



Supplemental Figure S4. MIMS (Cournac, Mus et al. 2002) raw data for O_2 uptake (U_O) and evolution (E_O) rates in the dark and during a 1.5 minute illumination ($700 \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$) with cells concentrated to $30 \mu\text{g}_{\text{Chl}}\cdot\text{ml}^{-1}$. The bars show the average value in the dark or in the light. $E_O = 0$ in the dark, while U_O is non null due to dark respiration. A large increase of U_O in the light (denoted $\text{Li}U_O$ for light-induced uptake) is observed in some cases. The cells were either dark adapted before the measurement or preilluminated with $120 \mu\text{E}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ of light with shaking for 5 minutes. Dark adapted $\Delta rbcl$ (top panels A and B) differs in relation to $\Delta rbcl pgr5$ (bottom panels C and D) because a pre-illumination had an inhibitory effect on both O_2 evolution and light induced O_2 uptake while the double mutant was unchanged.