



Figure 2

Minimum energy losses showing the percentage remaining (*inside arrows*) and percentage losses (*at right*) from an original 100% calculated for stage of photosynthetic energy transduction from sunlight incident on a leaf to plant biomass. Both C3 and C4 (NADP–malic enzyme type) photosynthesis are presented. Calculations assume a leaf temperature of 30 °C and an atmospheric [CO₂] of 387 ppm. The theoretical maximal photosynthetic energy conversion efficiency (ϵ_c) is 4.6% for C3 and 6% for C4 plants. These values are for total full-spectrum solar radiation. If the analysis is limited to photosynthetically active radiation (400–700 nm), then these values become 9.4% for C3 and 12.3% for C4. This analysis is redrawn, with modifications explained in the text, from (141).