

Wireless charging for raised floors at the ALCON plant

Großwallstadt, Germany



- Implementation: 2023
- Extensive modernization and automation of the ALCON plant in Großwallstadt for the production of contact lenses
- Challenge: Contactless loading of AGVs in clean rooms with raised floors
- Solution: Integration of the WCPS infrastructure into the existing raised floor structure of the building
- Result: Excellent utilization of the vehicles, no abrasion, ideal for cleanroom conditions

The project in brief

ALCON GmbH in Großwallstadt, Germany

Challenges:

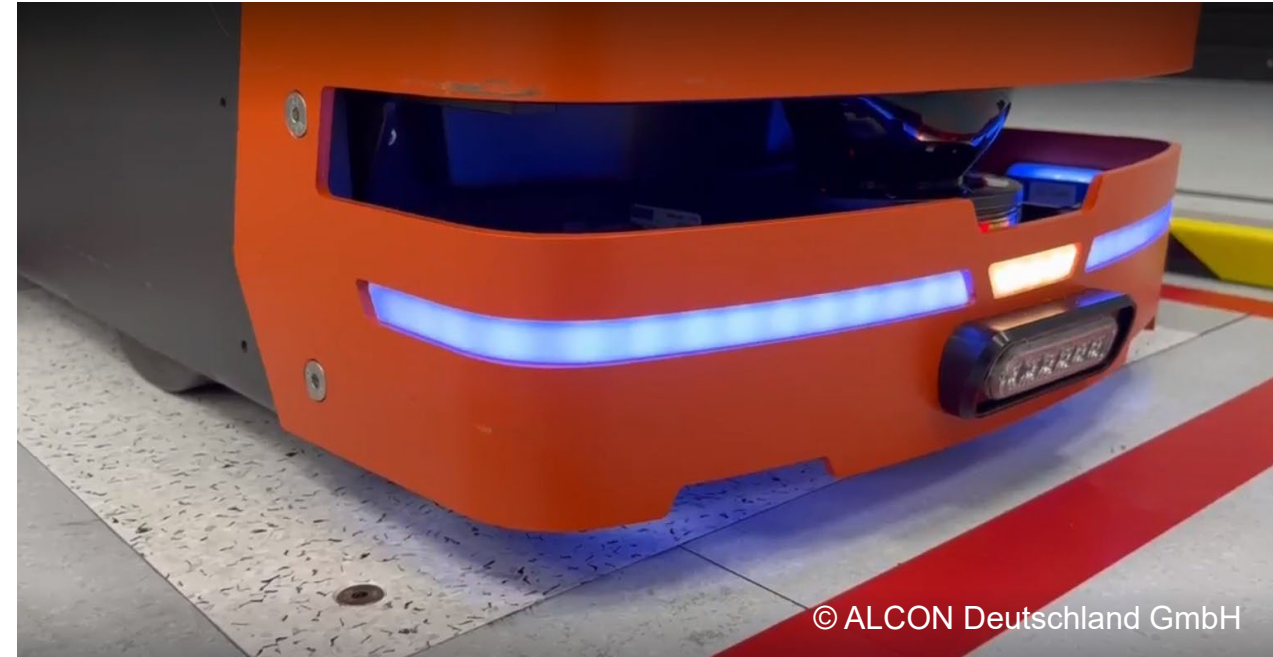
- Provision of energy for the AGVs during loading at the loading points (in-process charging)
- Integration of the charging infrastructure into the existing raised floor structure of the building
- Suitable for clean room conditions
- Fast & minimally invasive installation of the charging infrastructure

Solution:

- The raised floor solution for contactless charging from PohlCon: WCPS
- No barrier area or separate loading zones
- No risk of tripping, no abrasion
- Efficiently used stops of the fleet

Result:

- Maximum availability of AGVs thanks to secure energy supply
- In-process charging enables a smooth, uninterrupted logistics and production process
- No contamination of the clean room by particle formation, as can be caused by conductive charging
- Efficiently planned charging points instead of large-scale charging zones
- Use of WCPS infrastructure ideal for dense production areas
- Scaling for additional charging points can be realized quickly and easily



Challenges and solution

ALCON GmbH in Großwallstadt, Germany

Alcon is a global company specializing in the development, manufacture and distribution of eye care products, including contact lenses, ophthalmic surgical systems, surgical instruments and pharmaceutical products. The site in Großwallstadt is one of the most important competence and technology centers within the Alcon Group.

Contact lens manufacturing takes place at the plant there in state-of-the-art ISO 6 clean rooms. Nine automated production lines ensure the highest hygiene and quality standards. All rooms are equipped with raised floors, which not only enable optimal use of space but also allow the integration of automated processes.

Plant modernization enables further automation

This is exactly what the recent €400 million modernization of the plant was all about: production processes were further automated, which once again significantly increased efficiency: The previously manual transport of carrier shells of contact lenses from the material station to the production facilities is now fully automated thanks to the **SAFELOG AGV S3** automated guided vehicles (AGVs).

The AGVs independently drive the loaded trolleys to the plants and return as required. In doing so, they cover distances of up to 300 meters along the production lines in the clean room.

The following points should be taken into account when considering the desired charging infrastructure: The AGVs should be able to be charged "in process" without having to travel to separate charging stations. For this purpose, the charging infrastructure had to adapt to the local conditions. The integration of the WCPS charging infrastructure into the existing raised floor structure of the building offered the solution to these challenges.

PohlCon's raised floor system is an efficient infrastructure solution that enables in-process charging thanks to Wiferion's integrated charging coil. This not only ensures a safe and robust energy supply for the AGVs, but also prevents tripping hazards and fits perfectly into the production flow.

Efficient charging infrastructure from PohlCon

The decision to use inductive charging in the clean rooms makes particular sense, as this way no abrasion is generated and thus no particles are caused in the clean room, which is crucial for the strict hygiene requirements in contact lens production. In contrast, conductive loading runs the risk of generating particles that contaminate the clean room.

Currently, a WCPS raised floor system is integrated at each of the two stations within the cleanroom. This is where the AGVs are loaded and prepared for transport. The time that the AGVs spend at standstill anyway is profitably used for charging the AGVs - without having to interrupt the production or logistics process.

The efficiently planned charging points enable the AGVs to be seamlessly integrated into the overall production process. Additional charging points can be realized quickly and easily.

About

ALCON GmbH in Großwallstadt, Germany

Founded in 1945, **ALCON** has become a global player and leader in ophthalmology, offering a wide range of products including contact lenses, ophthalmic surgical systems, surgical instruments and pharmaceutical products.

SAFELOG has been involved in the development and intelligent linking of innovative logistics systems since 1996. This grew into the design of agent-based controlled mobile transport robots since 2015. Hardware and software solutions for patented, intuitively operable pick-by-light picking systems round off the program.

The **PohlCon brand PUK** has been designing, developing and producing high-quality power supply solutions for over 50 years. The charging infrastructure for contactless charging of robots via the ground is their latest innovation. Here, energy provision is ensured robustly, efficiently, reliably and via the ground. WCPS thus supports the special requirements for automated electrification of robot fleets in modern production and logistics facilities.

In cooperation with **Wiferion** and using the efficient etaLINK 3000 charging technology, PUK offers a comprehensive ground charging solution for fleet operators, AGV manufacturers and automation planners, for which the process determines the charging location and not vice versa.