

**PHILIPS**  
dynalite

Lighting Control

Western Australia

Empowering critical research  
with advanced lighting control

**UWA Fishery**

## About the project

Universities are a cornerstone of society where critical research is performed and the next generation of bright minds are shaped. To achieve this goal, a balance must be struck between theoretical learning and practical hands-on experience.

The University of Western Australia (UWA) has a world class aquaculture facility where students and researchers study the breeding cycles of fish in a controlled environment. The program hopes to answer important aquaculture research questions involving fish reproduction, nutrition, and physiology.

## The challenge

Like humans, animals have a circadian rhythm that drives many biological functions. The indoor aquaculture facility would therefore require good-quality lighting that mimics natural day-night cycles to support the health of the fish.

The chosen control system should be flexible and scalable, allowing the researchers to run multiple experiments simultaneously across different tanks. It should also be easily adjusted to enable the alignment of the fish's breeding cycles with the academic calendar.

The researchers required full control over the lighting schedules, and the ability to make adjustments on their own, without an installing contractor. Therefore, the control platform would require a convenient and intuitive user interface capable of providing the necessary control elements and security features to prevent disruptive changes from being made accidentally by cleaners or students.

## The solution

With over 100 years of continuous service in the electrical industry, Nilsen Networks has an enviable track record of delivering great service, reliability and quality throughout Australia. Nilsen Networks worked with UWA's facilities engineers to deliver an appropriate lighting control solution for UWA that would address the challenges above.

They selected a Philips Dynalite control system for this project, known industry wide for its strengths in high-quality circadian lighting, inherent flexibility and scalability, and intuitive controls.

### Emulating nature

Nilsen Networks provided UWA with a Dynalite-DALI system capable of replicating very specific lighting conditions to create a natural environment for the fish to thrive.

DT8 was leveraged to program the lighting levels, so the tuneable white LEDs transition from low-level warm white light in the mornings, high-level cool white light during the day, and back down to low-level warm light in the evenings. The timing of these schedules can be easily adjusted by researchers to accelerate or decelerate the breeding cycles as required.

The appearance of natural daylight conditions reduces stress for the fish and enables the fish to breed outside of their natural seasonal breeding window, giving more freedom to the researchers.

### Easily modifiable

The digitally addressable DALI system selected by Nilsen Networks allows the researchers to conduct multiple experiments simultaneously.



**“The PDTS is an intuitive graphical interface that suited the functionality requirements of the Head Researcher.**

**We used the DDBC120-DALI controller and PDEG gateway, to commission the DALI DT8 tuneable white fixtures and create multiple circadian rhythm cycles that support the researcher’s objectives.”**

**George Kerrigan**  
Project Manager, Nilsen Networks

This provides the fishery facility with built-in flexibility and scalability – so that the different tanks can be individually controlled or synced for convenience.

It also allows the researchers to meticulously control the lighting variables that may influence their study, down to the individual luminaire, to ensure optimal research outcomes.

### Intuitive and accessible

The Philips Dynalite Touch Screen (PDTs) was installed to give the researchers intuitive control over the lighting system.

Nilsen Networks set up the PDTs to have individual log ins with varying levels of access permission for each user. For example, students and cleaners have their own access levels, allowing them to access lighting controls in other parts of the facility, whilst the researchers have access to more control features.

This way, there is no risk of an unauthorised user compromising the research.

### Conclusion

By partnering with Nilsen Networks and Philips Dynalite, UWA’s Aquaculture Research Laboratory gained a flexible, adaptable, and user-friendly lighting system that supports the quality of research and quality of life for their fish.

Nilsen Networks were skilful in their deployment of the Dynalite system, and as such, UWA will continue to benefit from the enhanced control over their research variables for years to come.

### Benefits

The Dynalite system is:

			
Innovative	Scalable	Reliable	Human-centric

### Project team

**Customer** University of Western Australia

**System supply and commissioning** Nilsen Networks

**Lighting control solution** Philips Dynalite



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**“For 30 years our old fluorescent lighting system limited our research. This new Dynalite system is opening up many new research avenues by enabling us to accurately control photoperiod and light intensity, so that it mimics nature.**

**“In addition, it provides greater confidence that our laboratory research results will translate seamlessly to real-world applications in the aquaculture industry.”**

**Dr Craig Lawrence**  
Adjunct Associate Professor,  
UWA Aquaculture Laboratory





[www.dynalite.com](http://www.dynalite.com)

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