

MAVERICK



Intended Applications:	Monitoring of mammalian cell cultures in CHO or HEK293 media
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Analytical Performance

Measurement / reporting period:	1 per minute
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Glucose

Units of measurement:	Grams per liter (g/L)
Measurement range:	0 to 10 g/L
Measurement precision:	Approximately 0.1 g/L

Lactate

Units of measurement:	Grams per liter (g/L)
Measurement range:	0 to 5 g/L
Measurement precision:	Approximately 0.1 g/L

Total Biomass

Units of measurement:	Biomass units (BMUs)
Measurement range:	Equivalent of 0 to 25×10^6 cells/mL



IMMERSION
PROBE

MEASUREMENT
MODULE



TOUCH SCREEN
HUB

Hub



Measurement module connections:	6 with power and data over ethernet
User interface:	25.4 cm touch screen
Data export:	XLSX or CSV format via USB-C or USB-A port or over LAN
Digital communication protocol:	OPC UA
Networking:	Ethernet
Dimensions (H x W x D):	17 cm x 21 cm x 26 cm
Weight:	2 kg
Power requirements:	120/240 VAC, 50/60 Hz
Ingress protection rating:	IP 5X
Operating temperature range:	15°C to 25°C
Operating humidity range:	20-80% RH (non-condensing)
Software:	In accordance with GAMP 5 Category 3 guidelines and CFR 21 part 11 compliance ready

Measurement Module



Excitation wavelength:	785 nm
Laser output power:	Approximately 450 mW (strictly less than 500 mW)
Spectral range:	200 cm ⁻¹ to 3,200 cm ⁻¹
Spectral resolution:	Approximately 6 cm ⁻¹
Fiber-optical cable length:	200 cm
Power requirements:	40 W power-over-ethernet (POE) supplied by Hub
Integrated controllers:	Hysteresis controller with configurable analog output
Ingress protection rating:	IP 5X
Laser classification:	Class IIIB laser; NOHD 10 cm from probe tip (equivalent to Class I beyond 10 cm)
Analog outputs:	Two channel analog: 4 -20 mA or 0 -10 V
Dimensions (H x W x D):	8 cm x 20 cm x 26 cm
Weight:	2 kg
Operating temperature range:	15°C to 25°C
Operating humidity range:	20-80% RH (non-condensing)

Immersion Probe



Probe length and outside diameter:	220 mm length, 12 mm diameter
Minimum reactor wall clearance:	40 mm
Bioreactor connection:	Compression fitting; 12 mm I.D. ; PG-13.5 thread
Compatible sterilization methods:	Autoclave or steam sterilization
Maximum recommended sterilization temperature and pressure:	121°C, 15 psi
Wetted materials:	316L stainless steel with Ra 15 Electro-polish surface finish, sapphire, EPDM, and Bio-compatible ISO: 10993 certified lubricant