

**CANDILUX**  
industrial light

## Advanced Technology

CANDILUX GmbH

Technology

This is your light. 



## Sailer Group

**CANDILUX**  
industrial light

**sailerEnergy**



**sailer**  
Energieeffiziente Warmwasser-Systeme

## Future-Proof quality as a tradition.

**Globally appreciative clients**

Candilux GmbH is a middle sized company that has established an international presence through its core competence in the industrial LED illumination sector!

**Our people understand you**

Decades of experience and expertise in the field backed up by our traditionally high quality products, close customer contact and flat hierarchy are the traits of our business. We underline our competence by offering frequent training and application related seminars .

**State of the Art as basis**

Our company is part of the Sailer Group who wrote its mission statement two decades ago swearing then to produce the most reliable and energy efficient products possible. We live our responsibility to conserve energy and resources.

**Quality and flexibility**

Quality and flexibility manufactured at realistic prices are the basis for our modular production blocks (MPB) and subsequently the reason for Candilux's success in the industrial LED lighting sector. Here the price and performance find a true equilibrium.

**Future-Proof**

Our MPB's allow us to build fully serviceable luminaires. Through this approach our customers can, when required not only upgrade their systems but also completely change its operation characteristics without a noticeable difference in appearance. Therefore the systems can be adapted to suit new requirements without the requirement for a complete re-fit – A true ecological and economical advantage.

**Save the planet**

Based upon this it goes without saying that CANDILUX has a built in responsibility to recycle its de-commissioned material and as such, is proud to be part of the European WEEE operation scheme. Additionally we ensure that all our products completely fulfil the restriction of harmful substance standard – RoHS.

**Conclusion**

As a group, SAILER's resources span the collective needs for developing and building reliable, cost effective State-of-the-Art luminaire systems, that miser with costs and resources whilst excelling in lighting performance and product quality – Guaranteed!

## Advanced Technology

Assembled from MPB's, CANDILUX's luminaire production fulfils the highest standards for its client's requirements. This flexibility allows its usage in endless application areas due to its plug and play build properties.

A direct retrofit with CANDILUX's LED luminaire systems as opposed to previous technologies ensures minimal installation investment, immediate energy savings, perfect - optimal lighting!

The right hand example demonstrates a 1:1 retrofit Exchange of 400W halogen vapour with a P180I luminaire.

The 1:1 exchange is unequivocal as the exact emission properties of the LED light engine are freely available as part of the MPB range and hence a perfect fit.

The reliability and serviceable life expectancy of our LED luminaires, made in Germany's Swabia town Ehingen on the Donau, are due mainly to their design and tight selection of the most suitable LED's, power supplies and heat sinks available.

Lighting System Upgrade on a 1:1 Basis	Existing	Replacement
		
Type	Highbay reflector 1x 400W Halogen vapour	S180I BA82 Industrial S-Line LED Standard module
Nenn Flux (Source)	34.000 lm	27.470 lm
Efficacy (Luminaire)	66%	83%
System Flux	22.440 lm	22.800 lm
Power Consumption	440 W	230 W
System Efficacy	51 lm/W (CRI 65, 4400 K)	100 lm/W (CRI 70, 5000 K)
Luminant Exchange	Approx 8 000 Hrs.	Approx 60 000 Hrs.
Controls	- None - On/Off. Time delay during initial ignition and re-strike	- Unlimited switching cycles - Stepped intensity, Digitally Adressable Lighting Interface (DALI)

## Serviceable Life

The mean time between failure (MTBF) of LED's, power supplies and other sub-systems decreases inverse to the increase in ambient temperature. To ensure a full serviceable life span we design our products with this in mind. Therefore we offer certain luminaire classes for ambient temperatures of up to 80°C without exceeding the inherent flux depreciation of 30% over a course of 100,000 operational hours.

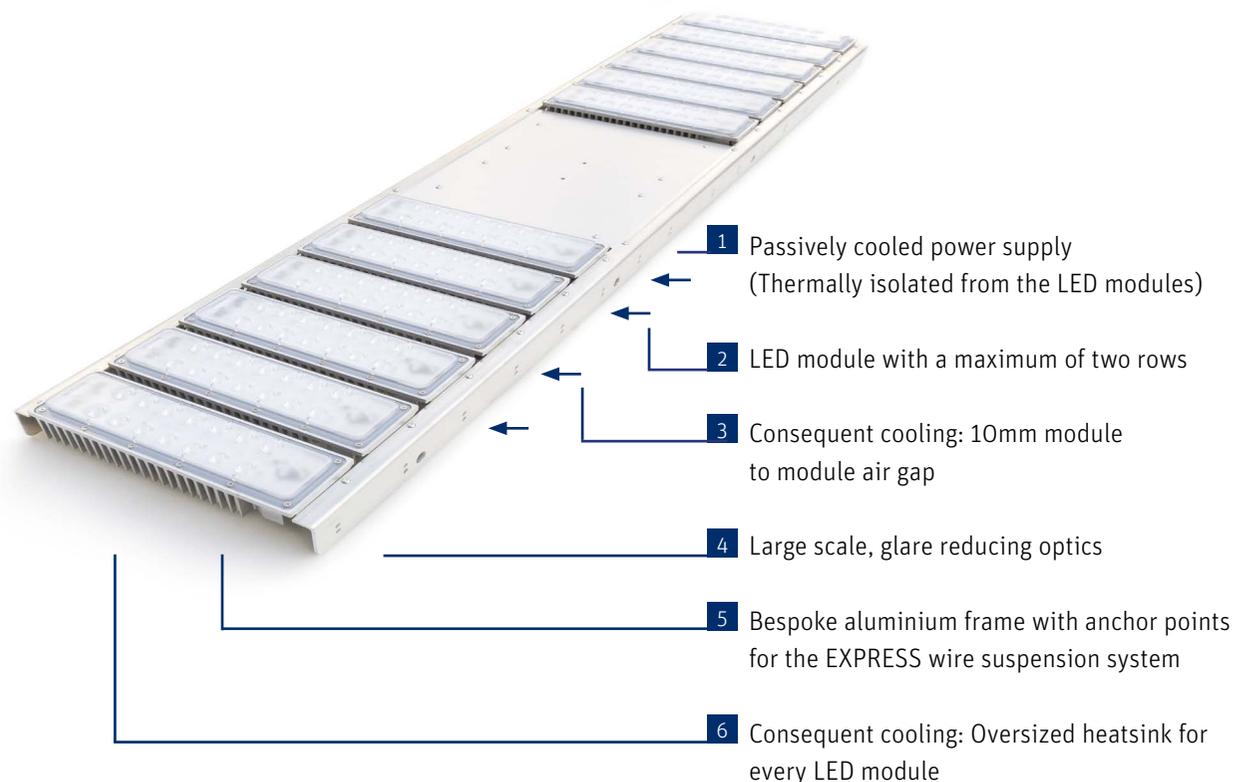
## Modularity

The high power LED luminaires are perfectly cooled for life. The individual elements are all thermally de-coupled so that a lumen flux reduction due to parasitic heat exchange is eradicated. The thermo-dynamic principal ensures each individual LED is optimally cooled.

The construction of CANDILUX's luminaires has been conceived in such a way that the thermal losses produced by the power supplies are restricted to the central area of the luminaire and are dissipated through natural convection (silent operation). This ensures enhanced power supply operation and user acceptance.

## CANDILUX technology overview

Example S-Line: S300I BA50



### LED-Positioning, Flux emission and Ageing

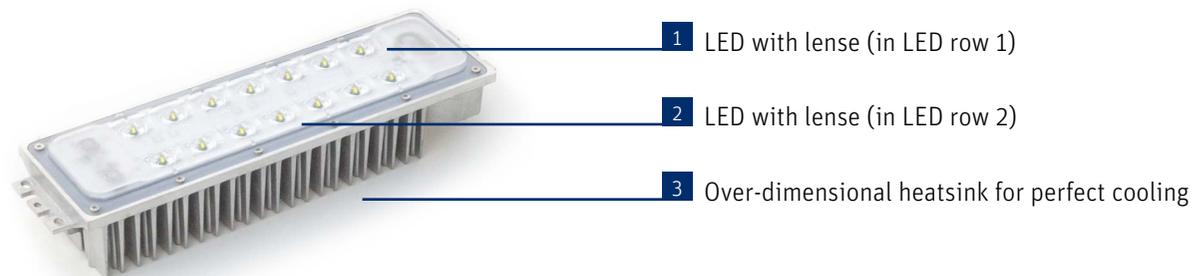
The CANDILUX MPB light engines deploy two rows of LED's avoiding a concentration of heat sources. These configurations are amply cooled by the over dimensional, rear mounted heatsinks which in turn ensure module to module conformity from both flux emission and life expectancy.

**Please note:** Open market luminaires and luminants utilising more than two rows of LED's on a common circuit board are liable to accumulative thermal loading and the generation of hot-spots.

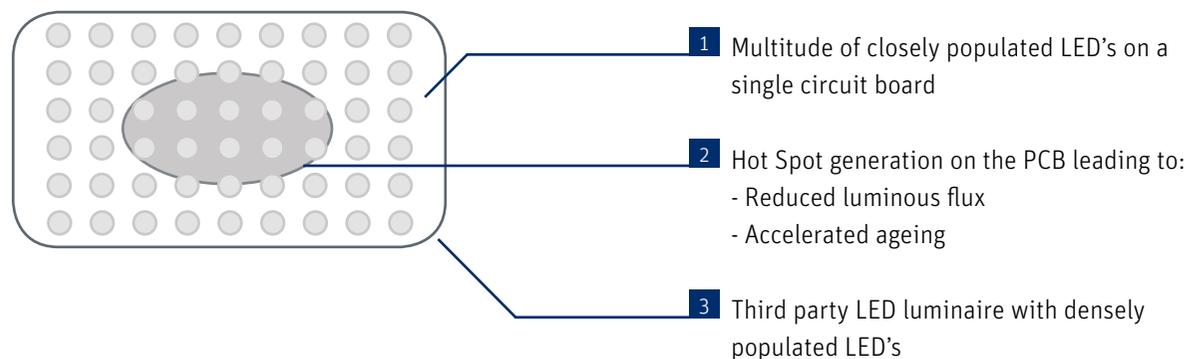
The physiological result of products encumbered with such hot-spots type are manifested by a loss of output flux and colour shift. These effects are enhanced when the heatsinks are contaminated reducing their efficacy further still.

### Comparison and advantages of CANDILUX technology

#### A. CANDILUX LED-Module



#### B. Open market LED luminaire or COB (Chip-On-Board) source





## Light quality

The CANDILUX large area luminaires are recognisable by their brilliantly illuminated and enlarged emission optics. These lenses are the reason for high output and glare free emission, the basis for calculable results within enclosed spaces and open plan structures.

The distributed flux characteristics are identical to all luminaires within the same class. The luminaires are available with CRI values between 70 & 90. The standard supplied correlated colour temperature (CCT) is 5000K. Other colour temperatures are available upon request.

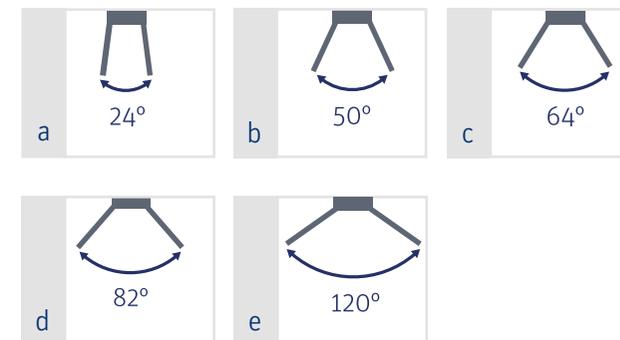
## Photometric distribution (optical Lens/Reflector)

The variety of distributional patterns available are generated through the combination of lenses and reflectors. Each LED retains its own lens or reflector. These elements are primarily responsible for the generation of the selected distributional characteristic. Due to the control of each individual light source the total generated flux is distributed over the complete area and effectively reduces the generation of glare. The respective EULUMDAT files are available on the CANDILUX website for downloading.

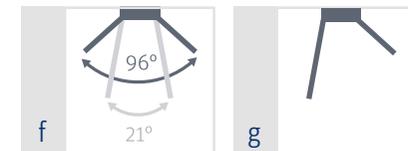
The utilisation and combination of distributional patterns ensure that the task area concerned can be optimally illuminated.

- Industrial hall and logistic storage shelving
- Flood and crane lighting
- Streetlight and portable LED luminaires

## Symmetrical distribution



## Asymmetric distribution



- a High mast applications
- b Highbay applications
- c Highbay applications
- d Highbay applications
- e Lowbay applications
- f Logistic storage shelving, narrow passages
- g Street and parking space applications

## LED luminaires: System structure

Our aim: A complete illumination system offering covering virtually all conceivable areas encountered within an industrial business unit with reduced installation, service and running costs.

The combination of multiple luminaire classes and photometric distributions create a large variety of usage possibilities. These combinations build the basis for an application specific and energy efficient lighting system - unequivocal.

## Emergency Lighting

Emergency lights from CANDILUX are fully compatible with standardised safety lighting concepts.

Installations with central battery systems can drive the CANDILUX emergency systems directly with DC. Should a de-centralised system be called for, the relevant light engine can be fitted with its respective battery pack. Naturally the luminaires are capable of being integrated into a PC based system with login function. Call our experts if support is required!

## Housing

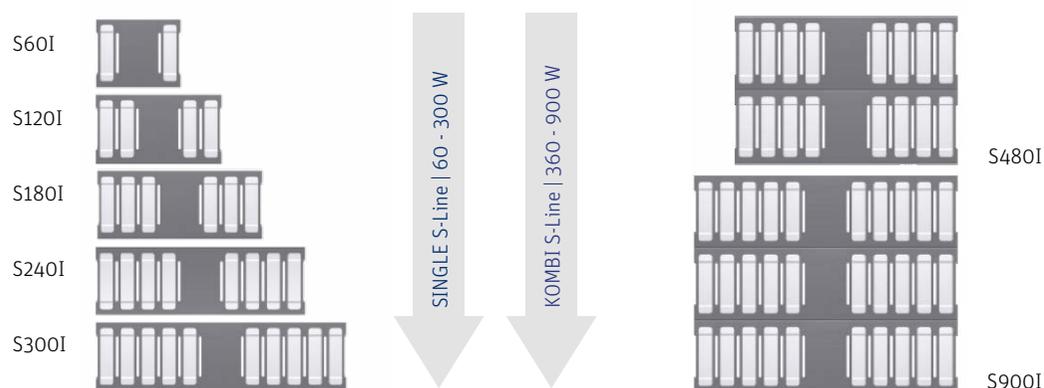
Stainless steel builds the basis for our professional (P-Line) housing. Aluminium is used for our saver (S-Line) system. Both lines are physically compatible with our EXPRESS quick-fit wire suspension system.

## Service and Maintenance

The LED S-Line luminaires are all based upon the same LED modules. These modules can be accessed and removed with standard tools. The power receptors are fitted with M12 connectors which enable easy exchange as part of the CANDILUX Future-Proof strategy.

## Lighting configurations

Example S-Line:



## Mounting

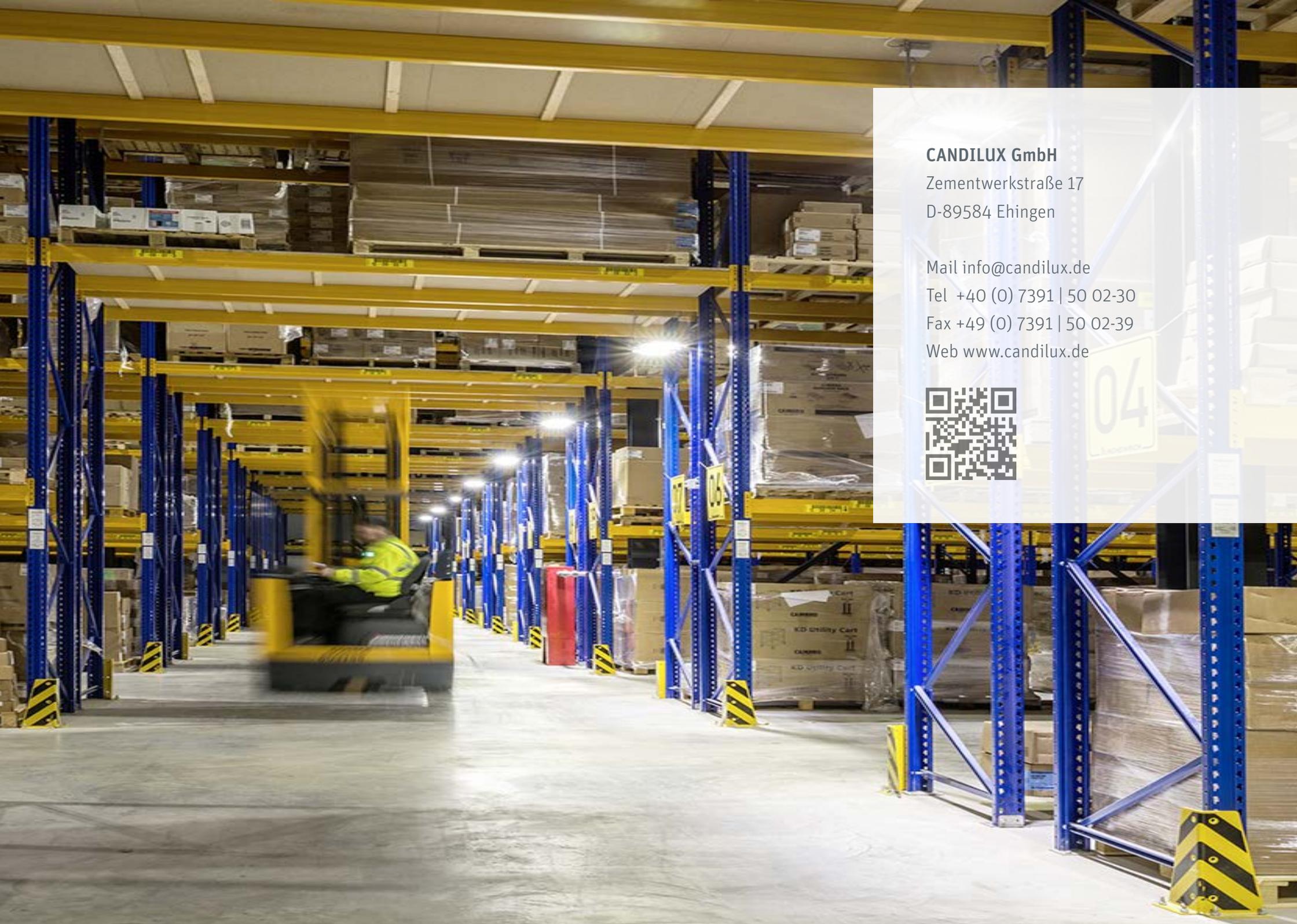
The EXPRESS wire suspension system consists of multi-strand wire, carabiner's and friction clamps for fast and effective suspension. The electrical connection is externally executed so that the luminaire does not need to be opened during commissioning.



## Future Proof

During the development of the LED modules we have paid the greatest attention to ensure that future generations of luminaires, and light engines, remain physically and electrically compatible with each other. In this way when the modules in our luminaires have reached the end of their serviceable life they can be easily upgraded without the need to replace the whole fitting.





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