

**Kardex Mlog,  
Germany**



## Kardex Mlog Provides Optimized Warehouse Logistics with MOBOTIX Cameras

### Video System Reduces Downtimes in High-Bay Warehouses by up to 30 Percent

Fast, punctual deliveries are the key to success in logistics, and successful deliveries require an efficient storage system. For example, storage and retrieval systems (AS/RS) arrange Euro-pallets in fully automatic high-bay warehouses. If these systems stop running, this results in major economic losses for the company. That's why Kardex Mlog, one of the leading suppliers of integrated material flow systems and high-bay warehouses, equips its AS/RS with MOBOTIX S15D cameras as standard in order to keep downtimes to a minimum. As a result, customers are able to reduce downtimes by up to 30 percent and obtain not only economic benefits but also greater safety for their employees.

Kardex Mlog has over 40 years' experience in planning, developing and maintaining fully automated logistics solutions for storing pallets, small parts, long goods and stage constructions. The general company offers a comprehensive service, including full technical support. Uninterrupted operation of the facility is always a priority. At the heart of operations are the storage and retrieval systems. Successful overall performance demands that this equipment be both reliable and dynamic. The company has been using MOBOTIX video systems for several years now, which help to resolve disruptions quickly and keep machine downtimes as short as possible.

### Save Money Thanks to a Full View

To install the cameras on the systems, Kardex Mlog works closely with IBC Raif GmbH, an IT and automation service provider specializing in consultation, planning, installation, operation, training and services for security systems. "We have been selling MOBOTIX video systems for several years now and are thoroughly impressed with the solutions," explains Norbert E. Raif, Managing Director at IBC Raif GmbH.

Kardex Mlog especially appreciates that the video systems

can be ideally adapted to pre-existing IT infrastructures and that the systems do not require any additional cables or programs. The storage and retrieval systems are like unmanned forklifts that run on tracks through rack aisles up to 100 meters in length and 40 meters in height. They use a telescopic arm to transport Euro-pallets and place them at the designated place on the rack, extending the telescopic rod fully automatically to do so. Once the pallet is correctly positioned, the AS/RS heads for the target shelf and unloads the pallet again. "Every storage and retrieval system is fitted with an S15D that has a lens on the left and right," explains Raif. "The S15D cameras allow operators in the high-bay warehouses to clearly see whether anything is hanging over the side of the pallets that could potentially cause the AS/RS to stop," explains the Technical Director of Kardex Mlog. "That's also the main reason why we put cameras on the AS/RS in the first place. Time is money with logistics, and if the warehouse comes to a standstill this results in high costs for the company. The downtimes for the storage and retrieval systems therefore need to be as short as possible."

Furthermore, real-time monitoring eliminates the need to perform complex and dangerous on-site analyses in high-bay warehouses. Employees no longer have to climb to heights of up to 40 meters in order to see what stopped the system.

### Troubleshooting for Greater Efficiency

The MOBOTIX video systems also record events before a disruption to allow extensive fault analyses to be performed. "The last four minutes before a disruptive event are always permanently saved," explains the Technical Director of Kardex Mlog. "If no problems occur during operation, the camera overwrites the previously saved image sequences automatically." The video images enable disruptions to be dealt with quickly and precisely — in some cases even

without the need for a service technician to walk along the affected rack aisle with the systems switched off. If the disruption needs to be resolved on-site, the video images can be used to determine how many employees are needed and what protective and auxiliary equipment or tools and replacement parts are required.

In the decentralized MOBOTIX concept, every camera acts as a high-performance computer. The camera processes data and images, and even carries out coding. The sole purpose of the PC or video control center is viewing and controlling the cameras — it is not used for analysis or recording. This means that the user does not require expensive, overly complex video management software.

### Two Become One: Save Money with Hemispheric Technology

Kardex Mlog previously used M1, M10 and later M22 and M24 cameras from MOBOTIX to ensure a clear view of the pallets. These only had one lens each, meaning that two cameras were installed on each AS/RS. The company has been using double hemispheric S15D cameras since fall 2013. This model features two miniature lens units and allows for a huge range of even more flexible application scenarios.

The hemispheric lenses are linked to the main housing via a connection cable and are attached to the AS/RS in a way that makes it possible to see what is happening around the palette from a bird's-eye view. This enables them to offer two distortion-corrected, high-resolution 180° panoramic images, each with 3.1 megapixels. "Hemispheric technology gives us an all-round 360° view without any blind spots, so now we only have to install one camera," explains the Technical Director of Kardex Mlog.

The dual camera also offers another important advantage: With a multi-camera system, objects constantly move from one viewing area to the next — but with a hemispheric



## An S15D is Installed on Every Storage and Retrieval System

panoramic camera, they never disappear from the video feed, nor do they double up in overlapping viewing areas.

### Good Visibility Even in the Dark

If a disruption occurs, the AS/RS will stop automatically. Thanks to the installed video systems, warehouse operators can now analyze the cause of the disruption using the recording and quickly implement specific measures to rectify the situation. For warehouse workers to obtain a clear video image even in dark high-bay warehouses, Kardex Mlog developed a solution together with IBC Raif GmbH. Small halogen spotlights have been fitted on the left and right of the AS/RS systems, and these lights switch on automatically during loading and unloading.

"We could also use black-and-white lenses, which deliver a significantly better image in the dark. These are not used in many warehouses, however, because it needs to be possible

to accurately identify the color of the product stored there. Therefore color lenses are generally used together with halogen spotlights," explains Raif.

### One Size Fits All — Video System for Standard Usage and Special Applications

"In my opinion, the system is unrivaled on the market. The robust, glass-fiber-reinforced housing, the broad range of operating temperatures from -30 to 60°C (-22°F to +140°F) without ventilation and heating, and the fact that there are no mechanical moving parts ensure that MOBOTIX cameras are highly reliable in all environmental conditions." This also plays an important role in fully automatic high-bay warehouses, since containers may need to be stored at a cool temperature in the rack depending on the industry, such as a pharmaceutical company or food company. This means that the installed systems and devices also need to be temperature-resistant.

### Downtimes Reduced by up to 30 Percent

"We identified how long the downtimes were before using the current Kardex Mlog solution with the camera and compared them with the situation now. The figures are impressive: On average, downtimes have been reduced by 25 to 30 percent since the camera system has been installed," summarizes Norbert E. Raif. "So warehouse operators save several thousand euros by using MOBOTIX video systems for the AS/RS."

Interested parties can see what this kind of system looks like at a demonstration stand at Kardex Mlog's headquarters in Neuenstadt, Germany. S15D cameras from MOBOTIX are also in use here. This enables customers to experience first-hand how they are installed and see the kinds of images they deliver.

Retailer information: