



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 a Solaris JUPITER. For supervisory control and data acquisition Leonardo software is included.



THE SYSTEM

The system consists of single or double-wall fermenter/bioreactor (total volume), bench-top, preassembled unit, 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



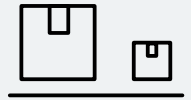
EDUCATION



PROCESS
DEVELOPMENT &
OPTIMIZATION



SCALE UP &
SCALE-DOWN
STUDIES



SMALL
PRODUCTION



CONTROL UNIT

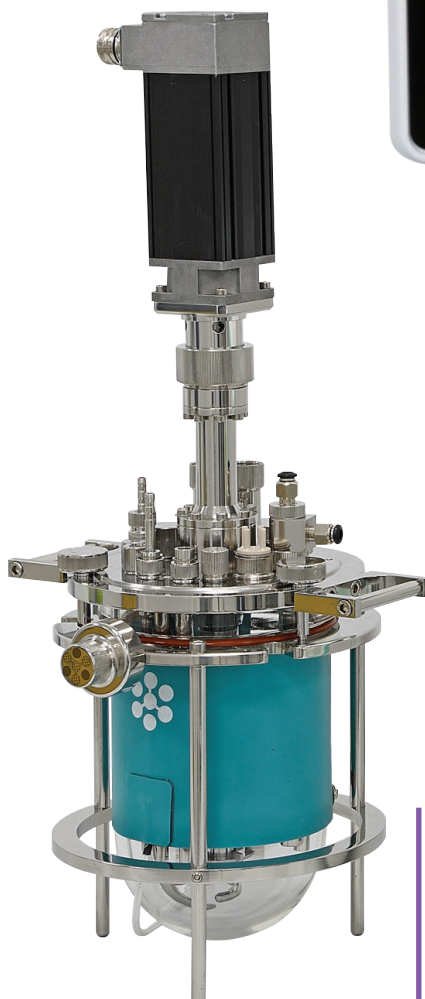
Different gas mixing strategies with up to 5 TMFC, double and single-wall design: for improved heat transfer.

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.



SINGLE-WALL

Product Description

JACKETED



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 D/H 2:1.

Double and single-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 single or doublewall design.

03

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

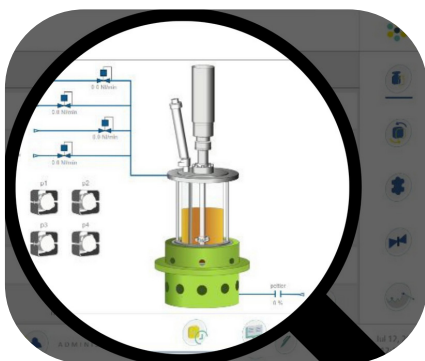
Leonardo Software



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.

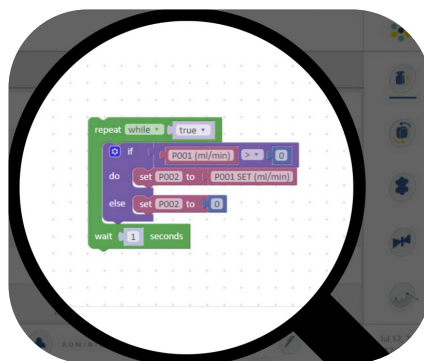
Full version included with the equipment. Up to 24 units managed in parallel with a unique HMI (24"). Data extraction in .csv format.

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



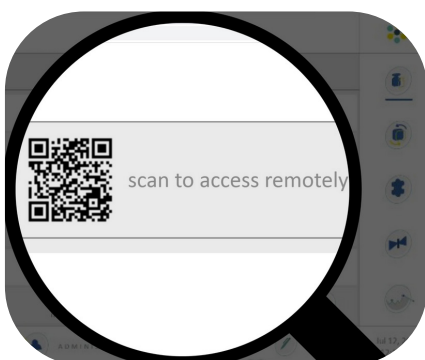
SYNOPTIC

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



LOGIC PARCEL

- Customized logic functions
- Parallel logic blocks and functions



REMOTE CONTROL

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



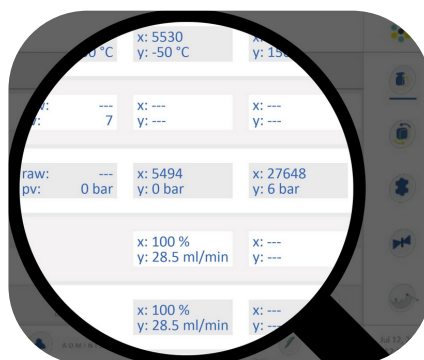
TRENDS

- 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
Production Code	jpt110300	jpt130395	jpt160395	jpt180480
Total Volume (L)	2.00	4.00	6.50	10.00
Ratio D/H	1:3.0	1:3.25	1:2.5	1:3.0
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	70 °C			
Operating pressure	< 0.5 bar (g) Pressure version: Jupiter 2.0 and 4.0: optionally < 2 bar (g)			
Headplate ports (10 in Jupiter 2.0; 12 in Jupiter 4.0, 6.5, 10.0)	Jupiter 2.0: 1 Agitation Group, 1 Gas Sparger, 1 Gas Overlay, 1 Gas Out Condenser, 1 Sampling/Harvesting, 1 Temperature, 1 Multifeed, 2 Sensors DN12 (pH, dO ₂ , dCO ₂), 1 adjustable level sensor. Jupiter 4.0, 6.5, 10.0: 1 Agitation Group, 1 Gas Sparger, 1 Gas Overlay, 1 Gas Out/Condenser, 1 Sampling/Harvesting, 1 Temperature, 1 Multifeed, 2 Sensors DN12 (pH, dO ₂ , dCO ₂), 1 adjustable level sensor, 2 Spare.			
Design	Borosilicate Glass Single or 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

STIRRINGS

Drive	Brushless Motor			
Speed (rpm)	1 - 1900	1 - 1800	1 - 1700	1 - 1700
Nominal Torque (Nm)	0.9	0.9	0.9	1.1
Impellers	Select from: Rushtons impellers, Marine impellers, Pitched-blade impellers			

THERMOREGULATION

Control	PID Control - Accuracy 0.1 °C - Electric Heaters and cooling valve (Double-wall) or cooling finger and heating blanket (single-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) + n. of additional TMFC (up to n.4)
Sparger type	Select from: Toro type (ring), sintered microbubbling - both provided with 0.22 µm sintered filter
Gas Out	1 Condenser + 0.22 µm sinterized filter

PERISTALTIC PUMPS

4 WM 114 FD/DV 60 rpm

CONTROLLER

Master Control Module (w x d x h)	From 1 to 24 units - 35 x 35 x 35 cm
HMI with Leonardo software	Operate interface touch screen PC, 24" color monitor; power consumption 200 W

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 °C
Operation temperature	up to 130 °C
Pressure range	0 - 6 bar

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
Operation temperature	up to 130 °C
Pressure range	0 - 12 bar

ANTIFOAM/LEVEL

Sensor	Solaris sensor
Control	Measuring resident in Leonardo software

TECHNICAL DATA

REDOX (ORP)

Sensor	Digital sensor
Control system	Measuring resident in Leonardo software
Control range	± 1500 mV
Operation temperature	up to 130 °C
Pressure range	0 - 6 bar

CONDUCTIVITY

Sensor	Digital sensor
Accuracy	± 3 % at 1 µS/cm to 100 mS/cm, ± 5 % at 100 to 300 mS/cm
Control system	Measuring resident in Leonardo software
Control range	1 - 300 000 µS/cm
Operation temperature	up to 130 °C
Pressure range	0 - 20 bar

dCO₂

Sensor	Analog sensor
Accuracy	± (10 % of the reading + 10 mbar)
Control system	Measuring resident in Leonardo software
Control range	0 - 200 % saturation
Operation temperature	-10 °C up to 60 °C

CELL DENSITY

Sensor	Digital sensor
Control system	Measuring resident in Leonardo software
Operation temperature	0 - 90 °C up to 141 °C
Pressure range	up to 10 bar (150 psi)
Interfaces	RS485 Modbus

WEIGHT

Sensor	Digital balance
Digital Balance 36.0 kg	accuracy ± 0.1 g
Digital Balance 3.60 kg	accuracy ± 0.01 g
Control	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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