Figure S1. Soil temperature ($T_{\text{soil}}$) inside the pots between 10:00 and 14:00 recorded over three consecutive days of heat waves (hw-d1, hw-d2 and hw-d3). The values are means ± SE (n=5) of temperature measured at 10 and 20 cm depths from soil surface.
Figure S2. Diurnal variation in air ($T_{air}$) and leaf temperature ($T_L$) for four tree species on pre-heat wave, three consecutive days of heat wave and post-heat wave cycles. Means ± SE (n=3). The grey areas depict times when all lights inside the growth chamber were switched off to mimic night time.
Figure S3. Diurnal variations in (A) steady-state chlorophyll fluorescence ($F_{\text{mMP}}$ or $F_{\text{oMP}}$ during the night) and (B) maximal fluorescence intensity ($F_{\text{mMP}}'$ or $F_{\text{oMP}}$ during the night) measured in three tree species on pre-heat wave (pre-$hw$), three consecutive days of heat wave ($hw$-d1, $hw$-d2 and $hw$-d3) and post-heat wave (post-$hw$) day. Means are given with ± SE (n=3), represented by the shaded areas. The grey areas depict times when all lights inside the growth chamber were switched off to mimic night time (ambient PAR = 0).
Figure S4. Relationship between the non-photochemical quenching ($NPQ_{MP}$) in three tree species and concurrent air temperature ($T_{air}$). Data correspond to values continuously measured in all plants over the course of the experiment (n=3-5). Data from different treatments were pooled together. Power regression fits are depicted for all species.
Figure S5. The normalised fast OJIP fluorescence kinetics (log time scale) in four tree species (A-D) on pre-heat wave (pre-hw), three consecutive days of heat wave (hw-d1, hw-d2 and hw-d3) and post-heat wave (post-hw) day (n=3-5). The kinetics were double normalised between two fluorescence extreme O (F₀) and P (F_M) phases: $V_{OP} = (F_t - F_O)/(F_P - F_O)$. Measurements were repeated on the same tagged leaves over the course of experiment during 15:40–16:00 h.
Figure S6. The fast OJIP fluorescence kinetics in four tree species (n=3-5) double normalised between (A-D) F₀ and Fₖ phases: $V_{OK} = (F_T - F_O)/(F_K - F_O)$ and between (E-H) F₀ and Fₗ phases: $V_{OJ} = (F_T - F_O)/(F_J - F_O)$. Measurements were repeated on the same tagged leaves over the course of experiment during 15:40–16:00 h.