

COGNEX

Advanced machine vision made easy

High-performance Classification and Identification for Logistics Environments

All-in-one, easy-to-deploy solution
with AI-powered item classification
and advanced code reading

SLX-290



Versatile, easy-to-deploy solution for sorting and identification

Elevate sorting efficiency and improve order accuracy using AI-powered classification and advanced barcode reading

SLX-290



The compact SLX-290 is a scalable, easy-to-install system built for short-distance sorting and identification. It combines AI-powered classification with high-performance barcode scanning to improve accuracy, cut waste, and enhance traceability. Fast setup reduces startup costs, while the on-device management console simplifies deployment and maintenance of multiple units, minimizing downtime and operating expenses.

Purpose-built

Compact in design, the SLX-290 improves quality control and traceability in tight spaces. Minimize sorting and tracking errors, while reducing rework costs with pre-trained AI classification and advanced decoding technology.

Easy to set up

Non-technical personnel can deploy the SLX-290 within minutes. Simply unbox the unit, follow the guided setup in the web-based UI, and you're ready to go, minimizing initial downtime and increasing line efficiency.

Scalable deployment

The SLX-290 scales efficiently across the warehouse with integrated multi-device management, allowing fast configuration changes and streamlined firmware updates without requiring an external PC.

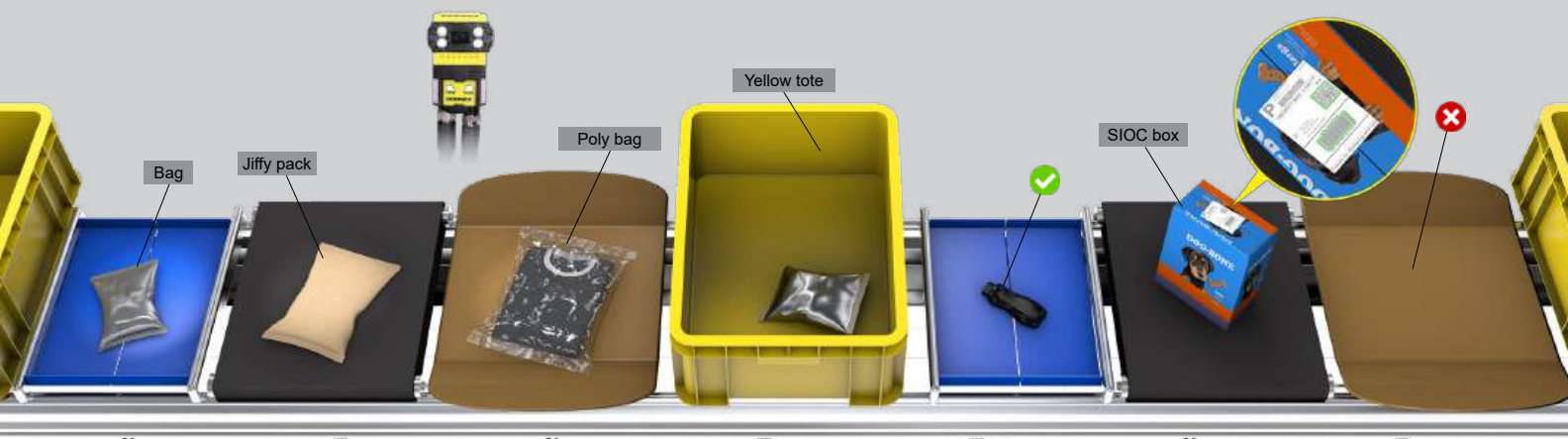
Robust performance handles process variability, such as:

Barcode label quality, position, and orientation

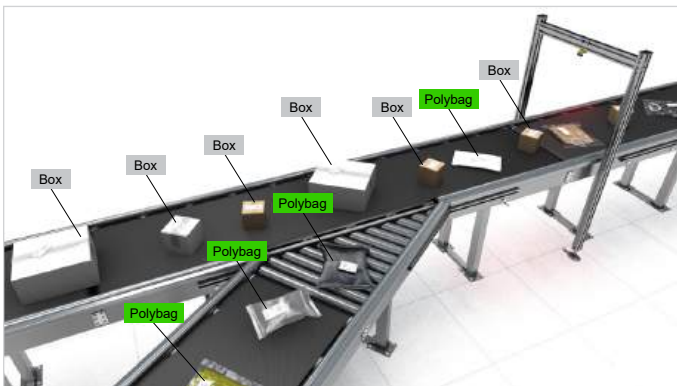
Hygiene issues

Different carrier and tray types

Package types



Application examples



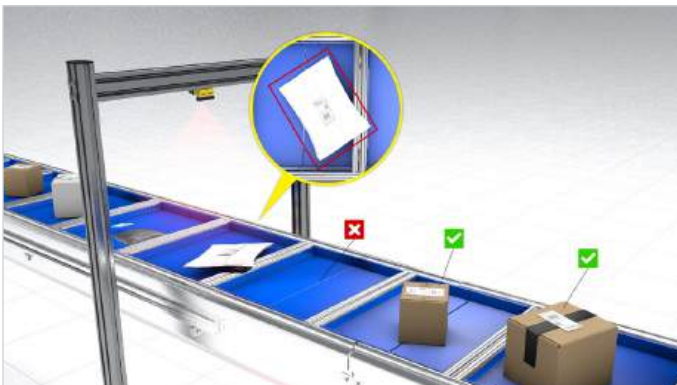
Item classification

Optimize material handling by categorizing various package types and routing them accordingly.



Print and apply label verification

Reduce lost shipments due to poorly applied labels by identifying mis-applied labels and routing them for rework.



Presence/absence detection

Minimize process errors by verifying the presence or absence of lightweight and irregular items before scanning or routing.



Multi-code reading

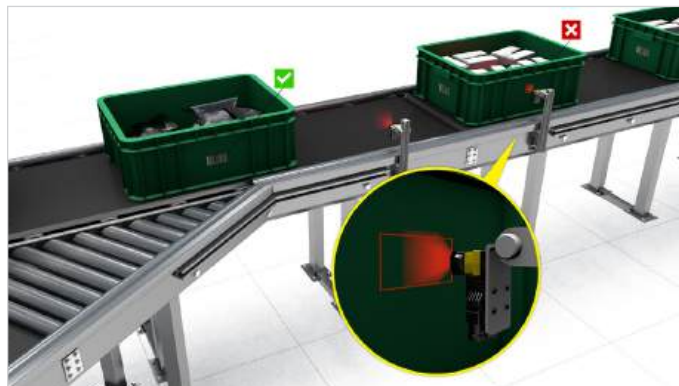
Decode complex labels that have both 1D and 2D codes on them, like those found on Ship in Own Container (SIOC) packaging.

Application examples



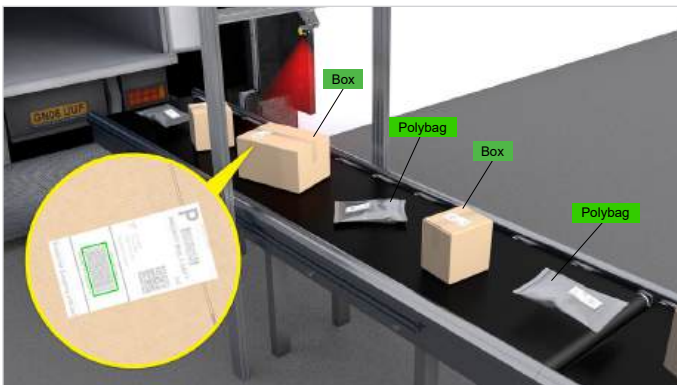
Identify flow problems in bottleneck areas

Detect equipment issues or jams in hard-to-reach areas like ASRS, chutes, and conveyor bellows.



Code reading and label detection

Ensure scanning occurs only when a barcode is present, diverting unlabeled packages for relabeling to minimize downtime.



Inbound scanning

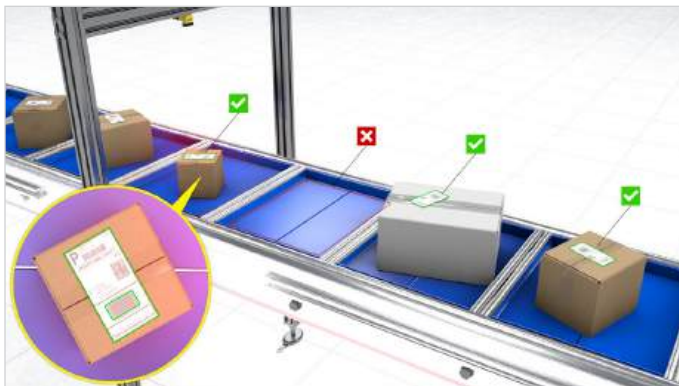
Speed up incoming goods processing at the dock door by decoding barcodes and classifying inbound packages for optimal material handling.



Returns processing

Improve efficiency of the returns process with hands-free, overhead-mounted barcode readers that verify receipts against the RMA list.

Key benefits



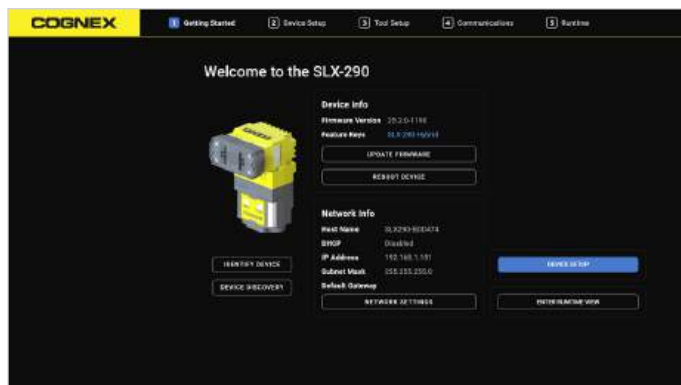
Streamline inspections and maintenance

The SLX-290 combines visual inspection and barcode reading in one device, eliminating the need for separate devices, to increase efficiency, save space, reduce costs, and simplify maintenance.



Fast, error-free sorting—every time

Accelerate sorting speed and minimize errors with AI-powered item classification, pre-trained to ensure consistency across various carrier types, packaging, contrasts, and backgrounds.



Simply unbox and deploy

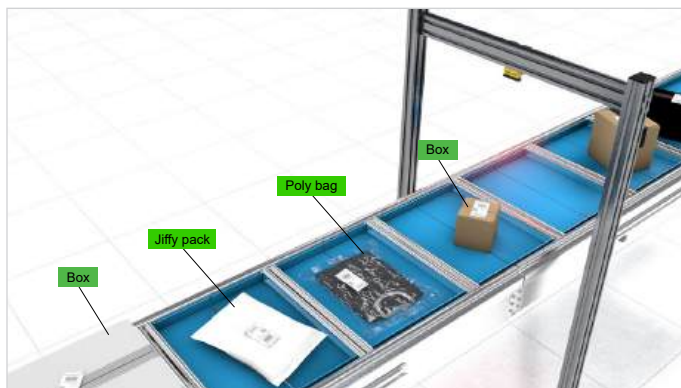
Non-technical personnel can set up the SLX-290 in just minutes, thanks to the web-based guided user interface (UI), which minimizes line downtime and generates results quickly. No software to download or external server needed.



Enhance process quality without compromising throughput

The AI-accelerated SLX-290 delivers up to 99.9% read rates and performs item classification tasks with high accuracy at line speeds.

Key features



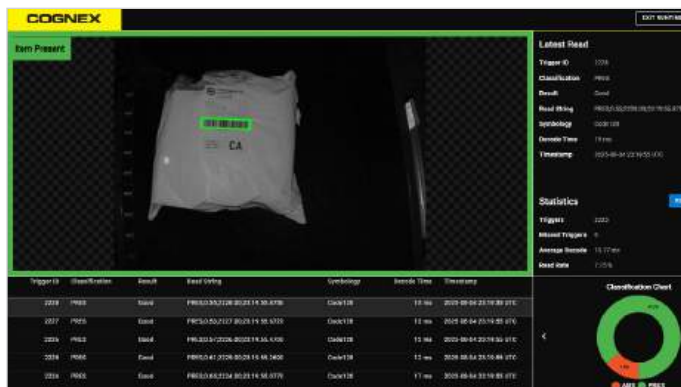
AI-powered detection and classification

Improve process quality by confirming the presence/absence of objects and classifying them by type on sorter trays.



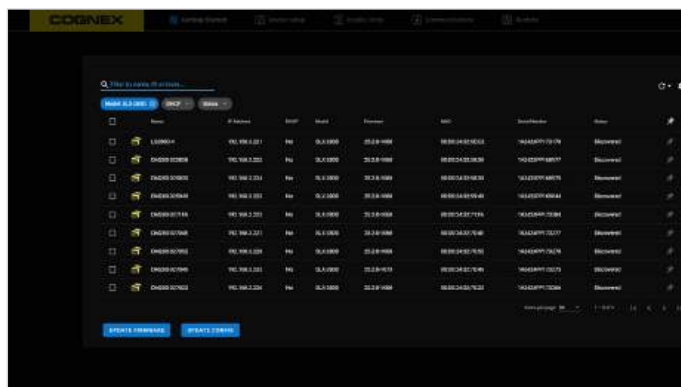
Advanced barcode reading technology

Solve complex code reading challenges, such as reading multiple 1D and 2D codes on a single box in one pass.



Web-based UI with guided setup







Minimize line downtime with quick installation that requires little expertise and no software downloads.













Embedded multi-device management

Connect, configure, and maintain multiple devices from within the SLX-290 web UI.

Feature Comparison: SLX-290 vs. Conventional Solutions

Common Application Characteristics		
	Conventional Solutions	SLX-290
Setup and deployment	 Setup requires external PC or software download	 Web-based UI eliminates the need for a PC and software downloads
Scalability	 Complex: Often requires a separate server on the network to perform updates	 Replicate configurations or push firmware updates over the network from a single device
System intelligence	 Limited output data	 Rich, customizable output data

Barcode Reading		
	1D barcode reader	SLX-290
Code reading	 Only reads 1D codes in a horizontal or vertical format; cannot tolerate moderate code rotation or read 2D codes	 Omnidirectional code reading: Accurately decode 1D and 2D barcodes at any angle
Belt coverage	 Short depth-of-field (DoF) and narrow field-of-view (FoV) limits belt coverage	 Larger depth-of-field (DoF) and wider field-of-view (FoV) support a variety of belt widths

Item Detection and Classification		
	2D rule-based vision sensor	SLX-290
Vision tool training requires	 Complicated: requires vision expert	 Pre-trained AI allows anyone to set up applications in <15 min
Object variation	 Complicated logic required to handle any variation	 Handles a wider range of variation without skilled intervention
Background and hygiene variation	 Requires clean, consistent backgrounds	 Detects against any background

Elevate order accuracy and sorting quality



Drive increased Operational Equipment Efficiency

The SLX-290 streamlines workflows, reduces manual labor, and enhances throughput, improving OEE.



Improve line efficiency by capturing item classification data, enabling control systems to optimize gaps and speed for different package types in real-time.



Reduce manual labor with automated inspections that deliver consistent, reliable results across sorter lines 24/7.



Improve sorting system efficiency by proactively detecting conditions that cause downtime, such as equipment jams or objects falling off sorter trays.

Deploy applications in minutes with a web-based UI and guided workflow

1

Find the device and open the home screen.

2

Configure application details and trigger set up.

3

Select and set up tool(s) to be used.

4

Configure communications protocols.

5

Enter runtime monitoring view.

Trigger ID	Classification	Result	Read String	Symbology	Decode Time	Timestamp
2228	PRES	Good	PRES0.55:2228.00:23:19:55.8758	Code128	15 ms	2025-08-04 23:19:55 UTC
2227	PRES	Good	PRES0.53:2227.00:23:19:55.6728	Code128	13 ms	2025-08-04 23:19:55 UTC
2226	PRES	Good	PRES0.57:2226.00:23:19:55.4708	Code128	12 ms	2025-08-04 23:19:55 UTC
2225	PRES	Good	PRES0.61:2225.00:23:19:55.2698	Code128	12 ms	2025-08-04 23:19:55 UTC
2224	PRES	Good	PRES0.65:2224.00:23:19:55.0778	Code128	17 ms	2025-08-04 23:19:55 UTC

Common UI across all SLX products

The SLX portfolio features a common software user interface, reducing operator training time and enabling smoother operations and faster deployment at scale.



SLX-290 Specifications










	SLX-290 (Core)	SLX-290 (Hybrid)
Functionality & Tool Sets		
Tool Set	Barcode decoding, EL Classify	Barcode decoding, EL Classify
Tool Use	Single tool	Single tool or combined tools
Imaging & Performance		
Sensor Type	1/3-inch CMOS, global shutter, monochrome	
Sensor Properties	Diagonal size: 6.21 mm, Pixel size: 3.45 μm (H)	
Image Resolution	1440 x 1080 (1.6 MP)	
Lens Options	4.5 mm f6	
Acquisition Speed/Frames per Second	Up to 45Hz	
Lighting	Wide-angle integrated light, white	
Connectivity & Communications		
Inputs	2 opto-isolated, 2 configurable	
Outputs	2 opto-isolated, 2 configurable	
Status Outputs	5 status LEDs, audible beeper, 2 visual indicator lights	
Networking Communications	Ethernet, USB-C	
Communication Protocols	Ethernet/IP™, PROFINET®, TCP, FTP	
Power & Electrical		
Power Requirements	24 V DC ± 10%	
Power Consumption	≤ 7.5 W	
Physical & Environmental		
Dimensions	50 x 83.6 x 48.4 mm	
Weight	170 g	
Operating Temperature	0–40 °C (32–104 °F)	
Storage Temperature	-10–60 °C (14–140 °F)	
Operating and Storage Humidity	< 95% non-condensing	
Protection	IP67	
Materials	Die-cast and extruded aluminum and zinc housing	
Mounting	Four M3 threaded mounting holes. Pattern: 37 x 21.1 mm (1.46 x 0.83 in) is compatible with the existing mounting brackets for the DM280 / IS2800	
Compliance		
Certifications	BIS, CE, ESD, Eye-Safety, TÜV SÜD NRTL	

PROFINET is a registered trademark of the PROFIBUS Nutzerorganisation e.V. (PNO)

EtherNet/IP is a trademark of ODVA, Inc.

Components and accessories

Power, I/O, and Connectivity		
	Product ID	Description
	CPS-8A-78-L	Emparro Power Supply 8A 7/8" - L
	CIO-MB-PNP	Master Breakout Board PNP
	CIO-PD-4	Power Distribution Board (PDB)
	CIO-HS-4	Hybrid Switch (HS)
	CIO-PB-4	Power Breakout (PB)
	CCB-CIO-P4141-XXX	Power chain L-coded
	CCB-CPS-A3E11-XXX	Emparro Input 7/8" to C14 Cable
	CCB-CPS-344533-XXX	Two Channel Emparro Output L-Coded Cable
	CCB-CIO-40021-XXX	External/Light Cable
	CCB-CIO-53001-XXX	Primary Cable 12pin

Power, I/O, and Connectivity		
	Product ID	Description
	CCB-CIO-40507-XXX	Shielded Secondary Cable 4pin
	DMA-PS-110VAC-24DC	Laptop Power Supply, 110V AC to 24V
	CCB-CIO-42751-000	Murr, M12 Cable T-Splitter
	CCB-CIO-FLEX-IN-3	Input W cable, Single Device, 3m
	CCB-CIO-51001-XXX	Ethernet chain X-coded
	DMA-STCBLE-IP65-XXX	USB-C to USB-A Ang Cable
	CCB-84901-2001-XXX	X-Coded Ethernet Cable
Mounting Brackets		
	Product ID	Description
	DM100-PIVOTM-01	Bracket, Pivot, Dataman
	DMA-BKT-LGS	Bracket, for Zone Routing Side Mount

Field of view diagram

1.6 MP with 4.5mm F6 lens

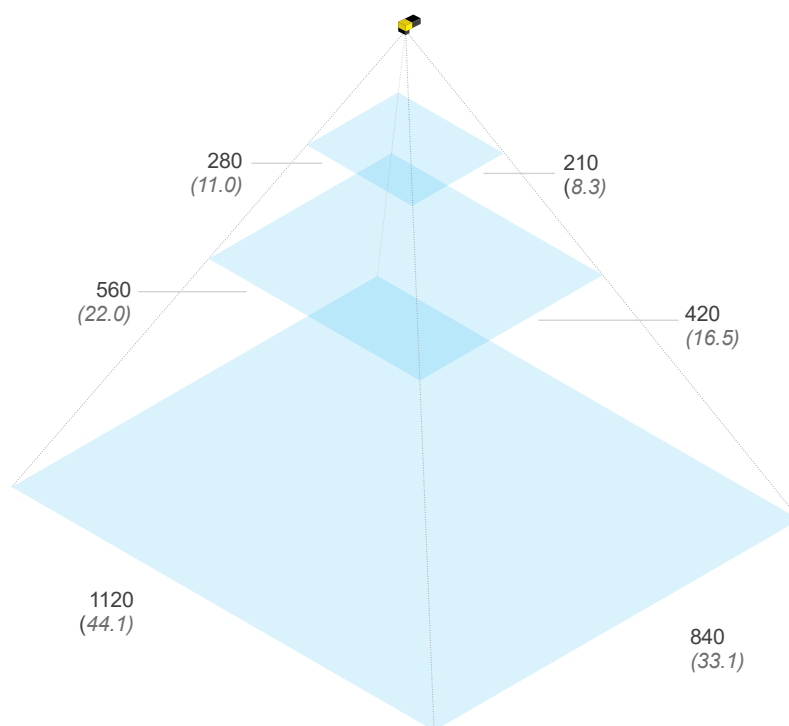
Common working distances

Units: mm (*in*)

250 (9.8)

500 (19.7)

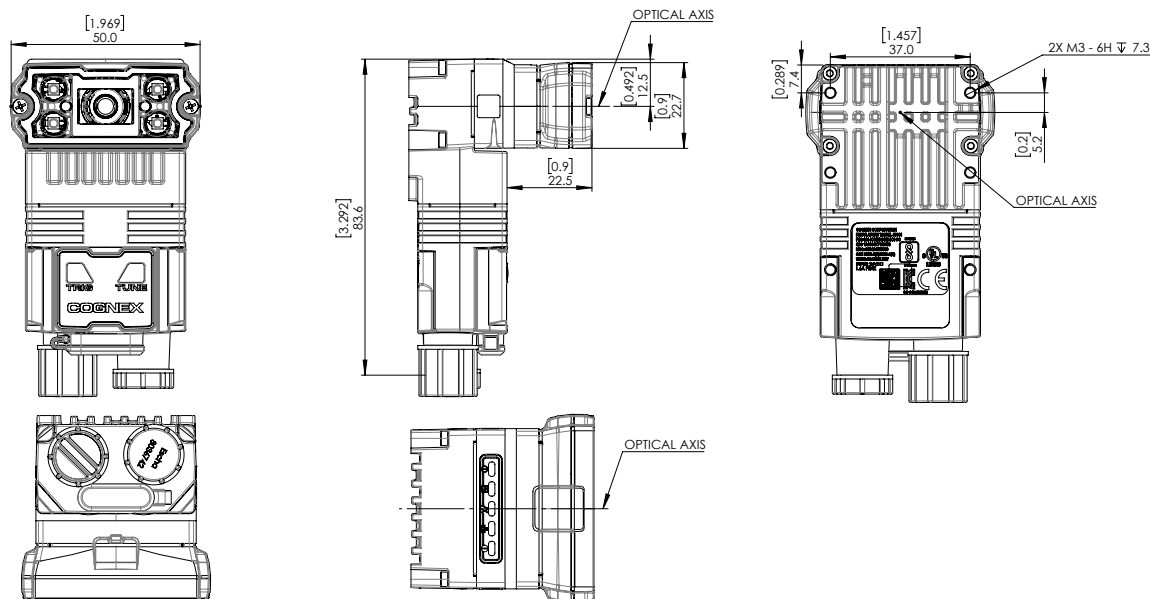
1000 (39.4)



Dimensions

SLX-290

[Download CAD files](#)



Customer Success

Industry-leading support that works the way *you* want,
from self-service resources to a global network of experts



Plan & Deploy



Run & Support



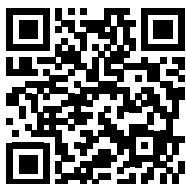
Expand & Optimize

From initial planning to full-scale implementation, Cognex makes using advanced machine vision easy.

During planning and deployment, you'll get curated guidance on product choices and setup, single-click registration, and image-based AI training to get going quickly.

Once you're validated and in production, we keep you at peak performance with connected support and self-service training to take you from beginner to expert.

And over time, we help you scale up through a broad portfolio of products with shared interfaces and capabilities, as well as easy access to data that helps you grow and optimize across multiple facilities.



cognex.com/customer-success



Solutions Experience Logistics Portfolio

The Cognex Solutions Experience (SLX) Logistics portfolio addresses the unique needs of the logistics industry, is easy to deploy, and offers robust barcode reading and AI-powered performance that enhances productivity, reduces errors, and optimizes processes for greater efficiency.

**High-resolution side-by-side
detection and large-format
top-side barcode reading**

SLX-3816

**High-performance
item detection and
classification**

SLX-290

**Barcode reading for
zone routing systems
and tote inspection**

SLX-280D

**Pick and pack hands-free
barcode reading and item
detection on sorter trays**

SLX-80

COGNEX

Advanced machine vision made easy

Corporate Headquarters
One Vision Drive
Natick, MA 01760 USA

Contact us or find your
regional sales office:
www.cognex.com/sales

Americas

North America	+1 855 426 4639
Brazil	+1 855 426 4639
Mexico	+52 552 789 5444

Europe

Austria	+49 721 958 8052
Belgium (FR)	+33 176 549 318
France	+33 176 549 318
Germany	+49 721 958 8052
Ireland	+353 21 601 9005
Italy	+39 02 9475 4345
Spain	+34 93 220 6237
Switzerland (DE)	+49 721 958 8052
Switzerland (FR)	+33 176 549 318
United Kingdom	+353 21 601 9005
Other Europe	+353 21 601 9005

Asia-Pacific

China	+86 021 8036 5424
India	+91 7305 040397
Japan	+81 345 790 266
Korea	+82 070 4784 4038
Malaysia	+60 3 2774 6820
Singapore	+65 3158 2511
Taiwan	+886 801 492 017
Other Asia-Pacific	+65 3158 2511

© Copyright 2025, Cognex Corporation.
All information in this document is subject to
change without notice. All Rights Reserved.
Cognex, and PinPoint are registered trademarks
of Cognex Corporation. All other trademarks are
property of their respective owners.

Lit. No. SLX290-DS-EN-09-2025

www.cognex.com