



# FOCUS

## Sea Cage Light



The most compact  
high powered  
underwater  
aquaculture light  
in the world

# FOCUS

## Sea Cage Light

The Focus sea cage light is an LED that's generations ahead. It's everything we know about lighting for everything you know about fish.

### Industry Leading

- Ultimate efficiency of up to 150 lumens per watt
- Superior high power and compact form
- Ultra durable and low maintenance
- Designed for sea cages
- Plug and play simplicity

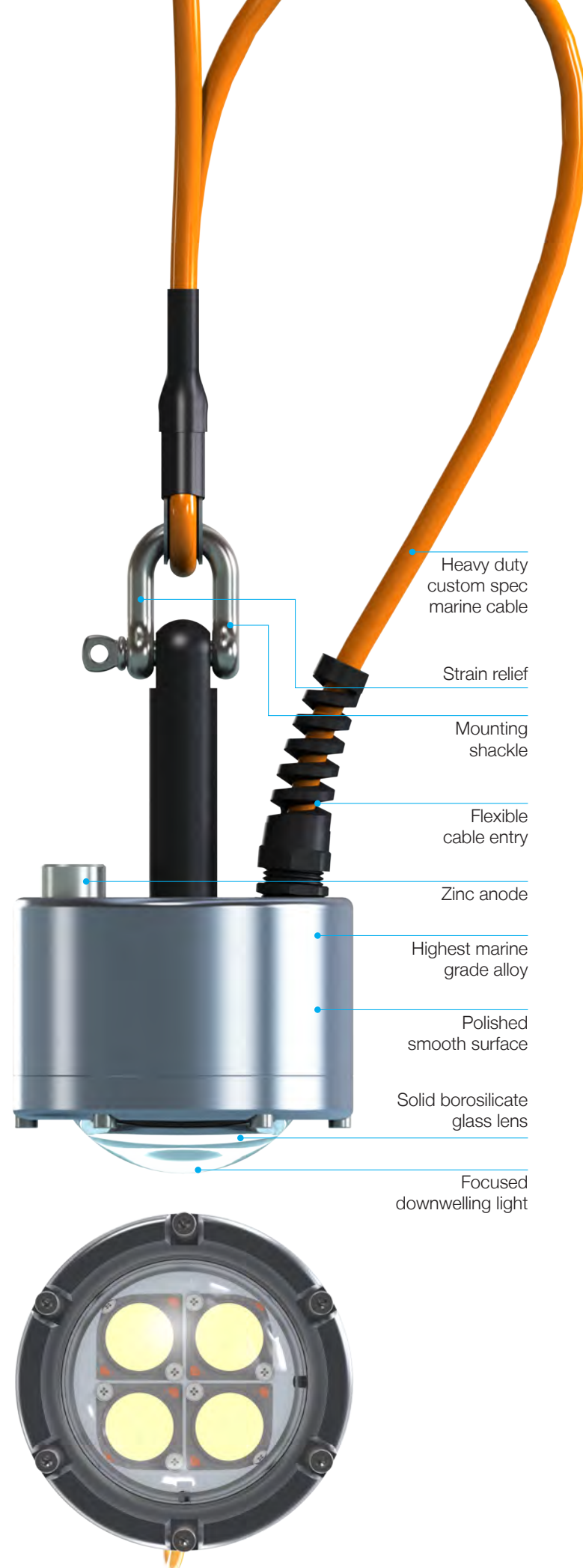
### Focus on innovation

The latest product in over 100 years of design and innovation at Planet Lighting, the Focus was designed for marine cage farming with next generation lighting technology. Our goal was to create the most efficient, reliable and effective sea cage light possible. After years of meticulous product development and use by some of the world's top salmon producers, the Focus breaks the mould for LED aquaculture lighting.

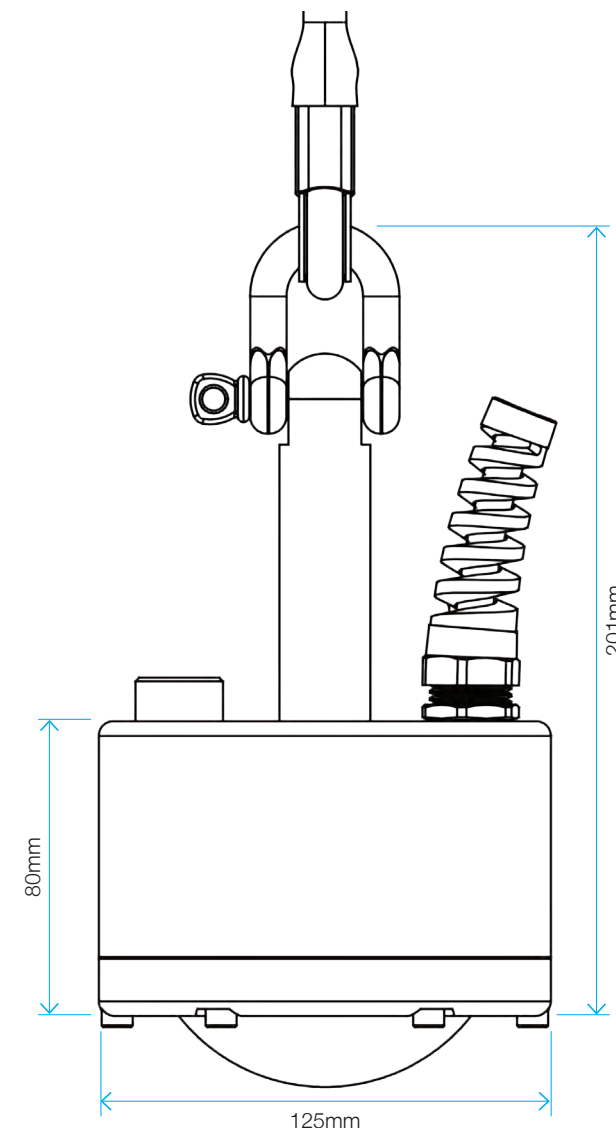
### Proven at sea

Our fresh approach and rapid development is already changing the aquaculture landscape. For Australian salmon producers, the Focus has delivered years of results in demanding aquaculture lighting conditions. As a result, the vast majority of farmed salmon in Australia now grows under our LED lighting. And the rest of the world is catching on fast. Our products are relied upon by some of the biggest and best in the industry: producers who know that good people, given great equipment, can achieve the extraordinary.

The most efficient underwater sea cage light in the world.



Small package.  
Feature packed.



The Focus unites a remarkable feature set. We've combined the best LED chipsets with the finest marine grade materials: all manufactured under a high quality in-house production process that leaves nothing to chance. The result is a light that literally outshines the competition and is one you can rely upon for years to come.

### High Efficiency

- Industry leading efficiency of up to 150 lumens per watt
- High output of up to 84,000 lumens
- An impressive 55% more effective light than omnidirectional metal halide or side emitting lighting. Light penetrates deeper to where it's needed.

### Smart Power

- Wide range of AC input voltages (90–305V)
- Isolated circuit per light with short and open circuit protection
- Improved generator compatibility with a non-inductive load.

### Focused Beam

- Downwelling 120° beam angle light creates a more natural environment for fish.
- Shining light only where you need it reduces light pollution, saves power and limits pest attraction.
- Available in 6500K cool white, green, or a combination.

### Extreme Durability

- Highest marine grade alloy construction
- Solid borosilicate glass lens
- Pressure tested to 150m depth.

### Low Maintenance

- High-power beam and small lens keeps the glass clear of biofouling
- No lamp changing needed
- Expected product life of 5 years.

### Compact design

- Height: 80mm, Diameter: 125mm  
Light Weight: 2.4 kg.





# 8 Ways the Focus will benefit your farm.



## 1. Eliminate maturation loss

Early maturation eats away at farm profits. Photoperiod manipulation with artificial lighting is the most effective maturation suppression method. The best artificial lighting will reduce this risk more effectively, with better light exposure for fish. That's where the Focus' perfect balance of powerful, efficient, and penetrative light combine to create the ultimate sun substitute. So let the sun shine on, and make maturation losses a thing of the past.

## 2. Grow fish faster

Research has shown that higher light intensity and improved light distribution increases fish growth rates. The high powered Focus features a 120° directional beam which delivers maximal light over a wide area. That's more useful light reaching more of your fish. Grow fish faster and reach market earlier with the Focus.

## 3. Reduce parasites and pests

Focused lighting can help reduce exposure of salmon to unwanted pests, including sea lice. Light-attracted sea lice are at their greatest concentrations in the first 5 metres of the water column. So we designed the Focus as a downwelling light that encourages your fish into deeper water. Less sidewelling light reduces pest attraction on your farm and limits fish exposure to profit-eating parasites.

## 4. Save energy costs

Switching to cutting-edge LED lighting saves you dollars and diesel. It also makes your farm more efficient to run. The Focus is the most efficient sea cage light bar none, giving you more useful light per watt than any other brand. Also, a resistive load and daylight sensing options make it even more power sensible. We think that's an important consideration for every farm, for the industry, and for the planet as a whole.

## 5. Cut maintenance costs

The Focus was designed for minimal maintenance and easy repair. We've ensured its super bright borosilicate lens is biofouling free. And with superior materials, it's tough enough to get on with the job without you. Plus, with no lamp changes necessary and a long expected product life of 5 years, you spend less time on repairs and replacements. That's less time cleaning, repairing and replacing equipment, and more time focusing on your fish.

## 6. Simpler farm operations

The Focus is small and lightweight, so it's safe and easy to handle. Its modular plug and play design requires no hard wiring for fast and seamless installation, removal or replacement. From the bottom up, the Focus was designed to be the perfect technology for marine farming, helping you farm with confidence and efficiency.

## 7. Reduce fish stress

Fish evolved under the sun, not beside it. So we designed the Focus to produce a lighting environment more natural for fish. A downwelling light more accurately mimics the way fish experience sunlight. And unlike older technologies such as metal halide (HID), that can sputter light and scare fish as they warm up, the Focus has a natural 30 minute soft start – just like a sunrise. More efficient, longer lasting, and more dependable lighting means that maintenance divers disturb and frighten fish less often. Limit fish mortality and improve their optimal growing environment by choosing next generation technology your fish will love.

## 8. Limits light pollution

As there is no sidewelling or upwelling light, your farm no longer need be a source of light pollution at night. Improve public amenity and minimise disturbance to the surrounding environment. So you can increase productivity, and be a good neighbour, too.

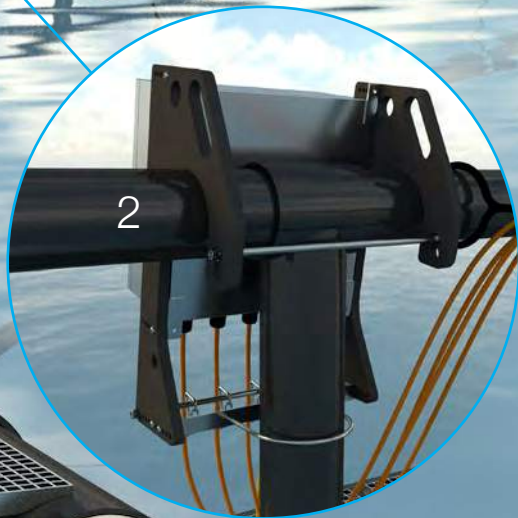




# New lighting technology.

The Focus is powered by remote LED control gear housed in a robust Marine Grade Stainless Steel cabinet. Our boxes are designed for extreme weather resistance with all electrical connections made within an IP68 box inside the steel housing, and sealed IP68 heavy duty connectors. Secure mounting brackets and a built in strain relief system add resilience. Remote gear is less exposed and easier to repair. Every feature of the Focus is built to last.

1. High visibility power indicator lights mounted on cabinet door.
2. The mounting bracket for HDPE cages fixes the cabinet onto the rail and stanchion.



# Designed for the sea cage.

3. AC power is connected to the cabinet which provides isolated DC circuits for lights.
4. The steel cage mounting bracket clamps the cabinet to the rail.





# The Focus advantage.

Next generation LED technology and great design can transform the limitations of traditional aquaculture lighting into standout advantages for your farm.

## Omnidirectional lights

### Low efficiency

- 70 to 120 lumens per watt for halide or low efficiency LED
- 55% of the light is wasted

### Expensive to maintain

- Short lifespan with costly replacement cycles
- Vulnerable to biofouling
- Heavy and difficult to handle

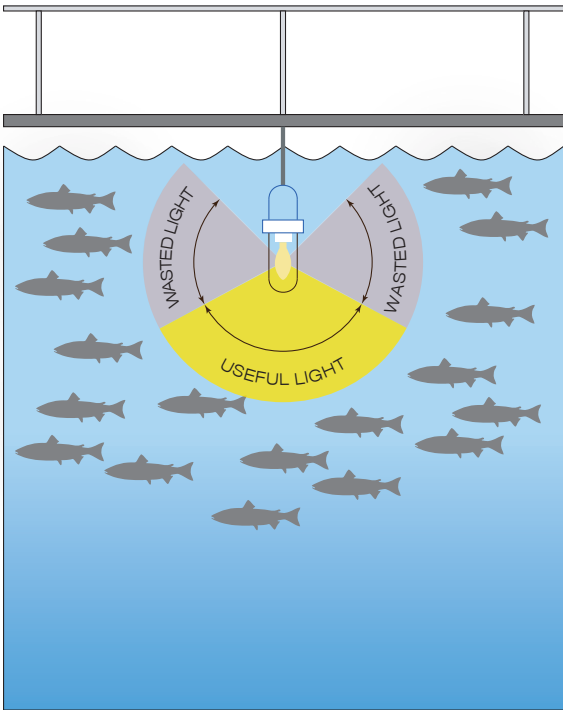
### Unfocused light

- Upwelling and sidewelling light does not target fish biology
- Attracts sea lice and other unwanted pests

### Stress to fish health

- Intense sidewelling light is unnatural for all species
- Instant on and sputtering during start startles fish

Omnidirectional sea cage lights spill light sideways and upwards wasting 55% of light.



## Focus

### Excellent Efficiency

- Up to 150 lumens per watt high efficiency LED
- 55% more useful light

### Low Cost to Maintain

- Long product life and no lamp changing
- Lens resists biofouling
- Small and easy to handle

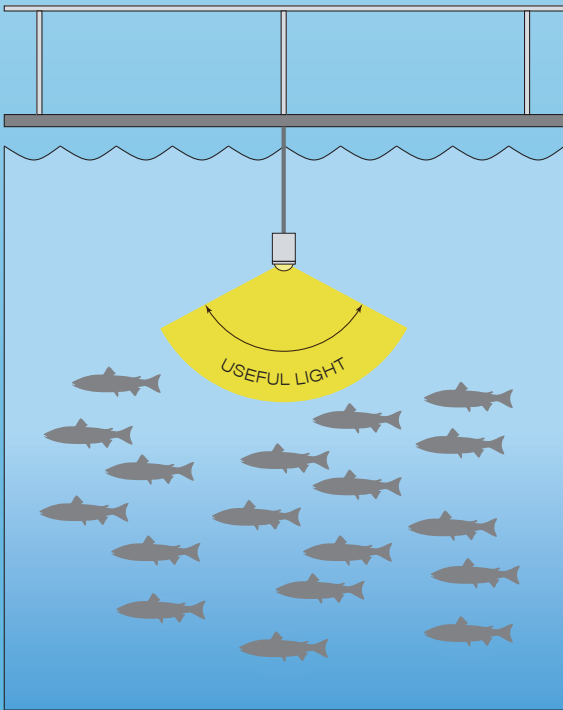
### Focused Light

- More effective light, better at targeting fish
- Helps separate fish from unwanted species

### Limits Fish Stress

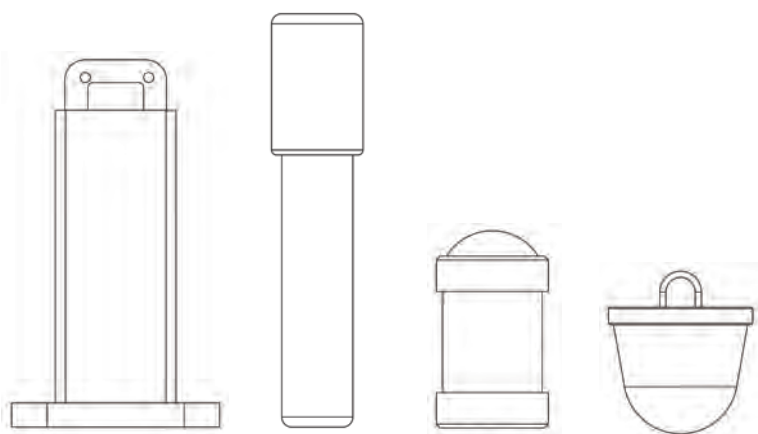
- Reproduces a more natural lighting environment
- 30 minute soft start emulates sunrise

The Focus is designed to direct light where fish need it.



# Smaller. Lighter. Brighter per watt.

The Focus is in step with on-going advancements in LED technologies, as well as the latest marine science. We believe farms that can quickly adapt to leading science and technologies are better equipped for what the future holds for aquaculture.



LED	HID	LED	LED	Focus	Model/Source
33.6kg	21kg	14kg	10kg	2.4kg	Weight (fitting only)
170100	125334	76228	57440	13600	Cross-sectional area (mm <sup>2</sup> )
900W	1000W	1000W	150W	600W	Power consumption

## Switching fish ON

Salmon respond to light by way of the pineal gland and epithalamus located in the top of their head. These contain the photo-receptors involved in the regulation of its circadian rhythms and hormonal changes. However, typical sea cage light designs project the majority of light to the sides, resulting in an extremely inefficient and ineffective way to stimulate these light-sensitive tissues. So we designed the Focus to project direct, downward focused light. This design is an incredibly more efficient and more powerful light for targeting fish biology. After all, fish evolved under the sun and not beside it.



The most compact, high-powered underwater aquaculture light in the world.



Focus Sea Cage Light



Focus: Lighting design that targets fish biology

# Superior Service. Unmatched Support.



The ocean can be unpredictable. But it helps to know you're supported by dependable service and superior spare parts availability.

## Expert advice. Global support.

This is where you can count on Planet Lighting's proven 100 year record in unmatched customer service. We think it's our best product and it comes free with every dealing with us. Whether it's expert advice in the field, or our well supported distributor network, you can be sure that if the lights go off, the service stays on.

## Spare parts: available when you need them.

We look after our distributors, so they can look after you. We ensure a ready stock of high quality spares are available when you need them.

# Focus: Choose from two versions.

The Focus is available in two versions: the Focus 600 and the Focus 300

At 600W, the Focus 600 delivers optimal illumination and power efficiency suitable for most large sea cage sizes.

The Focus 300 suits smaller cages or more economical power budgets.

Both versions use the same 125mm compact form factor, the same robust materials and the same high efficiency COB LEDs.

## Focus technical data

Model	Focus 600	Focus 300
Power consumption	600W	300W
Operating voltage	90–305V	90–305V
Light source	LED	LED
Number of Chips	4*	2*
Colour temp. (K°)	6500 K, Green	6500 K, Green
Luminous flux (lm)	Up to 84,000	Up to 42,000
Service life L70 (hrs)	> 36,000	> 36,000
Weight without cable	2.4kg	2.4kg
Weight with 40m of cable	6.9kg	6.9kg
Size: width x height	125mm x 80mm	125mm x 80mm
Materials used	Marine alloy	Marine alloy

\* We can supply any combinations of chipsets upon request.







# The time to focus is now

Get your farm equipped and ready for the next generation of aquaculture. Contact your nearest distributor or see our website for more information at [www.planetlighting.com](http://www.planetlighting.com)

## Have more questions?

Planet Lighting and our global network have the knowledge and expertise to answer your questions.

Call your distributor today to arrange an obligation free test of the Focus for your farm.



## Distributors:

### South America | Chile

#### Digital Blue

Comercial Dos Alceres Edificio Central Lake  
Santa Rosa 575 Of.48 Puerto Varas Chile  
Phone: +56 9 9219 4536

### North America | Canada

#### Powerserve Energy Ltd.

Unit #8 1040 9th Ave Campbell River  
BC V9W 4C2 Canada  
Phone: +1 (250) 830-1563  
[www.powerserve.ca](http://www.powerserve.ca)

### Scandinavia | Norway

#### Ahlsell

Phone: +46-8-685-70-00  
[www.ahlsell.com](http://www.ahlsell.com)

#### JM Hansen AS

Ærfuglveien 3a  
9015 Tromsø, Norway  
Phone +47-77-66-55-00  
[www.jmhansen.no](http://www.jmhansen.no)

### Western Europe | Scotland

#### Planet Lighting

2 Tamarind Drive Bellingen NSW 2454 Australia  
Phone: +61-2-6659-5600  
[www.planetlighting.com](http://www.planetlighting.com)

### Oceania | Australia

#### Planet Lighting

2 Tamarind Drive Bellingen NSW 2454 Australia  
Phone: +61-2-6659-5600  
[www.planetlighting.com](http://www.planetlighting.com)

#### Undersea Lighting

Hobart  
Phone: +61-418 123 946  
[De\\_T@bigpond.com](mailto:De_T@bigpond.com)

[www.planetlighting.com](http://www.planetlighting.com)  
[info@planetlighting.com](mailto:info@planetlighting.com)