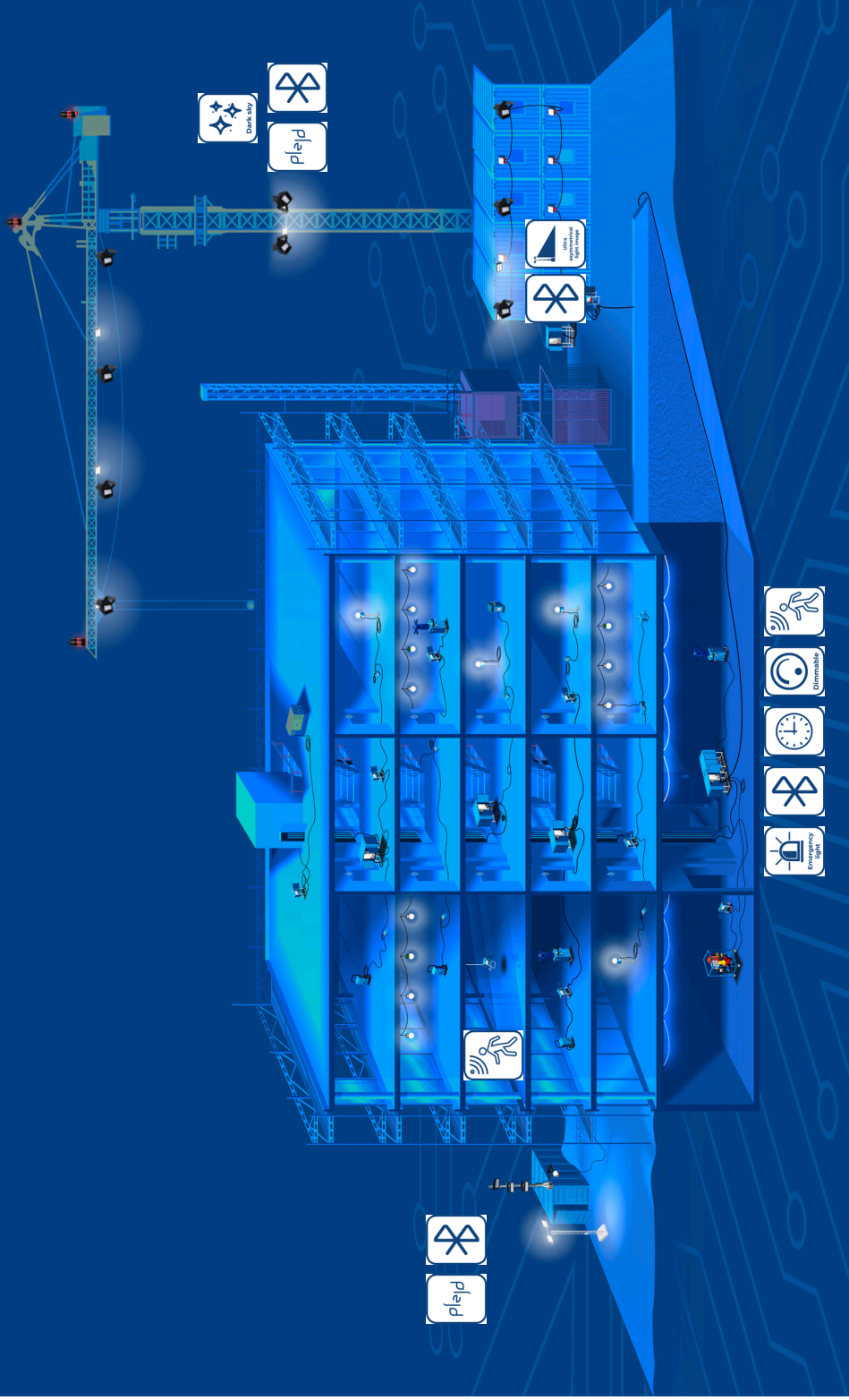


# Quick Guide Lighting





# The El-Björn house



## Boj LW Sensor

The new Boj LW Sensor is equipped with a sensor that dims the lighting to save energy. BOJ is a construction lamp that is designed to withstand the tough and demanding conditions that are often encountered on a construction site.



**Item number:** EB14270  
BOJ 48 V  
2500 lm, 20 W



**Item number:** EB14271  
BOJ 230 V  
2500 lm, 20 W



## NödBoj

NödBoj meets the requirements of the Swedish Work Environment Authority in AFS 2009:2 and standard 1838:2013 for a burn time of 1 hour. NödBoj has an external battery compartment and a test button and indicator for battery health.



**Item number:** EB14018  
BOJ NödBoj 48 V  
2500 lm, 20 W

**Item number:** EB13591  
BOJ NödBoj 230 V  
2500 lm, 20 W

**Item number:** EB15172  
Magnet



Battery operation gives a burn time of 3 x 1 h.







## Lighting transformers

A small and convenient lighting transformer in an aluminium enclosure. Lightweight and stackable, can also be wall-mounted.

**Item number:** EB16177  
LT 348AP  
With PLEJD

**Item number:** EB14489  
LT 348AP  
With Theben astro time

**Item number:** EB14492  
LT 348P  
Without Theben astro time



**Item number:** EB14270  
BOJ 48 V  
2500 lm, 20 W

Accessories	
Item number	Length
EB11985	100 m reel
EB11986	300 m reel
EB11987	Scotchlock 530



**Art.nr.:** EB11985



**Art.nr.:** EB11986



**Art.nr.:** EB11987





## FLEX LED strip II & back-up battery

Next-generation FLEX LED strip II with up to 2 hours of fluorescent emergency lighting and low flicker. Attaches easily to a wall or ceiling and can be connected in a string up to 100 m long using patented technology.

**Item number:** EB16084  
10 m FLEX LED strip II  
1300 lm, 146 W

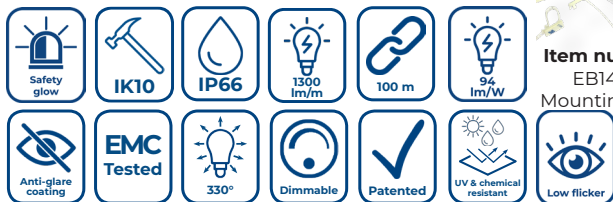


**Item number:** EB16086  
50 m FLEX LED strip II  
65,000 lm, 729 W

**Item number:** EB16083  
1 m FLEX LED strip II  
1300 lm, 14 W



**Item number:** EB16085  
25 m FLEX LED strip II  
32,500 lm, 365 W



**Item number:** EB14831  
Mounting clips



**Item number:** EB14903  
Repair kit

**Item number:** EB14421  
T-connector



## Accessories & controls FLEX LED

Timer-controlled dimmer for up to 100 m LED strip. Minimizes energy costs.

Flex back-up battery V.2 is an updated model that can supply 100 m of LED strip and is compatible with dimmable LED strips from most



**Item number:** EB15632  
Energy Guard LED Strip Dimmer

**Item number:** EB15722  
FLEX back-up battery V.2  
Supports up to 100 m



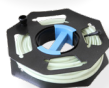


## Tent lighting

Complete range of lighting and controls for work tents, storage tents and halls. Flex LED strip can be installed quickly and easily in work tents. Combine with a daylight sensor or motion sensor to minimize energy use.



**Item number:** EB16084  
10 m FLEX LED strip II  
1300 lm, 146 W



**Item number:** EB16085  
25 m FLEX LED strip II  
32,500 lm, 365 W



**Item number:** EB16086  
50 m FLEX LED strip II  
65,000 lm, 729 W

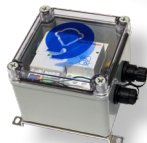


**Item number:** EB15565

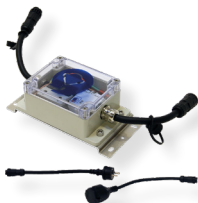


**Item number:** EB14575  
Aurora 90  
15,600 lm, 100 W

**Item number:** EB14576  
Aurora 150  
25,800 lm, 165 W



**Item number:** EB15564  
Motion sensor



**Item number:** EB15001  
Daylight relays



**Item number:** EB15002  
Theben astro time switch



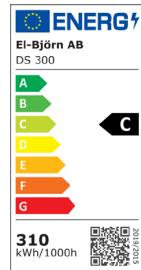
**Art.nr.:** EB15003  
Casambi

**Art.nr.:** EB15734  
Plejd controller

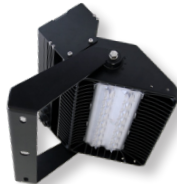


## Floodlight – Nordic Brick Dark Sky

The third generation of the popular Nordic Brick series. Light control with Plejd, astro time switch or motion sensor. Lighter, smaller, more user-friendly, with reduced glare from specially developed ultra asymmetrical optics.



**Item number:** EB16097  
Nordic Brick DS 130  
21,100 lm, 135 W



**Item number:** EB16098 / EB16099  
Nordic Brick DS 300 / DS 300 20°  
43,400 lm, 310 W



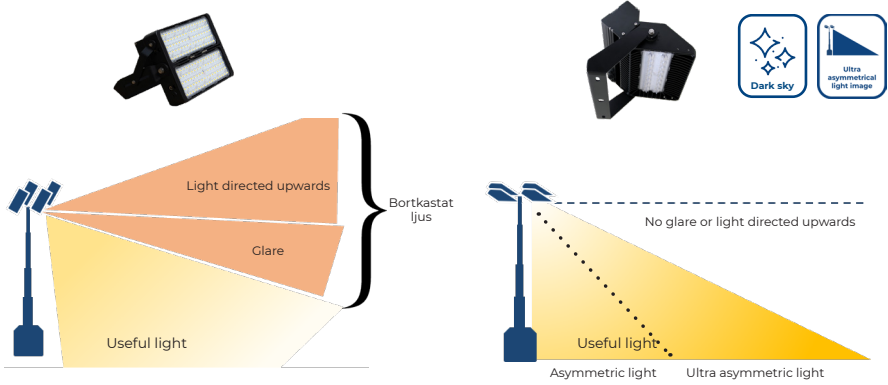
**Item number:** EB16100  
Nordic Brick DS 600  
86,800 lm, 620 W



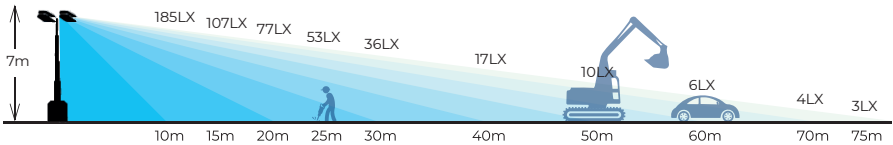


# Ultra asymmetric light image

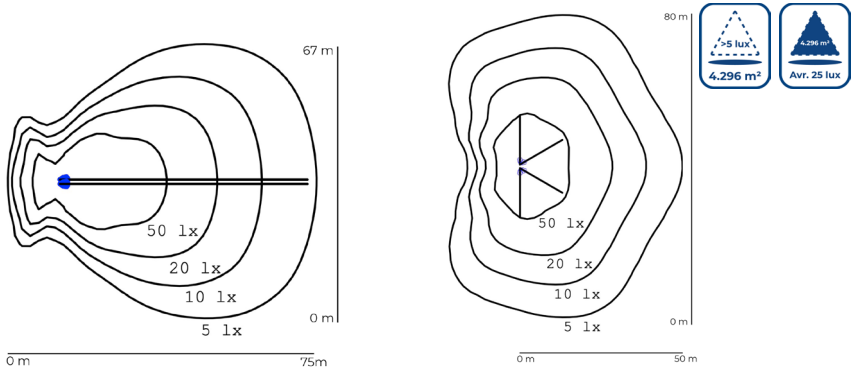
The ultra asymmetric lenses are a hybrid optic system that allows the fittings to be pointed at the ground while throwing the light forward. In contrast to asymmetric lighting, this maintains the light throw. Minimize glare and disturbance to the local environment and traffic.



# Light throw and illuminated



The symbols show the lux requirements for different tasks





## Nordic Brick Dark Sky crane solution

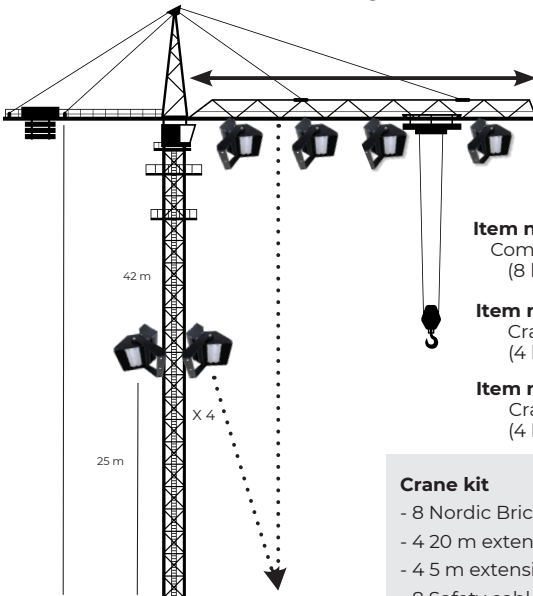
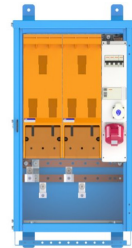
Designed for construction cranes, our floodlights make work easier – and safer. Extra-narrow beam angle, specially designed for cranes, allows light to be directed exactly where needed, with minimal glare. Lenses are easy to replace if they become damaged or scratched. Integrated supply output for additional floodlight simplifies installation and eliminates need for T-connectors.



Control lighting for an entire crane with a Casambi/PLEJDD light controller.

### BCS 500/408 AL SEFI.

The smallest modular system on the market. Can be used to connect a construction lift.



Mean value 122 lux

**Item number:** EB16120  
Complete crane kit  
(8 light fittings)

**Item number:** EB16118  
Crane boom kit  
(4 light fittings)

**Item number:** EB16119  
Crane tower kit  
(4 light fittings)

#### Crane kit

- 8 Nordic Brick 43,400 lm 20°
- 4 20 m extension cable with quick connectors
- 4 5 m extension cable
- 8 Safety cables

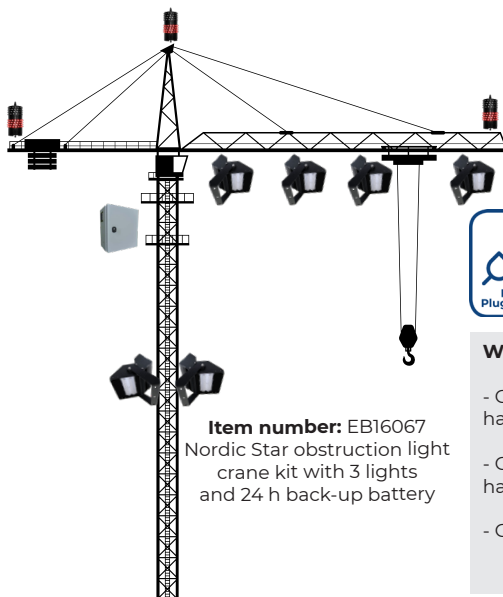
## Nordic Star Obstruction Lights

The obstruction lights illuminate with red and infrared light and comply with the Swedish Transport Agency's Type A requirements for low intensity lights and OFAC AD006F directive. Quick connectors and totally enclosed lighting make the fitting robust and easy to handle.

**Item number:** EB15851  
Nordic Star 48 V  
12 W

**Item number:** EB16063  
Nordic Star 230 V  
8 W

**Item number:** EB16064  
Nordic Star 24-48 V  
8 W



**Item number:** EB16067  
Nordic Star obstruction light  
crane kit with 3 lights  
and 24 h back-up battery



### When to use obstruction lights (TFS 2020:8)

- Cranes taller than 45 m in built-up areas must have 3 Type A obstruction lights (low intensity)
- Cranes taller than 20 m in other areas must have 3 Type A obstruction lights (low intensity)
- Close to airports





## Aurora industrial lighting

This is a reliable light fitting with very effective cooling that can be used for both permanent and temporary installations. It is available with frosted or clear glass.



**Item number:** EB15565  
Aurora Mini sensor  
6200 lm, 40 W

**Item number:** EB14574  
Aurora 70  
12,100 lm, 77 W



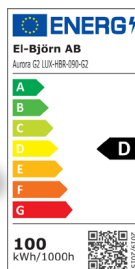
**Item number:** EB14577  
Aurora 200  
32,400 lm, 220 W



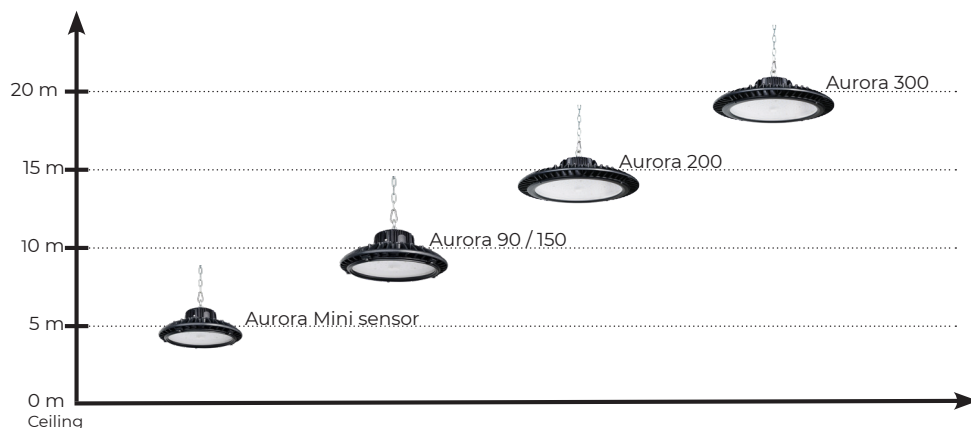
**Item number:** EB14575  
Aurora 90  
15,600 lm, 100 W

**Item number:** EB14578  
Aurora 300  
50,300 lm, 330 W

**Item number:** EB14576  
Aurora 150  
25,800 lm, 165 W



## Guidelines for installed height





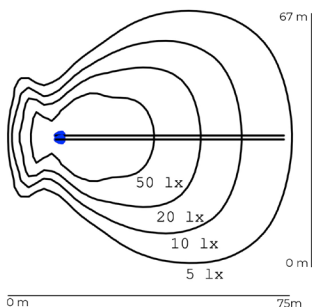
## Digitower 173 600lm 1240W

Next generation mast with connected light control and Dark Sky dimmed fittings. The Triple Drop Prevention safety system makes it a very safe mast. Ultra asymmetric light image with combined lens and reflector provide more than twice the brightness over long distances with minimal glare.

Art.nr.: EB16184  
manual winch



Art.nr.: EB16183  
Electric winch



- 4 x 43 400lm 310W Nordic Brick Dark Sky floodlight
- Ultra asymmetric light pattern minimizes light pollution
- Super compact design saves logistics costs
- Light control with PLEJD



larger illuminated area than Linktower T4  
4 296 m<sup>2</sup> with at least 5 lux over entire area.  
The average value over this area is 25 lux.



## Lighting towers



**Item number:** EB16122

**M5 3 x 21,100 lm**

- Height: 5 m
- 3 x 135 W LED
- Adjustable legs
- Telescopic construction



**Item number:** EB16125

**M5 Container tower 3 x 21,100 lm**

- Height: 4 m
- 3 x 135 W LED
- Telescopic construction



**Item number:** EB16128 / EB14350

**LINKTOWER Retrofit kit 4 x 38,200 lm**

- 4 x 135 W / 4 x 240 W
- Preserves CE declaration when fitted to Linktower towers
- Same light fittings as fitted to Linktower T4





## Mobile truss towers

A wide selection of robust, mobile, high-quality lighting towers with short delivery times. All towers have lighting controls.



**Item number:** EB15432  
Daylight relays **Item number:**  
EB16139

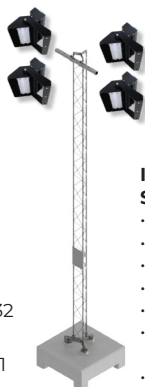
- Item number:** EB16133  
**SCANMAST truss tower**
- Height: 6 m
  - 2 x 310 W LED
  - 86,800 lm
  - Astro time switch
  - Additional service socket
  - Withstand wind speeds up to 26 m/s
  - Compact dimensions for transport



**Item number:** EB15432  
Daylight relays

**Item number:** EB16141  
Plejd

- Item number:** EB16138  
**SCANMAST truss tower**
- Height: 18 m
  - 4 x 310 W LED
  - 173,600 lm
  - Astro time switch
  - Additional service socket
  - Withstand wind speeds up to 26 m/s
  - Compact dimensions for transport
  - Mobile 6.9 ton foundation



**Item number:** EB15432  
Daylight relays

**Item number:** EB16140  
Plejd

- Item number:** EB16134  
**SCANMAST truss tower**
- Height: 12 m
  - 4 x 310 W LED
  - 173,600 lm
  - Astro time switch
  - Additional service socket
  - Withstand wind speeds up to 26 m/s
  - Compact dimensions for transport
  - Mobile 3.6 ton foundation



## Blue Plug & Play lighting control

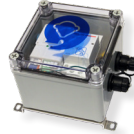
Minimizes light contamination and saves energy. El-Björn's Blue plug-and-play daylight relay can easily be installed on all our light fittings that carry the Blue symbol.



**Item number:** EB15001  
Daylight relays



**Item number:** EB15002  
Theben astro time switch



**Item number:** EB15564  
Motion sensor



**Item number:** EB16176  
Socket outlet with Plejd

## Bluetooth control



**Item number:** EB15734  
Plejd controller

**Item number:** EB15003  
Casambi



## Energy Guard LED strip Dimmer



**Item number:** EB15632  
Energy Guard LED strip dimmer



Product	Max power	Max initial current	Supply capacity: Nordic Brick 240	Supply capacity: Aurora 150	Supply capacity: Nordic Brick DS 300	Supply capacity: Nordic Brick DS 600
Plejd / Casambi controller	3200 W	4 KA	15	20	10pcs	5pcs
Theben astro time switch	2700 W	4 KA	12	17	8pcs	4pcs
Energy Guard LED Strip Dimmer	1500 W	4 KA	NA	NA	NA	NA
Daylight relays	1500 W	250 A	5	5	3pcs	2pcs
Motion sensor	2700 W	4 KA	12	17	8pcs	4pcs



**Item number:** EB15396, 5 m  
**Item number:** EB15397, 10 m  
**Item number:** EB15398, 20 m  
**Item number:** EB15060, 5 m  
**Item number:** EB15061, 10 m  
**Item number:** EB15062, 20 m



**Item number:** EB15405  
 M16 4-vägs Y-koppling  
**Item number:** EB15619  
 M19 4-vägs Y-koppling



**Item number:** EB14819  
 Schuko plug



**Item number:** EB14818  
 Schuko plug



**Item number:** EB13831  
 M19 Quick connector

**Item number:** EB15121  
 M16 Quick connector  
 dim. cable



**Item number:**  
 EB15122  
 M19 T-connector



**Item number:**  
 EB14348  
 M25 Quick connector

**Item number:**  
 EB15121  
 M16 Quick connector

Quick connectors & cables	
Item number	Description
EB15121	M16 Quick connector dim. cable
EB13831	M19 Quick connector
EB14348	M25 Quick connector
EB15122	M16 T-connector dim. cable
EB13830	M19 T-connector
EB15405	M16 4-way connector
EB14879	M19 4-way connector
EB15396	M16 Dim. connector cable 5 m
EB15397	M16 Dim. connector cable 10 m
EB15398	M16 Dim. connector cable 20 m
EB15060	M19 extension cable 5 m
EB15061	M19 extension cable 10 m
EB15062	M19 extension cable 20 m
EB14818	Schuko plug
EB14819	Schuko socket



## Savings with lighting control on a standard project

15-month project  
 Total area 17,950 m<sup>2</sup>  
 Garage area under property  
 Eight stairways

### Indoors:

- LED strip 500 m  
 - Boj 410 pcs

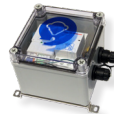
### Outdoors:

Number of lights:  
 - Link towers 6 x 4 = 24 pcs  
 - Crane 8 pcs  
 - Fixed lighting (cabins) 6 pcs

**Total: 38 pcs**



**Item number:** EB15632  
 Energy Guard  
 LED Strip Dimmer



**Item number:** EB15564  
 Motion sensor



**Item number:** EB15001  
 Daylight relays



**Item number:** EB15734  
 Plejd controller



**Item number:** EB15002  
 Theben astro time switch



# Energy savings



## EBL 48/20 Standard Boj VS Sensor Boj LW

Number of fittings (pcs)	410	410
<b>Energy costs:</b>		
Installed power incl. operating losses (W)	8,610	8,200
Power when dimmed (W)	0	4
Operating time	7,665	3,507
Control method (none, manual, presence, daylight) (h/yr)	None	Presence sensor + astro
Reduction factor dimmer	1.0	0.6
Energy consumption	65,996	17,275
Electricity price (SEK/kWh)	1.50	1.50
<b>TOTAL COST (PRESENT VALUE) (SEK)</b>	<b>98,993</b>	<b>25,913</b>
<b>Saving vs no light control</b>	<b>73,080</b>	<b>74%</b>

## Flex LED Strip VS Controlled Flex LED Strip

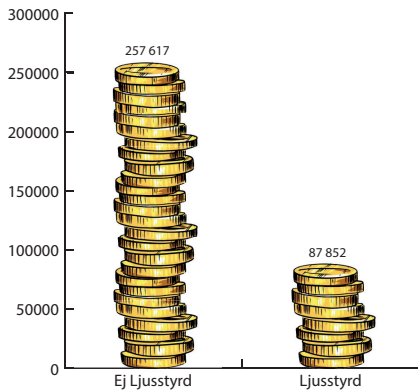
Number of fittings (M)	500	500
<b>Energy costs:</b>		
Installed power incl. operating losses (W)	7,200	7,200
Power when dimmed (W)	0	3
Operating time (h/project)		7,665 7,665
Control method (none, manual, presence, daylight) (h/yr)	None	Energy Guard LED strip dimmer
Reduction factor dimmer	1.0	0.46
Energy consumption (kWh/project)		55,188 25,390
Electricity price (SEK/kWh)	1.50	1.50
<b>TOTAL COST (PRESENT VALUE) (SEK)</b>	<b>82,782</b>	<b>38,084</b>
<b>Saving vs no light control</b>		<b>44,698 54%</b>



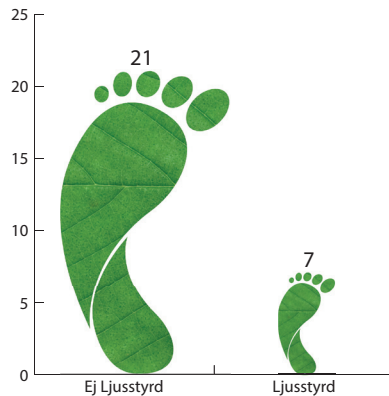
400W Metal halogen VS Nordic Brick VS Nordic Brick DS

Number of fittings (pcs)	38	38	38
Fittings power (W)	400	220	310
Fitting power incl. operating losses (W)	458	220	310
<b>Energy costs:</b>			
Installed power incl. operating losses (W)	17,404	8,360	11,780
Operating time (h/project)	6,048	6,048	1,350
Control method (none, manual, presence, daylight) (h/yr)	None	None	Astro + night mode
Energy consumption (kWh/project)	105,259	50,561	15,903
Electricity price (SEK/kWh)	1.50	1.50	1.50
<b>TOTAL COST</b>	<b>217,321</b>	<b>75,842</b>	<b>23,855</b>
<b>Saving vs metal halogen</b>	<b>141,479</b>	<b>193,466</b>	<b>89%</b>
<b>Saving vs no light control</b>			<b>51,987</b>

### Saving on lighting (SEK)



### CO<sub>2</sub> reduction (tonnes)



# Lighting for a safe and efficient construction site

Lighting is an important factor in how we perform at work. Poor lighting can lead to strain injuries and is a product-related factor in accidents on construction sites.

Falls and accidents with machinery and tools are the most commonly occurring accidents on construction sites (AFA 2017). A well-lit workplace with dimmable light fittings and low-contrast lighting helps to prevent this.

According to the Swedish Work Environment Authority (AFS 2020:1 §136) good lighting takes into account:

- Lighting intensity
- Irritating flicker
- Freedom from glare
- Light distribution and contrast
- Colour rendering to suit activities

1. Guideline values for lighting intensity can be found in SS-EN 12464-1 edition 1 and SS-EN 12464-2. All significant surfaces should have an average sustained lighting intensity of > 50 lux, and workplaces that are used continuously should have at least 200 lux. Achieving a lighting intensity of 200 lux is fully feasible with today's light fittings and not only provides a safer workplace but also a more efficient working environment.

People need more light as they age, and a 50-year-old needs twice as much light as a 20-year-old (Prevent 2020). By ensuring the right light level, we make the workplace accessible to all employees. Adding provisional light calculations to drawings ensures that the correct light level is obtained.

2. Irritating flicker: Visible and invisible flicker from lighting can cause concentration difficulties, migraines, dizziness and epileptic seizures. Most LED light fittings on the market have high or very high flicker levels. By specifying a requirement that lighting suppliers should state flicker levels and choosing light fittings that have <8% modulation up to at least 100 Hz, the risk of irritation is considered low (Swedish Work Environment Authority 2019) (IEE 2015).

3. Freedom from glare: Dimmable, glare-free light fittings with frosted glass or domes should be used to minimize glare.

4. Light distribution and contrast: The use of omnidirectional ceiling light fittings improves light distribution and reduces contrast. Contrast due to directional light sources such as floodlights creates shadows that increase the risk of glare and accidents.

5. Colour rendering to suit activities: Light fittings that are used must have a CRI value > 80 to ensure correct colour rendering.



### Lighting control

Lighting control gives you light in the right place and at the right level. To minimize light pollution, disturbance to the surrounding environment and energy consumption due to lighting and lighting equipment you should use:

- Dimmers
- Presence sensors
- Digital/astro time switches
- Shields for floodlights
  - Lenses
  - Glare protection

Lighting on construction sites at night reduces the risk of thefts and damage. Dimmer controls should be installed for lighting to minimizing impact on the surroundings and environment.

### Emergency lighting

Construction sites are workplaces where emergency lighting is required in stairways or along emergency exit routes. The light intensity at floor level along walkways should be at least 1 lux in the worst-lit area. Examples of lighting requirements for specifying lighting in emergency exit routes are given in standard SS-EN 1838:2013. Lighting – Emergency lighting. Edition 2. (AFS 2020:1 §136).

## CHECKLIST

### Safe and efficient lighting

#### Lighting intensity

- Light calculation based on drawing or health & safety plan (50–200 lux)

#### Emergency lighting

- >1 lux in stairways & emergency exit routes

#### Choice of light fitting

- Glare-free
- Flicker <8% 100 Hz
- Ability to control light level
- Colour rendering >80 CRI

#### Which lighting control to use

- Astro time switch / digital timer
- Dimmer
- Presence sensor
- Glare shields for floodlights





# Contact us for lighting advice.



**Jan Nielsen**

Sales, southwest Sweden / Denmark  
+46 (0)371-588 122  
jan.nielsen@elbjorn.se



**Marcus Ljungberg**

Sales, Stockholm / Västra Norrland  
+46 (0)70-641 77 60  
marcus.ljungberg@elbjorn.se



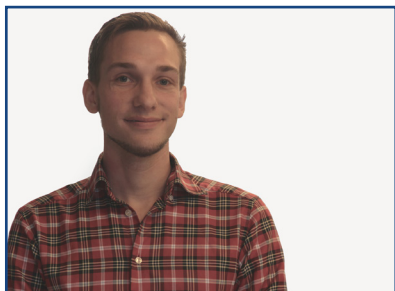
**Thomas Palmqvist**

Sales, Mälardalen / Västra Norrland  
+46 (0)72-203 56 66  
thomas.palmqvist@elbjorn.se



**Niklas Andersson**

Sales, western Sweden  
+46 (0)73-503 24 87  
niklas.andersson@elbjorn.se



**Axel Andersen**

Lighting product manager  
+46 (0)70-105 32 06  
axel.andersen@elbjorn.se





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