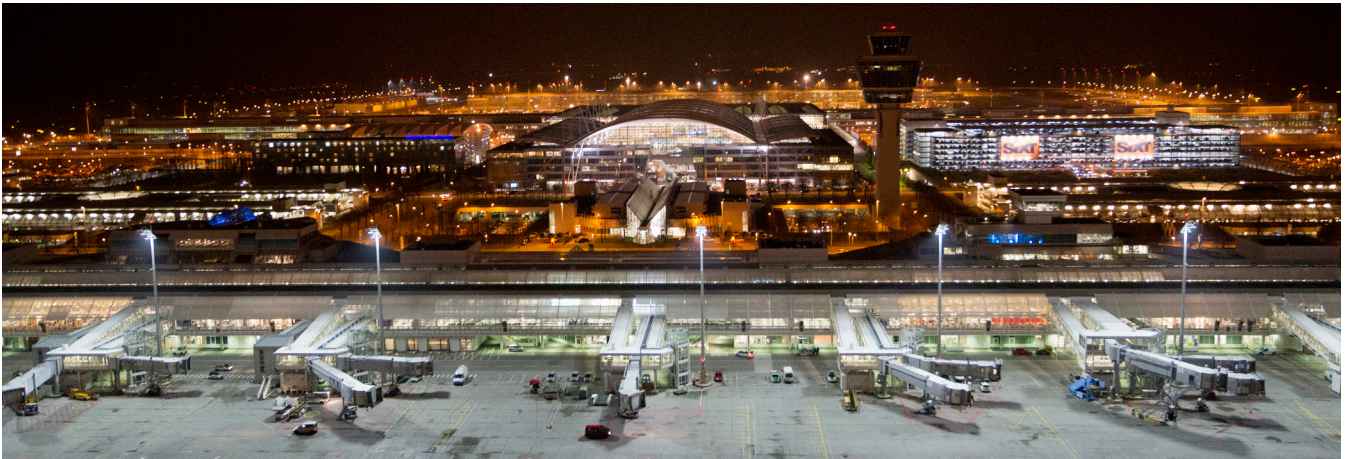


Munich Airport [D]

In a context where safety plays a determining role, ewo's floodlights represent the first LED solution ever used throughout the industry. Their high performance ensures sufficiently bright light for consistently good visibility; the systems are compact, energy efficient and relatively maintenance free.



TECHNOLOGICAL COMPARISON

Before

High mast systems:

- High-pressure sodium lamp:
 - 4 x SAP-1.000 W per pole
 - 2 x SAP-400 W per pole
- Electromagnetic ballast, $\eta = 90 \%$
- Power consumption in total: 147,84 kW
- Lighting immission: $R_n > 3 \%$

After

High mast systems:

- LED Lighting units:
 - 5 x F32 5.700 K 388 W per pole
 - 1 x F16 5.700 K 166 W per pole
- Electronical driver, $\eta = 92 \%$
- Power consumption in total: 59,82 kW
- Lighting immission: $R_n = 0 \%$

SAVINGS*

59,5%

- 512.682,00 kWh/year
- 307.609,00 kg CO₂/year
- 76.000,00 €/year

* CO₂ calculation at an energy mix of 600 g/kWh, saving at <0,15 €/kWh and 4,500 hours in service per annum

TECHNICAL DATA

Classification in compliance with 12464-2: ICAO Annex 14
Illuminance, $E_m = 30 \text{ lux}$, $U = 0,25$
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 x F32 (350mA)
 - 1 x F16 (300mA)
- 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 x 1 Multichip
- Current feed: 350mA
- Connected power: 388 W

Lighting management

Light controll over DALI

- Constant light output regulation
- Automatic lowered night-time lighting (50%)
- Remote maintenance

CREDITS

Project: Airport Munich, Ramp 1
Client: Flughafen München GmbH
Location: Munich, Germany
Project year: 2014