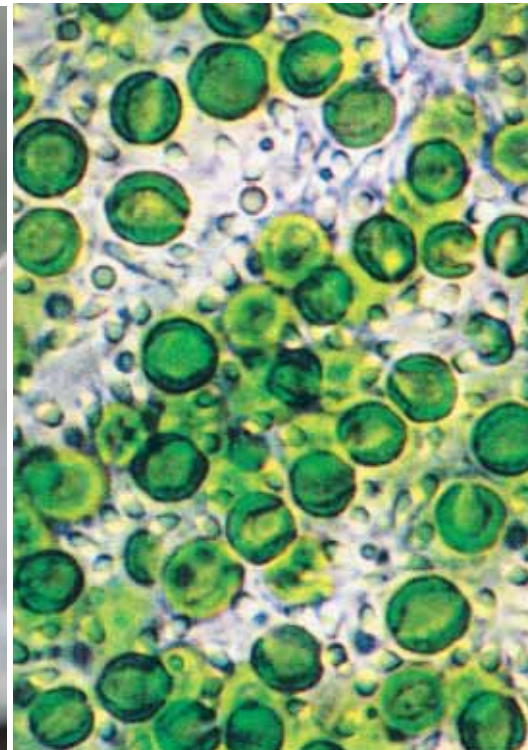




BIOSTAT® PBR Photosynthesis Platform for Future Growth



Photosynthetic Power



BIOSTAT® PBR is a new generation of photo-bioreactor systems utilizing thin layer pipe illumination.

Specifically designed for cultivation of phototropic organisms including micro algae, moss, bacteria and plant cells, this system incorporates a number of features enabling even the most shear sensitive cell types to be cultivated under optimum conditions. The BIOSTAT® PBR cultivation concept is available with scalable working volumes from 3–100 L.

Cultivation Concepts

Two main components form the basis for the BIOSTAT® PBR system.

The photosynthesis module, made of borosilicate glass, has been designed utilizing helix based geometry to produce optimum illumination efficiency per unit surface area. The recirculation vessel is provided with a range of measuring probes as temperature, pH, DO and turbidity probe and serves as a base unit for additional functions such as gassing | degassing and media conditioning. Both components are designed for high recirculation rates in order to prevent fouling. Optimum illumination levels utilizing fluorescent lamps can be manually controlled or automatically via cell density turbidity measurement device.

Control Concepts

The measurement and control capabilities supplied by Sartorius Stedim Biotech are second to none. Utilizing proven technology and expert engineering, we have developed our existing in-house systems to bring powerful control capabilities to the photo bioreactor market. The Control system presents an "easy-to-use" touch screen control system with integrated measurement and control hardware, pumps, temperature and gassing systems, for excellent process control.

Supplied with an application-driven, configuration package this system incorporates all facilities for immediate start-up.

MFCS/DA

For further enhancement of system performance a powerful supervisory process control software MFCS/DA for extended visualization, data acquisition and trend display is included.

MFCS/DA has been designed as a "plug and play" configuration to provide simultaneous data acquisition and control facilities. Additional laboratory data sources such as off-line process analyzers can be incorporated and an export function offers added flexibility for data analysis using other off-line programs. More advanced control strategies can be developed by use of the in-built Programmer's Interface.

Features

- Graphical user interface with touch screen operation
- Control loops for pH, DO, Temperature, illumination level, recirculation rate, substrate addition, gas mixing, gas flow rate
- Manual or automatic illumination control
- Integrated turbidity measurement
- Illumination intensity control via cell concentration
- CO₂ addition via pH control or manual gas control
- Integrated 4-Gas mixing system for aerobic and anaerobic cultivations
- Integrated thermostat system
- Scalable system design
- Validation support available
- Configurable software for future system extensions
- Inclusive Supervisory Process control software

BIOSTAT® PBR – the ideal for:

- Growth of micro algae, moss, bacteria and plant cells
- Axenic phototropic cultivations
- Mixotrophic cultivations
- Shear sensitive cells and oxygenic or anoxygenic applications
- Up scale migration i.e. Transition from shaking flasks
- Production scale up to 100 L
- For all phototropic applications



Sales and Service Contacts

For further contacts, visit www.sartorius-stedim.com

Europe

Germany

Sartorius Stedim Biotech GmbH
August-Spindler-Strasse 11
37079 Goettingen

Phone +49.551.308.0
Fax +49.551.308.3289

www.sartorius-stedim.com

Sartorius Stedim Systems GmbH
Schwarzenberger Weg 73-79
34212 Melsungen

Phone +49.5661.71.3400
Fax +49.5661.71.3702

www.sartorius-stedim.com

France

Sartorius Stedim Biotech S.A.
Z.I. des Paluds
Avenue de Jouques – BP 1051
13781 Aubagne Cedex

Phone +33.442.845600
Fax +33.442.845619

Sartorius Stedim France
4, rue Emile Baudot
91127 Palaiseau Cedex

Phone +33.1.6919.2100
Fax +33.1.6920.0922

Austria

Sartorius Stedim Austria GmbH
Franzosengraben 12
A-1030 Vienna

Phone +43.1.7965763.18
Fax +43.1.796576344

Belgium

Sartorius Stedim Belgium N.V.
Leuvensesteenweg, 248/B
1800 Vilvoorde

Phone +32.2.756.06.80
Fax +32.2.756.06.81

Denmark

Sartorius Stedim Nordic A/S
Hoerskaetten 6D, 1.
DK-2630 Taastrup

Phone +45.7023.4400
Fax +45.4630.4030

Italy

Sartorius Stedim Italy S.p.A.
Via dell'Antella, 76/A
50012 Antella-Bagno a Ripoli (FI)

Phone +39.055.63.40.41
Fax +39.055.63.40.526

Netherlands

Sartorius Stedim Netherlands B.V.
Edisonbaan 24
3439 MN Nieuwegein

Phone +31.30.6025080
Fax +31.30.6025099

Spain

Sartorius, S.A.
C/Isabel Colbrand 10-12,
Planta 4, Oficina 121
Polígono Industrial de Fuencarral
28050 Madrid

Phone +34.91.3586102
Fax +34.91.3588804

Switzerland

Sartorius Stedim Switzerland GmbH
Lerzenstrasse 21
8953 Dietikon

Phone +41.1.746.50.00
Fax +41.1.746.50.50

U.K.

Sartorius Stedim UK Limited
Longmead Business Park
Blenheim Road, Epsom
Surrey KT19 9 QQ

Phone +44.1372.737159
Fax +44.1372.726171

America

USA

Sartorius Stedim North America Inc.
131 Heartland Blvd.
Edgewood, New York 11717

Toll-Free +1.800.368.7178
Fax +1.631.254.4253

Sartorius Stedim SUS Inc.
1910 Mark Court
Concord, CA 94520

Phone +1.925.689.6650
Toll Free +1.800.914.6644
Fax +1.925.689.6988

Asia | Pacific

India

Sartorius Stedim India Pvt. Ltd.
10, 6th Main, 3rd Phase Peenya
KIADB Industrial Area
Bangalore – 560 058

Phone +91.80.2839.1963|0461
Fax +91.80.2839.8262

Japan

Sartorius Stedim Japan K.K.
KY Building, 8-11
Kita Shinagawa 1-chome
Shinagawa-ku
Tokyo 140-0001

Phone +81.3.3740.5407
Fax +81.3.3740.5406

Malaysia

Sartorius Stedim Malaysia Sdn. Bhd.
Lot L3-E-3B, Enterprise 4
Technology Park Malaysia
Bukit Jalil
57000 Kuala Lumpur

Phone +60.3.8996.0622
Fax +60.3.8996.0755

Singapore

Sartorius Stedim Singapore Pte. Ltd.
10, Science Park Road, The Alpha
#02-25, Singapore Science Park 2
Singapore 117684

Phone +65.6872.3966
Fax +65.6778.2494

Australia

Sartorius Stedim Australia Pty. Ltd.
Unit 17/104 Ferntree Gully Road
Waverley Business Park
East Oakleigh, Victoria 3166

Phone +61.3.9590.8800
Fax +61.3.9590.8828