Large Area Lighting

There are few areas of public life in which the subject of security takes on such a critical position as in air traffic. The lighting on the apron creates security if it provides its service without compromise, meets all standards, and is reliable and durable.

ewo is the forerunner in the use of LED technology for large areas and represents the highest standard in airports and logistics areas. The products have proven themselves for both smaller regional airports and for global hubs. They are so robust that they have been used in the Siberian winter but also function reliably in the Arabian heat. Maintenance is required more rarely and, as a result of the modular construction, is also greatly simplified.

The people who work on-site are convinced: the lighting is perceived as brighter, and as a result of the higher color rendering index, things such as documents can be better recognized. Wherever light is needed, it is even and available without dazzling. That reduces stress and tension at work and, in so doing, increases the level of security.

Using the full potential of LEDs for large-surface illumination.

For over 15 years, we have been focusing on high mast systems to illuminate large areas. We have gained important experience in the field of secondary reflector systems, and were pioneers in the industrywide conversion to LED technology. ewo's innovation was to use one LED lighting unit as the building block for large area lighting; this supplies performance comparable to floodlight systems while using up to 70 percent less energy and requiring less maintenance. The modular character of the technology and its diverse configuration options make it possible for us to fine-tune the production technique precisely to the task at hand. Through good planning, we create the right solutions for your project. Our systems meet major challenges, such as precise light direction and reliable temperature management, using high quality components.

Reference Projects:
Airport

AAL	Aalborg Airport
AAR	Aarhus Airport
ABJ	Abidjan Airport
ABZ	Aberdeen Airport
ADL	Adelaide Airport
ARN	Stockholm Arlanda Airport
BOS	Logan International Airport (Boston)
BQN	Rafael Hernández Airport (Puerto Rico)
BRN	Bern Airport
BTH	Hang Nadim Airport
CDG	Paris Charles de Gaulle Airport
CPH	Copenhagen Airport
DEN	Denver International Airport
DOH	Hamad International Airport (Doha)
DPS	Ngurah Rai International Airport (Denpasar)
DUS	Düsseldorf Airport
DXB	Dubai International Airport
EBJ	Esbjerg Airport
EIN	Eindhoven Airport
ELS	East London Airport
ETZ	Metz-Nancy-Lothringen Airport
EUX	F.D. Roosevelt Airport (St. Eustatius)
FAT	International Airport Fresno Yosemite
FDF	Martinique Airport
FNI	Aéroport Nîmes-Alès-Camargue-Cévennes
FRA	Frankfurt Airport
GRJ	George Airport
HAJ	Hannover-Langenhagen Airport
HAM	Hamburg Airport
HEL	Helsinki-Vantaa Airport
HSH	Henderson Executive Airport (Las Vegas)
INN	Innsbruck Airport
JED	King Abdulaziz International Airport (Jeddah)
JRO	Kilimanjaro International Airport
KMS	Kumasi International Airport
KUL	Kuala Lumpur International Airport
LNZ	Linz Airport
MEL	Melbourne Airport
MKY	Mackay Airport
MUC	Munich Airport
MST	Maastricht Aachen Airport
NRT	Narita International Airport (Tokio)
OAK	Oakland International Airport
OOL	Gold Coast Airport
OSD	Åre Östersund Airport
OSL	Oslo Airport
PUF	Pau Pyrénées Airport
RDZ	Rodez Marcillac Airport
RIL	Rifle Garfield County Airport
RIX	Riga International Airport
RTM	Rotterdam The Hague Airport
RTW	Saratov Airport
RUN	Roland Garros Airport (Réunion)
SIN	Singapore Changi Airport
SLC	Salt Lake City International Airport
STR	Stuttgart Airport
SXF	Berlin-Schönefeld Airport
SYD	Sydney Airport
THU	Thule Air Base (Grönland)
TRN	Turin Airport
TSV	Townsville International Airport
TXL	Berlin Tegel Airport
VCE	Venice Marco Polo Airport
VFA	Victoria Falls Airport
VIE	Vienna International Airport
WRO	Wrocław–Copernicus Airport
YKS	Yakutsk Airport
YPL	Pickle Lake Airport
YQR	Regina International Airport
YVR	Vancouver International Airport
ZCO	Aeropuerto Maquehue Araucania
ZRH	Zürich Airport

The R-System provides flexible and long lasting high performance lighting.

The modular construction R-System floodlight family consists of individual panels that are grouped by performance capability (R1–R6) depending on the required output. Each panel can be tilted and consists of 128 high-performance LEDs. The glass cover of the panels offers additional protection for the lens optics and makes simplified cleaning possible.

The panels are manufactured in a die-cast aluminum process and are available in untreated aluminum and polyester powder-coated finishes. The powder-coated variant offers additional protection for use in demanding environments where corrosion is a risk, such as seaside settings.

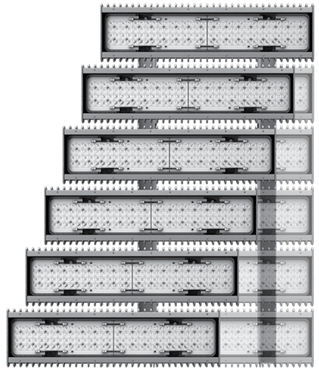
The equipment can be fitted with various lens optics, allowing it to react to different applications in a flexible manner. In addition to area lighting and special distribution of the light for airport apron and production hall areas, spot optics are now also available for targeted illumination and spot lighting. Our tried and true multilayer concept forms the basis for this development: each optical surface illuminates the entire assessment field, and the lighting intensity on a given surface is achieved through a layering of the light distributions of the individual LEDs. Even if one of them fails, the evenness is maintained.

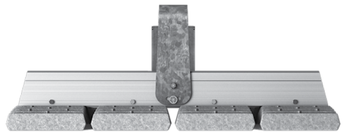
The R-System provides a higher lumens package with significantly less electricity consumption. The product also offers improved heat management. Heat dissipation now takes place by means of cooling fins which, as a result of their special arrangement, avoid detritus buildup, therefore guaranteeing long term functionality.

The compact construction form corresponds exactly to the size of conventional floodlights, making a one-to-one retrofitting of existing systems possible. Two mounting variants are available, a mounting bracket and an adapter for cable hanging.

The R-System can be controlled by means of DALI, but it also allows for wireless control via radio. The high-performance lamp control gear that was developed especially for this product allows for the partial switching and dimming of individual panels.

Product variant R4
Finish: polyester powder coating





Product variants R1–R6

Technical Details

1
1.1 Color temperature: cool white (5,700 K) / neutral white (4,000 K)
1.2 Housing accommodates up to 6 panels, each panel 1 DALI address
1.3 Current feed: 500 mA–700 mA, depending on ambient temperature
1.4 Electronic operating device with DALI interface or 1–10 V
1.5 Allowed ambient temperature range -40 to +55 °C

2
2.1 Various light distributions for large area, high bay or street lighting
2.2 Lens made from PMMA

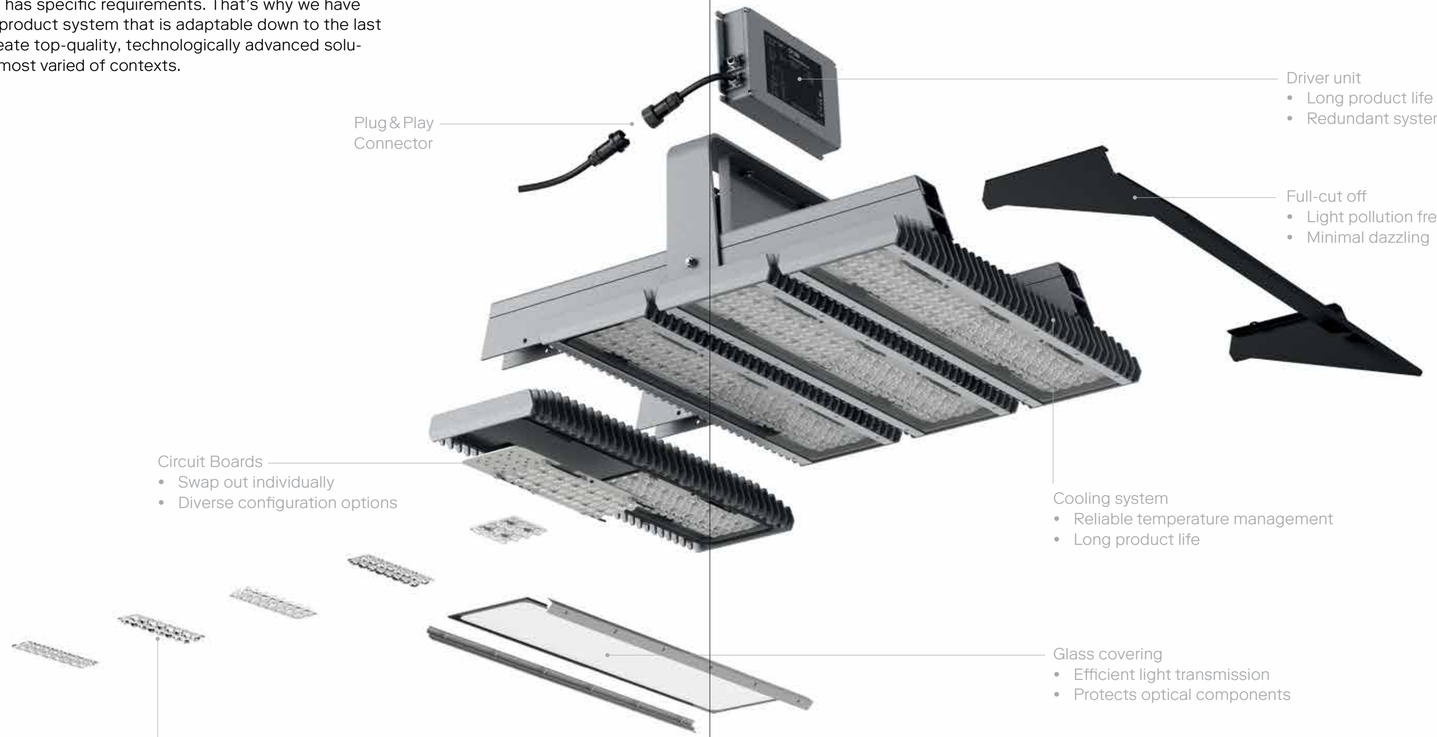
3
3.1 Lamp housing in die-cast aluminum, cover in single-pane safety glass (ESG)
3.2 Bracket made of hot-dip galvanized steel, holder made of aluminum
3.3 Finish: polyester powder coating, silver (RAL 9006/DB 701)

IP66 RoHS IK08

↘
ewo.com/r-system

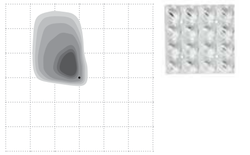
Modular Design, Highly Flexible Solutions

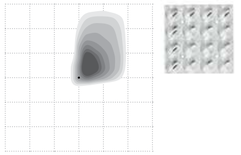
Every project has specific requirements. That's why we have developed a product system that is adaptable down to the last detail. We create top-quality, technologically advanced solutions for the most varied of contexts.

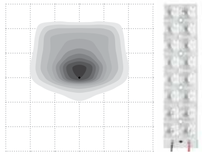


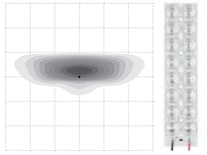
Light Distributions

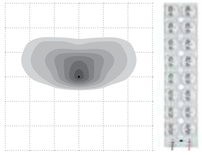
The system allows for a variety of light distributions depending on the choice of lens optics.

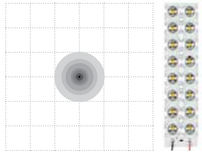

AP04-L

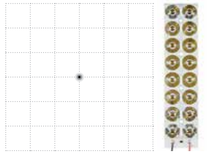

AP04-R

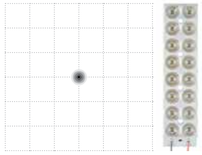

AP05

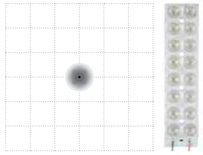

AS06

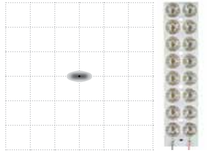

AS07


AH02


AG01


AG02


AG03


AG04

7 mm = 1 m / ● Light point height (LPH) = 1 m

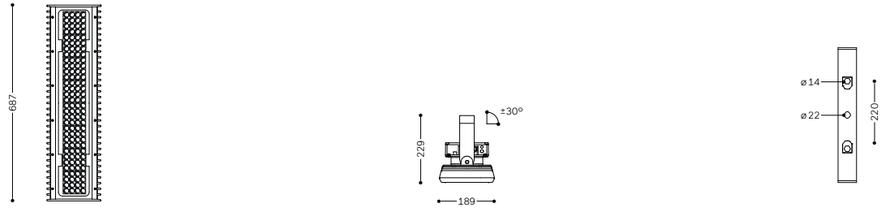
AG = spot optic
AP = place optic

AH = highbay optic
AS = street optic

R-System

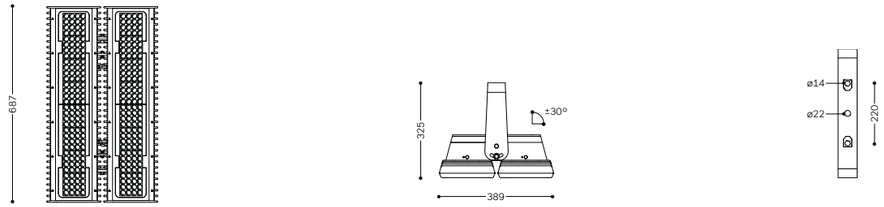
R1

13 kg
3 kg Driver



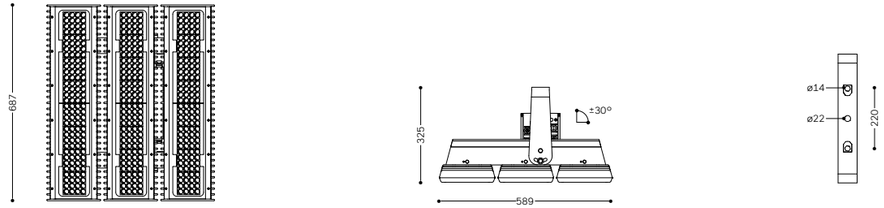
R2

20 kg
3 kg Driver



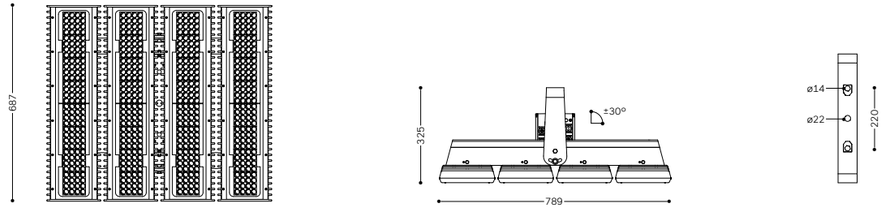
R3

27 kg
5 kg Driver



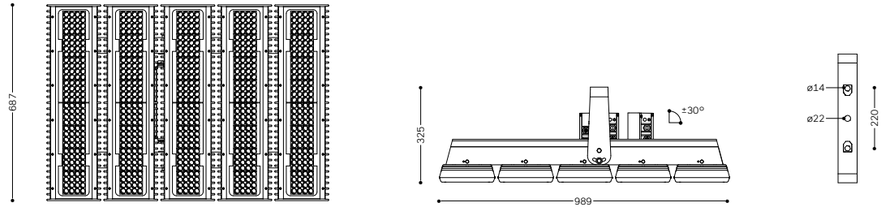
R4

34 kg
5 kg Driver



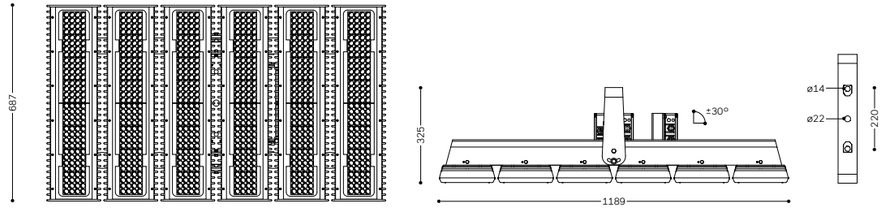
R5

42 kg
8 kg Driver



R6

49 kg
8 kg Driver



Color temperature

	4,000 K		5,700 K		
Current [mA]	Luminous flux * [lm]	Luminous efficacy [lm/W]	Luminous flux * [lm]	Luminous efficacy [lm/W]	Power [W]
R1					
500 mA	23,698	122.4	24,663	127.3	194
600 mA	27,316	117.2	28,406	121.9	233
700 mA	30,589	112.2	31,787	116.6	273
800 mA**	33,572	107.4	34,843	111.5	313
R2					
500 mA	47,395	122.4	49,325	127.3	387
600 mA	54,632	117.2	56,812	121.9	466
700 mA	61,178	112.2	63,573	116.6	545
800 mA**	67,144	107.4	69,687	111.5	625
R3					
500 mA	71,093	122.4	73,988	127.3	581
600 mA	81,947	117.2	85,218	121.9	699
700 mA	91,767	112.2	95,360	116.6	818
800 mA**	100,716	107.4	104,530	111.5	938
R4					
500 mA	94,790	122.4	98,650	127.3	775
600 mA	109,263	117.2	113,624	121.9	932
700 mA	122,356	112.2	127,146	116.6	1,091
800 mA**	134,287	107.4	139,373	111.5	1,251
R5					
500 mA	118,488	122.4	123,313	127.3	968
600 mA	136,579	117.2	142,030	121.9	1,166
700 mA	152,946	112.2	158,933	116.6	1,363
800 mA**	167,859	107.4	174,216	111.5	1,563
R6					
500 mA	142,185	122.4	147,976	127.3	1,162
600 mA	163,895	117.2	170,436	121.9	1,399
700 mA	183,535	112.2	190,719	116.6	1,636
800 mA**	201,431	107.4	209,060	111.5	1,876

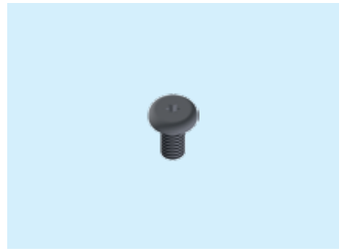
* Luminous flux tolerance ±7 %
** Upon request
The UL version of the R-System may be found on our website: ewo.com

Efficient, Sustainable Spare Parts Management

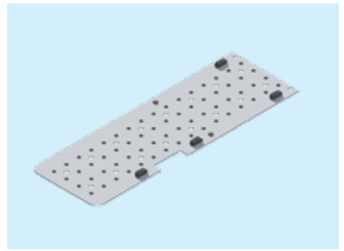
The R-System is easy to upgrade, repair, and adjust. Central components of the lighting system, including LED circuit boards, are easy to swap out, thanks to the intelligent design of our modular system. Maintenance and repair costs are kept to a minimum, while quality standards remain consistent.

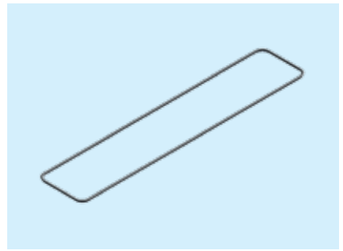
Samples of easily swappable parts include:

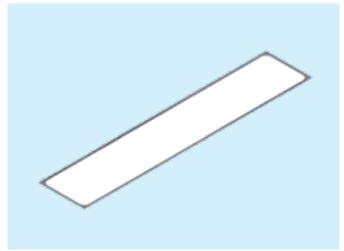

Ventilator element

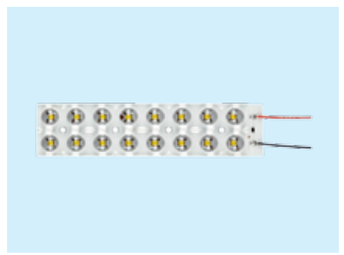

Lens head screw M4 × 8 Torx


Cable feedthrough


PCB circuit board


Gasket


Glass covering

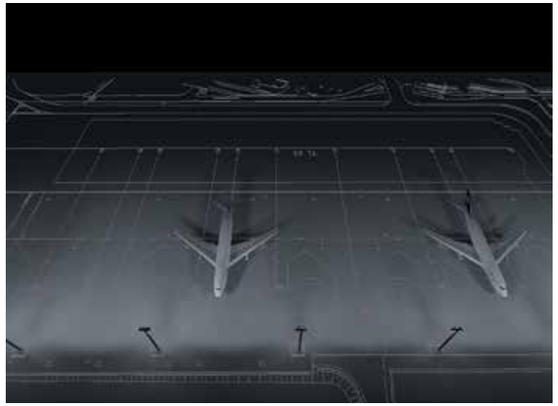

Lens optic

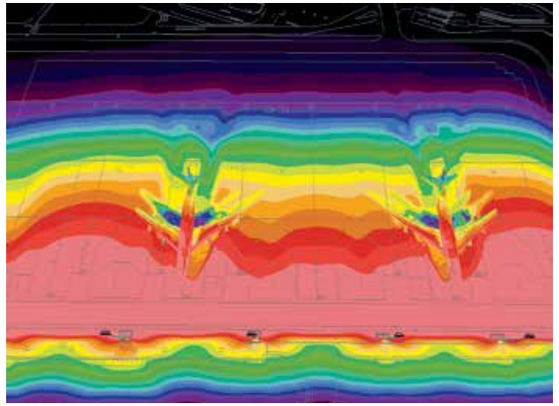

Clamp

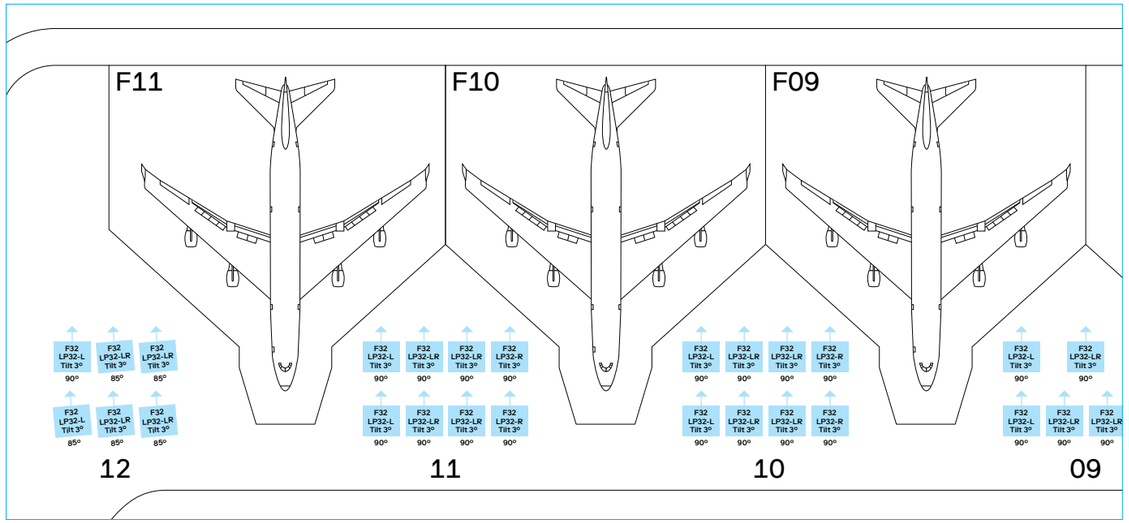

CP590 driver

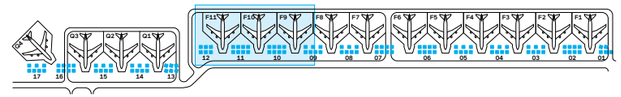
Support for Integrated Solutions

Alongside its apron floodlights, ewo equips airport customers with a complete lighting package including design and planning support. Our experienced lighting engineers work closely with leading airfield lighting designers worldwide, providing fully compliant designs in accordance with the most common international standards like ICAO, EASA, MOS and ISNEA. Beyond the lighting design, we offer support and detailed mounting and installation instructions for the poles.


Light distribution simulated in 3D

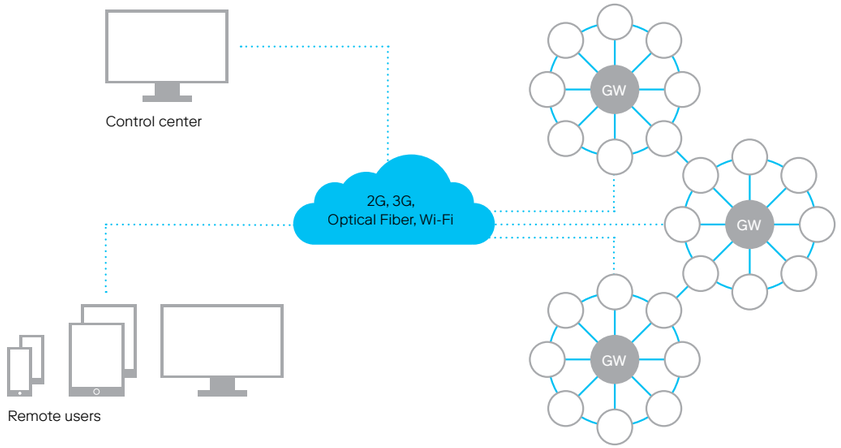

False color rendering demonstrating product illuminance



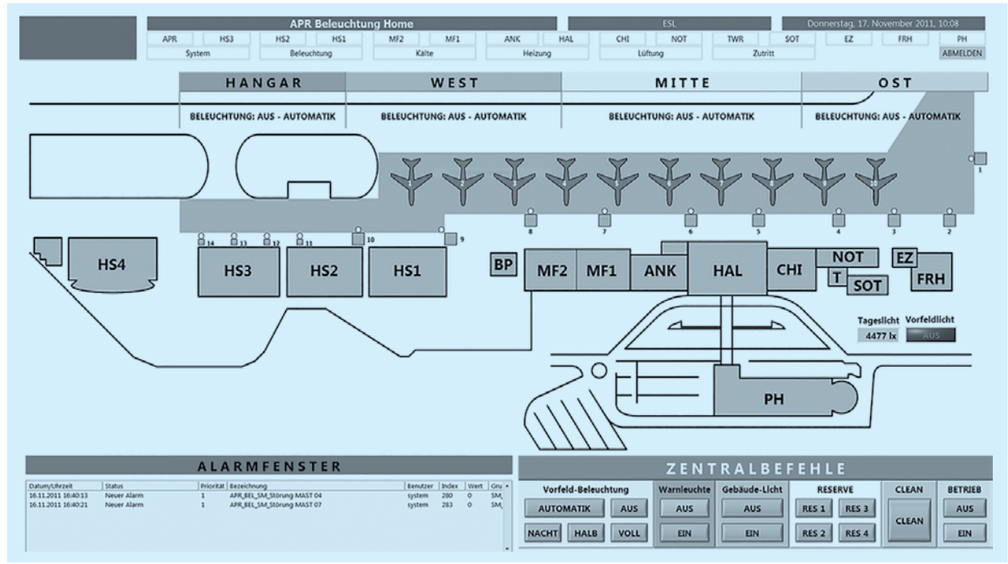

Light positioning schematic

Radio and Light Control

Our products may be fitted with a system to allow for wireless data communication within your networks. The 2-way communication between floodlights and control software enables full control and monitoring of the lights and will lead to more cost-effective and responsive maintenance.



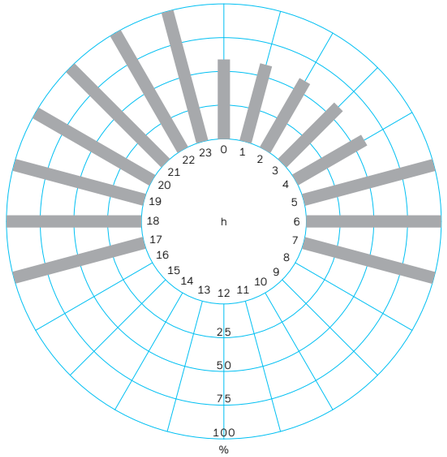
Multi control with up to 100 street lamps
per cluster / gateway (GW) for optimal performance



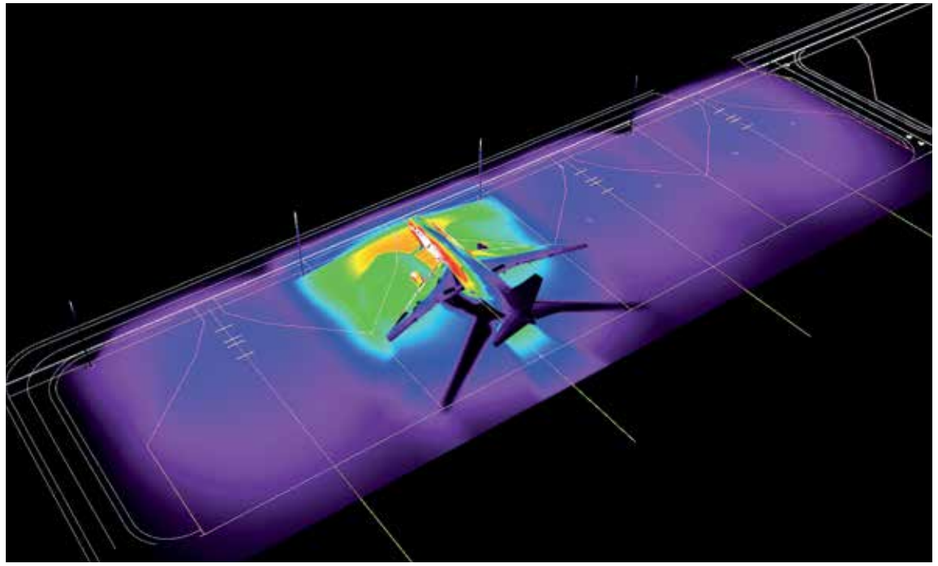
User interface

Greater Control and Efficiency

Our system harnesses the full potential of LED technology with an intelligent wireless floodlight control system. A single dynamic apron dimming scale creates further energy savings (up to an additional 50 percent) and increases LED product life.



Time-triggered dimming



False color rendering demonstrating product dimming capabilities

Munich Airport
Terminal 1, P185

Together with Munich Airport, ewo is carrying out a showcase project for energy-efficient apron lighting systems: Two of the existing high mast systems were each fitted out with six high-performance LED floodlights, which reduced the energy consumption of the systems by around 46 percent. The typology and the geometric dimensions of this system are oriented on tried and tested standards, so that existing masts can easily be converted and equipped with the new, energy-efficient technology.

The connection to a light management system provides further energy savings. Simple light source controls enable the creation of numerous light scenarios to perfectly suit the respective requirements.

In addition to the high level of energy reduction, the LED solution provides a significantly reduced maintenance level and a service life of more than 50,000 h, making an important contribution toward a more sustainable operation of the lighting system.

Munich Airport
Terminal 1, P185

The LED floodlight is mounted onto the existing holder.

White light has a considerably higher color-rendering value than NAV lamps, creating a clear yet relaxed sense of vision.

Each panel is fitted with 152 lighting units from the DP31 product line.

In direct comparison with the existing NAV system, LED technology consumes 46 percent less energy, while maintaining compliance with all specifications.

Technological Comparison

Before
High mast systems:
- High-pressure sodium lamp:
  4 × SAP – 1,000 W per pole
  2 × SAP – 400 W per pole
- Electromagnetic ballast, η = 90 %
- Power consumption in total: 147.84 kW
- Lighting immission: Rn > 3 %

After
High mast systems:
- LED Lighting units:
  5 × F32 5,700 K, 388 W per pole
  1 × F16 5,700 K, 166 W per pole
- Electronical driver, η = 92 %
- Power consumption in total: 59.82 kW
- Lighting immission: Rn = 0 %

Savings*

59.5 %

- 512,682.00 kWh/year
- 307,609.00 kg CO^2/year
- 76,000.00 €/year

* CO^2 calculation at an energy mix of 600 g/kWH, saving at <0.15 €/kWh and 4,500 hours in service per year

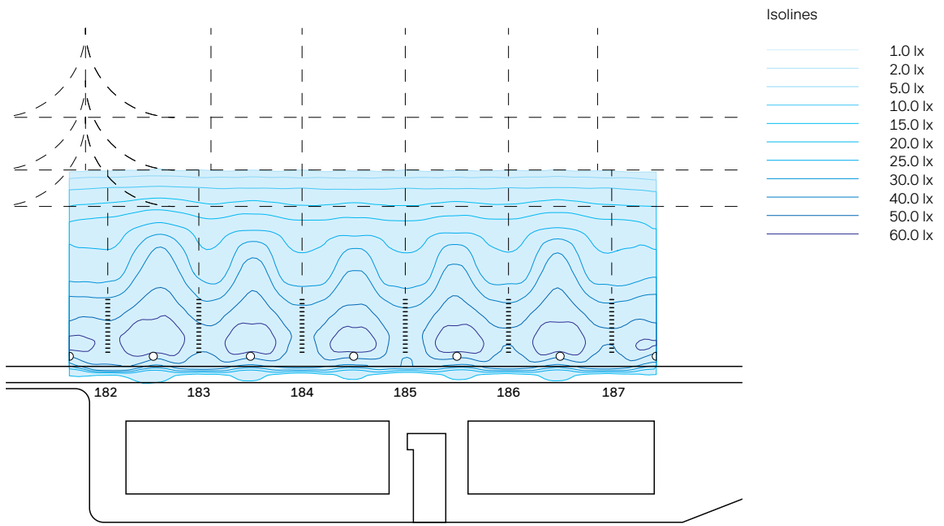
Technical Data

Classification in compliance with
12464-2: ICAO Annex 14
Illuminance, Em = 30 lux, U = 0.25
Area illuminated: 120,000 m²
Power consumption/area: 0.49 W/m²
Power consumption in total: 59.82 kW

Lighting system
- Lighting systems: High mast systems
  5 × F32 (350 mA)
  1 × F16 (300 mA)
- Mounting height: 34.0 m

Lighting technology
- Lighting unit in operation: LP32
- LED: Luxeon M, 159 lm/W
- Light colour: Cool white, 5,700 K
- Number of LEDs: 3 × 1 Multichip
- Current feed: 350 mA
- Connected power: 388 W

Lighting management
Light control over DALI
- Constant light output regulation
- Automatic lowered night-time lighting (50 %)
- Remote maintenance

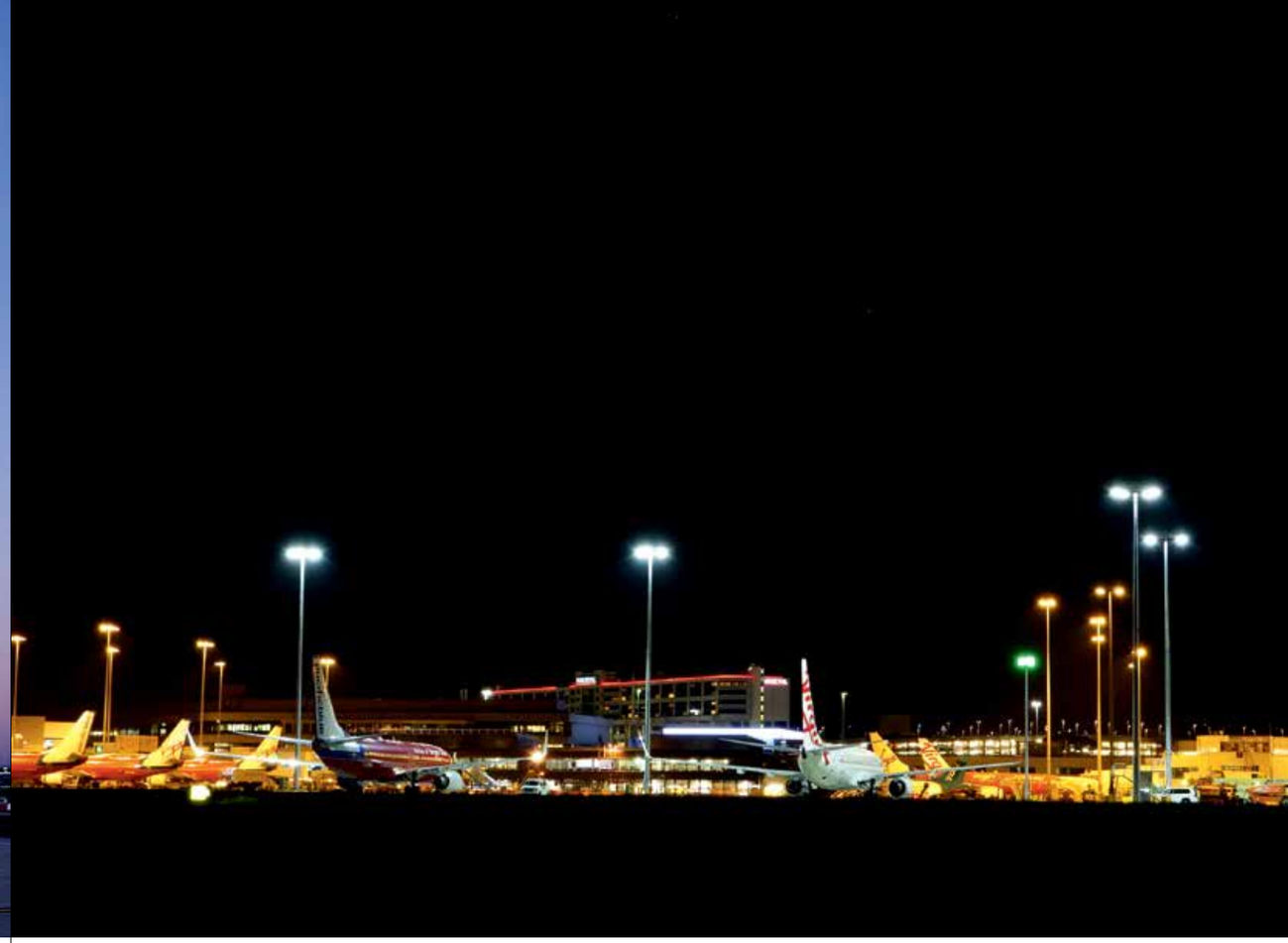


Due to the use of various optical lenses, both the apron and the taxiway can be provided with the optimum level of light in compliance with the respectively applied specifications.

Innsbruck Airport, Austria, 2011
The realization that LED technology provides improved light quality with lower costs while protecting the climate and the night sky was the deciding factor: the Innsbruck Airport, as the first one in the entire world, engaged ewo to switch over the entire apron illumination to LED.

Stuttgart Airport, Germany, 2015
In a multistage project, ewo supplied the airport with over 60 F-32 floodlights. This showed, once again, the effectiveness and sustainability of switching from existing conventional lighting systems to LED. The new, intelligently-controlled apron lighting dims automatically when the apron is not in use—cutting costs and reducing environmental impact.

Melbourne Airport, Australia, 2014–15
With 50 floodlights of the F32 model on six high mast systems, the first Australian airport is switching over to LED lighting. The functioning method of the system has been coordinated with the high ambient temperatures.



Additional Usage Options

Roads and traffic

Logistics

Harbor

Container terminal

ewo

For 20 years, ewo has been bringing light to a variety of places: picturesque walking trails, urban gathering points, streets, buildings, cultural venues, and airports, in addition to other transport-related and industrial settings. For us, know-how means harnessing the current state of technology in order to create custom-tailored solutions.

At our facility in South Tyrol, we develop and craft high-quality products for distributing, controlling, and limiting illumination in public spaces. Our innovations revolve around a modular LED lighting unit. It is the global starting point for precise and sustainable lighting scenarios of any scale.

We bring passionate curiosity to each and every individual challenge, whether specific lighting effects, special requirements regarding design, color and material of the luminaires, fragile or extreme settings, or explicit technical requirements. We also place great importance on cultural and artistic issues as well as on experimental interaction with architecture, art, and design.

ewo is a family business. We value clear communication—not only with each other, but also with our clients, project partners, and suppliers. Our solutions emerge out of an environment of mutual exchange and a creative and open mindset—these innovations have turned us, together with our products, into a pioneering force in the industry.

Contact

We understand that special locations require light to be dealt with in a special way. That is why we consider direct dialogue with you so important. It serves as the basis for our developing a lighting system that fulfills your individual needs.

We are always happy to advise you, simply give us a call.

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Large Area Lighting

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