



designed for scientists



HABITAT photo ferment

/// Data Sheet

* may be combined with double-walled vessel packages

The HABITAT photo ferment control unit package of the HABITAT research bioreactor is used to monitor and control the bioprocess. With the help of the LED panels included in the scope of delivery, the system can be used as a photobioreactor, for example for algae cultivation. The adjustment of the light intensity enables the simulation of the day-night rhythm. Furthermore,, the package includes the control unit with all connection options for the gas supply, liquid addition, sensors and temperature control as well as a tablet for simple and clear operation of the bioreactor.

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Subject to technical changes



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Control and monitoring

The bioprocess and all associated test parameters can be easily controlled and monitored via the tablet attached to the control unit and with the help of the intuitive and easy-to-use software. Depending on the type of cultivation, you can choose between the operating modes batch, fed-batch and perfusion/continuous. The new Chaotic Mixing function ensures faster and more effective mixing when required. The 10.4-inch tablet allows direct access to all actuators directly on the main screen. A clear calibration management, a diagram overview and the complete documentation of the process round off the operation. A software version that meets FDA CFR Part 11 requirements is available as an option.

Gas supply

Built in mass flow controllers for 4 separate gas lines (for N₂, O₂, air and CO₂) ensure precise, individually adjustable gassing, ideally tailored to the needs of your cells. Flow rates of 0.1-20 l/min can be achieved.

Liquid supply

4 integrated Watson Marlow pumps, adjustable in direction and speed, give you the variability to pump in and pump out different liquids (like acid, base, anti-foam agent, feeding solutions).

Sensors

HABITAT cell enables the measurement of the following parameters by means of sensors:

- pH
- DO (dissolved oxygen)
- temperature
- filling level
- foam

Temperature control

The constant and precise temperature control during the cultivation is guaranteed by the heating sleeve, which is adapted to the respective vessel size. (Heating sleeve is included with the HABITAT cell vessel package).

All features at a glance

- > compact, space-saving design, dimensions: 223 x 402 x 450 mm (WxDxH)
- > large tablet for clear operation (10,4 inch)
- > intuitive, easy-to-use software with a lot of functionalities.
- > 4 integrated fast-load pumps (Watson Marlow)
- > connectivity: USB, PC, RS232, ethernet, external signal input, external pump, single-use unit, thermostat
- > data storage
- > gas supply with 4 built-in mass flow controllers: e.g. for O₂, Luft, N₂, CO₂
- > Status LED display: direct error display by indicator light

Note: Only a control tower package and the separately available vessel package make up a functional unit.



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Technical Data

| | |
|---|--|
| Controller | Fermenter |
| Operating mode | timer, continuous and program operation |
| Display | Tablet PC |
| Operation | touch screen |
| Data memory size [GB] | 32 |
| Auto restart after power failure | yes |
| Ethernet interface | yes |
| Single use reactor interface | yes |
| Thermostat interface | yes |
| Ext. pump interface | yes |
| Filter heater | yes |
| LED light panel | yes |
| Stirring motor | yes |
| Calibration guide temperature | yes |
| Calibration guide pH | yes |
| Calibration guide pO ₂ | yes |
| pH - temperature compensation | yes |
| Mode hose filling | yes |
| Stirrer control mode | off, manual, profile, Cascade-pO ₂ control, chaotic |
| Speed range [rpm] | 1 - 2200 |
| Speed deviation >= 100 rpm [%] | ±2 |
| Speed deviation <= 100 rpm [rpm] | ±5 |
| Speed display | TFT |
| Reversible direction of rotation | yes |
| Timer | yes |
| Timer display | TFT |
| Time setting range [min] | 1 - 120 |
| Heating blanket | yes |
| Heat output [W] | 250 |
| Heat control | TFT |
| Temperature control | PID |
| Working temperature [°C] | 5 - 80 |
| Connection for ext. temperature sensor | PT1000 |
| Temperature display | yes |
| Temperature measuring range [°C] | 0 - 100 |
| Temperature measurement resolution [K] | 0.1 |
| Temperature control accuracy [°C] | ±0.2 |
| Temperature limit min. [°C] | 0 |
| Temperature limit max. [°C] | 110 |
| pH measurement | yes |
| pH control mode | off, auto, profile |
| pH value display | TFT |
| pH measuring range [pH] | 0 - 14 |
| pH measurement resolution [pH] | 0.01 |
| Accuracy of pH measurement [pH] | 0.02 |
| Connction for pO ₂ sensor | yes |
| pO ₂ control mode | off, manual, auto, profile |
| Measurement range pO ₂ min. [%sat] | 0 |



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| | |
|------------------------------------|------------|
| Measurement range pO2 max. [%sat] | 200 |
| Resolution pO2 measurement [%sat] | 0.01 |
| Accuracy of pO2 measurement [%sat] | 0.3 |
| Gas in connection Air [mm] | 6 |
| Gas out connection Air [mm] | 6 |
| Gas in connection O2 [mm] | 6 |
| Gas out connection O2 [mm] | 6 |
| Gas in connection N2 [mm] | 6 |
| Gas out connection N2 [mm] | 6 |
| Gas in connection CO2 [mm] | 6 |
| Gas out connection CO2 [mm] | 6 |
| Aeration mode | continuous |

