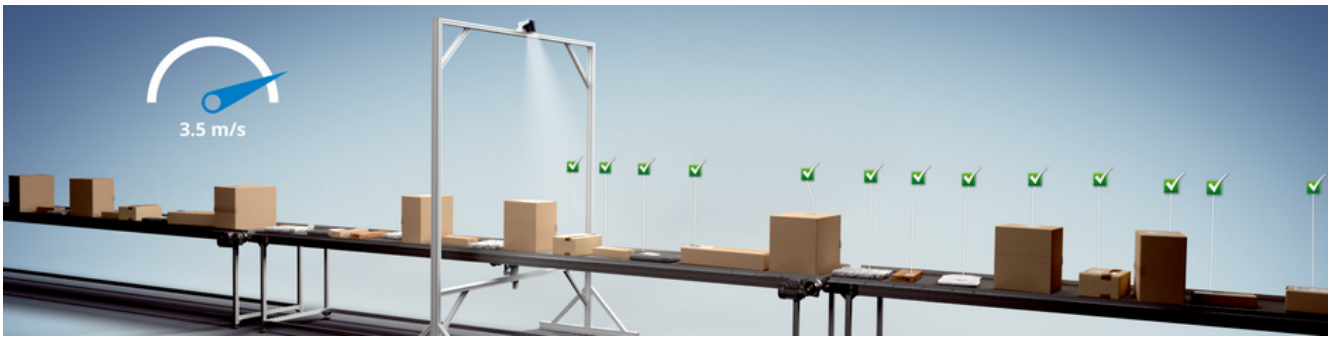
Product overview

Lector85x

1D and 2D code identification using a camera for wide fields of view and large reading distances

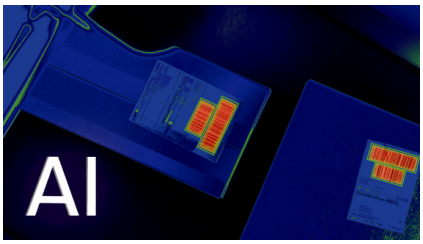
SICK
Sensor Intelligence.

Advantages



Record throughput and fast code reading using the pacesetter

Are you having difficulties reading codes quickly and precisely? Are high conveying speeds and poor code quality presenting a challenge? The AI-based pacesetter equipped with the latest imager technology is the solution. Thanks to superresolution and upsampling, a multi-core CPU, and dynamic focus, codes can be reliably identified. Tracking and 3D code assignment enable a high sorting rate and at the same time reduce manual post-processing work. With the Lector85x you will be breaking throughput records!



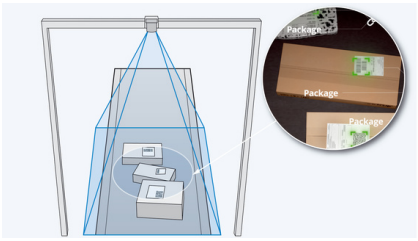
AI-based segmentation – efficient image processing
AI-based segmentation enables relevant code areas to be processed quickly and precisely and saves up to 75% of decoding time. The data is processed efficiently with a multi-core CPU. The deep learning-based segmentation ensures high accuracy – even in poor lighting conditions or with distorted codes. This increases the reading speed and throughput.

Superresolution and upsampling – precision redefined
Thanks to superresolution and upsampling, precise decoding is achieved even at low resolutions. Superresolution improves the resolution of 1D codes with the help of scan fusion, while upsampling optimizes the image quality of 2D codes. Fine code details are captured, ensuring that even complex codes or codes with small pixel sizes are recognized. This ensures reliable and accurate code reading.

Sharp images – no details missed
The camera resolution of up to 12 megapixels, the 32 integrated high-performance LEDs, and the dynamic focus ensure crystal-clear images – regardless of the reading distance, reading angle or code resolution. The dimensions of the objects to be identified often vary and therefore also the reading distance to the code. Thanks to the dynamic focus adjustment, the focus position of the camera lens adapts to the respective reading height. As as result, the image created is always sharp and well illuminated. Codes at different heights are read reliably and processed quickly, regardless of the camera distance.

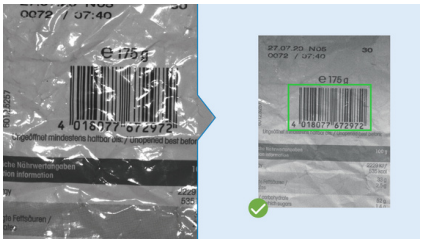
Reliable even at temperatures down to –35 °C

The Artic Shield variants of the Lector83x and Lector85x ensure stable and reliable code reading in refrigerated and deep-freeze environments. Even at temperatures between –28 °C and –35 °C, device performance and read rate remain at a high level – for reliable and efficient material flow even under extreme conditions.



High sorting accuracy and precise tracking

Tracking enables the unique assignment of objects and codes – without an additional controller. Several objects can be tracked at the same time as long as they have a minimum separation of 50 mm. This reduces manual interventions and supports an efficient, reliable sorting process.



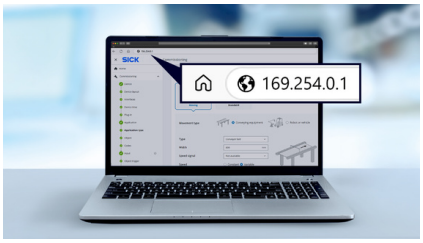
Trouble-free code reading – more clarity, fewer reflections

The basis for reliable code reading is an optimally illuminated image and a clearly visible code – free of interfering reflections and glare. A polarizing filter can be used to eliminate reflections, particularly in the case of codes under a film or on glossy surfaces. The result: Codes remain legible even under challenging conditions.

In the passing lane with the pacesetter! The Lector85x enables fast code reading and a high productivity – regardless of object size and code quality – with conveying speeds up to 3.5 m/s achievable.

Ready for operation in five minutes with the quickstarter – even without experts

Are you familiar with the problem that configuring a device is a tedious matter that also requires expert knowledge? The quickstarter Lector85x is ready for operation in just a few minutes without the need for a single expert. Application data can be entered effortlessly and the device adapts itself automatically. Using the web server, you can conveniently configure and monitor as well as diagnose your device from anywhere. The laser alignment aid and feedback LEDs optimally support you with aligning the device and monitoring the read results.

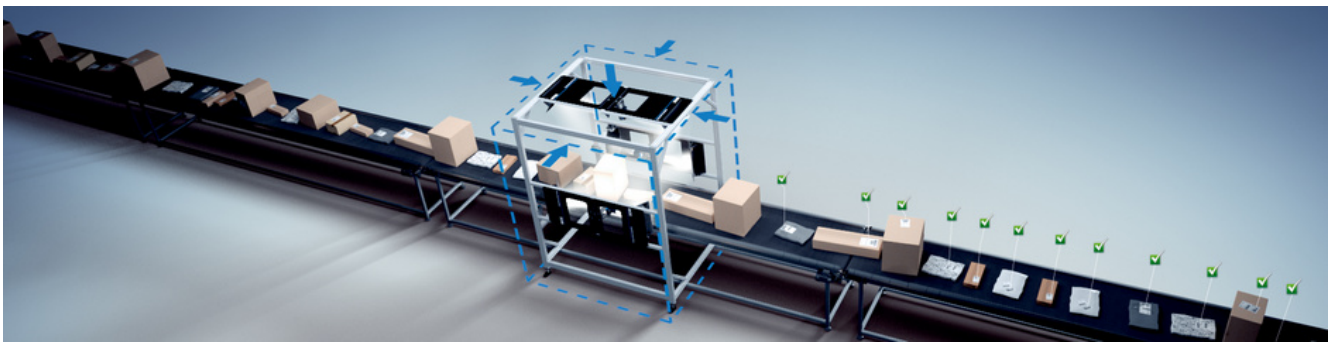


Web server – location-independent device access
The Lector85x can be configured via a web server using various interfaces (Ethernet, USB-C). Diagnostics and monitoring are simple, and integration into IT infrastructures is secure and scalable.

Application-based GUI – automatic parameterization without experts
With the help of the intuitive GUI of the device, individual application data can be entered simply and quickly and the Lector85x parameterizes itself automatically. A technical expert in image-based code readers is no longer required – the Lector85x is ready for operation in just a few minutes.
Virtual Sensor Lab

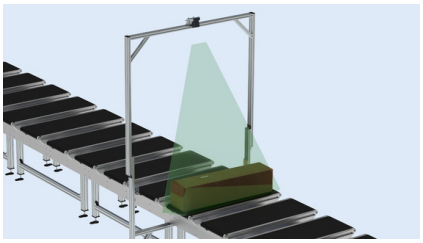
Optical feedback – simple installation and monitoring
The Lector85x can be precisely adjusted using the laser alignment aid, and the feedback LEDs inform you of important events such as a successful read operation.

The Lector85x is the quickstarter with user-friendly and application-based configuration and is ready for operation in just five minutes – with no expert knowledge required.

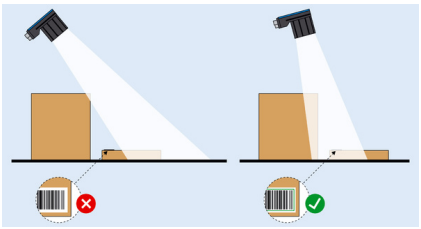


More performance, smaller footprint with the space-saver

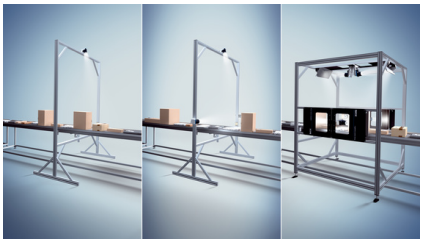
Do you need a solution for your code reading applications but have limited space and don't want to install lots of cameras and other components? The Lector85x is the space-saver that offers you an efficient and effective solution. With its imager resolution of up to 12 megapixels and the flexibility of a number of different optical device variants, it adapts to your specific needs and is also extremely reliable. A skew angle of up to 75 degrees can be achieved to avoid shadowing of objects and thereby improve the accuracy as well as reliability of the code identification. Use the Lector85x as a stand-alone solution, integrate it into your existing system, or settle on a turnkey identification solution – everything is fully scalable and can be easily adapted to your requirements.



Large field of view – few cameras
The large field of view of up to 6,048 pixels x 2,048 pixels of the ULTRASCENE variants and the high camera resolution of the Lector85x reduces the number of cameras and accessories required for a system, which saves commissioning time. Gigabit Ethernet also allows an easy exchange of data and downstream image analysis.



75-degree skew angle – all codes in view
The up to 75-degrees skew mounting of the Lector85x device avoids shadowing of objects. Codes on smaller, hidden objects can therefore also be detected.



Scalable code reading for individual requirements
Whether as a stand-alone solution, integrated into an existing system, or as a turnkey Lector Identification System – the Lector85x is scalable and adaptable to your requirements.

With the Lector85x, space-saving code reading is a reality. Performance where space is at premium – a true space-saver! Efficient and flexible identification solutions for any application.

Technical data overview

Focus	Adjustable focus / dynamic focus control (depends on variant)
Sensor type	CMOS monochrome
Sensor resolution	2,464 px x 2,048 px (5 MP) 4,096 px x 2,176 px (9 MP) 4,096 px x 3,008 px (12 MP) 6,048 px x 2,048 px (12 MP)
Scanning frequency	30 Hz / 20 Hz / 15 Hz (depends on variant)
Enclosure rating	IP65
Ethernet	✓ (3) / TCP/IP / ✓ / TCP/IP (depends on variant)
CAN	✓
Serial	✓, RS-232, RS-422, RS-232
USB	✓, USB 2.0
EtherNet/IP™	✓ (2)
PROFINET	✓ (2)
Weight	640 g / 975 g (depends on variant)

Product description

The Lector85x image-based code reader is designed for very high scanning performance and equally high throughput. The small camera has a resolution of up to 12 megapixels, an enormous depth of field and field of view as well as very good computing power. For reading stations, this means a compact design as well as fewer devices and installation work. When combined with AI-based segmentation, the camera reliably identifies codes even at conveyor speeds of up to 3.5 m/s and correctly assigns the codes to objects. This guarantees efficient identification processes and significantly reduces manual rework. The Lector85x can be intuitively configured using a web server and is ready for use within a few minutes – without the need for specialist knowledge.

At a glance

- AI-based segmentation, super resolution, multi-core CPU
- Large depth of field, extra-large field of view
- 12, 9 or 5 megapixel resolution, various lenses and illumination colors
- Intuitive, application-based configuration via web server
- Three-dimensional assignment of codes to objects
- 2 channels for high-speed image output

Your benefits

- High sort rate and reduction of manual rework thanks to high read rates for all objects, regardless of the code quality
- High-performance decoder and processor ensure high object throughput at low object distances, even at high conveyor speeds
- Easy commissioning in minutes thanks to intuitive, application-based configuration via web server
- High flexibility, even when space is limited: Wide conveying lines can be covered with just one camera, reducing the number of necessary devices and components

Fields of application

- Retail and warehousing: Code identification in sorting and picking processes, recording of incoming and outgoing goods
- CEP industry: Code identification, for instance on letters, parcels, flats
- Airports: Code identification on baggage and freight items; automatic sorting and warehousing

Ordering information

Other models and accessories ➜ www.sick.com/Lector85x

- **Optical focus:** adjustable focus (manual)
- **Sensor resolution:** 2,464 px x 2,048 px (5 MP)
- **Readable code structures:** 1D codes, 2D codes, Stacked

Illumination color	Focal length	Ambient operating temperature	Communication interface	Type	Part no.
–	8 mm, 12 mm, 16 mm, 25 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8505R-1MCXXXAL0SXXXX	1130543
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8505R-1MCXXXAF0SXXXX	1134614
Red	16 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8505R-1MCMDXAL2SXXXX	1158072
	25 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8505R-1MCMEXAL2SXXXX	1158073
White	8 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8505R-1MCIBXAL2SXXXX	1140575
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8505R-1MCIBXAF2SXXXX	1142896
	12 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8505R-1MCICXAL2SXXXX	1134221
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8505R-1MCICXAF2SXXXX	1138873
	16 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8505R-1MCKDXAL2SXXXX	1134220
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8505R-1MCKDXAF2SXXXX	1143531
		–35 °C ... +50 °C		V2D8505R-1MCKDXAF2AXXXX	1155147
	25 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8505R-1MCKEXAL2SXXXX	1134222
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8505R-1MCKEXAF2SXXXX	1149143
		–35 °C ... +50 °C		V2D8505R-1MCKEXAF2AXXXX	1157365

- **Optical focus:** dynamic focus control
- **Sensor resolution:** 2,464 px x 2,048 px (5 MP)
- **Readable code structures:** 1D codes, 2D codes, Stacked
- **Focal length:** 25 mm
- **Ambient operating temperature:** 0 °C ... +50 °C

Illumination color	Communication interface	Type	Part no.
Red	Ethernet, CAN, Serial, USB	V2D8505R-1MEMEXAL2SXXXX	1146411
	Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8505R-1MEMEXAF2SXXXX	1145298
White	Ethernet, CAN, Serial, USB	V2D8505R-1MEKEXAL2SXXXX	1134056
	Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8505R-1MEKEXAF2SXXXX	1144347

- **Optical focus:** adjustable focus (manual)
- **Sensor resolution:** 4,096 px x 2,176 px (9 MP)
- **Readable code structures:** 1D codes, 2D codes, Stacked

Illumination color	Focal length	Ambient operating temperature	Communication interface	Type	Part no.
–	12 mm, 16 mm, 25 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8509R-1MCXXXAL0SXXXX	1130539
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8509R-1MCXXXAF0SXXXX	1134613
Red	12 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8509R-1MCLCXAL2SXXXX	1158070
	16 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8509R-1MCLDXAL2SXXXX	1154945
	25 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8509R-1MCMEXAL2SXXXX	1158071
White	12 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8509R-1MCICXAL2SXXXX	1134218
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8509R-1MCICXAF2SXXXX	1143836
		–35 °C ... +50 °C		V2D8509R-1MCICXAF2AXXXX	1155188
	16 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8509R-1MCIDXAL2SXXXX	1134217
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8509R-1MCIDXAF2SXXXX	1134349
		–35 °C ... +50 °C		V2D8509R-1MCIDXAF2AXXXX	1155189
	25 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8509R-1MCKEXAL2SXXXX	1134219
			Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8509R-1MCKEXAF2SXXXX	1142879

- **Optical focus:** dynamic focus control
- **Sensor resolution:** 4,096 px x 2,176 px (9 MP)
- **Readable code structures:** 1D codes, 2D codes, Stacked
- **Focal length:** 25 mm
- **Ambient operating temperature:** 0 °C ... +50 °C

Illumination color	Communication interface	Type	Part no.
Red	Ethernet, CAN, Serial, USB	V2D8509R-1MEMEXAL2SXXXX	1144622
	Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8509R-1MEMEXAF2SXXXX	1144624
White	Ethernet, CAN, Serial, USB	V2D8509R-1MEKEXAL2SXXXX	1144112
	Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8509R-1MEKEXAF2SXXXX	1144348

- **Optical focus:** adjustable focus (manual)
- **Sensor resolution:** 4,096 px x 3,008 px (12 MP)
- **Readable code structures:** 1D codes, 2D codes, Stacked

Illumination color	Focal length	Optical filter	Ambient operating temperature	Communication interface	Type	Part no.
–	12 mm, 16 mm, 25 mm	–	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCXXXAL0SXXXX	1123615
				Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1MCXXXAF0SXXXX	1134611
Red	12 mm	–	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCLCXAL2SXXXX	1158069
	16 mm	–	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCLDXAL2SXXXX	1151593
				Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1MCLDXAF2SXXXX	1137895
			–35 °C ... +50 °C		V2D8512R-1MCLDXAF2AXXXX	1155145
	25 mm	–	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCMEXAL2SXXXX	1152141
White	12 mm	–	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCICXAL2SXXXX	1134214
				Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1MCICXAF2SXXXX	1147763
			–35 °C ... +50 °C		V2D8512R-1MCICXAF2AXXXX	1157544
	16 mm	–	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCIDXAL2SXXXX	1134213
				Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1MCIDXAF2SXXXX	1139825
			–35 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCIDXAL2AXXXX	1155148
				Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1MCIDXAF2AXXXX	1155144
		Polarizing filter	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCIDPAL2SXXXX	1148592
	25 mm	–	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1MCKEXAL2SXXXX	1134215
				Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1MCKEXAF2SXXXX	1144402

- **Optical focus:** dynamic focus control
- **Sensor resolution:** 4,096 px x 3,008 px (12 MP)
- **Readable code structures:** 1D codes, 2D codes, Stacked
- **Focal length:** 25 mm
- **Ambient operating temperature:** 0 °C ... +50 °C

Illumination color	Communication interface	Type	Part no.
Red	Ethernet, CAN, Serial, USB	V2D8512R-1MEMEXAL2SXXXX	1146410
	Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1MEMEXAF2SXXXX	1145299
White	Ethernet, CAN, Serial, USB	V2D8512R-1MEKEXAL2SXXXX	1134045
	Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1MEKEXAF2SXXXX	1144349

- **Optical focus:** adjustable focus (manual)
- **Sensor resolution:** 6,048 px x 2,048 px (12 MP)
- **Readable code structures:** 1D codes, 2D codes, Stacked
- **Illumination color:** White

Focal length	Ambient operating temperature	Communication interface	Type	Part no.
16 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1WCIDXAL2SXXXX	1153583
		Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1WCIDXAF2SXXXX	1152605
	–35 °C ... +50 °C		V2D8512R-1WCIDXAF2AXXXX	1155146
25 mm	0 °C ... +50 °C	Ethernet, CAN, Serial, USB	V2D8512R-1WCKEXAL2SXXXX	1152117
		Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1WCKEXAF2SXXXX	1153531

- **Optical focus:** dynamic focus control
- **Sensor resolution:** 6,048 px x 2,048 px (12 MP)
- **Readable code structures:** 1D codes, 2D codes, Stacked
- **Illumination color:** White
- **Focal length:** 25 mm
- **Ambient operating temperature:** 0 °C ... +50 °C

Communication interface	Type	Part no.
Ethernet, CAN, Serial, USB	V2D8512R-1WEKEXAL2SXXXX	1152642
Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1WEKEXAF2SXXXX	1151116

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com