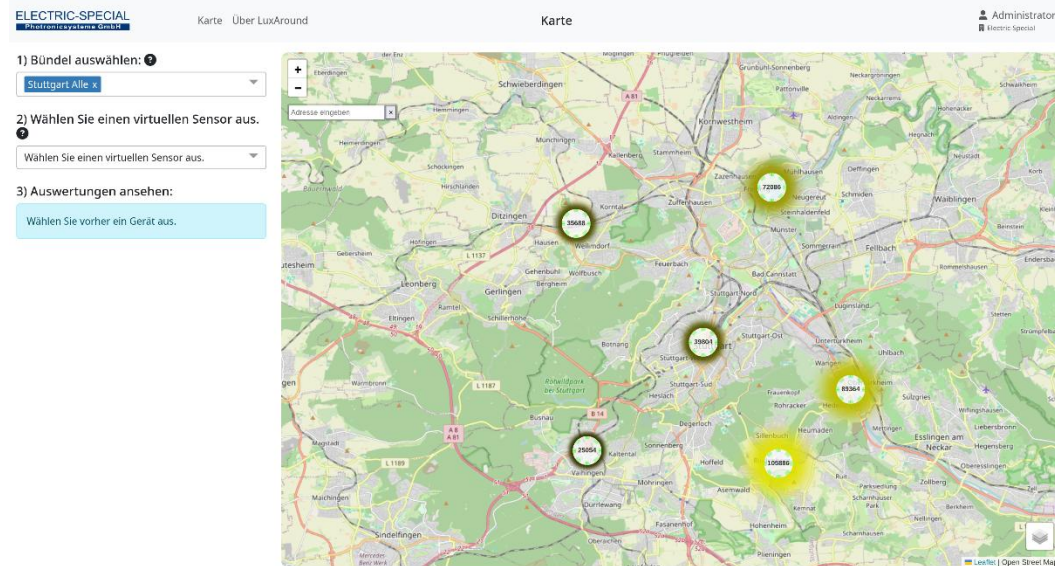




SCREENSHOT: MAP DISPLAY OF CURRENT MEASURED VALUES, STUTTGART EXAMPLE



SCREENSHOT: GRAPHICAL DISPLAY OF THE MEASURED VALUES

<https://www.LuxAround.de>

On the web interface at <https://www.LuxAround.de> you can try out some LuxAround functions using an open demonstration account.

We will gladly provide you with a free, no-obligation personal trial account for the LuxAround platform, showing all the options available for your applications. Simply call us on **+49 441 23369900** or send an email to **info@LuxAround.de**. We look forward to hearing from you!



LUXAROUND

Street and building lighting offers municipalities significant potential to reduce their CO₂ emissions. Converting to new LED technology also enables more cost-effective switching and control technology that can also take regional differences in lighting

into account. Outdated ripple-control technology, which switches lighting across entire regions as one block, is being replaced by demand-based controls that can, for example, also make use of dimming options.

CLOUD-BASED SWITCHING AND CONTROL TECHNOLOGY

To switch and control urban lighting according to demand, regional differences in requirements must be recorded and processed. LuxAround meets this challenge by networking sensors and actuators via an internet platform. A radio-based network of illuminance sensors collects real-time information on lighting conditions, which is processed on our platform. Based on this information, switching or control instructions are generated for specific districts

or streets and then transmitted via an internet or mobile network connection to local actuators to switch or dim the street lighting. LuxAround is operated via an internet portal, but can also be integrated into customer-side control systems. The entire network can be monitored and controlled from anywhere, independently of the platform.

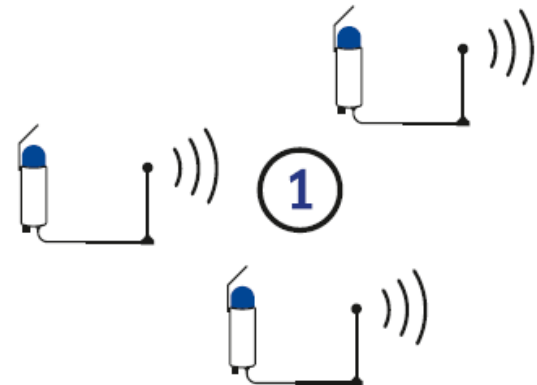
BENEFITS OF LUXAROUND

- Energy savings and reduction of CO₂ emissions
- Demand-based switching or dimming of street lighting
- Consideration of regional differences in illuminance, supplemented by current weather data
- Centralised data storage
- Control of actuator operation via a web interface
- Street-by-street switching possible
- Easy actuator connection via LAN, WLAN or mobile network
- High availability through redundancy
- Platform-based documentation of all relevant events

HOW LUXAROUND WORKS

LuxAround operates according to a five-stage process in which measured values are recorded locally and transmitted to central server units in a certified German data centre.

There, the information is analysed, processed and converted into individual switching or dimming instructions. These instructions are sent to the actuators via a secure internet or mobile network connection, where they trigger the actual switching operation.



1 MEASUREMENT DATA ACQUISITION

Illuminance is measured using a dual-channel sensor, allowing both the measurement range relevant for switching to be resolved precisely and the full daily progression to be recorded. The sensor buffers the measured data.

2 DATA TRANSMISSION TO THE DATA CENTRE

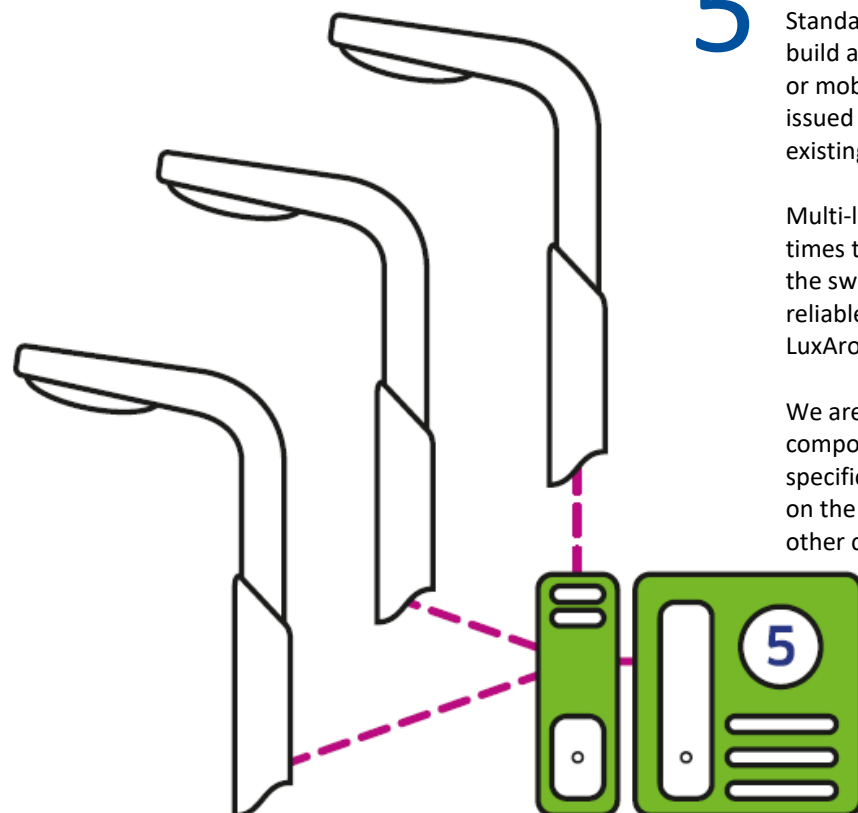
The measured values are transmitted in real time via the mobile network to the LuxAround platform servers and stored there.

5 SWITCHING, DIMMING AND CONTROL

Standard PLC components are used on site to build actuators that interact with LuxAround via an internet or mobile network connection. This allows the commands issued by the switching server to be flexibly integrated into existing infrastructures.

Multi-level fallback systems allow additional switching times to be calculated using an astronomical clock or the switching times from previous days. This ensures reliable operation even if the connection to LuxAround fails.

We are flexible in the choice of manufacturers for the PLC components and can adapt to your needs and specifications. The REST API communication interface used on the platform also enables the implementation of other connections according to customer requirements.



3 EVALUATION OF MEASURED VALUES AND PROVISION OF SWITCHING SIGNALS

At the data centre, the measured values are entered into a data server and stored together with a time stamp and the measurement location. They are then evaluated according to defined, customer-specific rules to determine the switch-on and switch-off times.

4 TRANSMISSION OF SWITCHING AND DIMMING COMMANDS, MONITORING OF THE ACTUATORS

The switching information is passed internally to a switching server, which generates switching commands and transmits them to the actuators via a secure internet or mobile network connection. The switching server also monitors actuator activity, for example when they confirm that a switching command was executed.

