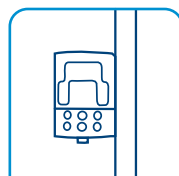




BoxCatcher Crane OCR



BoxCatcher

Identifying containers
during Ship To Shore
crane operations

The first flying crane OCR system

Our patented BoxCatcher has been designed to increase efficiency in waterside operations. With its innovative design, the BoxCatcher is a unique STS crane OCR system with intelligent cameras travelling on vertical rails, mounted onto the crane legs. Connected to the crane PLC, the camera's automatically travels to the spreader location, registering each container at the optimal location.

BoxCatcher captures key OCR data and 360° images without disrupting crane operations: there is no impact on the container's flight path nor the crane's uptime. Seamless TOS

integration ensures that the data is instantly sent to the TOS, ultimately improving vessel turnaround time. Best in class OCR read rates keep operator exception jobs to a minimum. The BoxCatcher generates and stores a set of high-resolution pictures for condition recording: these can serve as the indisputable visual proof of a container's condition in case of damage claims. Camco Technologies BoxCatcher Crane OCR solution is highly accurate and engineered for reliability, high availability and easy maintenance. The system's guaranteed longevity results in short ROI times.

Full crane OCR with just 2 BoxCatcher Container ID, ISO, seal, IMDG, door direction, 360° images for condition recording

HIGH-SPEED CAMERAS FOR OPTIMAL PERFORMANCE

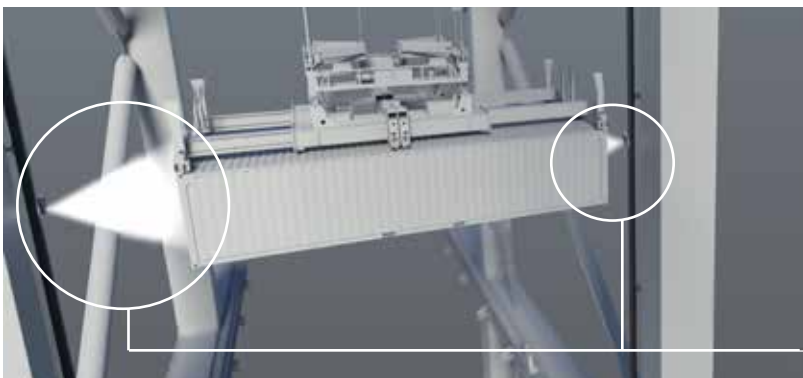
The BoxCatcher Crane OCR/OFR solution is used in STS cranes to automatically capture 360° container images and data without disrupting normal crane operations. It uses a combination of 12MP and 4MP global shutter cameras, designed to capture fast moving objects, traveling at 4,5 m/s. The cameras capture the images, instantly process them, and generate data and pictures. The generated data is interfaced via the Crane Operating System (COS) with the Terminal Operating System (TOS).

REGISTERING ALL CONTAINERS WITH ONE PAIR OF BOXCATCHER

Our BoxCatcher dynamic camera system supports full crane OCR/OFR—**covering container ID, ISO code, seal presence, dangerous goods labels and door direction**—for day and night crane operations. It also generates high-res pictures for

condition recording purposes—terminal operators can use these for better damage claims management. The BoxCatcher standard setup comes in one pair of BoxCatcher cameras that move swiftly up and down vertical guide rails, mounted onto opposite portal legs. The cameras automatically follow the container's flight path in real-time—the path being determined by the crane driver or crane automation. Integration with the crane control system ensures correct triggering.

The one-fits-all solution supports all possible container configurations: single, twin, tandem, quad, 20/40/45ft. To support 24/7 operations in all weather conditions, the cameras are equipped with built-in LED light projectors which produce optimal on demand light conditions. The BoxCatcher will autonomously compensate for the container swing during operations. **A complete Camco Technologies crane OCR/OFR system, including rails, can be installed by Camco Technologies in only one week.**



A pair of facing BoxCatcher cameras is mounted onto vertical guide rails, attached to the STS portal legs

Crane Operator Application

Web-based tool for swift exception handling

Accuracy is a key-advantage of Camco Technologies powerful OCR solutions. Focusing on exception rates instead of success read rates enables terminal operators to better plan resources.

Operators can use the **Crane Operator Application** for further exception handling. Processing OCR correction jobs is easy with this intuitive web-based application, where operators can validate data based on high-res container images. Exceptions are defined for each customer: incorrect or missing container numbers, exceptions relating to seal presence and dangerous goods labels.

As the number of exceptions is limited, a single operator can be assigned for handling 6 up to 8 cranes, depending on the complexity of the crane operations.



Making maintenance safe and easy

As Camco Technologies BoxCatcher cameras are used in harsh maritime environments, preventive service and maintenance is key. For easy access, the BoxCatcher camera can be redirected down to its maintenance position. When in service mode, the BoxCatcher front cover can be easily lifted and accessed by a certified technician. If needed, worn components can be replaced in a matter of minutes.

To limit downtime from maintenance interventions, Generation 3 BoxCatchers can be equipped with a

Washing Station module. This optional cleaning device is automatically activated when image quality becomes poor, and without interfering with the BoxCatcher's normal operation. A built-in sensor measures the front cover transparency. When dust, sand or other dirt deteriorates image quality, depending on the front cover dirtiness, a blower will be triggered to dust off the screen or water sprinklers will jet water while the remaining droplets will be blown off, ensuring crystal sharp pictures.

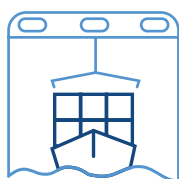
BOXCATCHER: EASY MAINTENANCE, MAXIMUM UPTIME

- Easily accessible maintenance position: camera home base
- Minimal equipment: two BoxCatchers per crane
- No moving cables inside the rails: Inductive Power Transfer (IPT) and leaky coax
- Lifetime warranty on mechanical components
- Remote monitoring and software updates
- Optional washing station

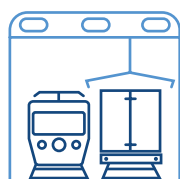
BoxCatcher in service position



“Data formerly registered manually by tallymen under the crane is now automatically captured, greatly enhancing safety”



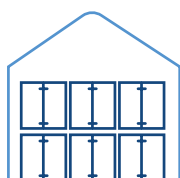
Maritime



Intermodal



Ro-Ro



Logistics

Camco Technologies is a pioneer in the automation of the container hand-over process. The Camco Technologies image recognition and location-based automation solutions provide accurate and essential data for terminals to optimize operations. Our proprietary hardware and software solutions integrate seamlessly with any terminal operation system and are implemented in more than 250 terminals all over the world.

We automate, you operate.

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