

Application Report

Reliable detection of bar codes in various positions

An oscillating mirror on the bar code reader ensures a large reading field, e.g. when detecting codes on wood chipboard stacks.



The limited space at the Rauch chipboard factory in Markt Bibart (Germany) means that code reading had to be performed extremely close to the bar code. Furthermore, the position of the code labels on the chipboard stacks vary depending on the height of the chipboard stack. Here a stationary bar code reader with oscillating mirror provides the ideal solution.

At Rauch Spanplattenwerk GmbH in Markt Bibart, wood-based panels are manufactured using fully automated production systems which are among the most modern in Europe. *"In total, the factory produces over 500,000 m³ of high-quality wood-based panels per year. The panels are further processed predominantly at Rauch's own furniture manufacturing facility",* says Reiner Maier, master electrician at the Markt Bibart factory. Following the environment-friendly final manufacturing process, the wood chipboard (Fig. 1) is cut to size and packed in stacks and then labeled at the end of the production lines with a so-called "stack note".

Over 13,000 trucks loaded with stacks leave the factory each year. To ensure that the information on the stack note is always and immediately available to the forklift driver when unloading the many chipboard stacks, the stack notes must be attached on both sides of the stack. Reiner Maier explains this requirement: *"During unloading, the stack note could happen to be located on the rear side of the board stack and therefore at a position that was not visible to the forklift driver."* An inexpensive solution was therefore needed which would also allow the product number relevant for the forklift driver to be attached to the opposite side of the stack.

Scanner plus printer – the perfect combination

An REA JET system from REA Elektronik GmbH in Mühlthal (Germany) provided the solution in the form of a large character inkjet printer. The completely autonomous system was installed at the end of the conveyor lines where the individual board stacks await shipping, i.e. loading onto the delivery trucks.

The printer receives the data from the Leuze electronic BCL 500i bar code reader mounted opposite. This is a line scanner which, owing to its beam spread of $\pm 30^\circ$, has a large reading field at short range. The scanner reads the labels on the other side of the stacks and passes on the information to the REA JET system. The REA JET system then prints the product numbers in large and clearly legible characters on the chipboard stack. The stack then has a label on both sides.

Oscillating mirrors increase size of reading fields

At Rauch, the conveyor line is extremely close to one of the building's walls. The above-mentioned BCL 500i bar code reader is attached to this wall (Fig. 2). Owing to the proximity of the reader, the reading distance is very small and – despite the large beam spread – the overall reading field is therefore extremely narrow. In addition, not all board stacks are the same height and the stack notes may also be at different heights.

However, with the so-called "oscillating mirror attachment" the BCL 500i is also able to scan larger surfaces and spatial areas for bar codes (Fig. 3). The oscillating mirror guides the scan line up and down at an adjustable frequency (Fig. 4). It is mainly used in cases where the position of the label is variable, the bars of the bar code are printed at a right angle to the conveying direction ("picket fence arrangement") or the bar codes are rotated so that they are no longer in a horizontal position. At Rauch, the oscillating mirror version of the BCL 500i scanner provides an adequately sized reading field despite the small distance to the variably positioned labels.

Code reconstruction technology increases reading reliability

Code reconstruction technology (CRT) from Leuze electronic ensures additional reading reliability. Whereas in simple reading systems the bar codes are detected entirely using a continuous scan line, code reconstruction technology enables offset and repeated reading of individual fragments of codes. The device then reconstructs these fragments to form an overall result. This technology enables the reliable decoding of labels which are not printed precisely or are difficult to read due to, for example, wood dust.

Another advantage is that the user is able to configure the devices. The integrated "webConfig" configuration tool allows communication with any browser (Fig. 5). Separate configuration software does not therefore need to be installed on a service laptop. This means that the device can be adjusted extremely easily from a distance.

Images and captions



Figure 1. At Rauch in Markt Bibart, it is all about chipboard. The labeling of the chipboard stacks and the readability of the codes are crucial for efficient logistics.



Figure 2. The chipboard stacks file past close to the wall. The scanner detects the label in any position on one side and passes on the information to the large character inkjet printer on the other side.



Figure 3. BCL 500i is a scanner family from Leuze electronic. The device on the left has an oscillating mirror attachment to increase the size of the reading field.

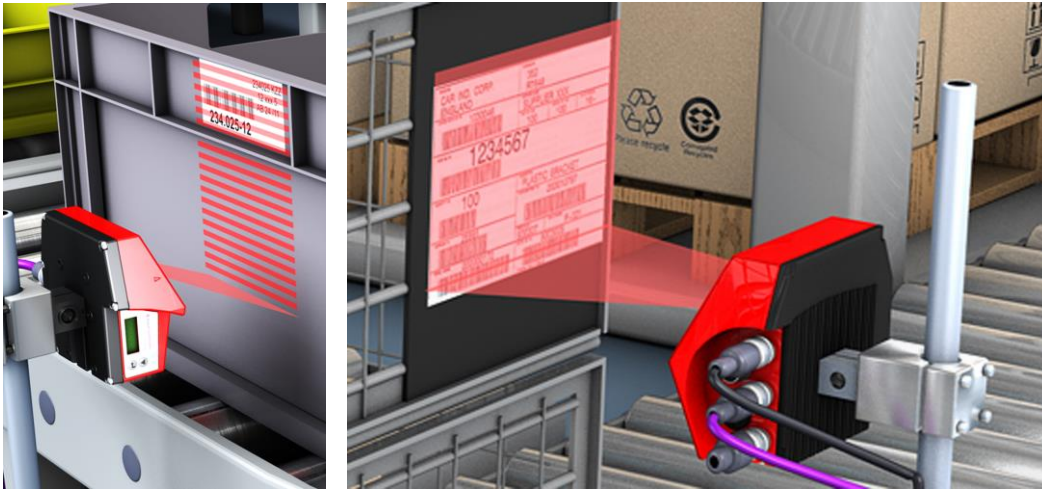


Figure 4. The bar code readers with oscillating mirror demonstrate their full potential wherever large reading fields are an important requirement.

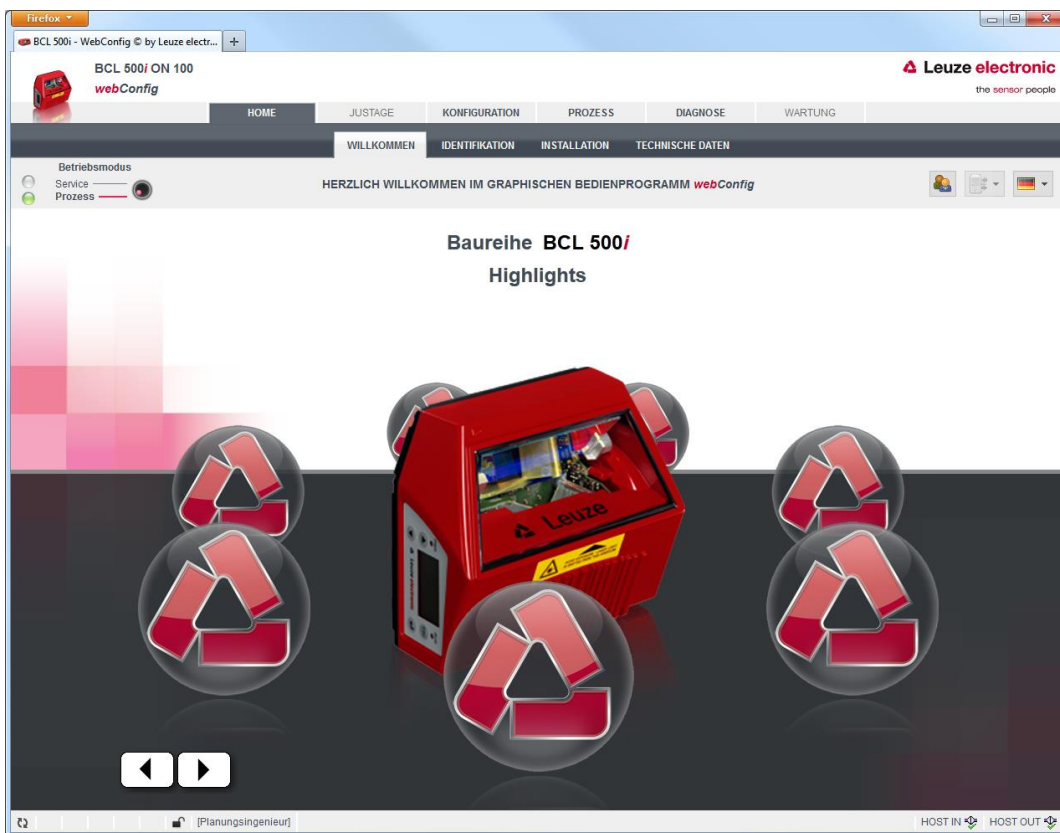


Figure 5. Start page of parametrization tool "Web-Config"

Presseanfragen

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