DIGITALWAX D
FOR DENTAL LABS
DWS profile

DWS Additive Manufacturing

DWS, Digital Wax Systems, was founded in Vicenza in 2007, drawing on lengthy consolidated experience in prototyping. DWS develops hi-tech solutions for prototyping and high-speed production, with the aim of reducing development times for new products and, as a consequence, time to market. These systems have become must-haves and strategic resources for corporate competitiveness. The goal of DWS is to innovate processes to make production faster and more flexible.

DWS is the only Italian company today capable of developing systems for prototyping and rapid production through implementation of stereolithography technology, with in-house manufacture of all the necessary resins and materials. It exports 95% of its production to over 60 countries around the world and is divided into four business units: jewellery, dental, general applications and, from today, also consumer goods.

The advantages that qualify DWS as an excellence can be summarised as follows:

- the use of new-gen photosensitive resins and materials developed in-house
- the innovative BluEdge® laser system
- dedicated 3D editing and manufacturing software
- the absence of the immersion in resin phase
- speed, accuracy and high surface quality.

The production process is one of its kind and protected by international patents. DWS is leader in the jewellery sector and also an important player with very interesting solutions for the dental sector and industrial applications in general.

Dental Lab & Clinic  Jewelry & Fashion  General Applications
DigitalWax® D systems
# DigitalWax® D line-up

<table>
<thead>
<tr>
<th></th>
<th>HD</th>
<th>UHD</th>
<th></th>
<th>HD</th>
<th>UHD</th>
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<th>UHD</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Orthodontic applications</td>
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</table>

- **HD** = High Definition
- **UHD** = Ultra High Definition

Applications range:
- + = productivity
- > = building speed
- o = resolution

### Dimensions in millimeters

<table>
<thead>
<tr>
<th>Model</th>
<th>Working Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>020D</td>
<td>130x130x90</td>
</tr>
<tr>
<td>026D</td>
<td>90x90x90</td>
</tr>
<tr>
<td>029D</td>
<td>150x150x100</td>
</tr>
<tr>
<td>030DSR</td>
<td>250x250x250</td>
</tr>
<tr>
<td>030DHR</td>
<td>300x300x300</td>
</tr>
</tbody>
</table>

**Legend**

- **HD** = High Definition
- **UHD** = Ultra High Definition

**Applications range**
- + = productivity
- > = building speed
- o = resolution
DigitalWax® D systems
Building process

The object is created layer by layer.

The Galvanometer type scanning method allows the highest building speed and accuracy. It is adopted by DigitalWax® 020D, 028D, 029D and 030D systems.

DigitalWax® D: Additive Manufacturing systems for digital dentistry

Due to their reduced moving parts and unique user-friendliness, DigitalWax® machines are characterised by high reliability and extra-low maintenance. A great flexibility is made possible by the quick material change, the absence of pre-heating and calibration. The machines are controlled by dedicated software that is perfectly compatible with most 3D CAD systems used in the dental applications. BluEdge® is a Class 3B laser source created by DWS Research & Development Centre that emits ultraviolet rays which solidify layer upon layer of photosensitive resin. By means of a vertical positioning device, the modelling platform base rises up for a measure corresponding to the thickness of the solidified layer. These motion capabilities, together with a synchronised laser allow the creation of exceptionally complex and precise three-dimensional prototypes. DigitalWax® stereolithography machines are characterised by innovations such as a transparent resin tank which allows the laser beam to pass through it, and a laser scanning unit placed directly under the tank. These innovations, in comparison to conventional techniques, make the whole process more flexible and more economical, especially in terms of material consumption.
**Desktop system for orthodontic applications**

High productivity and the lowest running cost on the market are the main characteristics of this **innovative rapid manufacturing system for orthodontic applications**. The high speed and accuracy of the machine mean shorter production times with no manual intervention, ensuring maximum client satisfaction and zero defects.

**DigitalWax® 020D is fast**: combining CAD/CAM design with intraoral scanning, impression scanning or stone model scanning, DWS 3D printers create finished products for orthodontic applications.

**Production of:**
- Orthodontic models
- Surgical guides
- Delivery and positioning trays
- Clear aligners and retainers

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**Standard accessories supplied with DigitalWax® 020D:**
- No. 1 Building platform mm 138x138 (working area mm 130x130)
- No. 1 Resin tank mod. RT800
- No. 1 Set of handling tools
- No. 1 DigitalWax® 020D Software Suite License
- No. 1 User manual

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**Technical data:**
- **Light source:** Solid State BluEdge® BE-1500C
- **Working area (x, y, z):** 130 x 130 x 90 mm
- **Slice thickness**: 0,01 – 0,10 mm
- **Scanning method:** Galvanometer
- **Laser scanning speed:** 0-4300 mm/sec
- **Software:** DigitalWax® 020D Controller
- **OS:** Windows 7
- **Input files format:** .stl – .slc
- **PC interface:** USB
- **Machine size:** 380x515x793 mm
- **Weight:** 56 Kg
- **Operating Temperature and Humidity:** 22°- 25°C / 60%
- **Electrical consumption:** 400 W
- **Power supply:** AC 230/115 V / 50-60 Hz

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*it depends on the kind of photo-sensitive material used. Technical specifications subject to changes without notice.*
HIGHLIGHTS

- Desktop size system
- Quick material change
- BluEdge® laser source
- High speed and accuracy
- Complete choice of castable materials
- Compatible with Temporis® material
- Low running costs
- Long life UV laser
- No calibration
DigitalWax® 028D

Desktop high accuracy system

DigitalWax® 028D is a high performance, rapid desktop manufacturing system, for small and medium size dental labs. The three-dimensional models are built by a special laser, which hardens a proprietary photocurable material. Thanks to layer-by-layer forming technology, there are no limits to the geometric complexity of the models: undercuts, cavities, thin surfaces and complex shapes can be created without any difficulty.

The BluEdge® laser is specifically developed and manufactured by DWS to guarantee high performance and long life. Thanks to high speed scanning technology, DigitalWax® 028D is suitable for a wide range of dental applications: direct castable patterns, provisional restorations and gypsum-like models from intraoral scanners.

### Standard accessories supplied with DigitalWax® 028D:
- No. 1 Building platform mm 100x100 (working area: mm 90x90)
- No. 1 Resin tank mod. RT800
- No. 1 Set of handling tools
- No. 1 Personal Computer with LCD monitor
- No. 1 UPS 650VA 230V 50/60 Hz
- No. 1 DigitalWax® 028D Software Suite License
- No. 1 User manual

*it depends on the kind of photo-sensitive material used. Technical specifications subject to changes without notice.

### Technical data:
- Laser source: Solid State BluEdge®
- Working area (x, y, z): 90 x 90 x 90 mm
- Slice thickness*: 0,01 – 0,10 mm
- Laser scanning speed: 0-4300 mm/sec
- Scanning method: Galvanometer
- Software: DigitalWax® 028D Controller
- OS: Windows 7
- Input files format: .stl - .slc
- Machine size: 380x515x733 mm
- Weight: 56 Kg
- Operating Temperature and Humidity: 22°- 25°C / 60%
- Electrical consumption: 400 W
- Power supply: AC 230/115 V / 50-60 Hz
**HIGHLIGHTS**
- Desktop size system
- Quick material change
- BluEdge® laser source
- High speed and accuracy
- Complete choice of materials
- Compatible with Temporis® material
- Low running costs
- Long life UV laser
- No calibration
DigitalWax® 029D

High performance production system

DigitalWax® 029D is a additive manufacturing system conceived for medium production volumes, suitable for considerable quantities of castable patterns and provisional restorations. The wide working area means DigitalWax® 029D is suitable for the production of medium quantities of orthodontic models and gypsum-like models from intraoral scanners.

TTT System: (Tank Translation Technology) consists of an electromechanical device that automatically shifts the resin tank during the growing of the model: it reduces localized wear of the tank caused by laser beam irradiation through the same area, improving both the life of the resin tank and the efficiency of the building process.

Standard accessories supplied with DigitalWax® 029D:
- No. 1 Building platform mm 160x160 (working area: mm 150x150)
- No. 1 Resin tank mod. RT500
- No. 1 Set of handling tools
- No. 1 Personal Computer with LCD monitor
- No. 1 UPS 650VA 230V 50/60 Hz
- No. 1 DigitalWax® 029D Software Suite License
- No. 1 User manual

Technical data:
- Laser source: Solid State BluEdge® BE-1800B
- Working area (x, y, z): 150 x 150 x 100 mm
- Slice thickness*: 0.01 – 0.10 mm
- Laser scanning speed: 6500 mm/sec
- Scanning method: Galvanometer
- Software: DigitalWax® 029D Controller
- OS: Windows 7
- Input file format: .stl - .slc
- Machine size: 610x660x1400 mm
- Weight: 150 Kg
- Operating Temperature and Humidity: 22°- 25°C / 60%
- Electrical consumption: 500 W
- Power supply: AC 230/115 V / 50-60 Hz

*it depends on the kind of photo-sensitive material used.
Technical specifications subject to changes without notice.
HIGHLIGHTS

- Perfect for medium volume production
- Quick material change
- BluEdge® laser source
- High speed and accuracy
- Superior surface quality
- TTT - Tank Translation Technology
- Complete choice of materials
- Compatible with Temporis® materials
- Extra-long life UV laser
- No calibration
- Low running costs
High productivity, large size capacity and the lowest running cost on the market are the main features of this innovative system.

In combination with a new generation of intraoral scanner systems, DigitalWax® 030D is the perfect solution for the mass production of digital impression models, delivering the highest accuracy and surface quality for a perfect replacement of the conventional physical impressions.

The right physical and visual properties are guaranteed by the new RD material series, specifically developed by DWS for digital impression SLA printing.

The great flexibility of the DigitalWax® 030D also allows the production of lost wax casting products, such as crowns, bridges and partial frameworks thanks to simple quick material change. Thanks to its long-term experience, DWS has developed the RF series of photocurable resins for direct casting of dental parts, which includes three different solutions for a full coverage of the casting applications.

**Technical data 030D SR:**
- Laser source: Solid State BluEdge®
- Working area (x, y, z): 250x250x250 mm
- Machine size: 1100x700x2000 mm

**Technical data 030D HR:**
- Laser source: Solid State BluEdge®
- Working area (x, y, z): 300x300x300 mm
- Machine size: 1100x700x2000 mm

Technical specifications subject to changes without notice.
**HIGHLIGHTS**

- Perfect for digital impression models
- Quick material change
- Highest productivity
- High speed and accuracy
- BluEdge® laser source
- Superior surface quality
- TTT - Tank Translation Technology
- Complete choice of materials
- Compatible with Temporis® material
- Extra-long life UV laser
- No calibration
- Low running costs
TEMPORIS® is a class IIA light curable material range for the fabrication of long-term temporary crowns and bridges. In order to meet esthetic and functional requirements, TEMPORIS® materials are available in different shades and they can be trimmed, shaped and polished. For a perfect customization, TEMPORIS® materials can be layered with light curable composites and personalized with light-curing stains.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>DD-1000-N</td>
<td>Long-term temporary restorations, class IIA*</td>
<td>BL3 shade</td>
</tr>
<tr>
<td>DD-1000-A1</td>
<td>Long-term temporary restorations, class IIA*</td>
<td>A1 shade</td>
</tr>
<tr>
<td>DD-1000-A2</td>
<td>Long-term temporary restorations, class IIA*</td>
<td>A2 shade</td>
</tr>
<tr>
<td>DD-1000-A3</td>
<td>Long-term temporary restorations, class IIA*</td>
<td>A3 shade</td>
</tr>
<tr>
<td>DD-1000-A3.5</td>
<td>Long-term temporary restorations, class IIA*</td>
<td>A3.5 shade</td>
</tr>
<tr>
<td>DD-1000-B1</td>
<td>Long-term temporary restorations, class IIA*</td>
<td>B1 shade</td>
</tr>
</tbody>
</table>

* 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 and subsequent amendments.
DIGITALWAX® RD and GL Series: Digital Impression materials for dental models

RD digital impression materials have been designed for the production of impression models directly from intraoral digital capture devices, as a replacement of the traditional physical impression.

GL material, gingiva-like, has been designed for the production of realistic models of soft tissues and gingival masks.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>RD095</td>
<td>Digital impression models</td>
<td>Ceramic-like, blue colour</td>
</tr>
<tr>
<td>RD096B</td>
<td>Digital impression models</td>
<td>Gypsum-like, light blue colour</td>
</tr>
<tr>
<td>RD096GY</td>
<td>Digital impression models</td>
<td>Gypsum-like, grey colour</td>
</tr>
<tr>
<td>RD096GR</td>
<td>Digital impression models</td>
<td>Gypsum-like, green colour</td>
</tr>
<tr>
<td>RD096P</td>
<td>Digital impression models</td>
<td>Gypsum-like, pink colour</td>
</tr>
<tr>
<td>RD096W</td>
<td>Digital impression models</td>
<td>Gypsum-like, white colour</td>
</tr>
<tr>
<td>RD096Y</td>
<td>Digital impression models</td>
<td>Gypsum-like, yellow colour</td>
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<tr>
<td>RD096IV</td>
<td>Digital impression models</td>
<td>Gypsum-like, ivory colour</td>
</tr>
<tr>
<td>RDECO</td>
<td>Digital impression models</td>
<td>Cost-effective, grey colour</td>
</tr>
<tr>
<td>GL4000</td>
<td>Soft tissue models, gingival masks</td>
<td>Gingiva-like, pink colour</td>
</tr>
</tbody>
</table>

Materials
Materials

DIGITALWAX® RF Series: resins for direct casting

RF casting resins are specifically designed for direct lost wax casting of dental objects and allow the production of high-definition crowns, bridges and partial frameworks.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF065</td>
<td>Direct casting</td>
<td>Easy burnout - Clear transparent</td>
</tr>
<tr>
<td>RF068</td>
<td>Direct casting</td>
<td>Rigid - Clear transparent</td>
</tr>
<tr>
<td>RF080</td>
<td>Direct casting</td>
<td>Extra-rigid - Clear transparent</td>
</tr>
</tbody>
</table>
DIGITALWAX® DS Series: Transparent materials for medical applications

DS resins are developed for the production of high-precision clear patterns.

<table>
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<tr>
<th>Type</th>
<th>Application</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS2000</td>
<td>3D medical imaging</td>
<td>Clear transparent</td>
</tr>
<tr>
<td>DS3000</td>
<td>Surgical guides</td>
<td>Bio-compatible, clear transparent</td>
</tr>
</tbody>
</table>
UV Curing Units

UV Curing Unit ‘S’ and ‘M’

The UV Curing Unit device concurs the secondary solidification of the models built by the DigitalWax® systems. These models are perfectly formed, but they need an additional exposure to a specific UV light source. This allows the consolidation and the stabilization of their structure and ensures the best casting results.

UV Curing Unit model “S2” is usually suggested for DigitalWax® 009D and DigitalWax® 028D, while the model “M” is more suitable for DigitalWax® 029D because it can cure a complete platform all at once.

Technical data:

<table>
<thead>
<tr>
<th></th>
<th>UV Curing Unit ‘S2’</th>
<th>UV Curing Unit ‘M’</th>
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</thead>
<tbody>
<tr>
<td><strong>Ventilation</strong></td>
<td>Forced ventilation inside</td>
<td>Forced ventilation inside</td>
</tr>
<tr>
<td><strong>User controls</strong></td>
<td>On/Off button</td>
<td>On/Off button</td>
</tr>
<tr>
<td></td>
<td>Timer</td>
<td>Timer</td>
</tr>
<tr>
<td></td>
<td>Safety device on door opening</td>
<td>Safety device on door opening</td>
</tr>
<tr>
<td><strong>Timer setting</strong></td>
<td>0 ÷ 30 minutes</td>
<td>0 ÷ 30 minutes</td>
</tr>
<tr>
<td><strong>Curing area dimensions</strong></td>
<td>160 x 160 x 160 mm</td>
<td>225 x 250 x 225 mm</td>
</tr>
<tr>
<td><strong>Machine size</strong></td>
<td>265 x 300 x 330 mm</td>
<td>370 x 330 x 480 mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>11.8 kg</td>
<td>20.5 kg</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>35 W</td>
<td>120 W</td>
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<tr>
<td><strong>Power supply</strong></td>
<td>90-264 V / 50-60 Hz</td>
<td>220 V / 50-60 Hz</td>
</tr>
</tbody>
</table>

Technical specifications subject to changes without notice.
**HIGHLIGHTS**

- Best casting results
- Low power consumption
- Simple use and maintenance
- Timer setting