

## TECHNICAL SPECIFICATION

Multi-Cultivator MC-1000-OD

Multi-Cultivator MC-1000-OD-MULTI

Multi-Cultivator MC-1000-OD-MIX

Cultivation Tubes		
Number	8	
Shape and material	Rounded, glass, autoclavable	
Stopper	Silicon stopper (one input for air sparging, one output for effluent)	
Volume per tube	100 ml (maximum working volume ca. 85 ml)	
Aeration tubes	Glass	Stainless Steel (optional)
Humidifier	Moistening of the sparging air to avoid evaporation from testing tubes	
Sampling	Through aeration tube. Three-Way Sampling Valve (optional) may be used	
Thermoregulation		
Volume of the thermostated waterbath	5 liters	
Heating system	150 W cartridge heater	
Range	From ca. 5-10°C above the ambient temperature up to 60°C	15 – 60°C with the Cooling Unit AC-710 (optional)
PWM pump	For water refilling of the thermostated waterbath during the high-temp cultivation (optional)	
Illumination – LED Lighting		
Intensity per slot	Up to 1.000 $\mu\text{mol. m}^{-2} \cdot \text{s}^{-1}$ for single color version Up to 2.500 $\mu\text{mol. m}^{-2} \cdot \text{s}^{-1}$ for mix-color version	Up to 2.500 $\mu\text{mol. m}^{-2} \cdot \text{s}^{-1}$ (optional for single color version; not available for multi-color version)
Single color version	Cool White	Warm White, 450, 475, 530, 615, 660, 730 nm * (optional)
Multi-color, Mix-color versions	405, 450, 475, WW, 530, 615, 660, 730 nm *	
Light path	27 mm	
Light regime	Light / dark cycles Constant, Linear, Sinusoid light mode Cycles from minutes up to days	Java scripting (advanced PBR control SW)
Aeration System		
Air sparging	Aeration pump providing total air flow rate around 1.100 ml/min	
Central valve manifold	Manually adjustable valves	
Bubbling interruption	Automatically before OD measurement	
Module for compressed air connection	Parker Prestolok (6 mm) connector that fit to the Parker Polyflex Presto TPU 6 x 1 tubing	
Gas Mixing System GMS 150	For precise concentration and flow rate of aeration gases, gas cylinders not included (optional)	
OD Monitoring		
Optical density	Real time measurement of OD at 680 and 720 nm / test tube	
Optical path	Ca. 27 mm	

<b>Accessories (optional)</b>	
Cooling Unit AC-710	For extended thermoregulation range 15 – 60°C
Turbidostat Module TS 1100	For fully controlled automatic turbidostatic cultivation
Light Upgrade	For high-illumination cultivation up to 2.500 $\mu\text{mol. m}^{-2}. \text{s}^{-1}$
Gas Mixing System GMS 150	For precise concentration and flow rate of aeration gases, gas cylinders not included
PWM Pump	For automatic refilling of the waterbath
Stainless Steel Aeration Tubes	Replacement of the glass aeration tubes
Three-Way Sampling Valve	To facilitate the sampling
<b>Control Unit</b>	
Photobioreactor control software	For online monitoring and visualization of all measured data as well as for creation of user-defined protocols Optional for MC standard and MULTI, compulsory for MC MIX Advanced / Basic version
Remote access	Wi-Fi, Ethernet
<b>Others</b>	
BIOS	Upgradeable firmware
Communication port	USB A-B
Material	Glass, stainless steel, silicon gasket, polycarbonate
Dimension	80.5 x 35 x 21 cm
Weight	13 kg
Electrical	110 – 240 V AC
Max. power consumption	300 W (MC 1000-OD) 185 W (AC-710) 50 W (GMS 150) 30 W (TS 1100)

\* Wavelengths in nanometers show illustrative maximum peak values, but spectral coverage is wider for each color. The maximum peak values can differ.