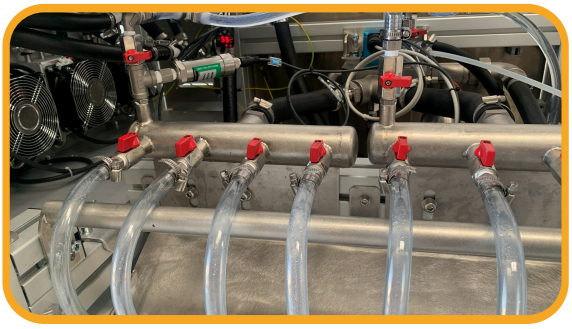
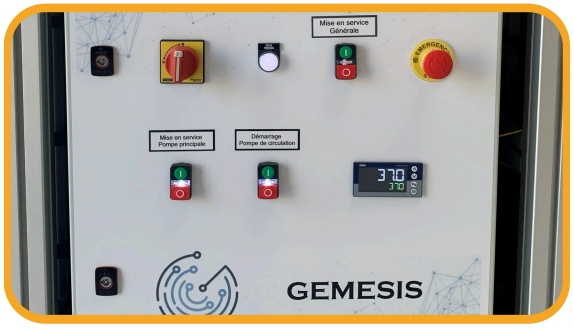
GMS PULSELAB 500

High-precision pulsatile test platform designed to accelerate the validation of medical devices.

GEMESIS





KEY FEATURES

- Dynamic servo valve for generating a wide range of test conditions
- Precision measurement platforme
- Dual circuit for a stable and reliable system for long test campaigns
- Integrated cooling and heating managment

01 - Executive Summary

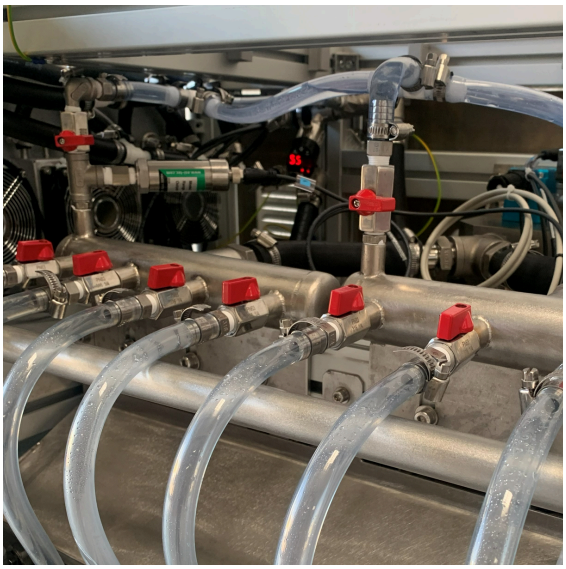
GMS PulseLab 500 is a high-precision pulsatile test platform designed to simulate physiological pressure conditions for the validation of medical and fluidic devices.

The system generates dynamic pressure profiles, including sinusoidal and custom patterns, with frequencies up to 35 Hz and a pressure range from 10 to 500 mbar. It enables realistic in vitro testing of vascular devices such as grafts, stents, and catheters.

With integrated temperature control at 37°C ±1°C and compatibility with various fluid viscosities, PulseLab 500 provides accurate simulation of physiological environments. Fully compatible with GEMS, the platform offers automated test execution, data logging, and advanced defect detection, making it suitable for both R&D and industrial applications.

02 - Applications

Application 1	Grafts
Application 2	Any pipes/ducts
Application 3	Components that needs to be tested with a variable pressure



03 - Key Technical Specifications

Measurement Ranges

Pressure range	Programmable range from 10 mbar to 500 mbar
Temperature	37°C
Flow rate	20L/min

Performance

Accuracy	Température +-1 °C
Acquisition frequency	10kHz
Cycle time	<5 ms

System Architecture

Instrumentation type	Low-pressure transmitters
Control system	Automated control
Software	GEMS or custom software
Data logging	Yes
Simultaneous acquisition	Yes
Redundancy	Yes, standard tooling with 8 DUT
Scalability	Yes
Parallel capability	Yes (depending on configuration)

Operating Conditions

Temperature range	10-27°C
Pressure range	0-500mbars
Atmosphere	Clean and dry
Environmental constraints	Laboratory or industrial installation

04 - OPTIONS

More DUT tested in parallel. Up to 16
Extra pumps + servovalve to have different test conditions running in parallel
Lower test rang (up to 0-50mbar) or higher rang (0-1000mbar)
Extra monitoring such: Conductivity, Ph, Viscosity
Interchangeable tooling

05 - Physical Characteristics

Dimensions (L x W x H)	1000 × 800 × 1100 mm
Weight	< 400 kg
Power consumption	2.5 kW
Electrical protection	16 A breaker + 30 mA RCD

06 - Key Advantages

- Adaptative design (Software and hardware) for easy evolutions
- Fully integrated and independent bench
- Stable and reliable system for long testing
- Fully monitored by sensor for failure detections
- Large range of test conditions.
- Adaptative design in case of product evolution
- Compact design

07 - Services & Support

Installation	On-site commissionning by our engineers
Training	Operator & maintenance training programs
Maintenance	Preventive & corrective maintenance contracts
Upgrades	Modular extensions & software updates

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