

Performance and Design.

Fast and User Friendly, a Breakthrough 3D Printer
for Provisional and Permanent Restorations.



reddot award 2018
best of the best





DWS designs and manufactures 3D printing systems, along with software and specific materials, all optimized for prosthetic and prosthodontic use.

DWS continuously innovates and integrates its advanced solutions, so to help clinics and laboratories completing the digitalization of their processes, efficiently exploiting their resources, lowering internal costs and increasing competitiveness.

The company is certified according to ISO 9001:2015 and ISO 13485:2016 standards, in full respect of the highest requirements in the field of medical devices.



DFAB 3D PRINTERS

The revolution in the dental sector.

- Provisional and permanent **restorations** in a single visit
- Photoshade Technology: the reproduction of the natural **colour gradient** of teeth
- **6 materials** to cover all requirements
- Disposable cartridges and an **intuitive interface** for the operator for the best user experience
- Dedicated **software** Nauta Photoshade
- Interconnection to a **cloud** system for the full traceability of the interventions, of the materials and of the cartridges.
- Thanks to the advanced AI, DFAB complies with **Industry 4.0** criteria
- Functional **design**, minimal and elegant, awarded with “best of the best” RedDot Award 2018.



PROVISIONAL AND PERMANENT RESTORATIONS

Natural-looking restorations in a single visit.

Developed for prosthetic clinics and dental laboratories, 3D printer DFAB Desktop connects to a computer and is easy to operate thanks to the proprietary **Nauta Photoshade** software. It allows the production of **natural-looking** dental prosthesis, in fewer steps than with traditional methods. The obtained prosthesis is ready to be fixed in the patient's mouth after only few steps for its finishing: easy supports removal, washing in alcohol, UV curing treatment for few minutes and final polishing.

- Certified restorations in a single visit
- It prints a bridge with up to 5 elements in less than 20 minutes
- Photoshade Technology: reproduction of the chromatic variation in tooth colour from the incisal to the cervical side.

FEW STEPS IN A SHORT TIME, TOP PERFORMANCES

Digital Workflow for 3D printing.

DWS developed the technology used in the **3D printer DFAB** with the main goal of **reducing printing times** and passages leading to prosthesis production (permanent or provisional restorations), other than making it easy to manage also for operators not owing deep and specific technical knowledge. The whole process can be summed up in four well-defined steps, including scanning and modeling.



01 — Scanning

DFAB and its software are compatible with the files obtained by the most common intraoral scanners.

02 — Modelling

Any STL file designed with CAD/CAM software can be printed.

03 — Printing

After selecting the shade, choosing gradient's positioning and width, giving preview's confirmation, the print is done in less than 20 minutes.

04 — Finishing

The precision and the realism of prosthesis, also in the shade, minimize the interventions on the details of the printed restorations.



TEMPORIS

The certified biocompatible material range.

Temporis*1 is a family of biocompatible materials produced by DWS, developed for the 3D printing of certified, long term restorations. Several studies have demonstrated that these materials present compression resistance values comparable to well known*2 hybrid composite resins for long term restorations.

- Long term restorations
- Fully biocompatible and non-toxic materials
- The restoration can be produced also with the innovative Photoshade technology, patented by DWS
- Temporis can be coated/glazed with biocompatible composites and customized with any kind of pigmentation
- DFAB Temporis cartridges are disposable and contain the optimal material quantity in order to avoid waste
- DFAB Temporis cartridges are provided together with a building platform and with tools for the cleaning of restorations

*1 The polymer is to be considered a long-term invasive medical device in Class IIa as provided for by the Rule 5, Annex IX, Dir. 93/42/EEC.

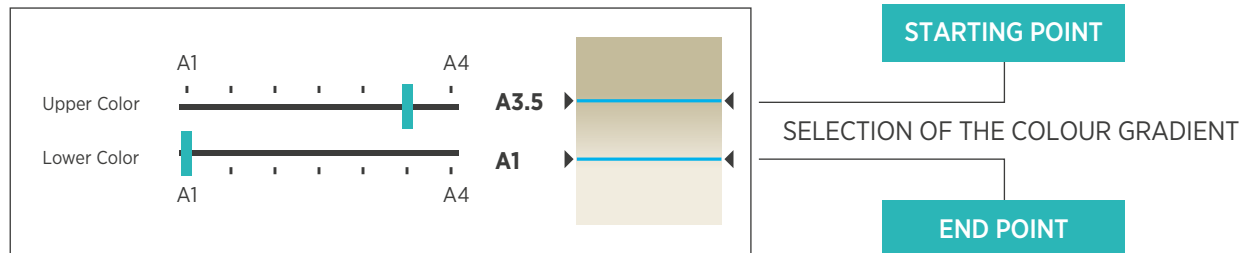
*2 Alharbi, Nawal, Reham Osman and Daniel Wismeijer. "Effects of build direction on the mechanical properties of 3D-printed complete coverage interim dental restorations." The Journal of Prosthetic Dentistry 115.6 (2016): 760-767.

PHOTOSHADE

A natural effect thanks to the adaptive colour gradient.

DFAB is a system that allows the reproduction of patient's specific teeth colours, in terms of pigmentation and shade, providing the prosthesis a realistic effect.

Thanks to the **Photoshade** technology, the operator selects the necessary shade's extremes by choosing the colours' codes from A1 to A3.5, in addition to the **exact position and width of the gradient** to be obtained. At the same time it is fully free to operate in the whole surface of the file, as per the light blue lines in the pictures. This process is not reproducible with CAD/CAM milling systems and with conventional 3D printers.



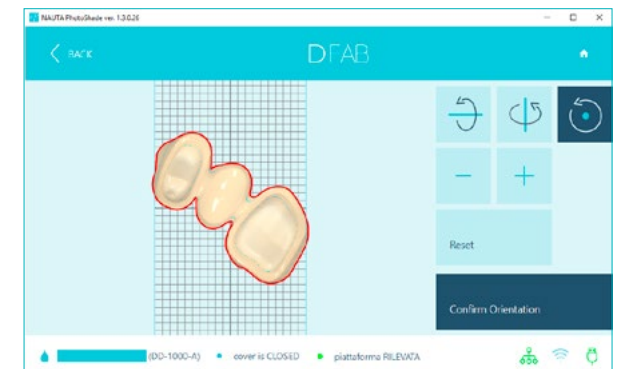


NAUTA PHOTOSHADE SOFTWARE

Simple and intuitive, step by step, it brings the user to the print.

The Nauta Photoshade software reproduces in **real time the restoration's preview** and, obtained the operator's confirmation, visualizes the file to be printed, so to get the most realistic result as possible.

- Extremely easy to use: it can be handled also by beginners or minimally educated operators
- Step by step working process guides the operator to the print
- A completely visual choice system, from the selection of the gradient to the shading colour





With Irix Max and DWS 3D printing technology, the translucent permanent restoration in nanocomposites can be obtained in short time and with the maximum quality.

PREVIEW

NANOCOMPOSITES FOR TRANSLUCENT PERMANENT RESTORATIONS

Only one visit is needed and the whole workflow remains in-house.

Thanks to **Irix Max***, a new material made with **nanocomposites**, a permanent restoration, precise and rapid in its printing, finally becomes a reachable goal for all dental clinics, either of small or medium dimensions. Outcome of long researches and tests, the restorations obtained with this **revolutionary material** stand out for their **translucency** and their high flexural strength. They share all the technical and productive advantages granted by the use of DWS innovative 3D printing technologies, like the **Photoshade** and **Nauta** software packages.

- High translucency
- In-house restorations in a single visit
- Direct print production of crowns, bridges, inlays, onlays and veneers
- High flexural strength values
- Colours available: A1, A2, A3, A3.5, B1, N and, with Photoshade technology, even the shading can be exactly reproduced

Material	LFAB	DFAB	XFAB 2500PD	XFAB 3500PD	O29D	XPRO S	XPRO Q
Irix Max	▲	▲	▲	▲	—	—	—

* The product is not yet certified and cannot be sold until the formal certification process is completed.

PREVIEW

RESTORATIONS IN ZIRCONIUM OXIDE

Printing times and production practices totally transformed by DWS' new material.

Irix Z* is one of the most recent and innovative finding by DWS research. It is a new and advanced zirconia that, combined with the **DFAB** printer and **Photoshade** technology, allows the creation of accurate **permanent restorations** in-house at the dental clinic and in extremely reduced times.

- In-house restorations
- Direct print of green restorations, sintering cycles are required
- Colours available: A1, A2, A3, A3.5, B1, N and, with Photoshade technology, even the shading can be exactly reproduced



Material	LFAB	DFAB	XFAB 2500PD	XFAB 3500PD	O29D	XPRO S	XPRO Q
Irix Z	▲	▲	—	—	—	—	—

A small revolution for the permanent restoration in zirconia. Precise and accurate, the restoration in Irix Z can be printed with DFAB in a simple and intuitive way.

* The product is not yet certified and cannot be sold until the formal certification process is completed.



Natural-looking restorations, with colour rendering thanks to our range of materials and even with matched shading when the 3D printer is provided with Photoshade technology.

CLASS IIa CERTIFIED RESTORATIONS

Precise and natural, available for the first time in direct printing.

Completely natural-looking bridges and crowns, finally available **directly from 3D printing**. This important progress is being obtained thanks to DWS digital technologies applied to innovative biocompatible materials of our **Temporis*** range. This material emulates the true colour of the teeth and our exclusive **Photoshade** system even allows controlled shading, when using printers equipped with it.

- Direct print production of crowns, bridges, inlays, onlays and veneers
- Colours available: A1, A2, A3, A3.5, B1, N and, with Photoshade technology, even the shading can be exactly reproduced
- Fewer steps, if compared with traditional methods
- Fast performance and low operating costs

Material	LFAB	DFAB	XFAB 2500PD	XFAB 3500PD	029D	XPRO S	XPRO Q
Temporis N	▲	—	▲	▲	—	—	—
Temporis A1	▲	—	▲	▲	—	—	—
Temporis A2	▲	—	▲	▲	—	—	—
Temporis A3	▲	—	▲	▲	—	—	—
Temporis A3.5	▲	—	▲	▲	—	—	—
Temporis B1	▲	—	▲	▲	—	—	—
Temporis Photoshade	—	▲	—	—	—	—	—

* The polymer is to be considered a long-term invasive medical device in Class IIa as provided for by the Rule 5, Annex IX, Dir. 93/42/EEC.

THE EASIEST USER EXPERIENCE

Ergonomic, fast and easy to use also in materials' loading phases.

DFAB's ergonomic design helps for a simple and intuitive use, other than safe and rapid, of the ready-to-use cartridges.



01 — Door opening

Press downward.
Let the work station scroll upwards.

02 — Cartridge insertion

Insert the cartridge in the appropriate
dedicated opening.

03 — Platform insertion

Insert the printing platform in the
dedicated compartment.

04 — Door closing

Press the door downward to close it.

MATERIALS AND CARTRIDGES

A constantly evolving complete range.

DWS offers a constantly evolving range of materials. The materials are available in ready-to-use cartridges, that grant the result in a single printing session and make the user experience functional and handy. Thanks to DWS systems (DFAB, materials, software) perfect long term or permanent restorations can be obtained, being them inlays, onlays, veneers, crowns or bridges.



Temporis

Certified materials produced by DWS for the 3D printing of provisional restorations.

Irix Max

DWS patented material for the creation of translucent definitive restorations in nanocomposites.

Irix Z

Exclusive DWS advanced zirconia allows the creation of accurate permanent restorations. Sintering cycles are required

DS3000

Transparent and biocompatible material in Class I for highly precise and accurate surgical guides.

Fusia RF080

Ideal resin for burnout and pressed ceramic cycles. For stable and non-deformable crowns and bridges.

Precisa RD096GY

Gypsum-like resin in grey colour for dental models from intraoral scanning. High surface smoothness and resolution.



DFAB Desktop

Natural-looking restorations
in a single visit.

Developed for prosthetic clinics and dental laboratories, 3D printer DFAB Desktop connects to a computer and is easy to operate thanks to the proprietary **Nauta Photoshade** software. It allows the production of **natural-looking** dental prosthesis, in fewer steps than with traditional methods. All DFAB family devices are connected to a cloud system that allows the full traceability of interventions, of materials and of cartridges.

- Certified restorations in a single visit
- It prints a bridge with up to 5 elements in less than 20 minutes
- Photoshade Technology: reproduction of the chromatic variation in tooth colour from the incisal to the cervical side.



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DFAB Chairside

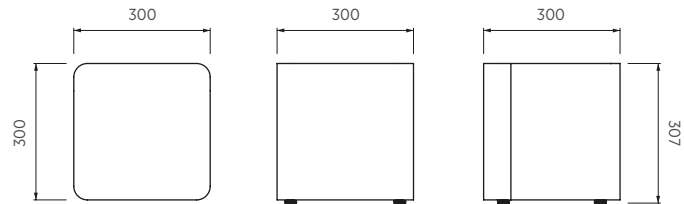
The most innovative technology combines the most intuitive user experience.

In its Chairside version, DFAB is provided with practical and intuitive touchscreen commands. DFAB Chairside is an **all-in-one device** that integrates a high speed additive manufacturing system to a **user friendly touchscreen** personal computer, practical and intuitive in its control.

- Disposable Cartridges: safe, hygienic, less waste, best user experience
- No powders are produced, no noise and no instruments or tool replacement is needed
- Compatible with intraoral scanners and CAD/CAM systems for the dental sector
- Cloud connection to ensure material traceability

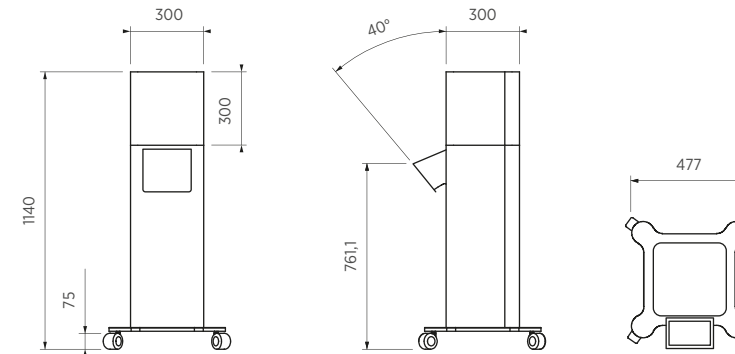
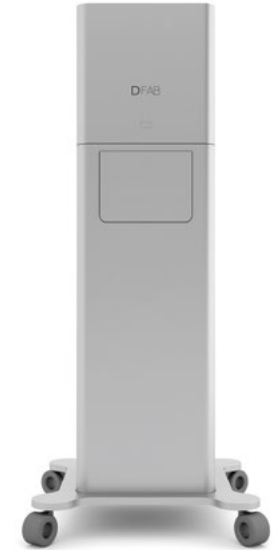
SPECIFICATIONS

Technical data*	DFAB Desktop
Technology:	Laser - TSLA
Working Area:	50 x 20 x 40 mm
Laser source:	Solid State BlueEdge®
Layer thickness:	10-100 micron (depending on the type of material used)
Scanning method:	Galvanometer
Software:	Nauta Photoshade
Input files format:	.stl, .nauta, .fictor
Machine Size:	300 x 300 x 307 mm
Weight:	15 Kg
Operating Temp. and Humidity:	15-25 °C / 60%
Power Supply:	24V DC con AC 240/100V / 50-60 Hz external supplier included
Electrical Consumption:	160W
PC Minimum Requirements:	Windows 7 or above
- Memory:	RAM 4GB
- Graphics Card:	OpenGL 2.0 compatible or above
I/O Interfaces:	1 USB port
Connectivity:	1 active internet connection



SPECIFICATIONS

Technical data*	DFAB Chairside
Technology:	Laser - TSLA
Working Area:	50 x 20 x 40 mm
Laser source:	Solid State BlueEdge®
Layer thickness:	10-100 micron (depending on the type of material used)
Scanning method:	Galvanometer
Software:	Nauta Photoshade
Input files format:	.stl, .nauta, .fictor
Machine Size:	480 x 480 x 1142 mm
Weight:	40 Kg
Operating Temp. and Humidity:	15-25 °C / 60%
Power Supply:	24V DC con AC 240/220V / 50-60 Hz external supplier included
Electrical Consumption:	200W
PC Minimum Requirements:	Windows 7 or above ¹
- Memory:	RAM 4GB ¹
- Graphics Card:	OpenGL 2.0 compatible or above ¹
I/O Interfaces:	1 USB port
Connectivity:	1 active internet connection



¹ Built-in PC, the minimum requirements are expressed in order to operate Nauta with an external PC (not included).



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MADE IN ITALY



The company is certified according to ISO 9001:2015 and ISO 13485:2016 standards, in full respect of the highest requirements in the field of medical devices.

Information

This brochure contains informative addressed to healthcare professionals as it deals with information that may lead to serious damages for patient's health and safety if not properly understood and duly executed. Regulations under the Italian law (Legislative Decree dated February, 23rd 2006, Legislative Decree no. 219/2006 and in general by Legislative Decree no. 46/97 as amended by Legislative Decree no. 37 dated January, 25th 2010).



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