

## Increase your results **02**

Your light management has a significant impact on your results.

## Optimal light for each group

Young stock and lactating cows require more light than dry cows.

## **04**

## Minimal energy consumption

The LED lights dim automatically when the right light level is available in the barn and vice versa.

## **06**

# Lely Light for Cows



*Improved results through optimal barn lighting*



*“More light in the barn also helps me to detect heat better.”*

**Henk Vijverberg**

Etain, France

“The change compared to the old situation, where I - so to speak - needed a flashlight to find the cows, of course, is gigantic. I work here now in the evening as if I am working during the day. I think it is very enjoyable but my goal was to improve the fertility results of my cows. It became easier to detect cows in heat.”



## *Your light management has a significant impact on your results*

Good light management during the lifetime of a cow has permanent benefits. Adjusting the light schedule and intensity, during the animal's lifetime affects many factors, such as her development, age of first insemination, milk production and inter calving period.

Sufficient light captured with the cow's eyes reduces the hormone Melatonin. When this hormone level is reduced the production of the IGF-1, or so called 'growth' hormone increases. This stimulates the cow's activity. The cow will have a higher feed intake resulting in a healthier rumen and higher milk production.

*Bright farming is yours by choice*



**+ 68%  
Lifetime  
production**

Extra lifetime production  
when a cow calves at  
24 months instead of  
26 months.

*(Source: Van Amburgh, 2000)*

**Young stock**

By exposing young stock to an optimal light schedule, they grow faster and get earlier to the ideal age for first calving. This results in a sooner start of the milk production.

# Optimal lighting for increased results

Cows benefit from good light management in the barn. Simulating the optimal day and night rhythm (photoperiod) stimulates growth, fertility and milk production.

## Influence of light on cows

The hormone Melatonin is reduced when light, with an intensity of 150 lux or more, touches the retina of the eyes. At the same time, the level of the growth hormone IGT-1 increases. This stimulates the cow's activity.



## Lactating cows

Cows get more active when they are exposed to an optimal light level. A higher activity brings a higher feed intake, a healthy rumen, and an increased milk yield. Academic research shows an increase of up to 10% in the milk production compared to cows in barns without optimal lighting. Next to that, cows show their heat better because sufficient lighting and a good day-night rhythm has a positive effect on their hormone regulation.

## The optimal light schedule

Stimulating the activity influences young stock and lactating cows positively. These groups benefit from a light intensity of 150 lux or more for 16 hours per day followed by 8 hours of darkness. Dry cows need more rest. 8 hours of 80 lux followed by 16 hours darkness helps them to prepare for calving and the next lactation cycle.



## Dry cows

In their dry period cows need to rest more. Daily, only 8 hours of light is sufficient. This can help to reduce the dry period from 60 to 42 days. After 6 weeks, cows are ready for their next lactation cycle. 8 hours of light also results in an increased milk yield of 1.5 to 2.5 kg per day during the first 16 weeks of lactation compared to dry cow exposed to 10 hours of light per day.



### Check-up lights

The L4C LED 250 fixture is equipped with 8 red LED check-up lights for rest hours. Cows barely detect red light and it gives you sufficient illumination for your checkup round or other work in the barn without disturbing the cows.



### L4C LED Control box

The L4C LED Control box is a stand-alone light controlling system with a touch screen. It contains an intuitive user interface to adjust settings, create a light schedule, divide fixtures into maximum 5 of groups, manually switch a group on or off, etc. One Control box can handle 30 L4C LED 250 fixtures or 60 L4C LED 125 fixtures. A combination of both fixtures is also possible. When more fixtures are needed, second (slave) control box is needed.

### Fully automated

All settings of the L4C LED light system can be made via a touch screen of the Control box. Even the barn curtains can be connected to the control box. This means, by setting the amount of light that is blocked by the screen, the system automatically increases the output when the screens go down. This way, you are ensured of an optimal light level in the barn at all times whilst keeping energy consumption to a minimum.

### Light Sensor

The light sensor knows exactly when the light inside the barn drops below the minimum value and which amount of light is needed for the correct light level in the barn. This way the dimming possibilities of the fixtures are optimally used during sunrise, sunset and dark winter days. By dimming the lights, you reduce the energy consumption and expand the lifetime of the LED lights.

### Lely L4C LED Switch box

The Switch box's main function is to switch off the main power to the complete L4C LED system in order to safely work on it. The Switch box also serves as an external switch for red checkup light at the entrance of the barn.

# The Lely L4C portfolio

Lely offers a complete LED light portfolio that provides efficient, well distributed light to optimise the development of young stock, the performance of milking cows as well as to take care of proper resting period for dry cows. The L4C LED lights are sustainable, energy efficient and durable.



## L4C LED fixtures

There are 2 types of LED fixtures available – 125 and 250 Watt. LED 125 is more suitable for lower barns (min height 3.5 m), for dry cow areas or beef farms. It is also a great solution to lit up your working areas. LED 250 on the other hand offers an efficient and well-lit environment for young stock and lactating cows. Both fixtures can be combined in one system for the most efficient light solution.

## Even light distribution

The rectangular shape of the fixture and the unique reflector inside the fixture, illuminate a rectangular surface in the barn with almost equal light level. Rectangular fixtures fit better to neighboring fixtures than round spots, creating a well-lit environment without over- or under illuminated areas. One 250 Watt fixture can illuminate 140 m<sup>2</sup>.

## Designed to fit the barn environment

The fixtures are specifically developed for barn conditions. This means that they are moisture and ammonia resistant. The design of the fixtures also ensures an optimal cooling of the LED lights and drivers to make a lifetime of 25 to 30 years possible. Even with a layer of dust on top of the fixture the cooling of the LEDs is sufficient.

## Well protected against heat and surge

To prevent damage, a thermal protection dims the light automatically when the temperature in the fixture becomes too high or it switches the lamp off if necessary. The fixtures are also equipped with a surge protection, which helps the system to operate properly during high power peaks.

## Technical specifications

	Lely L4C LED 125	Lely L4C LED 250
Purpose	<ul style="list-style-type: none"><li>• lower barn buildings</li><li>• dry cows</li><li>• working areas</li></ul>	<ul style="list-style-type: none"><li>• higher barn buildings</li><li>• lactating cows</li><li>• young stock</li></ul>
Lumen	18 000	36 000
Lumen per Watt brut	144	144
Lumen per Watt net	114	114
Dimmable	yes	yes
Colour	Neutral white 4.250K (+/- 5%)	Neutral white 4.250K (+/- 5%)
Red LED check-up lights	not available	standard integrated
Classification	IP65	IP65
Expected lifetime	60 000 hrs (L90)	60 000 hrs (L90)
Size W x L x H (mm)	326 x 560 x 133	326 x 1033 x 133
Weight (kg)	8	15
Warranty	5 years	5 years

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