CELL GROWTH QUANTIFIER (CGQ)

Biomass Monitoring For Shake Flasks

Technical Specifications

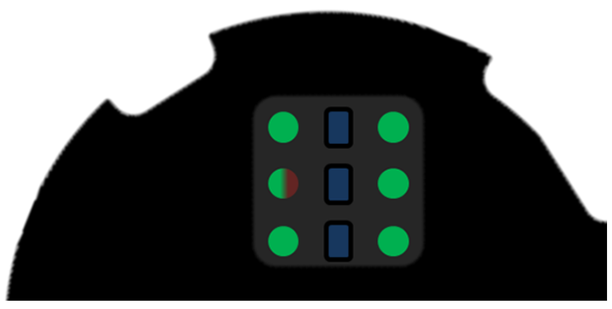
Measurement Principle

Backscattered light intensity [a.u.]
**Backscatter signal can be converted to OD_{600} values if two offline values are provided*

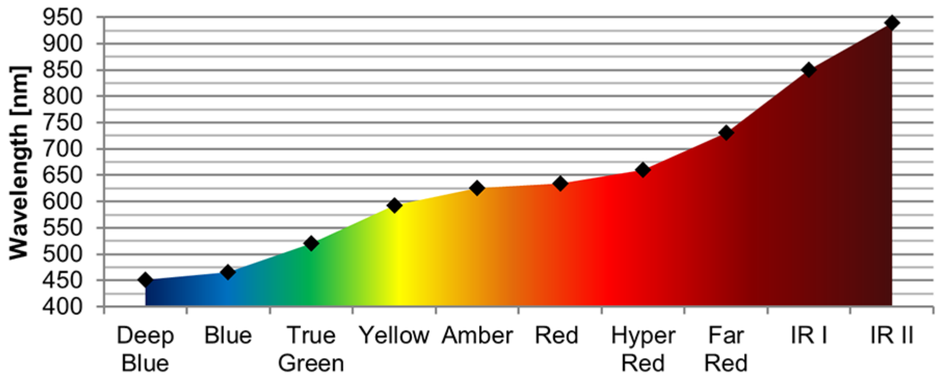
Measurement Range

OD 0.2 - 50
**OD range depends on bioprocess parameters*

Wavelength



Standard wavelength of each CGQ LED:
Position 1: 521 nm
Position 2: 521 nm
Position 3: 521 nm
**wavelength of each CGQ Sensor is customizable during the ordering process*



Spectrum of all available LED colors for wavelength customization of CGQ Sensors

Measurement Window Dimensions

18.5 x 18.5 mm

Measurement Interval

Recommended: 5 - 30 seconds
DOTS Software Default: 20 seconds

Footprint

Sensor plates: 92 – 177 mm
CGQ Hub starting from 44 x 105 x 109 mm (L x W x H)

Vessel Compatibility

Any shake flask size ranging from 100mL to 5000mL
Flasks with or without baffles
Glass and single-use plastic flasks with 38mm straight neck
Sticky Mat mounts

Recommended Operating Conditions

Temperature	10 – 50°C **Tested up to 75°C with no decrease in performance (plastic parts up to 50°C)* ***Ensure to let the CGQ Sensors adjust to the operating temperature for 30 min*	
Relative Humidity	0 – 80% (non-condensing)	
Shake Flask Filling Volume	optimal range good range[1] applicable range[2] extended range[3]	10 - 15% 5 - 25% 2 - 30% 0 - 50%
Shaking Speed	optimal range[4] using screws shaking diameter ≤ 2.5 cm shaking diameter ≤ 5.0 cm using sticky pads[5]	150 - 350 rpm 0 - 350 rpm 0 - 250 rpm 0 - 200 rpm

1 Measurement quality should be as good as for the optimal range, in few cases slightly reduced precision or weak artifacts might be observed.

2 Measurement quality should be acceptable, in some cases reduced precision or artifacts might be observed.

3 Measurement quality can be acceptable, in many cases reduced precision or artifacts might be observed. Filling volumes above 50% shouldn't be used to avoid spilling of the liquid during shaking.

4 Use these speeds for optimal measurement results, for other shaking speeds within the general specification range, in few cases slightly reduced precision or weak artifacts might be observed.

5 To ensure safe shaking condition, always refer to the user guides of your sticky mat manufacturer, if recommended shaking speed limits in the sticky mat user guides are lower than those denoted here, use only those shaking speeds specified in the sticky mat user guides