product data sheet

LaseLCPS-STS-3D

LOAD COLLISION PREVENTION SYSTEM FOR STS CRANES 3D

PORT INDUSTRY

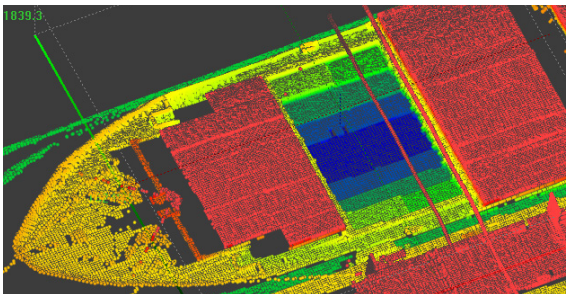
The LaseLCPS-STS-3D measurement system enables 3D collision prevention of containers at the spreader of an STS crane with containers on a container ship.

THE MEASUREMENT SYSTEM

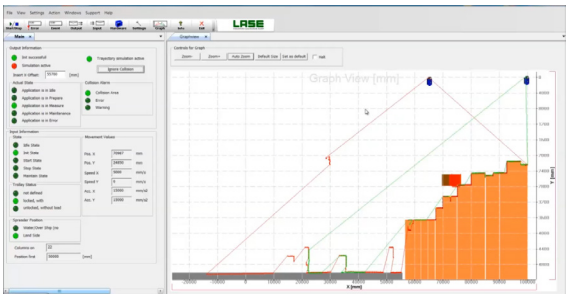
The use of robust and modern LASE laser technology aims to reduce the risk of accidents during loading operations of STS cranes and prevent collisions of container cargo on the ship.

The measurement system consists of three 2D laser scanners of the LASE 2000D Series, which are mounted positioned under the crane trolley. All laser scanners are aligned to the ground, whereof two scanning planes extend parallel to each other across the row of containers in the direction of trolley travel. Another scanning plane is aligned transverse to the trolley travel direction. When the trolley passes over the ship, the measurement system generates a 3D profile. This is used to avoid collisions in the container row and adjacent containers. In addition, the spreader is always in the field of view of the laser scanners. By comparing the current load position (spreader with/without container) with the profile of the container stacks on the ship, collision avoidance is guaranteed.

The LaseLCPS-STS-3D measurement system also records the longitudinal displacement of the ship and detects catwalks and cell guides. The application software evaluates the scan data measured by the scanner, performs calculations and sends the results to the crane PLC. LaseLCPS-STS-3D is primarily designed for STS crane operations and serves to increase both safety and an efficient container handling workflow. This innovative solution serves to reduce the risk of collisions and accidents during the loading and unloading of ships. In addition, with the so-called soft-landing function, the system serves to gently set down containers and spreaders, which means a reduction in noise and reduced wear.



The system creates a 3D profile of the vessel and the cargo.



Software view: A collision is imminent; an alarm signal is triggered.

THE FEATURES

- 3D and 2D container profiling
- Detection of longitudinal displacement of the vessel
- Cell guide and catwalk detection
- Check of stack topography in cross travel direction
- Driver assistance
- Container collision prevention

THE BENEFITS

- Collision protection between containers on spreaders and container stacks on ships
- Collision protection between spreader and container stacks on ships
- Collision protection to adjacent container bays
- Gentle container handling by soft landing
- Lower spreader wear and reduction of noise emissions

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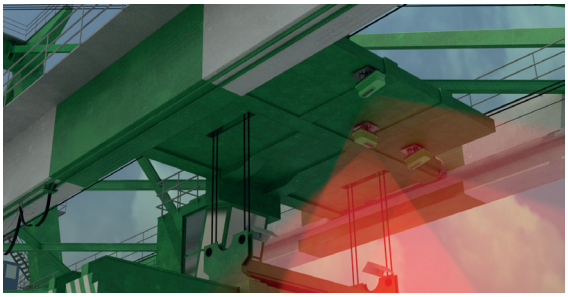
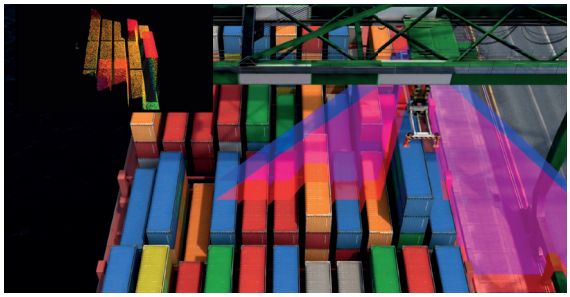
THE FUNCTION PRINCIPLE



Retrofit solution: The scanners and reference plates are attached to the STS crane.



The sensors continuously monitor the working area.

When seting down the container, the speed is reduced as the distance decreases.

They continuously measure the distance to adjacent containers.

In the event of an imminent collision, a warning signal is triggered.

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GLOBAL PLAYER FOR
LASER MEASUREMENT SYSTEMS

For more than 30 years, LASE Industrielle Lasertechnik GmbH has been the global contact for high-precision and robust laser measurement technology for the port sector. With our 1D, 2D, 3D and multilayer sensors as well with our high sophisticated application software, our systems stand for more accurate, safe and efficient container handling. Our goal is to drive the automation of the port industry forward. With 30 offices worldwide through subsidiaries and business partners, we are always at your side.

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