Supplementary Table S1. Assessment of sensor precision (expressed as the relative standard deviation, RSD) using four cyanobacteria species of differing morphologies at a range of biovolumes.

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| **Cyanobacteria****Species** | **Biovolume****(mm3 L-1)** | **Phycocyanin Concentration (µg L-1)** | **RSD** | **Average RSD** |
| **Ave** | **SD** |
| *Microcystis aeruginosa* (CAWBG617; single celled or small colonies) | 85.4 | 505.2 | 1.4 | 0.3% | 1.0% |
| 42.7 | 301.3 | 2.1 | 0.7% |
| 21.4 | 157.9 | 3.6 | 2.3% |
| 10.7 | 83.1 | 1.4 | 1.6% |
| 5.3 | 56.8 | 0.2 | 0.4% |
| 2.7 | 34.0 | 0.2 | 0.7% |
| 1.3 | 31.1 | 0.2 | 0.7% |
| 1.0 | 22.4 | 0.1 | 0.4% |
| 0.8 | 15.7 | 0.2 | 1.2% |
| 0.6 | 13.3 | 0.2 | 1.3% |
| *Microcystis wesenbergii* (CAWBG647; large globous colonies) | 60.2 | 1623.6 | 534.0 | 32.9% | 36.7% |
| 30.1 | 845.7 | 227.2 | 26.9% |
| 15.1 | 549.4 | 243.1 | 44.2% |
| 7.5 | 199.1 | 37.7 | 18.9% |
| 3.8 | 181.5 | 41.1 | 22.7% |
| 1.9 | 120.8 | 68.8 | 57.0% |
| 0.9 | 91.5 | 26.4 | 28.8% |
| 0.7 | 63.1 | 53.4 | 84.6% |
| 0.5 | 18.4 | 2.6 | 14.4% |
| *Dolichospermum lemmermannii* (CAWBG564; tangled and coiled filaments in large colonies) | 18.1 | 24.4 | 353.2 | 6.9% | 10.6% |
| 9.0 | 13.0 | 184.8 | 7.0% |
| 6.8 | 12.1 | 169.0 | 7.2% |
| 5.1 | 15.0 | 145.7 | 10.3% |
| 3.8 | 12.3 | 111.0 | 11.1% |
| 2.9 | 8.8 | 80.9 | 10.9% |
| 2.1 | 7.4 | 56.2 | 13.1% |
| 1.6 | 7.1 | 67.5 | 10.5% |
| 1.2 | 8.9 | 52.5 | 17.0% |
| 0.9 | 3.7 | 42.0 | 8.9% |
| 0.7 | 5.4 | 32.0 | 16.8% |
| 0.5 | 2.3 | 29.1 | 7.9% |
| *Cuspidothrix issastachenkoi* (CAWBG595; straight filaments in bunches) | 48.5 | 7.3 | 277.0 | 2.6% | 4.3% |
| 24.3 | 5.8 | 145.1 | 4.0% |
| 12.1 | 2.2 | 82.2 | 2.7% |
| 6.1 | 2.6 | 46.3 | 5.7% |
| 3.0 | 0.6 | 25.0 | 2.5% |
| 1.5 | 0.4 | 19.5 | 1.8% |
| 1.1 | 0.3 | 13.8 | 2.0% |
| 0.9 | 0.8 | 12.5 | 6.2% |
| 0.6 | 1.0 | 10.9 | 8.9% |
| 0.5 | 0.8 | 12.6 | 6.4% |