



SI Figure 1. Resonance Raman spectra of the Low-light (LL, Panel A), Intermediate Light (IL, Panel B) and High Light (HL, Panels C). In each panel, spectra a ,b ,c , and d correspond to a 10 min spectrum resulted from ten individual spectra of 60 sec each; total accumulation 10

min. The sum of the four spectra (a+b+c+d) in each panel are the spectra of the 40 min presented in the paper.

Table SI. Raman Frequencies of the marker bands of Fx, Dd, Chl *a* and Chl *c* under IL, LL and HL growth conditions. (+) indicates an increase in the intensity and (-) a decrease in the intensity.

	Band Position (cm⁻¹)		
	LL	IL	HL
<i>Fx</i> (<i>v</i> ₁)	1528	1528	1528
<i>Fx</i> (<i>v</i> ₂)	1159	1159	1159
<i>Fx</i> (<i>v</i> ₃)	1004/1014	1004/1014	1004/1014(-)
<i>Fx</i> (<i>v</i> ₄)	964	964	964
<i>Dd/Dt</i> (<i>v</i> ₁)	1528	1528	1528(+)
<i>Dd/Dt</i> (<i>v</i> ₂)	1159	1159	1159(+)
<i>Dd/Dt</i> (<i>v</i> ₃)	1011	1011	1011(+)
<i>Dd/Dt</i> (<i>v</i> ₄)	986	986	986
<i>Chl a</i> (<i>C</i> ₀ <i>N</i>)	1342	1342	1342(-)
<i>Chl a</i> (<i>C</i> ₀ <i>N</i>)	1377	1377	1377(-)
<i>Chl c</i> (<i>C</i> ₀ <i>N</i>)	1355	1355	1355(-)
<i>Chl c</i> (<i>C</i> ₀ <i>N</i>)	1361	1361(-)	1361(-)