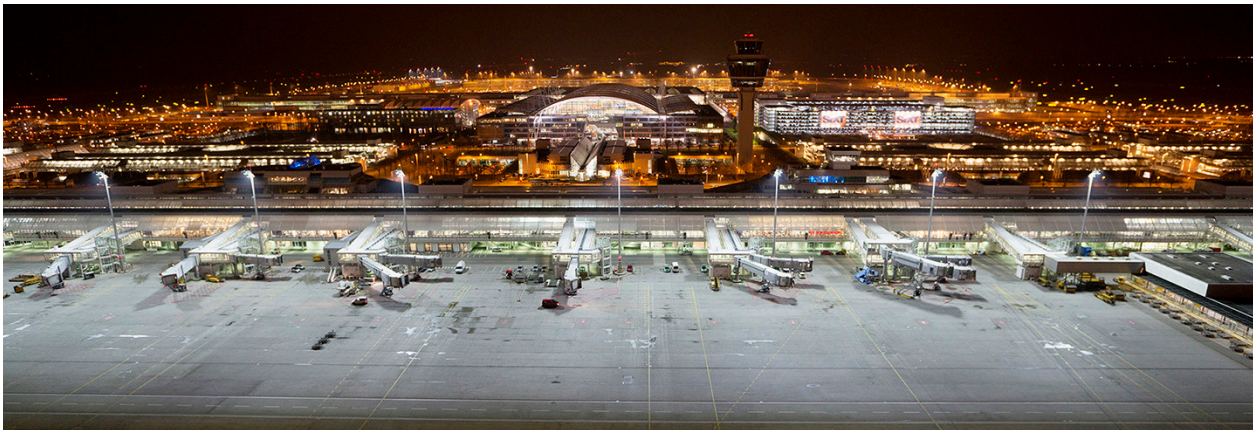
Case Study

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, η = 90 %
- Power consumption in total: 147.84 kW
- Lighting immission: Rn > 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, 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 annum

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 x F32 (350 mA)
  1 x 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: 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: Flughafen München, Ramp 1
Client: Flughafen München GmbH
Location: Munich, Germany
Project year: 2014