

Keeping everything shipshape

ProPhotonix explain how its **LOTUS LED Line Light** is assisting in the management of the huge number of shipping containers into and out of ports

In any given year, the number of containers that pass through sea ports throughout the world runs into the millions. And, with that in mind, the management of the flow of these containers is a significant logistical task.

High quality imaging systems assist in this process through a number of applications including OCR (optical character recognition), to read the identifying markings on containers, and inspecting the containers for damage. Many of these applications use line scan technology to perform these tasks. ProPhotonix's LOTUS LED

Line Light is one such system that is being utilised in a system managing the flow of shipping containers.

The primary goal of inspection systems at ports is to read the unique recognisable marks on the exterior of the shipping containers. Generally, the containers are transported on a truck or a rail carriage, which presents an object that's moving not unlike a classic line scan application.

Tough environments

However, the challenges lie in the external environmental conditions that the system is operating in - com-

Below: ProPhotonix has configured its standard LOTUS product to deal with the additional environmental requirements of managing the flow of shipping containers into and out of ports

pared to that of a controlled factory environment. Outside extremes of temperature, rain water and salt water spray, as well as other environmental considerations, require the product to be sealed and robust enough to withstand external conditions.

In addition, unlike in a factory production line where the lighting can be placed very close to the target, here there has to be a safe stand-off distance, to allow different sizes of containers to pass safely through the system. This presents a brightness challenge when compared to standard factory automation. Finally, the lighting system must also be long enough to cover the side of the container.

ProPhotonix has configured its standard LOTUS product to deal with the additional environmental requirements in this application. One of the key advantages of the LOTUS LED Line Light is that it is modular and units up to 4.4m long have been produced. Julie Busby of Multipix Imaging commented, "LOTUS is a robust and compact solution that provides super bright and uniform illumination ideally suited to this and many other line scan applications."

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Vision sensors, vision infrared and vision identification

Offering error-proofing and inspection anywhere, Balluff's BVS vision-based sensor includes standard, advanced and infrared vision sensors as well as vision identification that reads both barcodes and data matrix. The range is supported by specially designed accessories which include inspection monitors, vision lighting, protective housings and 3D sensor holders.

BVS vision sensors are well suited where you need multiple monitoring functions at the same time or if you need to switch between monitoring functions quickly. Changeovers are possible at all times - even during the process itself.

The BVS-E standard offers 20 inspection memory slots and a free choice between seven independent tools that can be freely rotated. Up to 25 characteristics can be programmed per inspection.

The BVS-E advanced sensor is designed for fast and challenging applications. As well as offering all features of the standard version, the additional 360° position tracking monitors the rotational position, detecting an object regardless of the location and position.

All configured inspections are also compensated for the parts rotation, minimising the need to tightly fixture parts, while reducing set-up costs. The added output logic functionality provides the ability to link any tool or combination of tools to any output. This allows the inspection to be customised to any production situation where simple inspection results are not enough.

Inspection and read processes for vision sensors can be impaired by changing ambient light. Simultaneously, employees and technicians are often bothered by the pulsing light of normal vision sensors. However, with the NEW BVS-E Infrared you

do not have such problems, because the BVS-E vision sensor with infrared lighting and integrated light filter prevents this in advance.

Its light is invisible to the human eye, so that it does not bother the operator - its integrated light filter ensures that most ambient light cannot get in. This increases the read quality and the reliability of the inspection, so that process reliability also increases.

The BVS-E identification sensors read all common codes, whether they are 1D codes (barcodes) or 2D codes (data matrix codes). Text and number strings and the code plain text are verified using OCR. The result tells you whether the inspection was 'OK' or 'Not OK'. If you also require the read code data, you can output it via serial RS232 and Ethernet interfaces. This means that you can track which parts have been processed.

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