

HIGH PRODUCTIVITY RAPID MANUFACTURING SYSTEMS

DIGITALWAX X

FOR GENERAL APPLICATIONS



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.



General Applications



Jewelry & Fashion



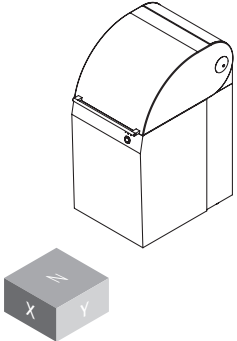
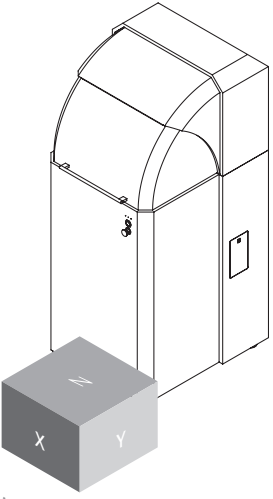
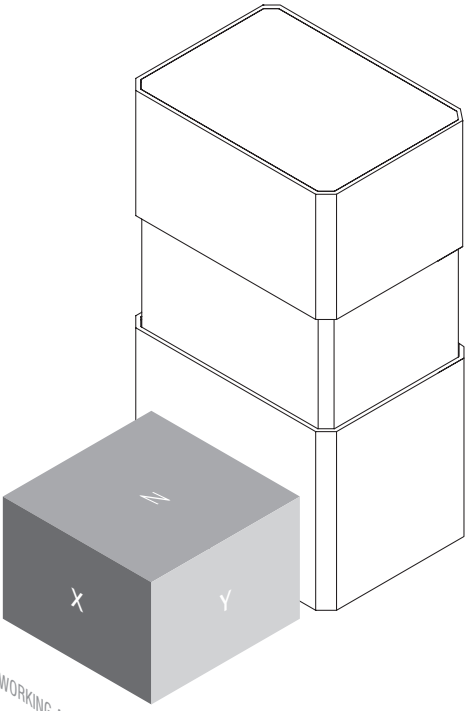
Dental Lab & Clinic

DigitalWax® X systems



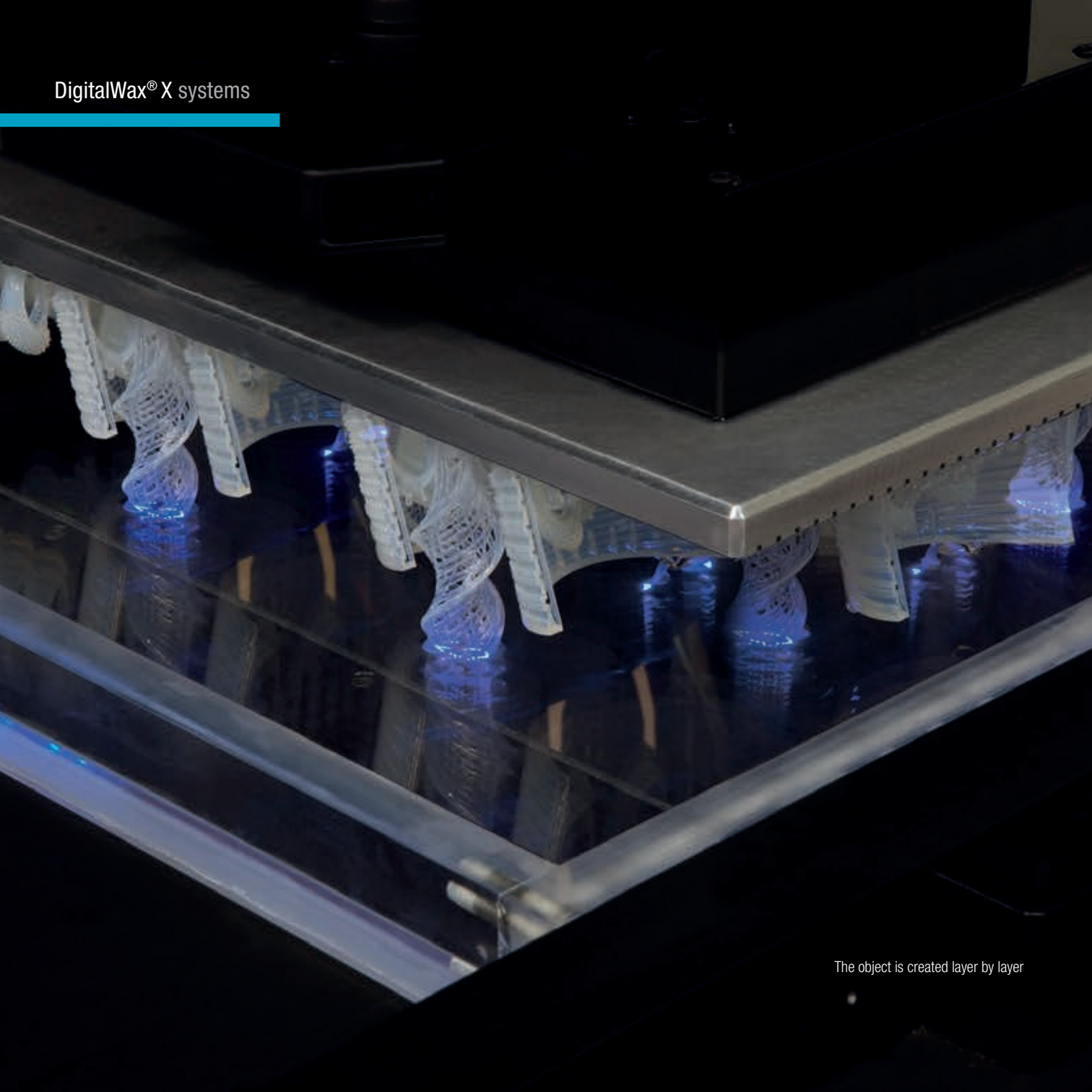
Legend

- + = productivity
- > = building speed
- o = resolution

020X	029X	030X
+++++	+++++	+++++
>>>>	>>>>	>>>>
oooo	oooo	oooo
 <p>WORKING AREA 130X130X90</p>	 <p>WORKING AREA 150X150X200</p>	 <p>WORKING AREA 300X300X300</p>

Dimensions in millimeters

DigitalWax® X systems



The object is created layer by layer

Building process



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

DigitalWax® X: Additive Manufacturing systems for general applications

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 industrial 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 3D printer

Designed for the production of functional prototypes, finished parts, concept models with the highest definition and resolution.

DigitalWax® 020X meets the strictest quality standards, reducing to a minimum or even doing away with the need to finish pieces.

All this in just a few hours thanks to a fast accurate laser and considerably lower consumption of photopolymerizable material, used without waste or the need for further support materials.

DigitalWax® 020X is reliable, quiet and ideal for engineering, design, consumer products and for all sector in general that call for speed and accuracy in the new product development stage and manufacturing division.

The flexibility of this product is guaranteed by the wide range of “X Series” materials, from which you can pick the most suitable for your requirements and business.

Standard accessories supplied with DigitalWax® 020X:

No. 1 Building platform mm 138x138 (working area mm 130x130)

No. 1 Resin tank mod. RT800

No. 1 Set of handling tools

No. 1 Nauta®+ Software License

No. 1 User manual

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: Factor®

OS: Windows 7

Input files format: .stl - .slc

Network interface: USB

Machine size: 380x515x810 mm

Weight: 58 Kg

Operating Temperature and Humidity: 22°- 25°C / 60%

Electrical consumption: 400 W

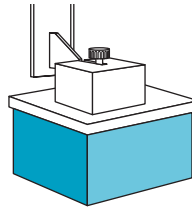
Power supply: AC 230/115 V / 50-60 Hz

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



GALVANOMETER

WORKING AREA: 130x130x90



HIGHLIGHTS

- Desktop size system
- Quick material change
- BluEdge® laser source
- High speed and accuracy
- Low running costs
- Long life UV laser
- No calibration





High productivity Additive Manufacturing system

High accuracy, large size capacity and the lowest running cost in the market are the main features of this innovative system.

Fully compatible with the majority of 3D CAD/CAM systems, DigitalWax® 029X is the perfect solution either for rapid prototyping and rapid manufacturing of complex parts, delivering the highest level of accuracy and surface quality.

A quick 3D printout with high surface quality can be very helpful during the concept design phase: the DM210 ceramic nano-filled resin enables a designer to visually inspect the design for form, fit, and function. The new DL350 polypropylene-like resin has been specifically developed by DWS for flexible, fully functional prototypes.

DigitalWax® 029X allows the production of lost wax casting products as well by a simple and quick material change.

Standard accessories supplied with DigitalWax® 029X:

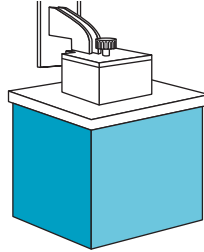
No. 1 TTT system
No. 1 Building platform mm 160x160 (working area: mm 150x150)
No. 1 Resin tank mod. RT500
No. 1 Set of handling tools
No. 1 Personal Computer with LCD monitor
No. 1 UPS 650VA 230V 50/60 Hz
No. 1 Nauta®+ Software License
No. 1 User manual

Technical data:

Laser source: Solid State BluEdge®	BE-1800C
Working area (x, y, z):	150 x 150 x 200 mm
Slice thickness*:	0,01 – 0,10 mm
Laser scanning speed:	6500 mm/sec
Scanning method:	Galvanometer
Software:	Factor®
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-curable resin used.
 Technical specifications subject to changes without notice.

SYSTEM - GALVANOMETER WORKING AREA: 150x150x200

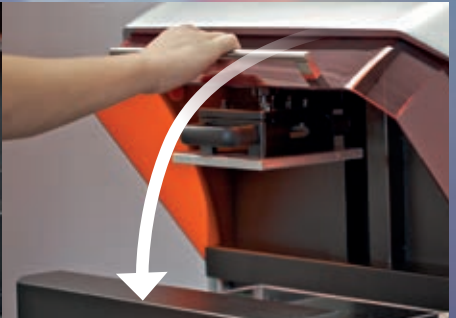


HIGHLIGHTS

- BluEdge® laser source
- TTT - Tank Translation Technology
- High speed and accuracy
- High surface quality
- Complete choice of materials
- Extra-long life UV laser
- No calibration
- Lowest running cost



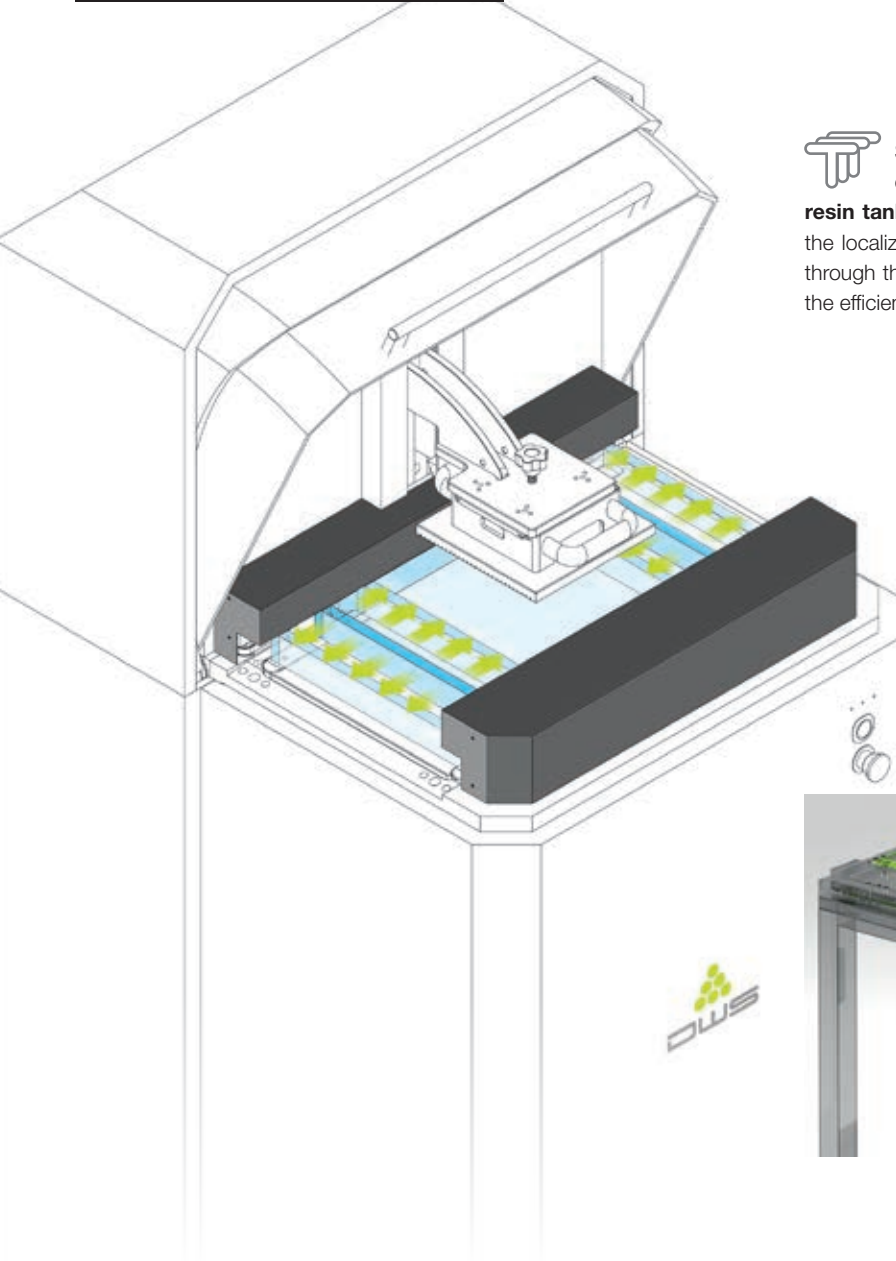
DigitalWax® advantages



Resin tank loading system, left or right - Quick material change

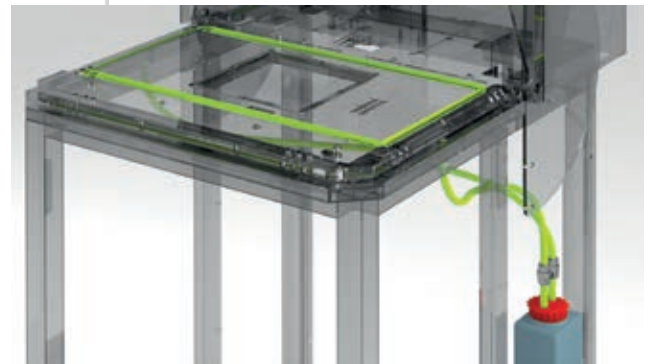
Easy and safe locking system

TTT SYSTEM



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

The **Leakage Protection System** prevents damages due to improper infiltration of liquids inside the sophisticated scanning and laser devices.





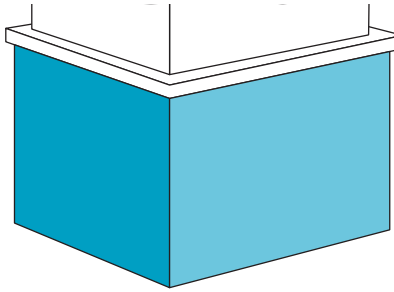
High productivity Additive Manufacturing system

DigitalWax® 030X rapid manufacturing system has been specifically developed for high productivity applications in the industrial field. High accuracy, large size capacity and the lowest running cost in the market are the main features of this innovative system. In combination with a new generation of fully castable materials, DigitalWax® 030X is the perfect solution for the mass production of wax-like patterns, delivering the highest accuracy and surface quality for a perfect replacement of the conventional mould injection method. The great flexibility of the DigitalWax® 030X allows a quick material change and a choice of different materials, either for direct casting and rubber moulding applications. Thanks to its long-term experience, DWS has developed the DC series of wax-based resins for direct casting and the DM/DL Series of hybrid materials for the production of master models for rubber moulding applications.

Technical data:

Laser source:	Solid State BluEdge®
Working area (x, y, z):	300x300x300 mm
Machine size:	1100x700x2000 mm

SYSTEM - GALVANOMETER WORKING AREA: 300x300x300



HIGHLIGHTS

- BluEdge® laser source
- TTT - Tank Translation Technology
- Highest productivity
- High speed and accuracy
- Superior surface quality
- Complete choice of materials
- Lowest running cost



Materials

DIGITALWAX® DC Series: resins for direct casting

DC casting resins are specifically designed for **direct lost wax casting** applications. Designed to allow the production of high-definition, detailed parts and smooth surfaces that do not require manual finishing.

Type	Application	Features	Colour
DC080	Direct casting	Hard casting resin	Light yellow
DC100	Direct casting	Soft casting resin	Light yellow

DIGITALWAX® DM/DL/AB/GM Series: resins for rubber moulds and functional parts

DM nano-filled resins are the right materials for heat resistant parts with high accuracy and excellent surface quality.

DL, AB and **GM resins** have been developed for rapid prototyping and rapid manufacturing of functional parts.

Type	Application	Features	Colour
DM210	Mock-up design	Smooth surface	Dark blue
DM220	HTV rubber mould	High temperature resistance	Light blue
DL260	Mock-up design	Extra-smooth surface	Opaque grey
DL350	Functional prototype	PP-like	Light yellow
DL360	Functional prototype	Transparent	Light yellow
AB001	Functional prototype	ABS-like	White
AB002	Functional prototype	ABS-like	Grey
GM08	Functional prototype	Rubber-like, transparent	Light yellow
GM08B	Functional prototype	Rubber-like	Black

UV Curing Units

HIGHLIGHTS

Best casting results

Low power consumption

Simple use and maintenance

Timer setting



UV Curing Unit 'S2' 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® 020X, while the model "M" is more suitable for DigitalWax® 029X because it can cure a complete platform all at once.

Technical data:

	UV Curing Unit 'S2'	UV Curing Unit 'M'
Ventilation	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
Timer setting	0 ÷ 30 minutes	0 ÷ 30 minutes
Curing area dimensions	160 x 160 x 160 mm	225 x 250 x 225 mm
Machine size	265 x 300 x 330 mm	370 x 330 x 480 mm
Weight	11,8 kg	20,5 kg
Power consumption	35 W	120 W
Power supply	90-264 V / 50-60 Hz	220 V / 50-60 Hz

Technical specifications subject to changes without notice.





DWS srl - Via Lago di Levico, 3 - 36010 Zanè (VI) Italy
Phone +39 0445 372323 - Fax +39 0445 372191
www.dwssystems.com