RTB

PARKING GUIDANCE SYSTEM

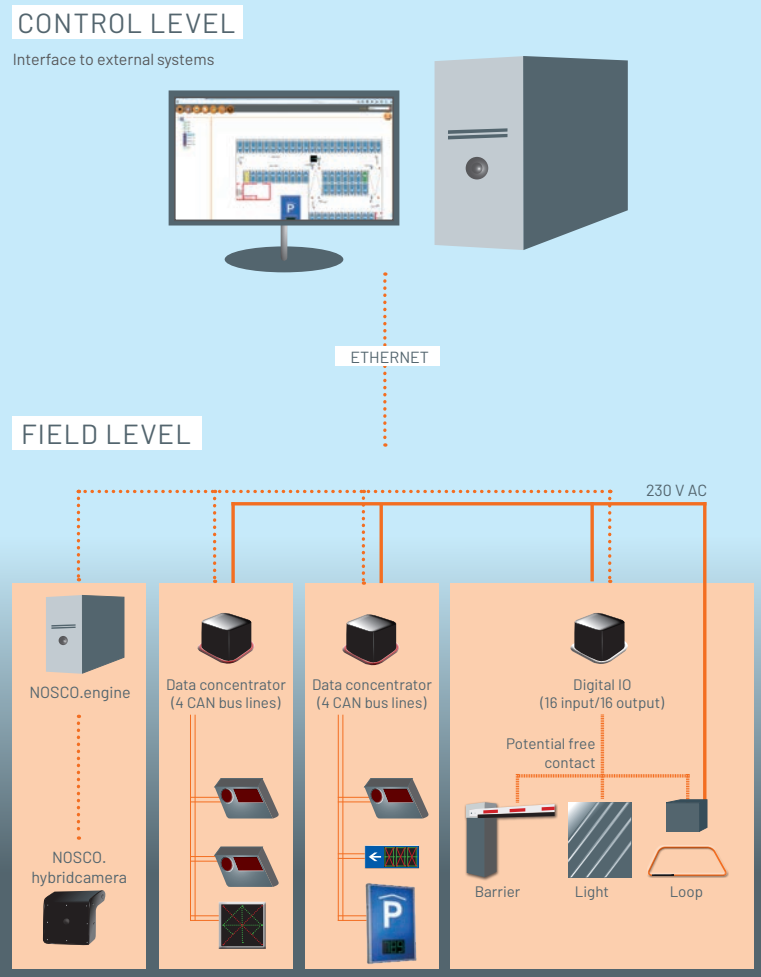
LOBO

MORE TIME

The number of inhabitants in cities is constantly rising, vehicles are getting bigger and bigger, but the resource of parking space is limited. Parking search traffic in inner cities takes up an immense share of the total traffic volume. According to traffic researchers, it can account for up to a third of the total traffic volume at peak times. While in large cities the areas close to the city center with high building density are more affected, parking search traffic in medium-sized cities is concentrated in the central business areas, where not only customers but also employees are looking for free parking spaces. Efficient, modern parking management is required that ideally adapts to the circumstances and situations.

In this context, digital transformation is playing an increasingly important role, especially in the transportation sector. This is because the networking of systems is creating new smart options that make it possible to effectively utilize existing capacities in a situational and sustainable manner. In the future, for example, it is conceivable that information from the parking guidance system will be displayed directly in the vehicle, that autonomously driving vehicles will find their parking space independently, and that weather, event or public transport data will flow directly into parking management systems. Digital transformation and technology at the highest level provide the basis for effective parking design.

PARKING AT TOP LEVEL



The LOBO parking guidance system from RTB offers state-of-the-art technology for equipping public parking garages and underground garages.

- Parking guidance server with project-specific RTB software LOBO.control
- Entrance displays for a perfect overview of the utilization of the parking garage or parking lot
- Displays for traffic control and direct guidance to the next free parking space
- Balancing vehicle counting by means of NOSCO.hybridkamera
- Single parking space detection by means of infrared or ultrasonic sensors per parking space
- LED's per parking space or sub-area to indicate free or occupied parking spaces
- Ground sensors per parking space

A mixed installation of different sensors, including the NOSCO.hybridkamera, is possible.

| MORE SMILE

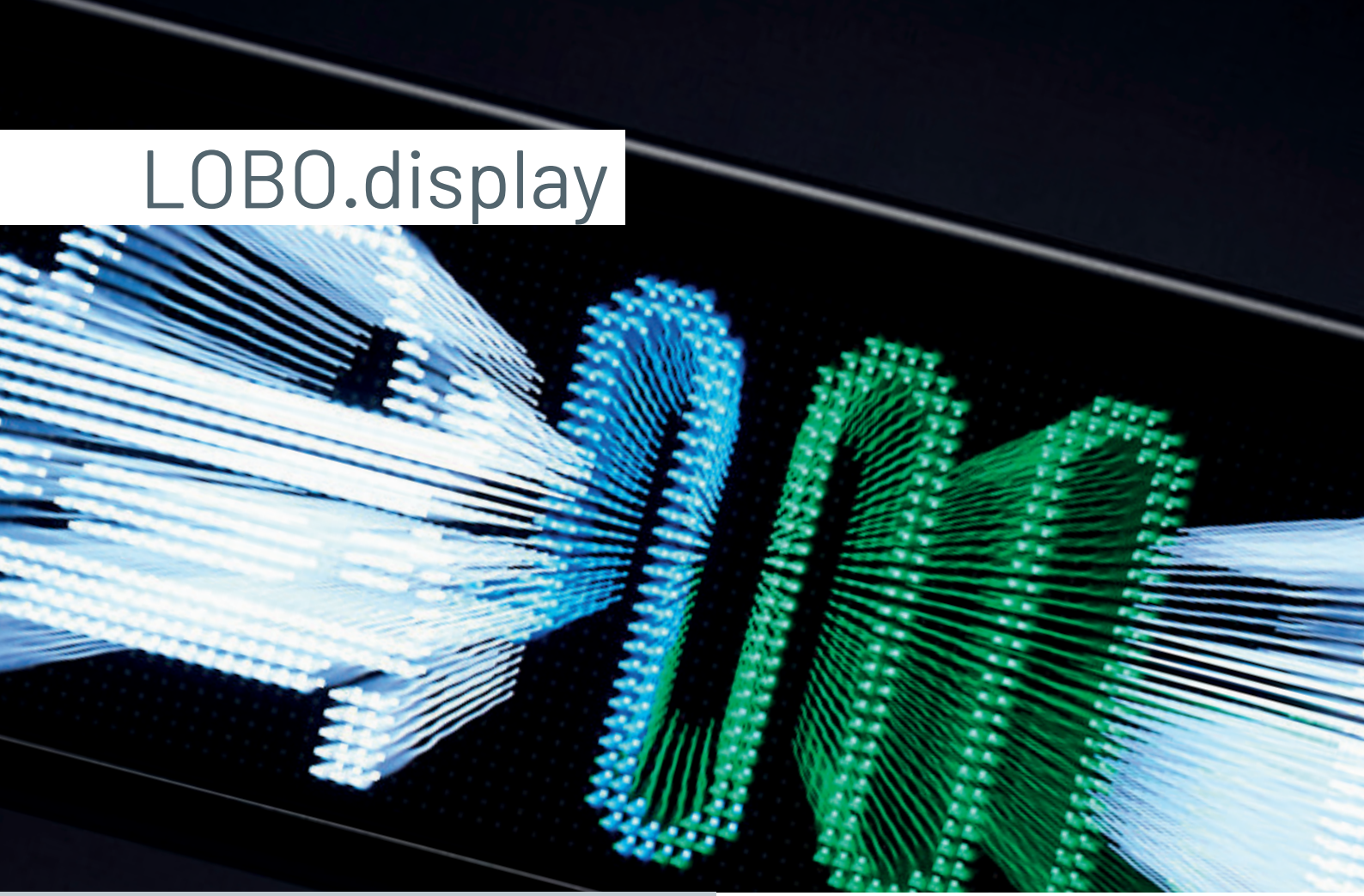
FOR MOTORISTS

- Complete and immediate information about parking space availability
- Time savings through the fastest route to a free parking or loading space
- Reduction of fuel consumption due to less parking search traffic
- No traffic jams due to parking search traffic
- Reservation of individual parking spaces
- Employee parking spaces as a benefit for employees
- High comfort - the workday starts relaxed or the „shopping experience" begins in the parking garage

FOR OPERATORS

- Better utilization
- Cars off the street and into the parking garage
- Utilization of hard-to-find parking spaces through targeted traffic management
- Guidance of special customers (VIPs, mobility-impaired persons, families, etc.)
- Time monitoring and possible sanctioning of overruns
- Usage statistics, information and security
- Sustainable reduction of parking search traffic, thus less CO2 pollution

LOBO.display



MODULAR SYSTEM

The first impression counts! A free choice in design makes almost anything possible. Thanks to a modular system, RTB displays can be freely modulated to a large extent and specific requirements can also be individually implemented.

Within the LOBO system all devices can be combined with each other.

- Displays, sensors, camera
- Signals can be controlled via I/O
- High flexibility

LOBO.display

ENTRANCE DISPLAYS

Modern, innovative parking garages set accents both visually and technically and offer users the highest possible parking comfort. The design of the entrance area in particular is important to provide all relevant information in advance. Various options are available for this purpose:

LOBO.display

ENTRY

- LED display or full matrix LED display
- Pole or wall mounting
- Static information is backlit
- Customized pre-assembly
- Display of numerical information (e.g. remaining spaces), text („free/occupied“) or icons (mobility impaired, e-charging, family . . .)
- Adjustment of brightness possible
- Connection via CAN bus or Ethernet

LOBO.display

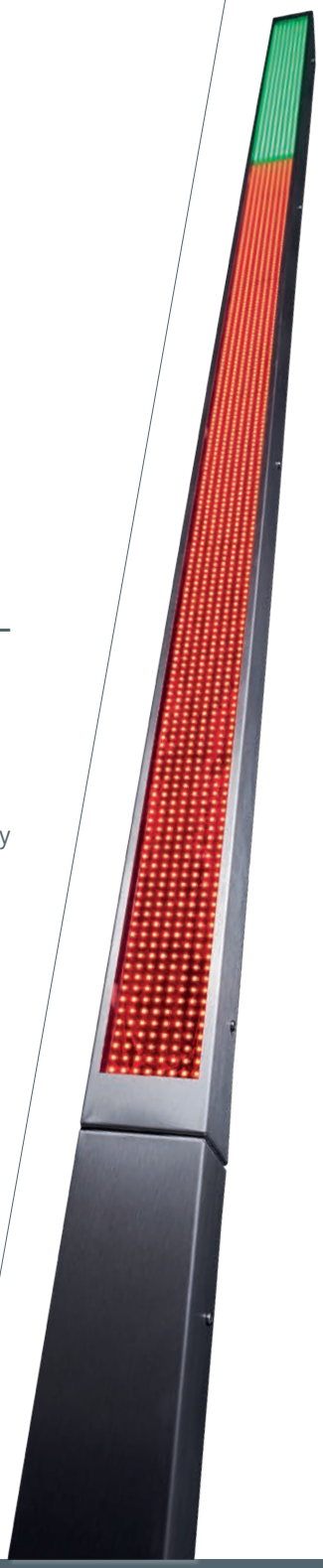
VIDEO

- Video-capable display
- Pole or wall mounting
- Dynamically changing information and display options possible
- Customizable
- Easy customization of content and settings possible
- Display of numeric information or text, icons, images, moving content as well as videos (e.g. advertising or image videos)
- Connection via Ethernet

LOBO.display

OCCUPANCY LEVEL

- Sophisticated design as an absolute eye-catcher
- Visible from a long distance as a stylish display of the occupancy status of the parking garage/ underground garage
- Availability of single or double sided versions
- RGB LEDs



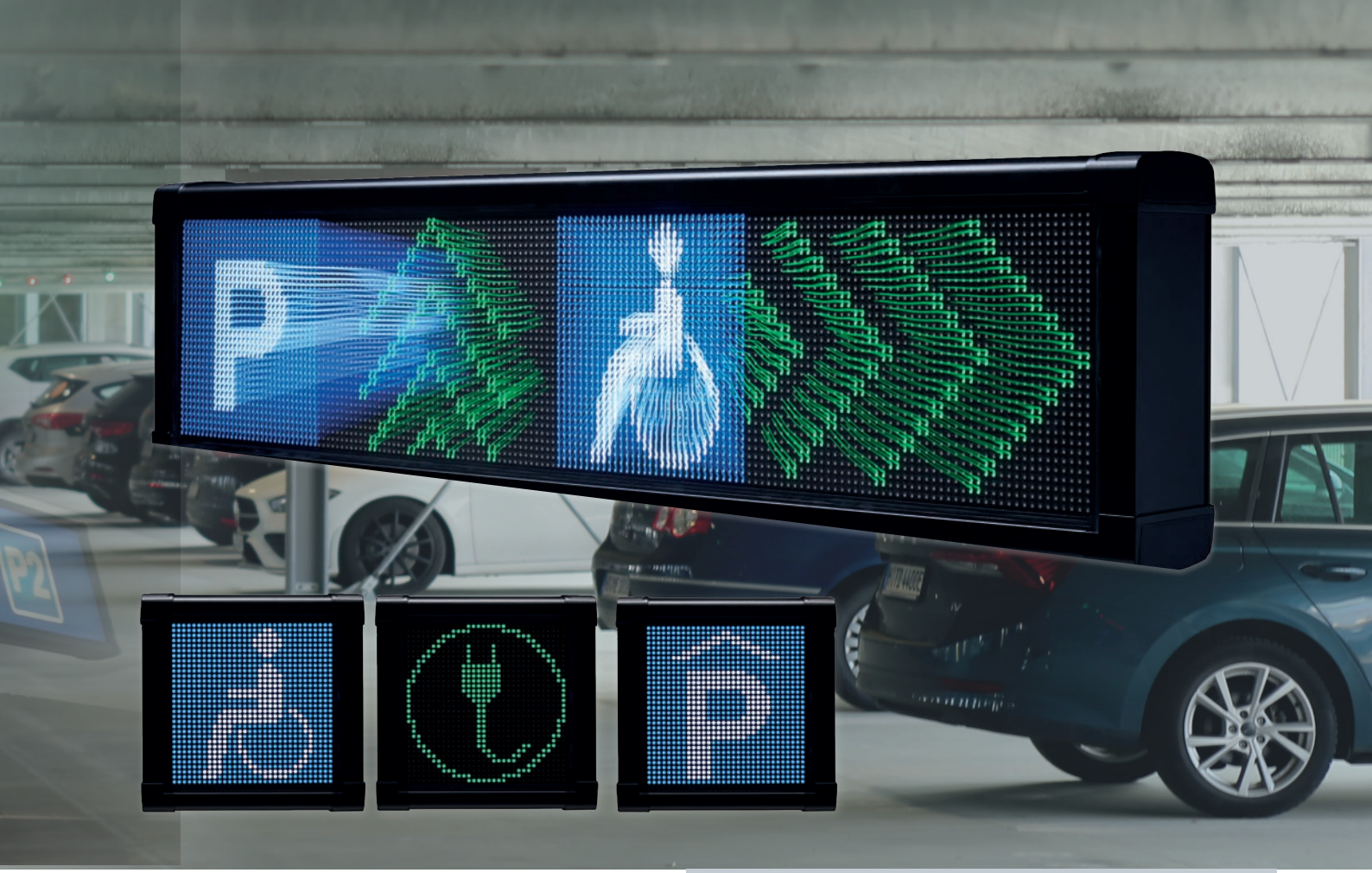
LOBO.display

ZONE DISPLAYS

Zone displays are positioned at decision points, where the exact number of free parking spaces is not required. They inform the driver about the occupancy of all three driving directions with only one single display. They are equipped with three green arrows (left, straight ahead, right) and a red cross. With the full matrix display, freely configurable icons can be visualized.

LOBO.display ZONE

- LED display or full matrix LED display
- Ceiling and wall mounting
- Customizable
- Connection via CAN bus or Ethernet
- Can be combined with navigation display
- Dynamic display options
- Adjustment of brightness possible



NAVIGATION DISPLAYS

Navigation displays are used at strategic points, such as on and off ramps or intersection areas. They show the number of available parking spaces per area and point the way directly to them. By means of navigation displays, vehicles can be guided specifically to the parking space that suits them best.

LOBO.display NAVIGATION

- Variable number of LED modules and digits
- Backlight can be switched on or off brightness-controlled
- Foil printing as desired
- Display of remaining parking spaces per area
- Direct guidance to the demanded parking space (e-loading, family, mobility impaired, VIP ...)
- Numeric or full matrix (allows quick adaptation of the content)
- Ceiling or wall mounting
- Combination with zone displays possible

LOBO.sensor

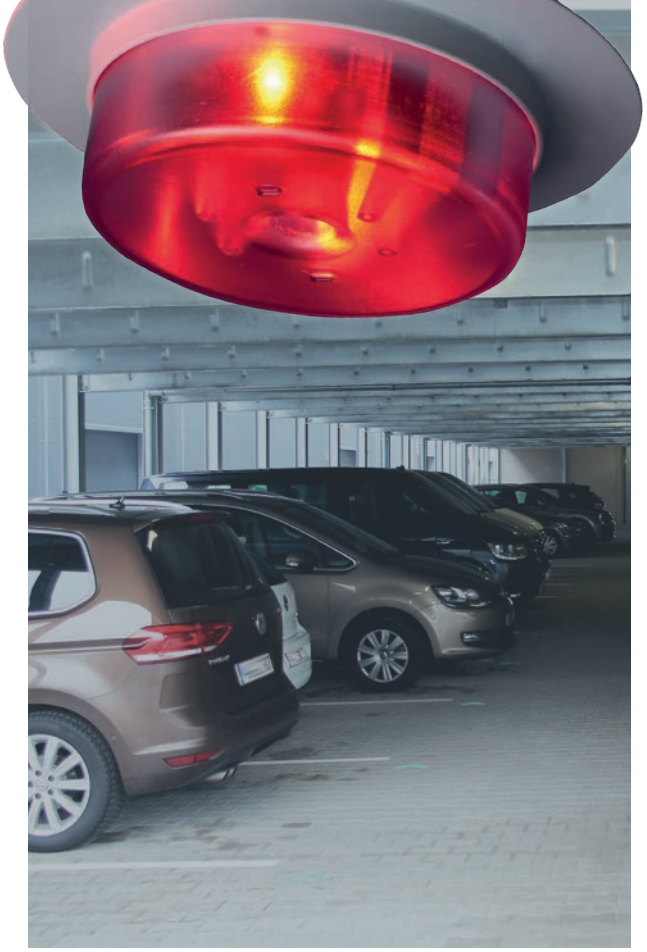
SINGLE SPACE DETECTION

Effective parking space management requires precise data about the available parking spaces. By means of an exact single parking space detection and the direct transmission of the data to the parking guidance server, the parking search traffic can be optimally controlled.

Various sensors are available for the detection of individual parking spaces. A mixed installation of the systems is also possible.

LOBO.sensor INFRARED

- Detection from an angled position at the top of the tramline
- Signaling of occupancy status via RGB LEDs in the tramline
- Free color selection for occupancy states possible (assignment to user groups)
- Reservation of parking spaces possible via color assignment to user groups
- Eco mode for LED (dimmable, can be switched off, etc.)
- Automatic resets when leaving or entering the parking spaces
- Integration into existing building infrastructure with electrical cable ducts and rail systems
- CAN-Bus and LIN-BUS for data transfer
- Tool-free assembly
- Pre-assembled cables



LOBO.sensor ULTRASONIC

- Detection centrally from above the parking space
- Signaling of occupancy status via integrated RGB LEDs
- Free color selection for occupancy states possible (assignment to user groups)
- Reservation of parking spaces possible via color assignment to user groups
- Eco mode for LED (dimmable, can be switched off, etc.)
- Automatic resets when leaving or entering the parking spaces
- Control via CAN bus
- Compatible with Trilux rail systems
- Mounting on ceiling or rail possible

LOBO.sensor GROUND

- Detection from below
- Sensors are glued to the floor
- Use of LoRaWAN technology
- Battery operated, therefore wireless
- Suitable for outdoor use, for example on open parking spaces

NOSCO.hybridcamera

BALANCING ENTRY COUNTING

ENTRY AND LEVEL COUNTING

The hybrid system NOSCO combines different technologies to achieve a very high detection accuracy. It combines 3D camera and artificial intelligence data to achieve the highest possible accuracy based on a neural network. In addition, radar sensors can be added to the system.

NOSCO works with a balancing counting method, determines the current occupancy situation based on movements and transmits this to the parking guidance system.

- Camera-based entry/level counting
- Hybrid camera (combination of radar, 3D technology and AI possible).
- Stop & go traffic is detected
- Bumper-to-bumper traffic is recognized and detected individually
- Very high detection rate
- Different scenarios detectable (passing stopped vehicles, encounter traffic)

The NOSCO.hybridcamera fuses the data of two sensors (camera and radar), which are located in the entry and exit areas or on the ramps of parking garages. The NOSCO.engine signal processing unit evaluates the data from the NOSCO.hybridcamera and transmits it to the LOBO.control software, which controls the displays in the parking garage.

NOSCO IS PARTICULARLY SUITABLE FOR USE IN THE FOLLOWING SITUATIONS:

- Parking garage operators for whom counting by means of a barrier, loop, or photoelectric sensor provides too inaccurate results
- Parking garages or parking areas where single space sensors cannot be installed.
- Parking garages where an almost daily reset is possible, i.e. which do not have a 24/7 operation.
- Parking garage operators who operate their parking garage without barriers, but still want to install an entry count and get an utilization overview.
- Counting of the top level of a parking garage, if it is not covered (combination with LOBO.sensors on the covered levels possible).
- Open spaces without exact parking space marking.

LOBO.control

LOBO.control is the RTB software for the management of parking garages equipped with single space detection or the balancing system NOSCO. LOBO.control works in real time and dynamically.

IT OFFERS:

- Overview of the occupancy level of all connected parking garages and levels
- User-friendly tree structure with ground plan of all levels
- Overview of all parking spaces, sensors or cameras
- Clear statistical analysis and user-friendly control of all sensors and displays as well as cameras
- Easy navigation through clear button icons
- Flexibility due to the possibility of integrating external systems

In addition, it is possible to implement custmer-specific functions in the „Extras“ menu, which are not covered by the functionalities of the standard application.

In the respective site plan, LOBO.control displays the occupancy states of the levels in different colors according to their status. In addition, configuration according to individual user groups is possible. For example, parking spaces can be assigned to VIPs, people with limited mobility, families, electric vehicles, etc. and signaled accordingly by the color of the LED.

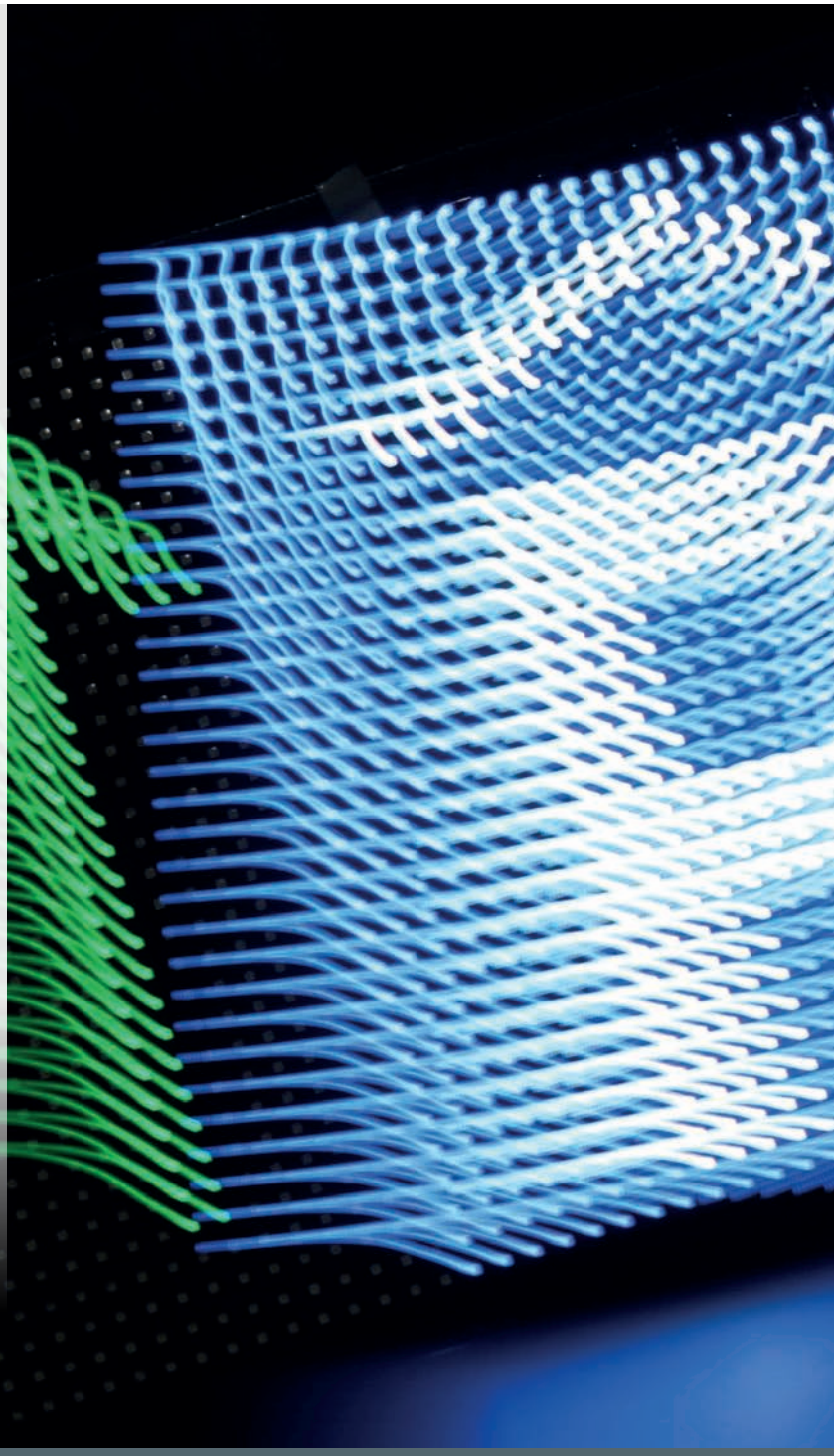
Numerous evaluation options are available, both for single levels and for the entire parking garage or parking area:

- MESSAGE: All feedback signals from the sensors are recorded.
- PARKING: All parking processes are visualized
- TIME MONITORING: All parking processes are displayed where the set time period per parking process has been exceeded
- ECOMODE is adjustable according to priority, LED switches off if occupied
- SCENARIOS: Preset (maintenance, events, weekend, etc.)
- EASY UPLOAD of videos & icons
- USER & RIGHTS MANAGEMENT
- EXPORT FUNCTION, for example in xlsx format

AUTHENTIC PEOPLE. RELIABLE PRODUCTS.

That is the premise on which we operate. We aim to impress you with innovative power, excellent quality, and outstanding service. User-friendliness of our products and customer orientation are most important for us. We put our heart and soul into reliable, collaborative partnerships.

As an internationally company, RTB develops, produces, and distributes solutions in the traffic lights, detection and parking sectors. We have repeatedly set new standards for the industry with our bold ideas. We combine a constant willingness to innovate and dogged persistence with a natural straightforward approach. We see customers, suppliers and employees as equals, engaging in intensive dialog with them, which perhaps explains our long-term success.



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