

# Case Study Flir Systems GmbH / Vanderlande Industries B.V.

Internationale Fachmesse  
für industrielle Instandhaltung

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International Trade Fair for  
Industrial Maintenance

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## Parcels and Suitcases Roll Unerringly Towards Their Destination Thanks to Infrared Preventive Maintenance Equipment

### Categories

1. Maintenance service
2. Infrared systems, thermography
3. Plant-safety equipment

### Market Sector

Transport and logistics

### Brief Description

- Plant surveillance, damage prevention early warning system and diagnosis procedure using infrared cameras made by Flir Systems.
- Application of infrared cameras in research & development at Vanderlande Industries as well as for maintenance purposes of materials handling and conveyor systems, which had been installed at Vanderlande's customers' plants.

### Task

Production and delivery of high performance thermographic systems for use in research & development departments as well as in the maintenance service of a leading provider of intralogistics systems to enhance performance and reliability of materials flow operations.

### Preparation

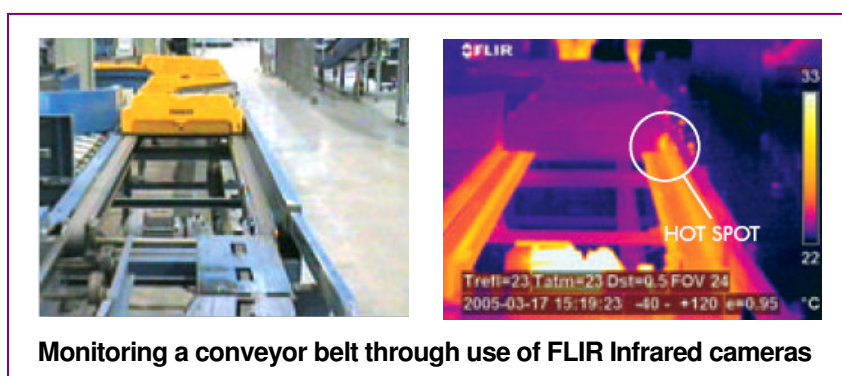
By identifying anomalies, which the human eye does not see, thermography enables the execution of preventive measures, before costly plant shutdowns happen. Infrared cameras enable precise contact-free temperature measurement. Nearly every technical component becomes hot, before failing. Infrared cameras indicate these problems at an early stage. This makes FLIR Systems' infrared cameras a highly cost efficient and valuable instrument, which can be used for very different cases. One such diagnostics method is condition monitoring for Vanderlande Industries' maintenance services. Another such field is research & development.

### Implementation

*As market leader in the field of automatic conveying and distribution facilities Vanderlande Industries continuously invest in designing new and faster handling and distribution systems for distribution centres or baggage logistics at airports. The research & development and the maintenance departments of Vanderlande therefore needed a high-performance thermographic system to identify technical faults at early stage and decided to opt for products made by **Flir Systems GmbH**:*

Timely and error-free delivery of these items depends on numerous factors, not least among them being smooth-running conveyor belts and intelligent sorting systems. And that's precisely what Vanderlande Industries near Eindhoven in the Netherlands produces. Increasingly, Vanderlande is positioning itself as a solution and service provider in its three core markets of baggage handling, distribution and express parcel services. Having started out as a small machinery factory, Vanderlande Industries has developed into a true global player in its sector. Its list of customers reads like a worldwide who's who of airports and logistics heavyweights, who certainly demand high quality and reliability regarding their conveyor systems. The company develops, installs and implements these systems worldwide. If requested by the customer, they also take care of the maintenance of the delivered systems. For example at Schiphol, Amsterdam's airport, 50 Vanderlande employees maintain

the baggage handling system. Vanderlande's Innovation Centre features outstanding facilities for translating those demands into products. In the brand-new hall, new, highly complex transport and sorting systems are developed, continuously tested for durability and then optimised. "Vanderlande is producing and installing all the baggage handling systems for the new Terminal 5 at London Heathrow Airport.", says Jean-Pierre van der Zanden, Test Engineer and Group Leader at the Vanderlande Test Centre. "At one of our meetings with the British Airport Authority (BAA), the enormous possibilities offered by FLIR infrared thermography were confirmed. The BAA uses FLIR Systems infrared cameras not just for detecting heat loss in buildings and inspecting technical installations, but also for maintaining baggage handling systems, which we installed, in particular at Heathrow and Gatwick Airports. We also received very positive reports about the results of using FLIR infrared thermography from Louisville, Kentucky, where the biggest hub of express parcel giant UPS is located. Vanderlande installed the complete sorting system there." Hearing all the positive reports about the cost- and time saving benefits of FLIR infrared thermography, Vanderlande started to think about not only employing FLIR technology at their customers' sites but using it themselves.



Today thermal imaging technology plays an important role in the optimisation of Vanderlande's products. In the course of durability tests on TUBTRAX<sup>®</sup>, a conveyor belt system for baggage in crates, friction problems were discovered at one of the switch points which channel the sorting process. The rubbing of the plastic conveyor belt on the metal was not ideal. It was causing wear and placing an extra strain on the system. This kind of conveyor belt, which is mainly used at airports, attains a high speed of seven metres per second (approx. 25 km/h). "Thanks to *ThermaCAM P65*, we were able to see clearly that too much heat was being generated. What's more, not only could we locate the problem accurately, but we were also able to monitor the heat generation with respect to time and temperature.", says Ferry Maasbommel, test advisor and thermal imaging camera expert at Vanderlande. Again, during the setting up in the test centre of the newly developed BAGTRAX<sup>®</sup> system for rapid baggage conveyance over longer distances between different terminals, the *ThermaCAM P65* kept a good eye on things. BAGTRAX is an innovative system for baggage transport in carts propelled by a linear induction motor, in which successive magnetic fields power the belt. The bearings in the test centre version overheated too fast. In the end it turned out that the problem lay not with the choice of material, but with an assembly fault, so that the engineers, contrary to what they had expected, had no need for a lengthy search for a different type of plastic in order to make the system completely flawless.

The experiences with thermography acquired at the test centre have been presented internally to the Service Division. The time- and cost-saving potential of infrared technology was rated highly, so that this important pillar of Vanderlande Industries is now also using infrared thermography for preventive maintenance on its already installed baggage handling systems. "Here at the test centre we're very enthusiastic about the results obtained by infrared thermography. We are promoting the wider use of infrared thermography", says Maasbommel. "You learn to look at things differently.", adds Jean-Pierre van der Zanden. "You see things that you would never suspect with a visual camera. Infrared technology enables you to identify problems earlier and thus gain time for countermeasures before a problem turns into a disaster."

**Customer's Benefit**

- Time saving and cost-efficient method to identify defects in conveyor and distribution systems.
- Mobile or stationary application either for research & development or for maintenance purposes.
- Precise, exact spatial identification of defects at an early stage supports clear diagnostics and helps evade errors during the problem-solving process.

**Ordering Party**

**Vanderlande Industries B.V.**, founded in 1950 has its headquarters in Veghel, The Netherlands. Vanderlande Industries is a market leader in the field of automatic conveyor and distribution systems. Vanderlande offers its automatic material flow systems for storage, distribution, express and parcel services, baggage logistics and for the manufacturing industry. Vanderlande's intralogistics solutions have been implemented in more than 700 distribution centres and in more than 600 airports. Each system is custom-made, attending to the specific customer requirements and strategies. Material flow systems are designed in all dimensions und implemented as needed – starting with small, locally used storage and distribution sites and ending up with airport systems and the largest distribution centres of the world. Next to producing these systems, Vanderlande also offers servicing and optimising them. In 2006 Vanderlande Industries employed a staff of 1350 and posted sales of € 438 million.

Internet: <http://www.vanderlande.de>

**Contractor**

**Flir Systems GmbH** is a subsidiary of FLIR Systems, Inc., global market leader for thermographic systems and infrared cameras for civilian and military use. The Group posted sales of half a billion US-Dollars in 2005. Flir Systems GmbH offers Infrared cameras for use in preventive maintenance, for tasks in the field of building physics and for checking compliance with the energy savings regulations EnEV. Also, infrared camera systems are used for high-level scientific problem solving in R & D, laboratory analysis and during product design. Intelligent infrared multisensor technique and infrared industry cameras are used in the field of machine vision for industrial assembly and handling technologies, robotics, control and positioning systems. Thermal imaging is also used for surveillance and law enforcement purposes as well as for fire security systems.

Internet: <http://www.flirthermography.de>

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**Maintain 2006**

The 2nd International Trade Fair for Industrial Maintenance will be staged from October 17<sup>th</sup> to 19<sup>th</sup>, 2006 at the M,O,C, trade fair centre in Munich. As MAINTAIN is the only specialized international trade fair for industrial maintenance in the world, it gives visitors a look at the latest trends in all sectors and furnishes them with information about state-of-the-art solutions that can be used to repair, maintain, inspect and improve their production facilities. For decision-makers and experts, that makes it the most important business gathering that deals with all aspects of industrial maintenance. Special fora on maintenance as a core factor for production and up-to-date information on MAINTAIN's web pages add to the event itself.

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