



SOLARIS™
BIOTECH

By Donaldson



JUPITER

CATALOGUE





JUPITER

single & parallel autoclavable fermenter bioreactor

The **Jupiter** platform offers multiple autoclavable vessel sizes and designs from 2.0 L up to 10.0 L total volume. The system is highly configurable, offering a wide range of measurement and control options. Pressure control up to 1.6 bar is also available in the 2 and 4 L volumes.

“Having the opportunity to extract real time process data with the lowest step time of 1 second remotely offers to our customer a powerful monitoring tool.”

APPLICATIONS

Our products are utilized across various sectors including **pharmaceuticals, food production, agriculture, biomanufacturing, bioplastics, biofuels, cosmeceuticals**, catering to both research and development and lab production needs

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Our Product Jupiter

This catalogue describes Solaris JUPITER.
For supervisory control and data acquisition
Leonardo software is included.



THE SYSTEM

The system consists of a benchtop, pre-assembled double-wall fermenter/bioreactor, supplied with all necessary tubes, valves and instruments, automation, control panel (HMI).

THE DESIGN

The system is designed for aerobic and anaerobic cultivations/fermentations, closed aseptic operations. The control is based on a SCADA control system.

Customizable Configuration

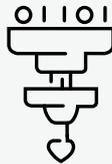
Different aspect ratio and thermoregulation strategies



BASIC
RESEARCH



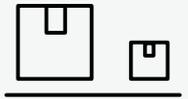
EDUCATION



PROCESS
DEVELOPMENT &
OPTIMIZATION



SCALE UP &
SCALE-DOWN
STUDIES



SMALL
PRODUCTION



CONTROL UNIT

Different gas mixing strategies with up to 5 TMFC, double-wall design: for improved heat transfer.

Suitable for batch, fed-batch and continuous processes.

Modbus digital sensors reduce background noise and guarantee quick response time.

Offer of a wide range of measurement and control options managed via property software.

Optional integration of up to 4 analog input/output connections, choosing between 0 - 10 V and 0-20 mA/4-20 mA.



DOUBLE-WALL VESSEL

Product Description

DOUBLE-WALL



LEDA: an innovative sterile sampling system for Solaris' autoclavable equipment, it allows up to 180 sterile samplings per batch.

A powerful and accurate (1 RPM) brushless motor direct assembly.

Different aspect ratios available upon customer request: D/H 3/1 and 2/1.

Double-wall borosilicate glass vessel designs available for all volumes.

Sterile septum with single use membrane for manual feeding.

VESSELS



Optional Configuration The Pressure

Jupiter Pressure

With the same configuration, control options and parameters as the standard one, gives the ability to run bioprocesses at higher pressure conditions. The **system is highly configurable**, offering a wide range of measurement and control options.

01

Pressure control up to 1.6 bar (with constant gas-in and gas-out flux) controlled from software.

02

Vessel dimensions available in 2 and 4 litres total volumes with double-wall design.

03

Suitable for batch, fed-batch and continuous processes and parallel control up to 24 units.

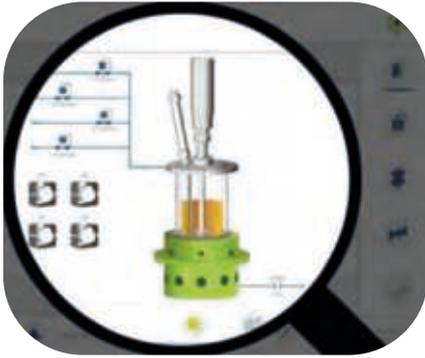
Leonardo Software



The innovative SCADA software Leonardo has a smart and user-friendly controller designed to provide a high level of automated management of the fermentation/cultivation processes.

Full version included with the equipment. Up to 24 units managed in parallel with a unique HMI (24"). Data extraction in .csv format.

Remote control and access via PC, tablet or smartphone, with QR code scanning or via dedicated portal.



SYNOPTIC

- Real time 3D view
- Parallel control
- Manual control



LOGIC PARSER

- Customized logic functions
- Parallel logic blocks and functions



REMOTE CONTROL

- Unlimited number of profiles editor
- Unlimited number of devices to be associated



TRENDS

- Custom acquisition time
- Up to 6 values simultaneously display
- Automatic graph comparison



WORKFLOW

- Custom phase manager
- Parallel visualization
 - Cascade settings
- Peristaltic pumps function assignable from software



CALIBRATION

- Up to three-point calibration
- Simultaneous calibration values for parallel work

Technical Data

VESSEL

Solaris Code	Jupiter 2.0	Jupiter 4.0	Jupiter 6.5	Jupiter 10.0
Total Volume (L)	2.0	4.0	6.5	10.0
Ratio H/D	3.00/1	3.25/1	2.50/1	3.00/1
Min working volume (L)	0.5	1.0	1.6	2.6
Max working volume (L)	1.5	3.0	4.9	7.5
Max temperature	65 °C			
Operating pressure	< 0.5 bar(g) Jupiter Pressure 2.0 and 4.0: < 2 bar(g) (option)			
Headplate ports (9 in Jupiter 2.0; 11 in Jupiter 4.0, 6.5, 10.0)	Jupiter 2.0: 1 Gas Sparger, 1 Gas Overlay, 1 Condenser, 1 Sampling/Harvesting, 1 Temperature, 1 Multifeed, 2 Sensors, 1 Level/antifoam sensor. Jupiter 4.0, 6.5, 10.0: 1 Gas Sparger, 1 Gas Overlay, 1 Condenser, 1 Sampling/Harvesting, 1 Temperature, 1 Multifeed, 2 Sensors, 1 Level/antifoam sensor, 2 Spare.			
Design	Borosilicate glass with double-wall vessel			
Materials	Borosilicate glass and AISI 316 L			

SENSORS LENGTH (mm)

pH	325	425	425	425
dO ₂	325	425	425	425

DIMENSIONS FOR AUTOCLAVE (with Condenser)

Height (mm)	610	705	705	790
Diameter (mm)	275	285	315	335

STIRRING

Drive	Brushless Motor			
Speed (rpm)	1 - 1900	1 - 1800	1 - 1700	1 - 1700
Nominal Torque (Nm)	0.9	0.9	0.9	0.9
Impellers	Select from: Rushtons, Marine, Pitched-blade			

THERMOREGULATION

Control	PID Control - Accuracy 0.1 °C Electric Heaters and cooling valve (double-wall)			
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GAS CONTROL & GAS MIXING

Sparger and overlay gas control	TMFC
Gas mixing (Air, CO ₂ , O ₂ , N ₂)	1 TMFC (included in entry level) + up to 4 additional TMFC
Sparger type	Select from: Toro type (ring), sintered microbubbling
Gas out	1 Condenser + 0.22 µm filter

PERISTALTIC PUMPS

Quantity & type	4 Watson Marlow type 114 FD/DV
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CONTROLLER

Master control module (w x d x h)	From 1 to 24 units - 35 x 35 x 35 cm
HMI with Leonardo software	Touch screen PC, 24" color monitor

TEMPERATURE

Sensor	PT100
Accuracy	± 0.1 °C
Control system	Measuring resident in Leonardo software
Control range	0 - 150 °C

pH

Sensor	Digital sensor
Sensitivity	57 to 59 mV/pH
Control system	Measuring resident in Leonardo software
Control range	0 - 14
Operating temperature	Up to 130 °C
Pressure range	0 - 6 bar(g)
Actuator	Cascade to peristaltic pumps for the addition of acid/base solutions or gas (CO ₂)

dO₂

Sensor	Digital optical sensor
Accuracy	1 ± 0.05 %-vol, 21 ± 0.2 %-vol, 50 ± 0.5% -vol
Control system	Measuring resident in Leonardo software
Control range	0 - 300 % air saturation
Operating temperature	Up to 130 °C
Pressure range	0 - 12 bar(g)
Actuator	Cascade to RPM, gas control, feedings

ANTIFOAM/LEVEL

Sensor	Conductivity based
Control	Measuring resident in Leonardo software

TECHNICAL DATA

REDOX (ORP)

Sensor	Digital sensor
Control system	Measuring resident in Leonardo software
Control range	± 1500 mV
Operating temperature	Up to 130 °C
Pressure range	0 - 6 bar(g)

CONDUCTIVITY

Sensor	Digital sensor
Accuracy	± 3 % at 1 μ S/cm to 100 mS/cm, ± 5 % at 100 to 300 mS/cm
Control system	Measuring resident in Leonardo software
Control range	1 - 300 000 μ S/cm
Operating temperature	Up to 130 °C
Pressure range	0 - 20 bar(g)

dCO₂

Sensor	Digital sensor
Accuracy	$\pm (10$ % of the reading + 10 mbar)
Control system	Measuring resident in Leonardo software
Control range	0 - 200 % saturation
Operating temperature	Up to 130 °C
Pressure range	0 - 20 bar(g)

CELL DENSITY

Sensor	Digital sensor
Control system	Measuring resident in Leonardo software
Operating temperature	Up to 140 °C
Pressure range	Up to 10 bar(g) (150 psi)
TCD control range	0 - 4 AU
VCD control range	0.0 to 400 pF/cm

WEIGHT

Sensor	Digital balance
Accuracy	± 0.01 g (3.6 kg) , ± 0.1 g (36.0 kg)
Control system	Measuring resident in Leonardo software

PERISTALTIC PUMPS

WM 120 U Brushless	1 - 100 rpm
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Get in touch



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