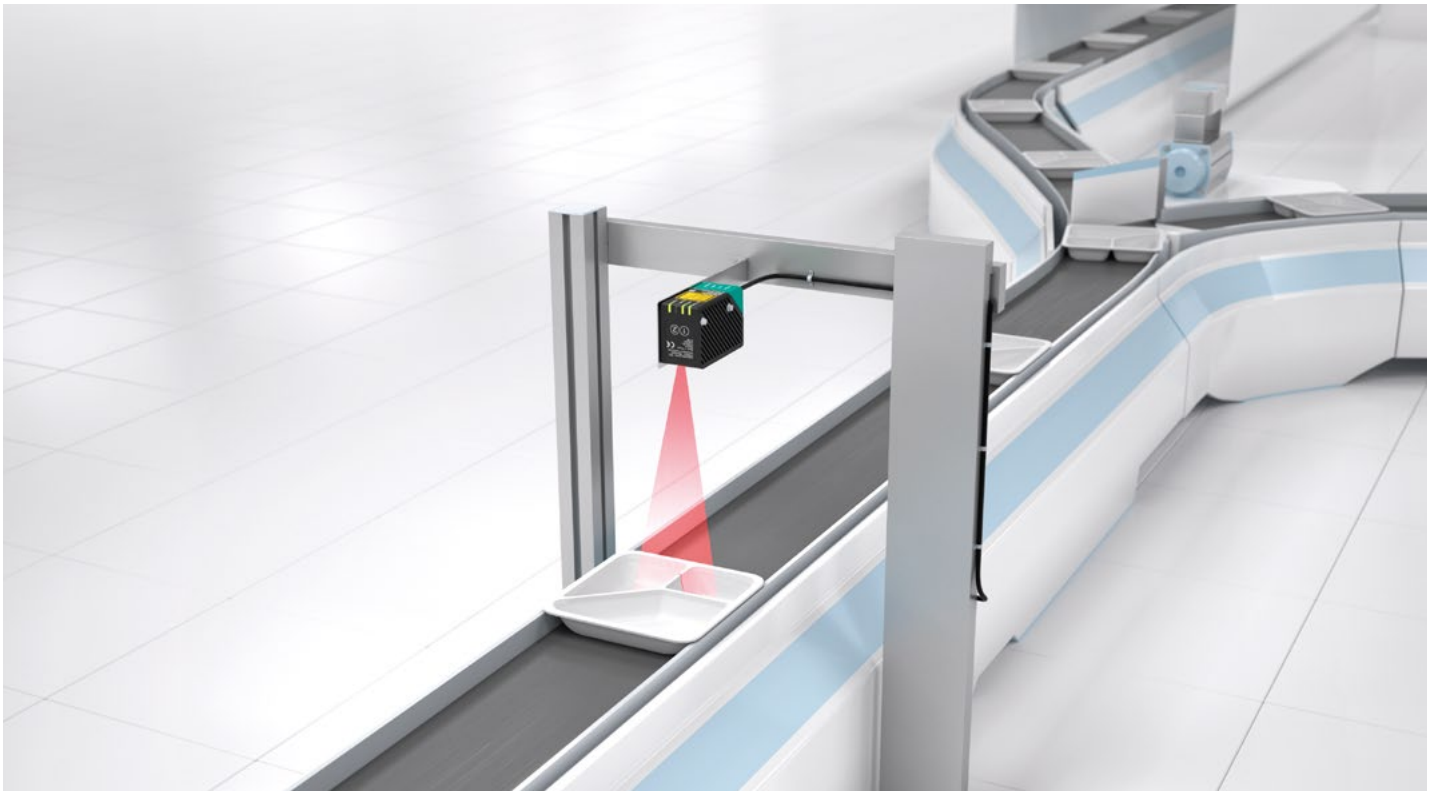


# Ensuring Reliability in Ready-Meal Production

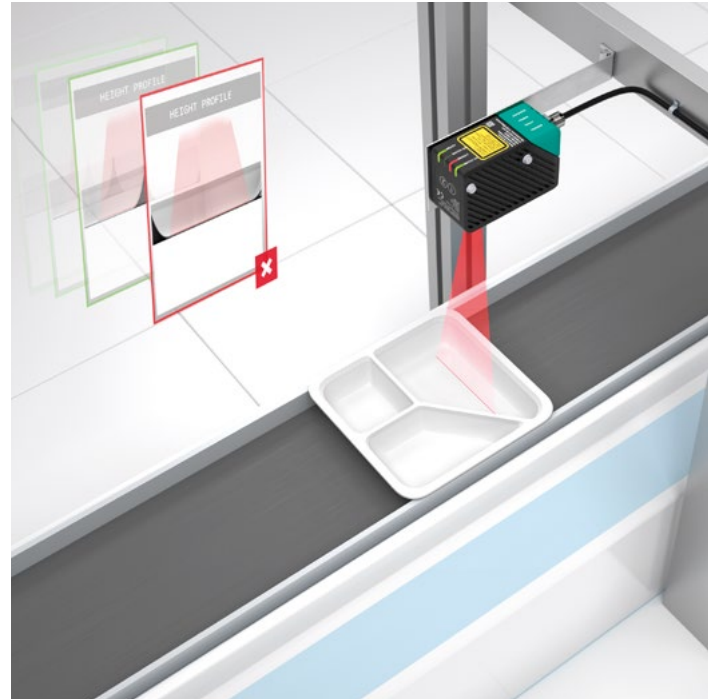
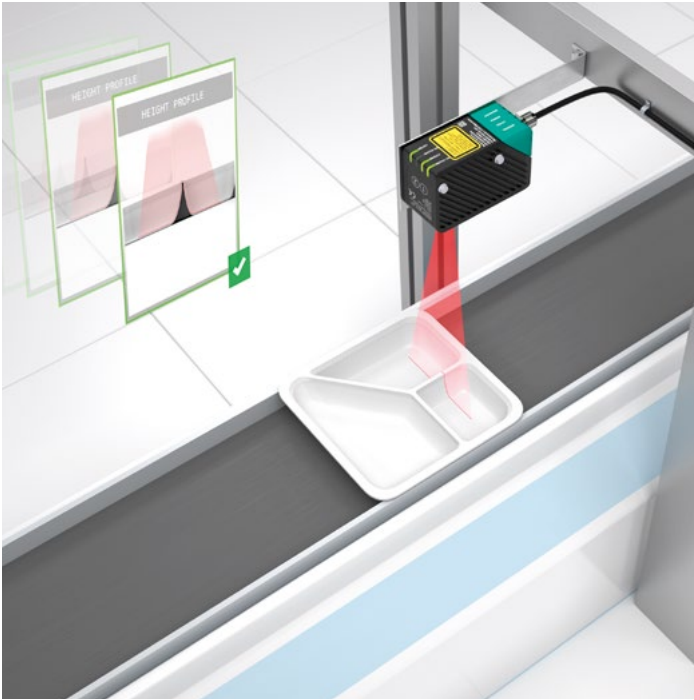
Light Section Sensor Detects Low-Contrast Packaging



## The Application

Plastic trays divided into several small compartments are often used when producing ready meals in the food industry. Correctly filling these compartments is essential for meals that consist of several different components, such as meat, pasta, or vegetables. To ensure that the components are filled into the correct compartments, it is necessary to check in advance that the trays are correctly positioned. In conventional solutions, this task is often performed by costly and complex vision

sensors. However, for a standard vision sensor to reliably detect low-contrast objects, such as uniform white plastic trays with smooth surfaces, additional external lighting and complex configuration knowledge are required.



### The Goal

Filling the individual compartments in the plastic tray and carefully separating the different meal components is an essential prerequisite for acceptance by the customer and for properly sealing the container. In the case of a defect, the product cannot be sold, and the meal must be discarded. Checking that the plastic trays are in the correct position requires a reliable, quick, and easy-to-install solution that supports a quick and efficient filling process.

### The Solution

The SmartRunner Matcher from Pepperl+Fuchs offers the ideal solution for checking the position of the plastic trays. The solution comprises a light section sensor with a highly precise laser beam that has been optimized in the factory to compare height profiles. The sensor is mounted above the conveyor belt and detects the profile of each plastic tray without any need for additional external lighting. Depending on whether the detected profile matches the stored reference profile, the switching output on the device sends a “good” or “bad” signal. When the height does not match the reference profile, it indicates that the plastic tray has been incorrectly positioned, is missing, or damaged, and must be immediately removed to allow the filling process to continue without interruption. With the ability to store up to 32 reference profiles, the SmartRunner Matcher Extended is recommended for plants that process a variety of different products.

### The Benefits

The benefits of light section technology become clear in the application. The plain white trays have little contrast, yet the SmartRunner Matcher always delivers reliable and unambiguous results. The solution is not dependent on contrast in any way, and instead detects the height profile of the target object. The height profile can be taught in instantly at the touch of a button; the SmartRunner Matcher is then ready for use. 2-D vision sensors, on the hand, require complex configuration and external lighting.

Continuous verification that the plastic trays are correctly positioned ensures a reliable filling process. When used for packaging processes in the food industry, the SmartRunner Matcher prevents production waste and plant downtime while enabling smooth and efficient operation.

#### At a glance:

- A ready-to-use solution, optimized for profile comparisons
- The sensor converts complex data into simple switching signals understood by any control panel
- Light section technology delivers reliable results every time, regardless of the surface quality, colors, and contrast
- A simple and inexpensive solution that does not require additional external lighting
- Quick parameterization and commissioning via teach-in and Data Matrix control codes