnologies and DWS patented additive manufacturing process, it is now possible to manufacture jewellery products directly using the innovative IRIX nanoceramic materials, which reproduce the main features of natural stones.

- Materials for digital stone to be set on jewellery pieces
- Different colours available
- Ready to use materials after 3D printing
- Easy to polish with common jewellery tools

Materials	Colour	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Irix	White	–	–	▲	▲	▲	▲
Irix	Ivory	–	–	▲	▲	▲	▲
Irix	Black	–	–	▲	▲	▲	▲
Irix	Coral	–	–	▲	▲	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.



JEWELLERY PROTOTYPING

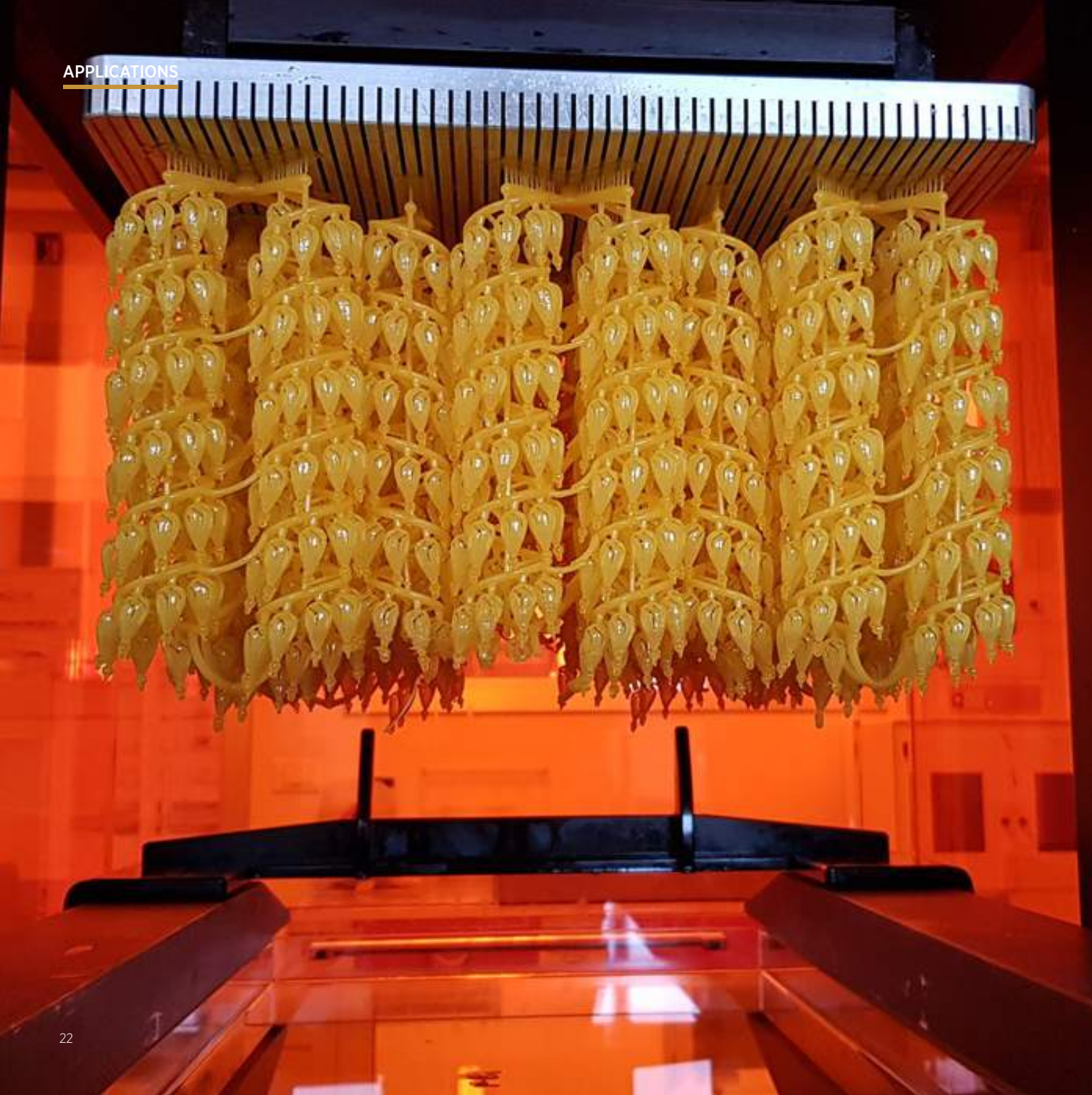
Design And Shape Checking Before Production

3D printing speeds up production processes and ensures the possibility to save time and precious materials. Before the production of any items, it is possible to verify shapes, dimensions and levels of detail by proceeding with an initial print of a less expensive material. For example, Irix, the digital stone, also allows to 3D print stone-like models so to verify dimensions and accuracy before the cutting of real ones.

- Prototypes and aesthetic mock ups for the packaging of jewelry and fashion accessories
- 3D printed stone-like models as check-outs before cutting real stones
- Check-outs of shapes, dimensions and details before 3D printing large quantities
- Easy to work with common jewellery tools

Materials	Colour	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Precisa 779	Grey	▲	▲	–	–	–	–
Precisa DL260	Grey	–	–	▲	▲	▲	▲
Therma 294	Blue	▲	▲	–	–	–	–
Irix	White	–	–	▲	▲	▲	▲
Irix	Ivory	–	–	▲	▲	▲	▲
Irix	Black	–	–	▲	▲	▲	▲
Irix	Coral	–	–	▲	▲	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.



INDIRECT MANUFACTURING

Fusia 445, high resolution 3D printing of casting clusters* for an innovative fully digital workflow

Fusia 445 is a castable material for DWS stereolithographic 3D printers, developed to produce Clusters* for lost-wax casting. Thanks to the combination of material, of printer and special developed software, the workflow will become completely digital and automated. This will increase the productivity in medium and large jewellery industries, reducing the time to market by shrinking production times and costs in many fields.

- Completely digital and automated workflow
- Increase of productivity
- Costs and time saving for production
- Real-time production
- Saving in precious metal use
- Less precious metal to refine
- Total scalability
- Industry 4.0 compliant

Materials	Colour	XFAB 2000	XFAB 2500 HD	XFAB 3500 HD	028J	029J	XPRO Q
Fusia 445	Yellow	–	–	–	–	▲	▲

See Appendix for specifications. List of compatibility subject to modifications.
*Patent Pending



100 Micron Pendant
Sergio Zenere Design

SERGIO ZENERE DESIGN PENDANT, AWARD WINNER

A Tiny 100-micron Filigree Pendant,
Lengthened Shaped, 4 Centimeters In Dimension.

The pattern design is a twisted plot that has required the highest resolution in order to avoid losing details and definition.

The complex and thin geometry can be obtained with DWS material Fusia DC710. The advantages of DWS castable materials are: reliability, repeatability and easy procedures to direct cast. The pendant's yarn has a thickness of 100 micron and has been rewarded at the Santa Fe Symposium in 2013 as the world's thinnest jewellery product made by a 3D printer.



“Rosaspina” and “Onda” Bracelets
Francesca Gabrielli Design

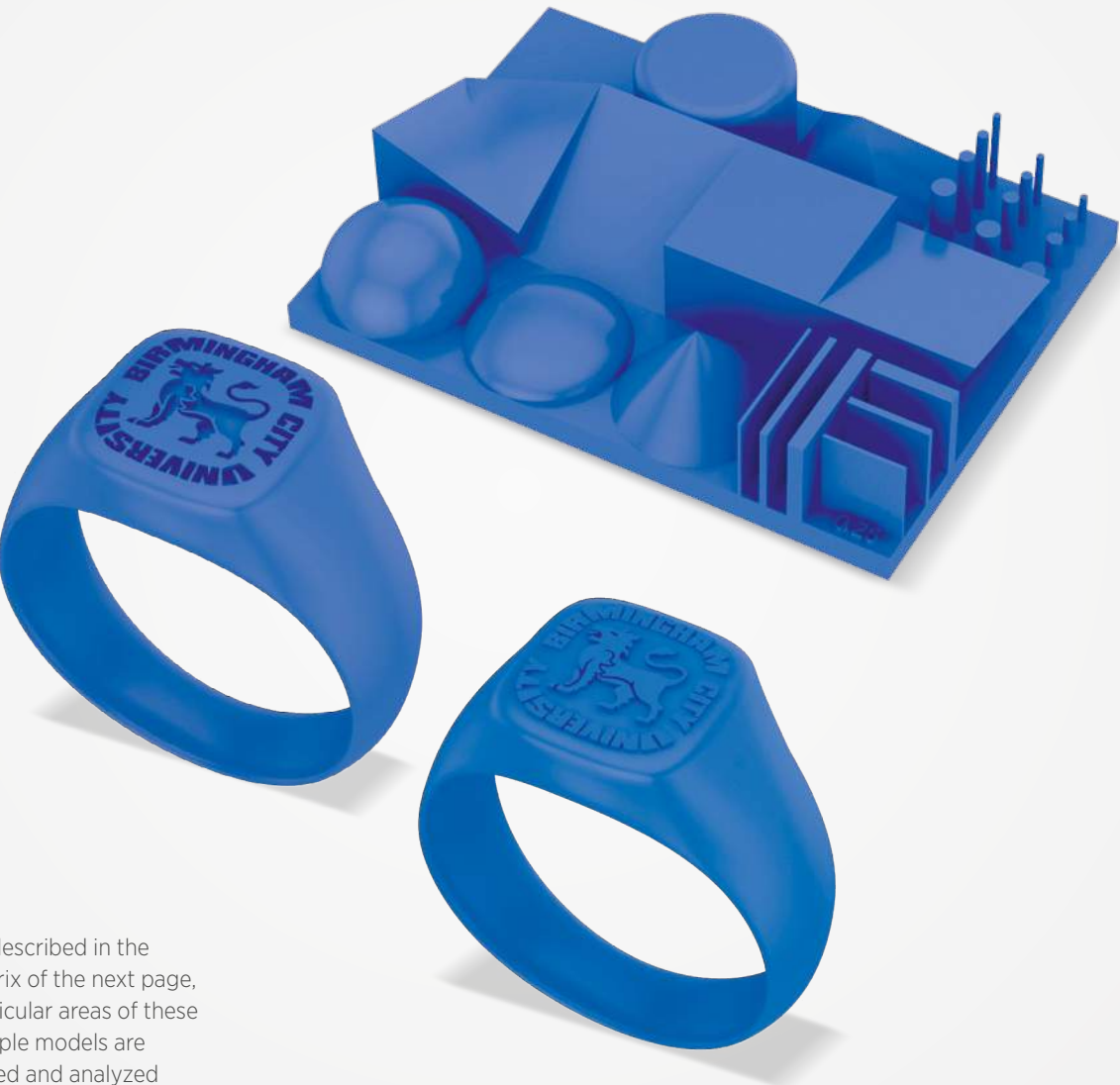
“ROSASPINA” AND “ONDA” BRACELETS - FRANCESCA GABRIELLI DESIGN

The 3D printing allows creations with no limits.

“I find it interesting for the possibility of customizing every single piece: each unit results unique, exclusive and it perfectly matches the customer’s needs”. Onda is a bracelet inspired by the sea waves that reproduces water ripples. It has been 3D printed in Irix material, turquoise colour, which imitates features and colors of natural stones.

Rosaspina displays a texture of 3D roses: the sides of petals are sharp and the buds are precise and detailed. Created with Irix, it reproduces the ivory colour and effect.

The pieces have been also galvanized.



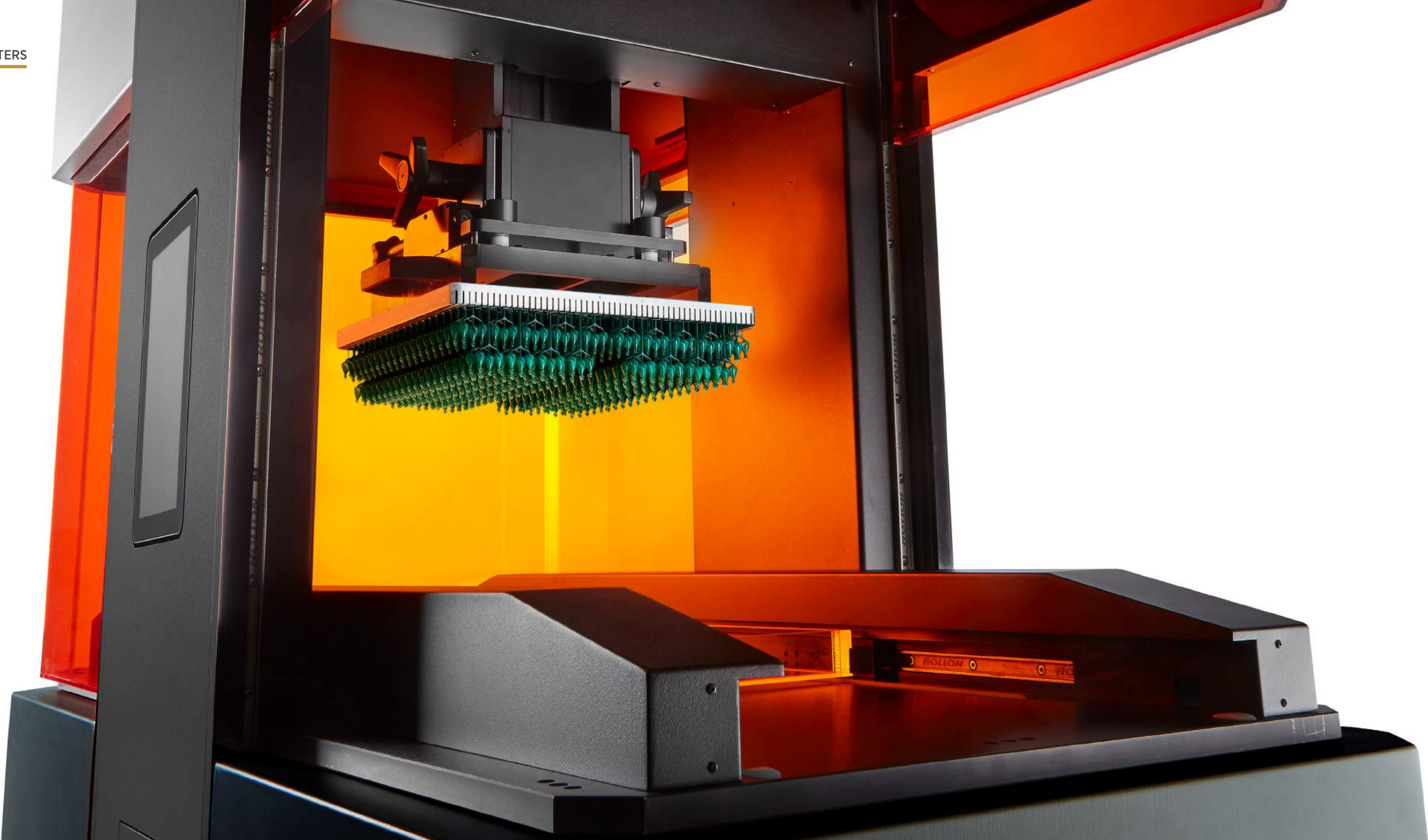
As described in the matrix of the next page, particular areas of these sample models are tested and analyzed

FRANK COOPER ASSOCIATE HEAD SCHOOL OF JEWELLERY

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Do the new, low cost, photopolymer 3D printers now becoming available have a place in the jewellery manufacturing environment? Below the recap of results after the extensive tests.
As described in the matrix reported in the next page, particular areas of these sample models were tested and analyzed.

Item	COMPETITORS RESINS' AVERAGE			DWS RESIN		
	Excellent Quality	Acceptable Quality	Unacceptable Quality	Excellent Quality	Acceptable Quality	Unacceptable Quality
Area 1	–	–	▲	–	▲	–
Area 2	–	▲	–	▲	–	–
Area 3	▲	–	–	▲	–	–
Area 4	▲	–	–	▲	–	–
Area 5	–	▲	–	▲	–	–
Area 6	–	▲	–	▲	–	–
Area 7	▲	–	–	▲	–	–
Area 8	–	▲	–	▲	–	–
Area 9	–	▲	–	▲	–	–
Area 10	–	▲	–	▲	–	–
Area 11	▲	–	–	▲	–	–
Area 12	▲	–	–	▲	–	–
Class ring indented	–	▲	–	▲	–	–
Class ring raised	–	–	▲	–	–	▲
Cage ring	–	▲	–	▲	–	–
Pavlova ring	▲	–	–	▲	–	–





XFAB 2000

XFAB

XFAB 2000 Take On Digital At Low Costs

XFAB 2000 is the innovative desktop 3D printer suitable for fashion accessories and artisanal jewellery. Conceived for small goldsmiths and designers who need to choose an innovative production cycle over traditional methods, XFAB 2000 is the best solution to enter the digital era at low costs. The 3D printer is suitable for the production of fashion accessories for vulcanized rubber moulding such as cufflinks, zip pullers, eyewear, key chains, studs, brooches and solid or detailed models for direct casting.

Thanks to the friendly software interface and the extrusion mechanism of the cartridges, no manual intervention is required to start and the risk of accidental spills is eliminated. The smart cartridges have been designed to ensure that resin refills are simple, fast and safe.

XFAB 2000 is 3D printing solution accessible to everyone, incorporating the advanced and patented technologies found in more industrial systems.

SOFTWARE
NAUTA AND FICTOR INCLUDED

Ø 180x180
WORKING AREA X, Y, Z (mm)



XFAB 2500 HD

XFAB

XFAB 2500 HD The Premium Quality For Goldsmiths

XFAB 2500 HD is the perfect tool for professional applications in jewellery to produce models for direct casting and rubber moulding. It is provided with the proprietary software Nauta, which allows to modify supports, to alter the orientation and the position of objects for best 3D printing, thus maximizing the quality of surfaces. The printer features also the Fictor software, which allows to manually customize the parameters of DWS materials based on the user's know-how. XFAB 2500 HD is addressed to small goldsmiths, designers and to those who need to produce a wide variety of models in high resolution, from solid to fine detailed models, for direct casting and rubber moulding. The smart cartridges for the XFAB series have been designed to ensure safety, a quick material change and the cutting of time for material filling and replacements. Thanks to the automatic extrusion mechanism, no manual intervention is required and risks of accidental leaks are eliminated. XFAB 2500 HD works with professional grade materials like Fusia DC710 or Fusia DC800. The BluEdge laser developed in-house by DWS is accurate, precise and calibrated to obtain smooth surfaces requiring no further finishing. It is long lasting and needs no maintenance or adjustments.

SOFTWARE
NAUTA AND FICTOR INCLUDED

Ø 180x180
WORKING AREA X, Y, Z (mm)



XFAB 3500HD

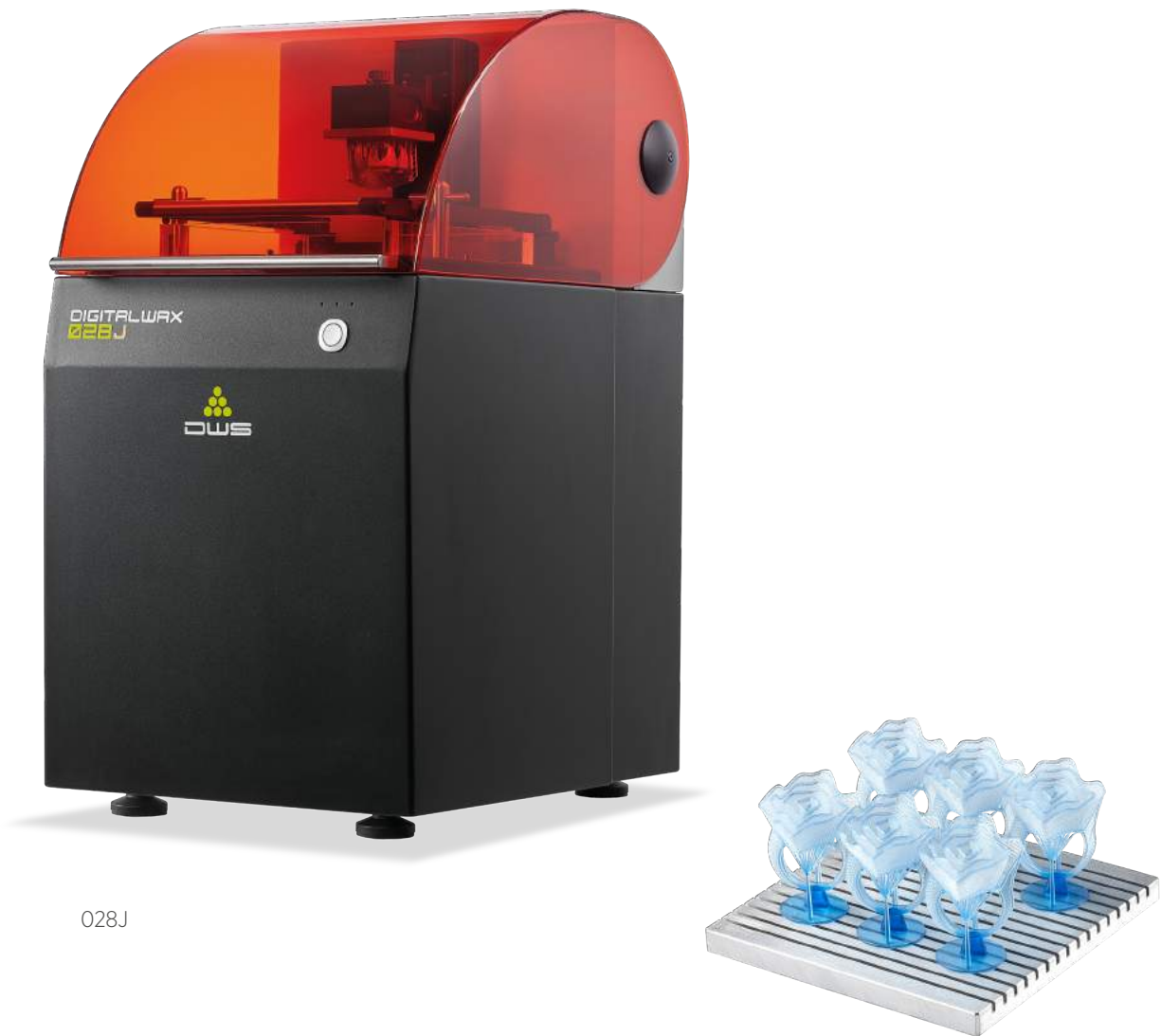
XFAB

XFAB 3500HD
The Tool Of Choice For Heavy-Duty Applications

XFAB 3500 HD is the advanced version of XFAB series and delivers outstanding models in jewellery and fashion accessories. XFAB 3500 HD is able to reach a quality close to the top range printers, with a very convenient precision/productivity ratio dedicated to demanding jewels manufacturers. A full range of DWS materials is fully exploitable by the 3500 HD high-end printer. The materials are designed, developed and produced in-house by DWS to guarantee the quality of the finished products and the best performances during direct casting and rubber moulding. XFAB 3500 HD is addressed to medium size goldsmiths' laboratories demanding a premium quality.

BUILT-IN PC
WIDE RANGE OF MATERIALS

140x140x180
WORKING AREA X, Y, Z (mm)



028J

028J

028J Series: The Maximum Freedom In Design And Production

028J is a reliable, high-speed, high-precision 3D printing system for rapid manufacturing, specifically developed to allow small to medium-sized jewellery workshops to produce very high quality models, with no limits on shape or geometric complexity.

The 028J 3D printer can produce richly detailed models with smooth and ornate surfaces, undercuts and cavities, ensuring the greatest possible freedom when designing pieces. It is also perfect for creating fashion accessories and models for fashion jewelry.

With low running costs and zero planned maintenance costs, this printer has been designed for long term uninterrupted operation.

It is compatible with the full range of materials DWS has developed specifically for jewellery applications.

RAPID PROTOTYPING
BEST RESOLUTION

UP TO 90x90x90mm
WORKING AREA X, Y, Z (mm)

029J

029J Series - The Highest Quality At The Highest Speed

029J is a high-speed, high-precision SLA 3D printer for rapid manufacturing in the jewellery industry. Specifically developed for medium and large-sized jewellery workshops, it is ideal for big-name brands demanding a top reliable printer with a large printing area that can produce pieces of the highest quality, precision and resolution, in big quantities.

029J family can produce up to 270 pieces per day (depending on the complexity) to an extremely high level of detail, including smooth surfaces, undercuts, cavities, and filigrees, ensuring the greatest freedom when designing.

With extremely low running and maintenance costs, the printer has been designed to operate continuously, always ensuring the maximum reliability and consistency. Together with the integrated Nauta+ software that automatically generates the support structures, the system is compatible with the entire range of materials developed by DWS for jewellery applications.

RAPID PRODUCTION
BEST RESOLUTION

150x150x100
WORKING AREA X, Y, Z (mm)



029J



XPRO Q



XPRO Q

Large Working Area For Top Productivity

XPRO Q is a stereolithographic 3D printer capable of the highest levels of productivity and quality in the jewellery sector. This reliable 3D printer boasts a large printing area and can produce models of the highest quality, precision and resolution. It is designed for large businesses, third-party manufacturers, and big-name brands in the jewellery industry and can produce up to 3,200 models per day (depending on complexity) to an extremely high level of detail, including smooth surfaces, undercuts, cavities and filigrees while offering the greatest freedom for the designer. XPRO Q is the perfect 3D printing system for the production of large quantities of models for direct casting and rubber moulding within a short time. With low running costs and zero planned maintenance costs, XPRO Q has been designed to operate continuously, always ensuring the maximum reliability and consistency. The system uses SLA technology to obtain the extremely high resolution and precision that the industry demands and it is compatible with the entire range of materials DWS has developed for jewellery applications. The system includes an integrated touch screen computer, making it easy to launch print jobs, and four Solid State BluEdge laser sources working simultaneously to ensure the fastest production times.

4 LASERS
BEST RESOLUTION

300x300x300
WORKING AREA X, Y, Z (mm)





	XFAB 2000	XFAB 2500 HD
Technology	Laser Stereolithography	Laser Stereolithography
Working Area	Ø 180 x 180 mm	Ø 180 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	Fictor and Nauta XFAB Edition Included	Fictor and Nauta XFAB Edition 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 642 mm
Weight	31 Kg	31 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 7 or Above* ¹	Windows 7 or Above* ¹
Memory	RAM 4GB* ¹	RAM 4GB* ¹
Graphic Card	OpenGL 2.0 Compatible or Above* ¹	OpenGL 2.0 Compatible or Above* ¹
I/O Interfaces	1 USB port	1 USB port
Connectivity	1 Active Internet Connection	1 Active Internet Connection

*¹ The recommended requirements may vary in accordance with the complexity of to be printed.

Technical specifications subject to change without notice.



	XFAB 3500HD	028J Series
Technology	Laser Stereolithography	Laser Stereolithography
Working Area	140 x 140 x 180 mm	65 x 65 x 90 mm and 90 x 90 x 90 mm depending on the version
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	Fictor and Nauta XFAB Edition Included	Nauta+ and Fictor
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 762 mm	380 x 515 x 733 mm
Weight	40 Kg	56 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	AC 230/115 V / 50-60 Hz
Electrical Consumption	160W	400 W
PC Minimum Requirements	Windows 7 or above* ¹	External PC included
Memory	RAM 4GB* ¹	-
Graphic Card	OpenGL 2.0 Compatible or Above* ¹	-
I/O Interfaces	1 USB Port - 1 Ethernet TCP/IP Port	1 USB port - 1 TCP/IP ethernet port
Connectivity	1 Active Internet Connection	1 Active Internet Connection

*¹ Built-in PC, the minimum requirements are expressed in order to operate Nauta with an external PC (not included). The recommended requirements may vary in accordance with the complexity of the file to be printed.

Technical specifications subject to change without notice.

TECHNICAL DATA SHEET



	029J Series	XPRO Q
Technology	Laser Stereolithography	Laser Stereolithography
Working Area	110 x 110 x 100 mm and 150 x 150 x 100 mm depending on the version	300 x 300 x 300 mm
Laser Source	Solid State BlueEdge	Quad-laser 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	Nauta+ and Fictor	Nauta+ and Fictor
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	610 x 660 x 1400 mm	704 x 1446 x 2048 mm
Weight	150 Kg	500 Kg
Operating Temperature and Humidity	20°-25°C / 60%	20°-25°C / 60%
Power Supply	AC 230/115 V / 50-60 Hz	AC 230/115 V / 50-60 Hz
Electrical Consumption	500W	500W
PC Minimum Requirements	External PC included	Windows 7 or Above* ¹
Memory	-	RAM 4GB* ¹
Graphic Card	-	OpenGL 2.0 Compatible or Above* ¹
I/O Interfaces	1 USB port - 1 TCP/IP ethernet port	1 USB Port - 1 Ethernet TCP/IP Port
Connectivity	1 Active Internet Connection	1 Active Internet Connection

*¹ Built-in PC, the minimum requirements are expressed in order to operate Nauta with an external PC (not included). The recommended requirements may vary in accordance with the complexity of the file to be printed.
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