



# 3DGence Material Management System

rev.1/2022



# 3DGence MMS

## ABSOLUTE PROCESS CONTROL:

- Process and material traceability
- Repeatable and accurate prints
- PAEK annealing program
- Fine-tuned drying programs
- Self-care program – minimal staff involvement, low effort maintenance



# 3DGence MMS

3DGence MMS – Material Management System is a solution dedicated to keep your materials in a proper condition during the whole printing process and helps to control it. Connected with 3DGence CLOUD, MMS can transfer information from NFC tags for full traceability and a streamlined workflow.

3DGence MMS is designed as 3 chambers, 4 materials slots each, operated from built-in 10-inch touchscreen.

The device can be extended with MMS Expansion Unit (slave device), both operated from the same touchscreen.



# 3DGence MMS – Features and benefits

Register the materials from Certified Materials Database into your process and get full material traceability.

Each spool of material purchased from 3DGence is equipped with NFC tag with unique ID. Once opened, the material is registered in the MMS database and the information can be send to 3DGence CLOUD and traced back till the very end of the production process.

Every single operation of the process, either conducted on MMS or 3DGence INDUSTRY line printer is controlled and registered in process logs.



# 3DGence MMS – Features and benefits

## Minimize the risk of failure or production stoppage

Correctly selected material, treated according to manufacturer requirements. Choose the 3DGence Certified Material together with Material Management System, and MMS will assess the current condition of the material, then will automatically set the drying or storage program.

Each material will be dried and stored according to material grade specific requirements. The system chooses and indicates to exact slot to dry and store the spool. All of the printing profiles have been design and verified based on industrial standard of material moisture content testing.



# 3DGence MMS – Features and benefits

## Anneal your PAEK end-use parts

MMS helps you make your high-performance PAEK prints even more durable.

Benefit from the parts annealing program, implemented into MMS. Tailor-made PEAK annealing procedures have been included to produce highest performing semi-crystalline parts manufactured out of ultrapolymers: PEEK and Victrex AM200 FIL from 3DGence Certified Materials Database.



# 3DGence MMS – Features and benefits

## Molecular sieve to always keep your materials in perfect conditions

Each MMS chamber is equipped with the molecular sieve cartridge, which is an industrial medium used for drying of polymers. Drying agent inside the cartridge is responsible for absorption of water molecules which are present in the chamber after thermal activation of the material.

Once a week the user will be requested to regenerate the drying agent in each chamber. This simple procedure will help the user maintain perfect conditions to dry and store all moisture-sensitive filaments.



# 3DGence MMS – Features and benefits

## Safety first!

All of 3DGence machines are certified against most restrictive safety regulations. MMS is equipped with a number of operator- and proces-, both active and passive safety features.

Temperature sensors, chamber locks, door opening sensors, overtemperature sensors for electronics – all of them to take care of the safety.





# 3DGence MMS – Features and benefits

Custom settings to keep the materials in mint condition

Take advantage of the Custom Mode in Material Management System. 3DGence MMS gives you freedom to build your own material drying and storage program.



# 3DGence MMS – package content

## WHAT IS INCLUDED?

- 3DGence Material Management System
- Molecular sieve cartridges
- WLAN module and RJ45 cable
- 3-phase power supply adapter (only for MMS Expansion Unit)

## WHAT IS THE ADDITIONAL EQUIPMENT?

- MMS Expansion Unit – 3 chambers
- Spare cartridges
- Metal container for annealing procedure
- Quartz sand for annealing procedure



# 3DGence MMS – specification

## DIMENSIONS

Dryer dimensions (W×D×H):  
1–3 chambers: 842 × 626 × 1736 mm  
6 chambers: 1552 × 626 × 1736 mm

Max. dimensions with open door (W×D×H):  
1–3 chamber: 842 × 1090 × 1736 mm  
6 chamber: 1552 × 1090 × 1736 mm

## ENVIRONMENT

Working temperature: 10–28°C relative humidity from 30% to 60% w/o condensation

Storage temperature: -20–54°C relative humidity 10% to 85% w/o condensation

## POWER

Required connection (Europe):  
1–3 chambers: 1ph 16A CEE 7/7 plug  
6 chambers: 3ph 32A CEE 17 plug

Power cable length: 2200 mm

Voltage:  
1–3 chambers: 230V AC (210–250V AC)  
6 chambers: 2×230V AC (210–250V AC)

Frequency: 50–60 Hz

Max.power consumption of the device without additional accessories:  
1 chamber: 1300 W  
3 chambers: 3680 W  
6 chambers: 7300 W

## TEMPERATURES

Operating temperature range: 50°C–200°C



# 3DGence MMS – specification

<b>CONNECTION</b>	Communication:	WiFi, LAN, USB
<b>DRYING</b>	Operating technology:	Dry air (actively dried)
	Drying chamber space (W x D x H):	470 × 260 × 320mm
	Drying chamber volume:	39,1 L
	Number of material slots in one chamber:	4
	Number of chambers in the dryer:	Depending on version (1, 3 or 6 chambers)
	Maximum filament spool diameter:	220 mm
	Maximum thickness of the spool:	90 mm
	Material tracking system:	Smart Material Manager
	Third party materials:	Yes, optional
	Drying process settings:	Predefined
	Recrystallization process settings:	Predefined
<b>SOFTWARE</b>	Device monitoring and archiving:	3DGence CLOUD
	Software updates:	Automatic, via USB



# 3DGence MMS – specification

## CONSTRUCTION

Construction:	Freestanding, equipped with castor wheels
Frame:	Steel
Doors:	Sealed/Thermally Insulated
Electronics:	3DGence
NFC TAG Reader:	Yes, on the front of the device
Display:	10" TFT capacitive display with 1280 x 768 px resolution

## SAFETY

Doors:	Mechanical lock with key, door opening sensor, over temperature protection acc. to DIN 12880 class 1.0, class 3.1
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## ACCESSORIES

Print recrystallization kit (optional)  
Drying agent cartridges (one for each drying chamber)  
Drawers for storing materials in the drying chamber (one for each drying chamber)  
WiFi adaptor  
Power adapter 1x 3ph 400V 32A / 3x 1ph 230V 32A (for connecting additional 3 chambers)

