


BPM-60	oxygen	pH
ports	one port for glass fibre (side), two for CAN-BUS (top)	
dimension	height: 156mm diameter: 84mm diameter of connector ring: 108mm	
signal	O ₂ to CAN Bus	pH to CAN Bus
holder	with optical unit	
optical unit	single version: O ₂ or double version: O ₂ and pH	
flask size	250, 500, 1000, 2000mL	
ISIS	software for monitoring, calibration, controlling	
monitoring	8 additional process parameters (8 x O ₂ or 4x O ₂ and pH)	
calibration	pre-calibrated sensor flasks	
recalibration	one point recalibration is possible	
applicable	98/NT/2000/XP/Vista	
GMP	21 CFR Part 11 compliance (audit trail)	
sensor flask	oxygen	pH
measuring range	0 – 100 %O ₂	5.5 – 8.5 pH
response time (t90) at 25°C	30sec	30sec
resolution	± 0.01 %O ₂ at 0.21 %O ₂ ± 0.1 %O ₂ at 20.9 %O ₂	± 0.01 pH at pH=7
accuracy	± 0.05 %O ₂ at 0.2 %O ₂ ± 0.4 %O ₂ at 20.9 %O ₂	± 0.05 pH at pH=7 with one-point adjustment ± 0.10 pH at pH=7 with pre-calibration
drift	< 0.015%O ₂ per day (sampling interval of 1 min.)	< 0.005 pH per day (sampling interval of 1 min.)
temperature range	from 5 to 50°C	
compatibility	aqueous solutions, ethanol, methanol (may. 10%v/v), pH2-10	
cross-sensitivity	typically no cross-sensitivity in culture media	reduced to ionic strength (salinity), a high concentration of small fluorescent molecules in the visible range can interfere
storage stability	18 months provided the sensor is stored in the dark	
calibration	sensor flask are pre-calibrated, a one point calibration is possible at the beginning of the experiment, when the medium conditions are defined (pH, pO ₂)	
sterilization	sensor flask are delivered irradiated	
resterilization	steam sterilisation ethylene oxide gamma irradiation	is not recommended
tray plug	1: 24V DC + 2: 24V DC – 3: CAN-H 4: CAN-L 5: CAN-GND	

BPM-60

BioProcess Monitoring

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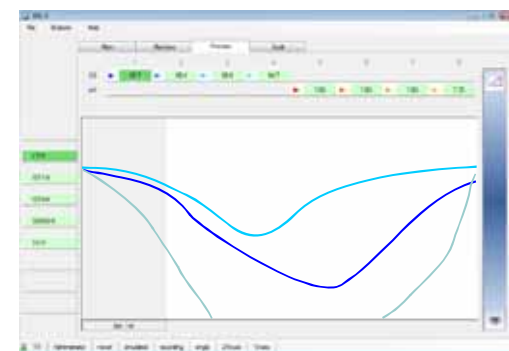




Shaking Platform
with integrated connector



Sensor
Spots



ISIS
data logging
monitoring
audit trail

Applicable for the following shaking machines
SBM, LT-X, ISF1-X, ISF4-X



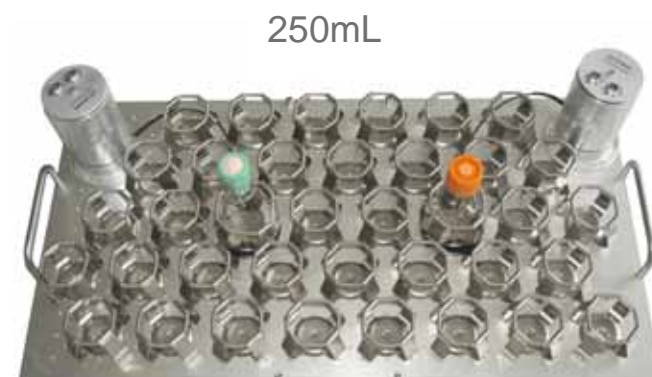
BPM-60

Holder
with optical sensors



BPM-60 BioProcess Monitoring

non invasive online
measurement of dissolved
oxygen and pH in shake flasks



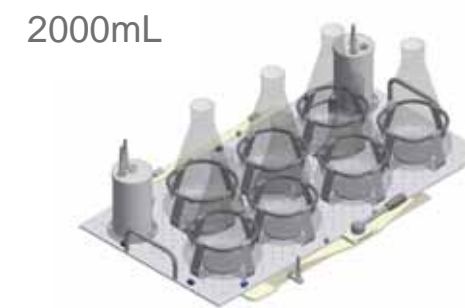
250mL



500mL



1000mL



2000mL

- + online signal
- + reproducibility
- + optimised cultivation conditions
- + made for PAT

O₂ 0-100%
pH 5.5-8.5