

HIGH-PERFORMANCE – LED-TECHNOLOGIE



Bundesministerium
für Wirtschaft
und Energie

**BMWI business development in Greece in the field of civil security
from
02 - 06 November 2020**



LED-LIGHT-Germany GmbH

The LED-LIGHT-Germany's high performance LED-Technology is designed, developed and made in Germany since 2006. LED Light is a system partner for energy-efficient lighting systems and renovation. With the highest possible quality and service processes, LED-LIGHT-Germany GmbH is a specialized manufacturer. The lightning and service offers are tailored to the respective customer needs and projects. LED Lights analyzes and develops the optimal solution for each project together with its customers

„ALL IN ONE HAND“.

Which target persons are we looking

- Operator of Airports, Seaports, Trainstations,
- Public Managers and Operators of Buildings, Monument-Culture-Sports and Event Venues
- Architekt
- Project planer / developer
- Electrical and energy companies as cooperation partners
- Private and municipal facility management companies
- Production Companies
- Government (Public-Lighting)

Products and Services

High Performance LED Lighting Systems for Airports

- *Arrival and departure halls
- *Check-in and information desk
- *Connection areas - and treadmills
- *Customs and passport control
- *Security controlled areas
- *Baggage reclaim and baggage handling
- *Air traffic control
- *Shopping, food and leisure areas
- *Social rooms
- *Office and conference rooms
- *Architectural and facade lighting
- *Car parks, tunnels and roads
- *Apron lighting
- *Hangars
- *Logistics

The conventional airfield lighting of the US Military Airport Ramstein (airfield 1,500 x 400 meters) with 350.000 Watt lit, was replaced with 151.000 Watt led RAS120, at a mast of 65 meters. The required 500 lux and homogeneous illumination are easily achieved



konventional light	305800 Watt	REDUKTION 70,90% RETURN OF INVESTMENT 30 MONTH		led light	88960 Watt
daration	12 hours per day			daration	12 Stunden per day
days per week	7			days per week	7
electricity costs	0,14 € pro kWh			electricity costs	0,14 € pro kWh
time period	power consumption	electricity costs	power consumption	electricity costs	SAVING €
pro day	3.669,60 kWh	513,74 €	1.067,52 kWh	149,45 €	364,29 €
1 week	25.687,20 kWh	3.596,21 €	7.472,64 kWh	1.046,17 €	2.550,04 €
4 weeks	102.748,80 kWh	14.384,83 €	29.890,56 kWh	4.184,68 €	10.200,15 €
1 year	1.335.734,40 kWh	187.002,82 €	388.577,28 kWh	54.400,82 €	132.602,00 €
5 years	6.678.672,00 kWh	935.014,08 €	1.942.886,40 kWh	272.004,10 €	663.009,98 €

High Performance LED Lighting Systems for Seaports



HIGH POWER FLOODLIGHTS

Based on our unique multi head design the **HPF®** flood lights are the only solution on the market with never seen benefits. Especially the high end flood light fixture with 8 heads provides very unique features for large area illumination like stadiums or industrial applications. Every head is flexible regarding beam angle, power rating and colour temperature. This flexibility offers a combination of wide beam angles for the short distance and small beam angles for the far distance with perfect uniformity. The high performance flood lights are the perfect solution for 1st grade large stadium with full colour illumination tasks and large area. industrial applications like crane flood lights and goods handling arrays and seaportslighting With very narrow beam angles it provides also the perfect solution for high rise facade illumination up to 400 m height. And all this comes with power savings of more than 80%.



HIGH POWER FLOODLIGHTS

Short information about the technical data and informations

- Systempower maximal 1280 Watt
- Light Efficiency up to 160lm/w
- Beam Angle 15/25/40/60/100
- Operating voltage: 90-308VAC or 130-430 VDC
- Operating frequency: 47 - 63 Hz
- Operating temperature up to -30°C up to 70°C
- Control system DMX / DALI / 1-10V / custom
- Weight 12,7 kg up to 26,5 kg
- Protection degree / class: IP65 / I /II or III (with ext. Power)
- durable antibacterial and germ-free coating
- Up to 10 years guarantee
- ESCO and other special Project- Finance Systems

Antibacterial and germ-free Lighting for Hospitals **in combination** with **Human-Centric-Lighting HCL**

1. Patient Room

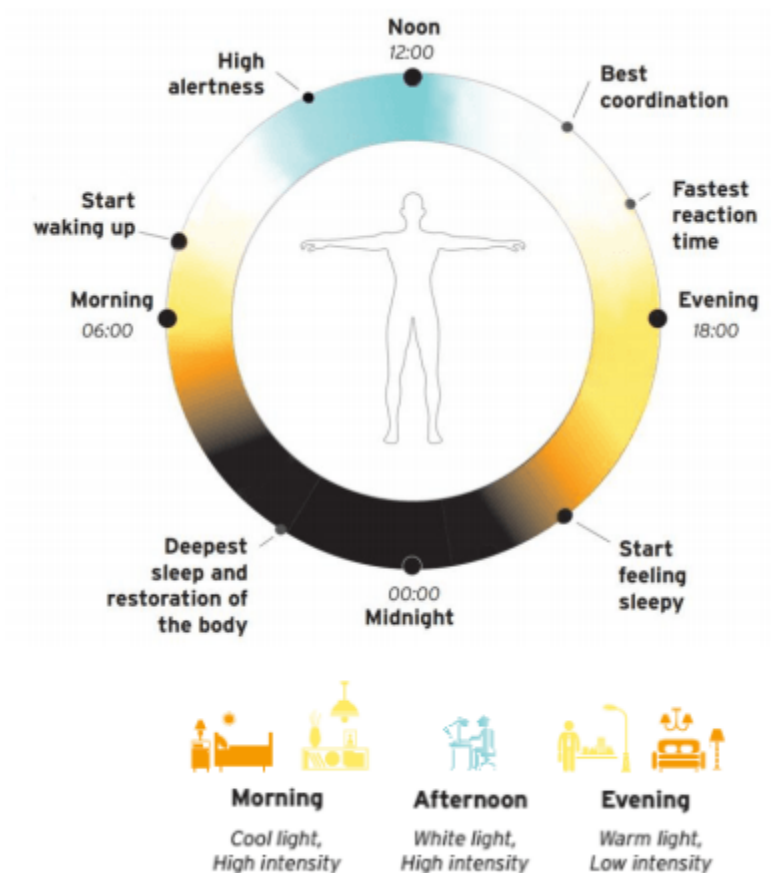
Light is more than a medium for seeing: It not only serves visual needs but also has emotional and biological effects on people. This knowledge is taken up by contemporary lighting concepts. In line with the **Human-Centric-Lighting HCL** approach, they focus more than ever on people and their needs - in a targeted manner and with long-term effects.

Human-Centric-Lighting HCL stands for a lighting concept that provides the user with the right light for the respective living or working situation at all times. Light is always effective - and HCL concepts provide targeted, long-term support

- * Health,
- * Well-being and
- * Human performance



This presentation on **Human-Centric-Lighting HCL** describes the natural cycle of light effects on the internal clock of the human body and gives insights into how this cycle can be imitated with electric light.



Studies on growth forecast and benefits

- * The [Studie „Quantified benefits of Human Centric Lighting“](#) of 2015 proves the benefits of HCL lighting for investors, users and society as a whole.
- * The [DGUV-Information 215-220 „Non-visual effects of light on People“](#) (2018) points out the advantages in the world of work and advises the conscious use of light.
- * The [LiTG-Schrift 32 „About the non-visual effects of Light on People“](#) gives a scientifically sound insight into the current knowledge.

Antibacterial and germ-free Operating room Ceiling lighting



Type of room, task or activity in the operating area	Em [lux]	UG R _L [lux]
preparation and recovery rooms	500	19
(recovery rooms) recovery phase	100	-
(recovery rooms) supplementary lighting in case of need	1000	19
Operating rooms	1000	19
Operating environment	2000	19
Field of Operation	40000 - 160000	19

Antibacterial and germ-free Hospital Ceiling lighting



Antibacterial and germ-free Lighting for Schools and Kindergartens in combination with

Human-Centric-Lighting HCL

Nature as a model Nature offers ideal conditions for keeping the inner clock in balance. A similar effect is achieved by artificial light that adapts to the rhythm of daylight. Daylight changes continuously in intensity, colour temperature and direction of light. If artificial light adapts dynamically to the course of daylight, it increases the sense of wellbeing and motivation just like natural daylight. Moreover, the adaptation is beneficial in terms of energy. Targeted control of light can support memory and concentration, general well-being and communication.



MEDIUM POWER LINEAR LIGHTS SYSTEM

Antibacterial and germ-free Lighting

Human-Centric-Lighting HCL

Following our design idea of an all in one system we developed a very unique linear light fixture. The very slim design offers a various range of benefits, like very wide beam angle, plug connection and mounting without tools. In addition the diffuser comes in different configurations, like clear polycarbonate version for maximum light output, stain version for better distribution and ripped version for dazzle reduction.

High quality aluminium coated with highly effective unique and durable antibacterial coating or anodised versions are available. The light line can also be equipped with special function modules for data-, power- and so on..



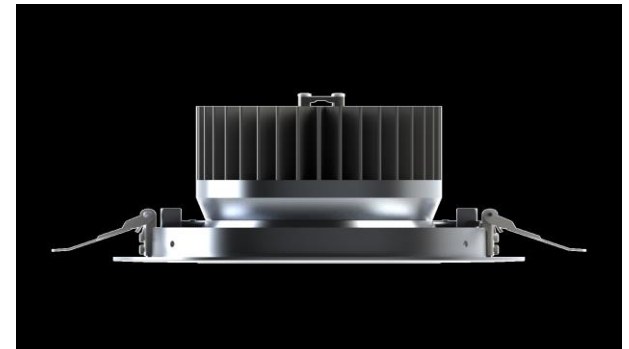
HIGH PERFORMANCE DOWN LIGHTS

Antibacterial and germ-free in combination with Human-Centric-Lighting HCL

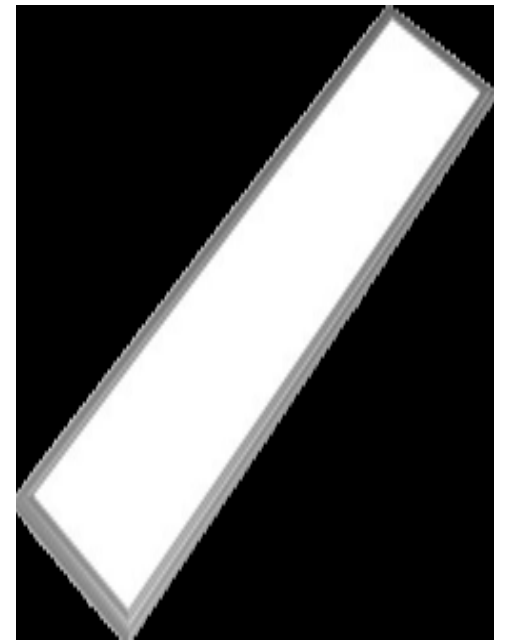
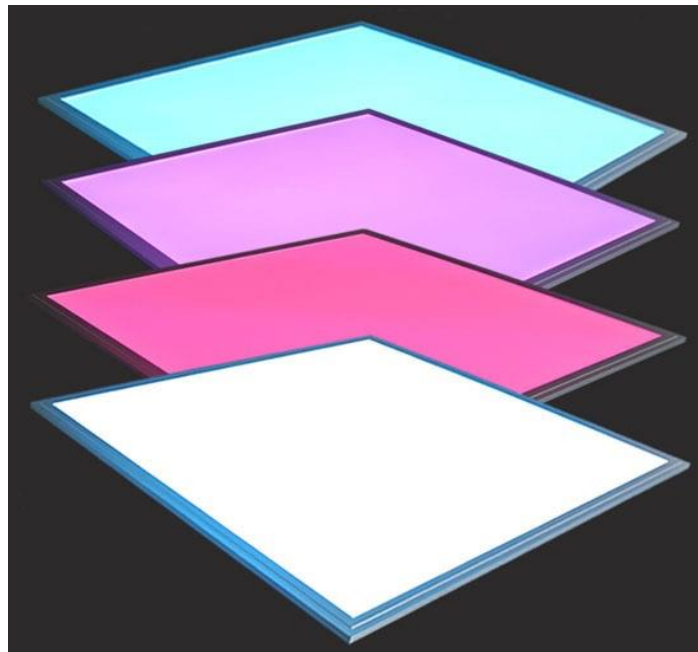
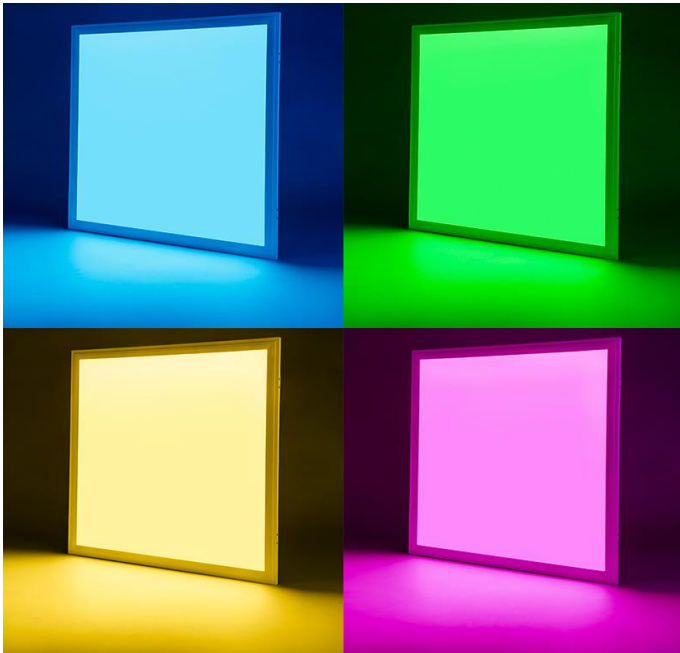
Even the most of the luminaries is invisible, we keep our high end design idea and durability. With our unique rotation mechanism for 270° turning without loosen the fixture and 40° tilt angle are the most advanced downlights at the market. Changeable beam angles based on reflector technology are providing in every application the perfect homogenous colour distribution with no colour drift all over the whole area. Integrated emergency light functions realised with the major light source have no influence at the original architectural design like other common emergency light fixtures.

TYPICAL APPLICATIONS:

With different diameter and power ratings the perfect solution for every application. Full colour, single and double colour, high CRI up to 98 and special configurations are available in every size and power rating.



High Performance Panel Lights
Antibacterial and germ-free in combination with
Human-Centric-Lighting HCL



HIGH PERFORMANCE PANEL SYSTEM antibacterial and germ-free

As ordinary ceiling mounted version or as design fixture, our high end panels with only 12 mm thickness and surrounding LED arrangement are outstanding in terms of uniformity, power output and as full colour versions unique at the market. With system power output of up to 78W and many control opportunities our HIGH PERFORMANCE PANEL SYSTEM is one of the most advanced fixture in this field. The high end DMX 512 control system is the best choice for full colour ceiling effects.

TYPICAL APPLICATIONS:

Office general illumination at highest uniformity level. Special full colour effect lights at meeting rooms, shops and show rooms. **Human-Centric-Lighting HCL** at hospitals, schools and all other workplaces.

UNIQUE FEATURES:

- ✓ ultra thin design
- ✓ surrounding light input
- ✓ best uniformity
- ✓ full colour
- ✓ high efficient

DIFFERENT APPLICATION AREAS

Kameha Grand Hotel Bonn 2011 Hotel of the Year worldwide



CO2 savings: 33.90 tons / year



RALEDSOURCE™ illuminated one of the world's best real estate projects. Since October 2009, this unique LED lighting technology is in operation 24 hours and therefore more than 70.000 hours without led failure. Despite the difficult application area (under a glass roof) and only with passive cooling!!!

Kameha Grand Hotel Bonn RALEDSOURCE replaces **2009** the planned **35000 Watt** conventional ceiling lighting (hit and halogen) with just under **5.0000 Watt** of its high-performance LED RGBW lighting technology. In daily operation only **1400 Watt** are required. At a light point height of **25 meters**, the **required 500 Lux** can be safely secured **on the ground**.



Titanic Deluxe Berlin, Französische Straße Facade Lighting

With a total power of only 120 watts LED illuminated (0.8 watts per led spot and window)



RALEDSOURCE im Humboldt Carre, Berlin



**2011 The Humboldt Carre Berlin
receives the award
“Best event location in Germany”**

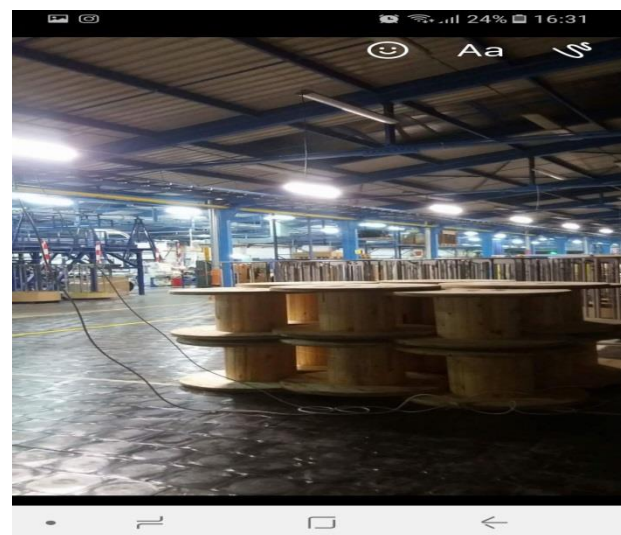


The independent jury of experts was particularly enthusiastic about the world's unique high-performance LED lighting system. With only just under 600 Watt of LED-RGBW total power, which is fully controllable and dimmable via DMX, this system convinced holistically.

HIPP KFT HUNGARY, Production site of the family-owned company HIPP, one of the leading manufacturers of baby food. Switching the exterior lighting to our high power LED light technology, with the result that we could save 64% energy. Currently, our lighting technology has been successfully used in local production for more than a year without any interference



**25.000 sqm production hall + warehouse 75% energy savings + 54% saving on luminaires.
ESCO model with an investment of 255.000 euros and a 58-month ROI of only 6 ct kWh**





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