

TMC[®]

Commercial

Low Energy Commercial Lighting System

AQUARAY[®]

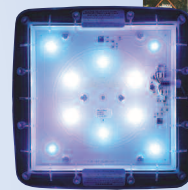
Nature **NP**[™]
Perfect

AquaBeam 1500 Ultima NP Ocean Blue and AquaBeam 2000HD Ultima NP ReefWhite with patented "Nature Perfect" technology

What is "Nature Perfect" and why is it important?

*"...larvae achieved the best performance, and showed fastest development and lowest degree of deformity under a light/dark cycle using blue light (half-peak bandwidth = 435–500 nm), conditions which were the closest to their natural aquatic environment."*¹

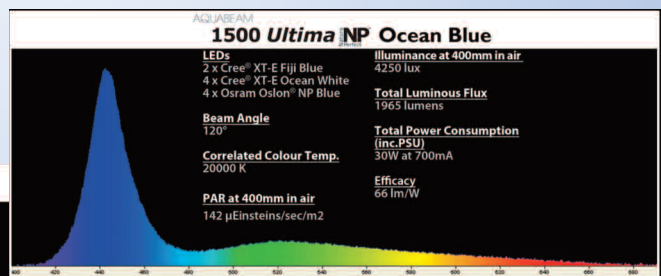
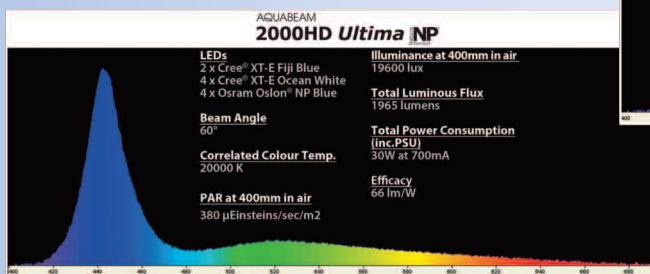
The importance of light intensity and photoperiod in aquaculture is widely acknowledged by the industry. Recently, the importance of light spectrum has been highlighted as a critical factor in the drive towards improved culture outcomes. However, with no commercial grade product available, much of the industry continues to depend on inefficient traditional lighting platforms. Output from these fixtures can be highly variable, tends to degrade rapidly and has a spectral profile which does not match the biological requirements of the culture species.



Our patented "Nature Perfect" system is based on a 460nm blue diode which has been "white shifted" to include a peak at 540nm. This has the effect of matching the output to the spectral range required by marine organisms, particularly during early life stages.



By combining this option with other colour modules in the range (465nm Reef Blue, or 410nm near-UV, for example) the final spectrum can be further optimised to meet the specific requirements of a particular culture.



All measurements taken in TMC's own test lab with Ocean Optics' USB2000+UV-VIS fibre optic spectrometer and SpectraSuite software

¹Effects of light during early larval development of some aquacultured teleosts: A review - N. Villamizar a, B. Blanco-Vives a, H. Migaud b, A. Davie b, S. Carboni b, F.J. Sánchez-Vázquez a, a Department of Physiology, Faculty of Biology, University of Murcia, Campus Espinardo, 30100-Murcia, Spain b Institute of Aquaculture, University of Stirling, Stirling, Scotland, FK9 4LA, United Kingdom



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