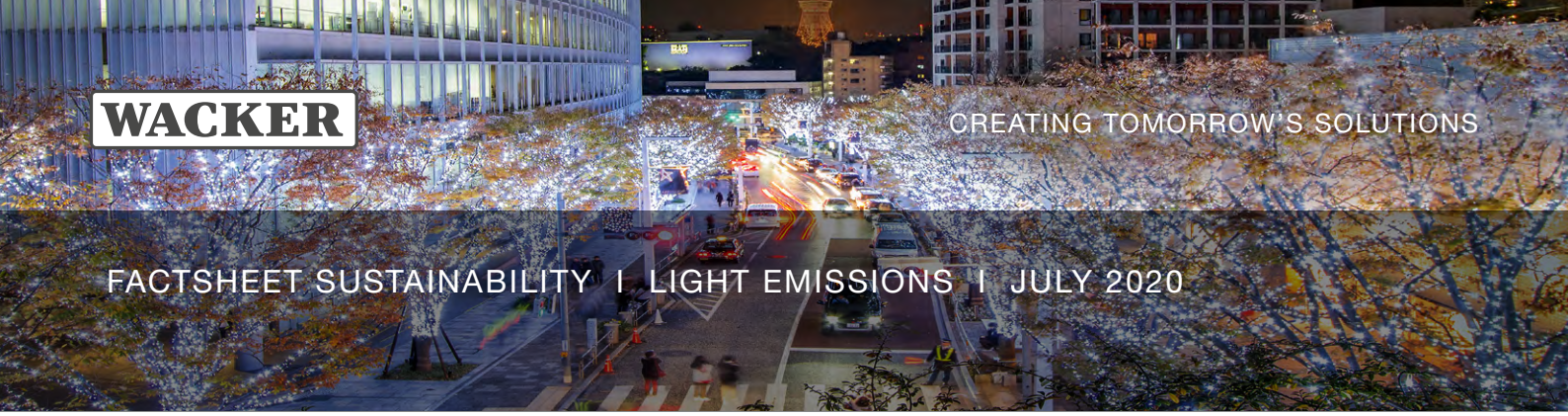


WACKER

CREATING TOMORROW'S SOLUTIONS

FACTSHEET SUSTAINABILITY I LIGHT EMISSIONS I JULY 2020

WACKER'S POSITION ON LIGHT POLLUTION AND ITS PREVENTION

Limiting Light Pollution

The introduction of electric light is one of the greatest advances of the 20th century. Excessive light, however, can have a negative impact on the nocturnal landscape, on biodiversity and on people. And WACKER can also do its part by using light wisely.

Lighting Serves a Purpose

First, lighting at a production site needs to ensure reliable illumination for work areas. These include outdoor facilities, damp locations, explosion zones and other areas with special requirements. Newly procured lighting and replacement fixtures need to be economical yet efficient enough to keep energy costs as low as possible. Other priorities for lighting include a long service life and long-term availability.

Taking the Environment into Account

In addition to accommodating economic considerations, lighting also needs to meet the requirements of the EU Ecodesign Regulation (EC No. 244/2009). Highly efficient lighting helps keep energy consumption low and, in so doing, reduces CO_2 emissions. Low amounts of short-wavelength light and a limited beam angle reduce light pollution and thus its negative impact on nature and surrounding residential areas. A tightly fitting housing prevents insects and spiders from finding their way into a light fixture.

A Focus on LEDs

LED technology has now become the state of the art – even for the specialized needs of a plant. As such, new lighting installations at WACKER are always designed for LEDs. Existing lighting is converted to LED when repair work is required or when old technology reaches the end of its service life and needs to be replaced.

WACKER in Brazil

Conventional outdoor lighting at our site in Brazil has already been successfully converted to LED technology.

- The process began with a study aimed at analyzing technical implementation and improving the lighting situation. The study was conducted at no additional charge by the company performing the installation.
- This was followed by a cost-benefit analysis, which showed that, even before the end of the first year, savings were roughly twice what had been invested.
- The site also found that the improved lighting also enhanced safety.

Figure 1: Study determining ideal lighting

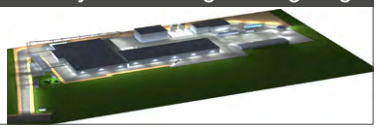
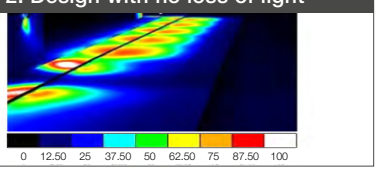


Figure 2: Design with no loss of light



Lighting Times Are Important Too

External lights for plant areas, buildings and outdoor facilities make it possible to operate these systems safely. This is based on applicable standards and plant-specific occupational safety requirements that establish lighting location, timing and intensity, minimizing all of these.

Everyone Has a Role to Play

This means that, when determining lighting location, times and intensity, anyone who operates a site, plant or building needs to pay additional attention to the impact on outside parties. Lighting must be directed strictly at the area requiring illumination (typically downward), for example, in order to prevent diffuse light. Operators should set up an automatic daylight sensor switch and review the use of on/off or dimmer switches in smaller sections of a plant. This does not apply to designated, independent security lighting. The light spectrum should be kept within a range that minimizes attraction to insects (minimal UV and blue-light components). Lighting should be dismantled once it is no longer necessary.

Support Tools and Links

- European Commission regulation

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