COGNEX

Advanced machine vision made easy



High-resolution Side-by-side Detection and Large-format Top-side Barcode Reading for Logistics

Purpose-built, easy-to-deploy device with AI-powered detection and high-performance barcode reading

SLX-3816

All-in-one, easy-to-use solution for side-by-side detection and identification



Enhance operational equipment efficiency (OEE) of sorting operations using AI-powered item detection and advanced barcode reading

SLX-3816

The SLX-3816 streamlines logistics sorting with fast setup, intuitive AI detection, and advanced decoding capabilities. With point-and-shoot accuracy and a user-friendly web UI, it easily resolves side-by-side conflicts, minimizes errors, and delivers exceptional performance and value from day one.

Purpose-built

The SLX-3816 addresses the specific needs of logistics operations with AI-powered features that identify improperly gapped objects, reduce false detections, and read barcodes, all at line speed.

Easy to set up

Non-technical staff can deploy the SLX-3816 in minutes, without complex programming. A web-based UI, guided setup, and pre-trained point-and-shoot item detection deliver production-level results straight out of the box.

Scalable deployment

The SLX-3816 efficiently scales across the warehouse with integrated multi-device management, allowing quick configuration adjustments and firmware updates across the network, no external PC required.

Robust performance handles process variability, such as:

- Package gapping and spacing
- Barcode quality
- Different carriers and sorting systems
- Package types



Application examples



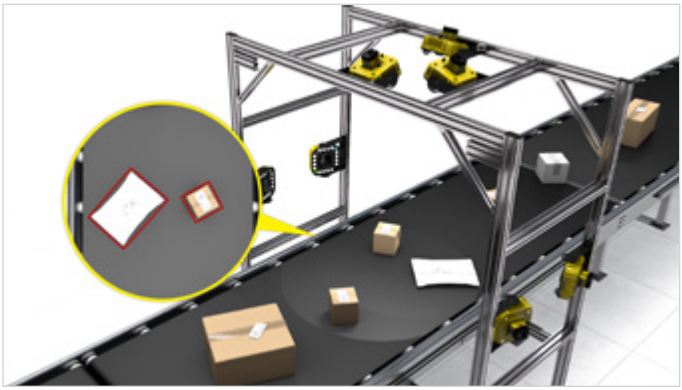
Standalone side-by-side detection

Reduce mis-sorting and improve order accuracy by segmenting improperly gapped objects and ensuring special packaging, like multi-pack carriers or split-top cases, is recognized as a single object, not two separate ones.



Dock door scanning

Ensure accurate inventory counts when receiving inbound goods by adding side-by-side detection to high-speed inbound scanning tunnels.



Item detection for ship sorting

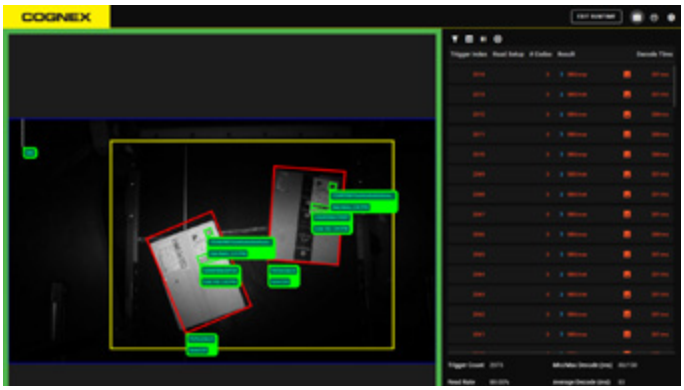
Increase sorting efficiency and reduce mis-sorts by adding side-by-side detection to ship sorters.



Outbound scanning

Enhance traceability and throughput, and minimize shipping errors by adding side-by-side detection to outbound scanning tunnels.

Key benefits



Unlock efficiency with combined vision and barcode reading

Performing inspections with code reading boosts efficiency, saves money and space, and simplifies maintenance by eliminating the need for multiple devices.



Correctly handled packages



Failed side-by-side condition marked for rework

Achieve quick and measurable ROI while optimizing OEE

The SLX-3816 uses AI vision to accurately detect side-by-side conditions on sorting lines, preventing costly mis-sorts and double shipments. Easily integrated into new or existing systems, it improves sorting OEE by reducing errors and provides quick ROI by significantly lowering costs associated with lost orders.



AI locates barcodes, increasing decoding efficiency

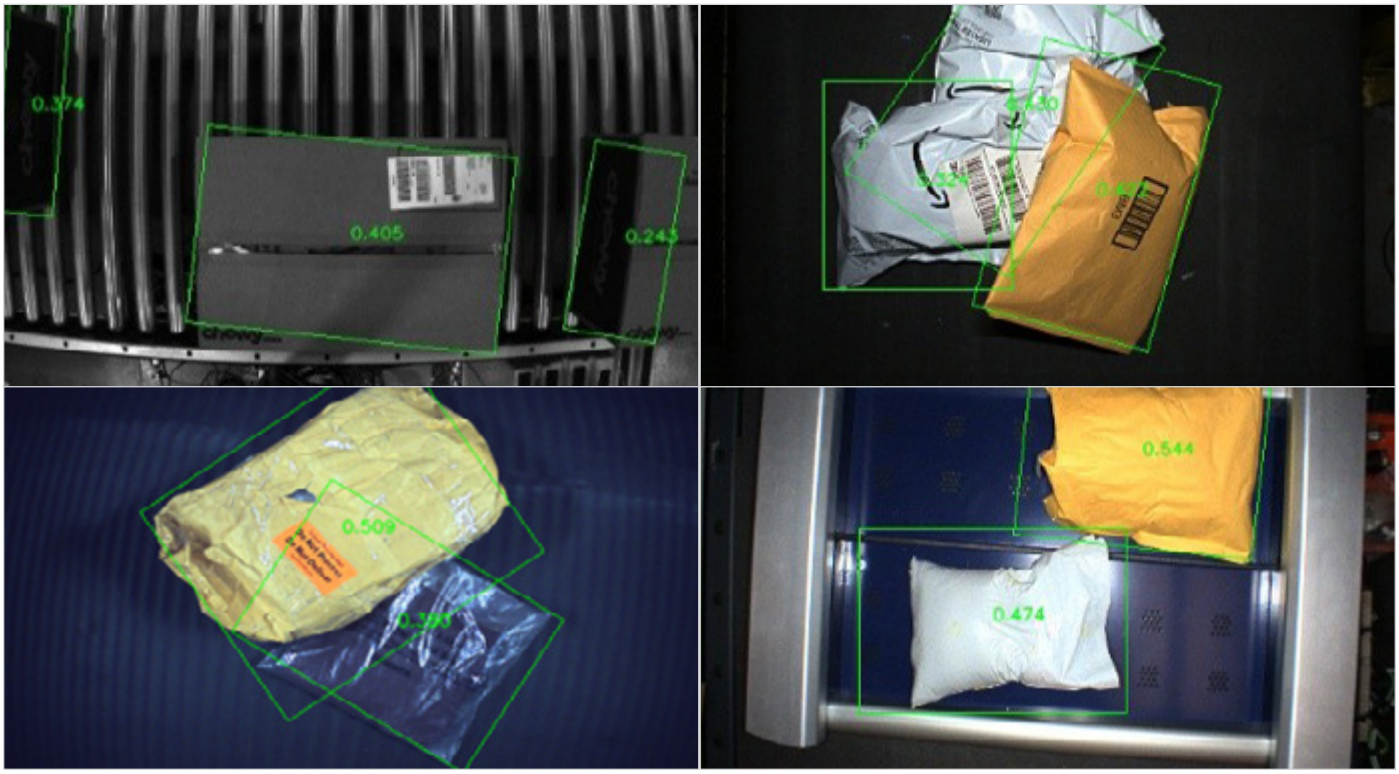
Have it both ways: high speeds, high read rates

Run your logistics lines at the highest speeds while maintaining exceptional read rates and close package proximity. Proprietary, AI-powered decoding technology optimizes read rates during high-speed operations by quickly locating barcodes and enables faster throughput by simultaneously decoding 1D/2D codes.

Key benefits

Deploy smarter and faster with pre-trained AI

A point-and-shoot design enables easy deployment and use by non-technical staff, delivering consistent performance and simplifying management right out of the box, in any operational environment.



Supported Conveyance and Object Types

Conveyance types:

- Bomb-bay sorters*
- Cross-belt sorters*
- Flat belts (dark background)
- Roller belts (straight/slanted)

Object types:

- Boxes
- Jiffy packs
- Mailers
- Multi-packs
- Polybags
- SIOCs

* Please consult with your local Cognex Logistics Sales Engineer for specific criteria and application guidance.

Detect side-by-side conditions across a variety of conveyance and object types

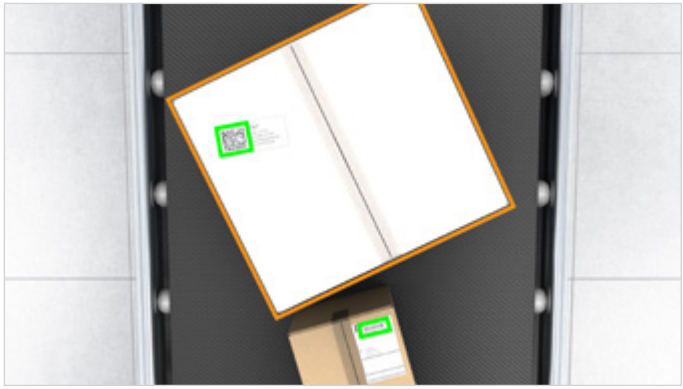
Designed to handle variation, the embedded pre-trained AI detection tool within the SLX-3816 detects objects despite package and background variability.

Key features



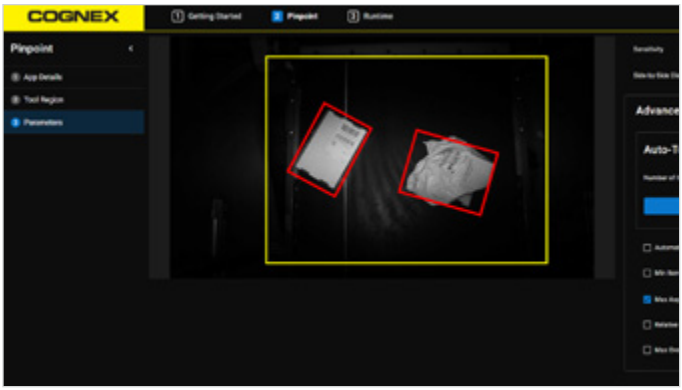
Point-and-shoot inspection

Simplify quality checks using pre-trained AI-powered item detection that instantly detects and segments improperly gapped objects.



AI-powered barcode reading technology

Decode multiple codes of different symbologies across the entire field of view up to three times faster using the AI-accelerated decoding.



Web-based UI with guided setup

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



Powerful 16MP imager

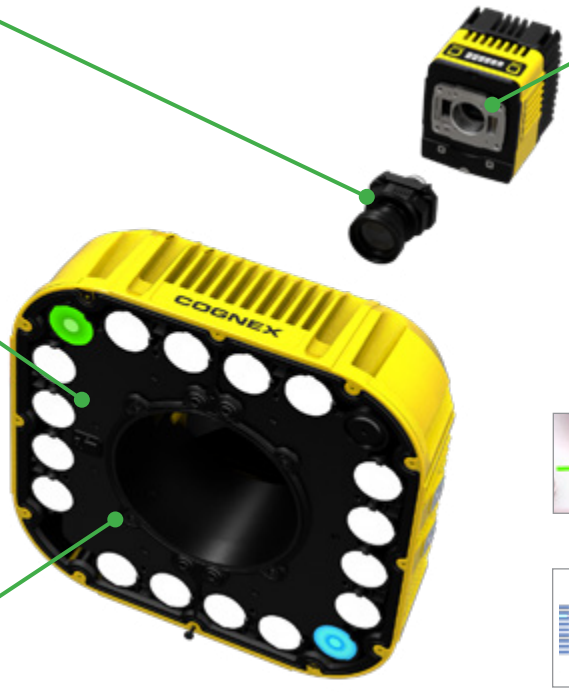
Capture clear, detailed images over a wide field of view, enabling maximum belt coverage.

Minimize product loss, prevent mis-sorts, and enhance traceability

Variable aperture C-mount lens options (12mm or 16mm) maximize belt coverage.

High-Powered Integrated Torch (HPIT) maximizes code readability with unmatched illumination power and uniform light distribution.

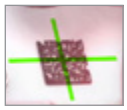
Distance sensor provides distance-based triggering to assist installation and sensor-based data when code filtering is used.



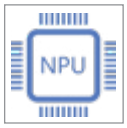
High-resolution sensors provide greater field-of-view and depth-of-field coverage.

Gigabit Ethernet enables fast communication speeds.

USB-C connectivity provides a direct communication channel to external sources when in HID mode.



Guided laser aimer clearly maps the field-of-view to the desired target.



Neural Processing Unit (NPU) enables high-speed, AI-powered vision tasks without compromising throughput.

Drive increased Operational Equipment Efficiency

The SLX-3816 streamlines workflows, reduces manual labor, and enhances throughput, improving OEE.

Improve order accuracy with automated quality checks that reduce mis-sorts and product loss caused by side-by-side conditions.

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

Increase 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 setup.

3 Enter runtime monitoring view.



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-3816 Specifications

	SLX-3816 (Core)	SLX-3816 (Hybrid)
Functionality & Tool Sets		
Tool Set	QuickSort barcode reading	QuickSort barcode reading, AI-powered item segmentation
Tool Use	Single tool	Single tool, or combined
Imaging & Performance		
Sensor Type	1.1-inch CMOS	
Sensor Properties	Diagonal size: 16.9 mm, Pixel size: 2.74 µm (H) x 2.74 µm (V)	
Image Resolution	5320 x 3032 (16.13 MP)	
Lens Options	12 mm, 16 mm - Variable aperture and variable focus lenses	
Acquisition Speed/Frames per Second	Up to 18Hz	
Lighting	High Powered Integrated Torch Light (HPIT)	
Connectivity & Communications		
Inputs	1 opto-isolated, up to 3 general-purpose when connected to the Breakout cable	
Outputs	Up to 4 outputs when connected to the Breakout cable	
Status Outputs	5 status LEDs, 1 visual indicator ring	
Networking Communications	2 Ethernet ports, USB-C	
Communication Protocols	Ethernet/IP™, PROFINET® (Class B), SLMP	
Power & Electrical		
Power Requirements	24 VDC ± 10%	
Power Consumption	≤ 40 W	
Physical & Environmental		
Dimensions	246.9 x 246.9 x 175.3 mm (with HPIT light)	
Weight	3066 g (108.2 oz) - no lens included	
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)	
Storage Temperature	-20 °C to 80 °C (-4 °F to 176 °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: 38.5 x 58.5 mm (1.52 x 2.60 in)	
Compliance		
Certifications	CE, China RoH, EU RoHS, FCC, KCC, 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

Power, I/O, and Connectivity

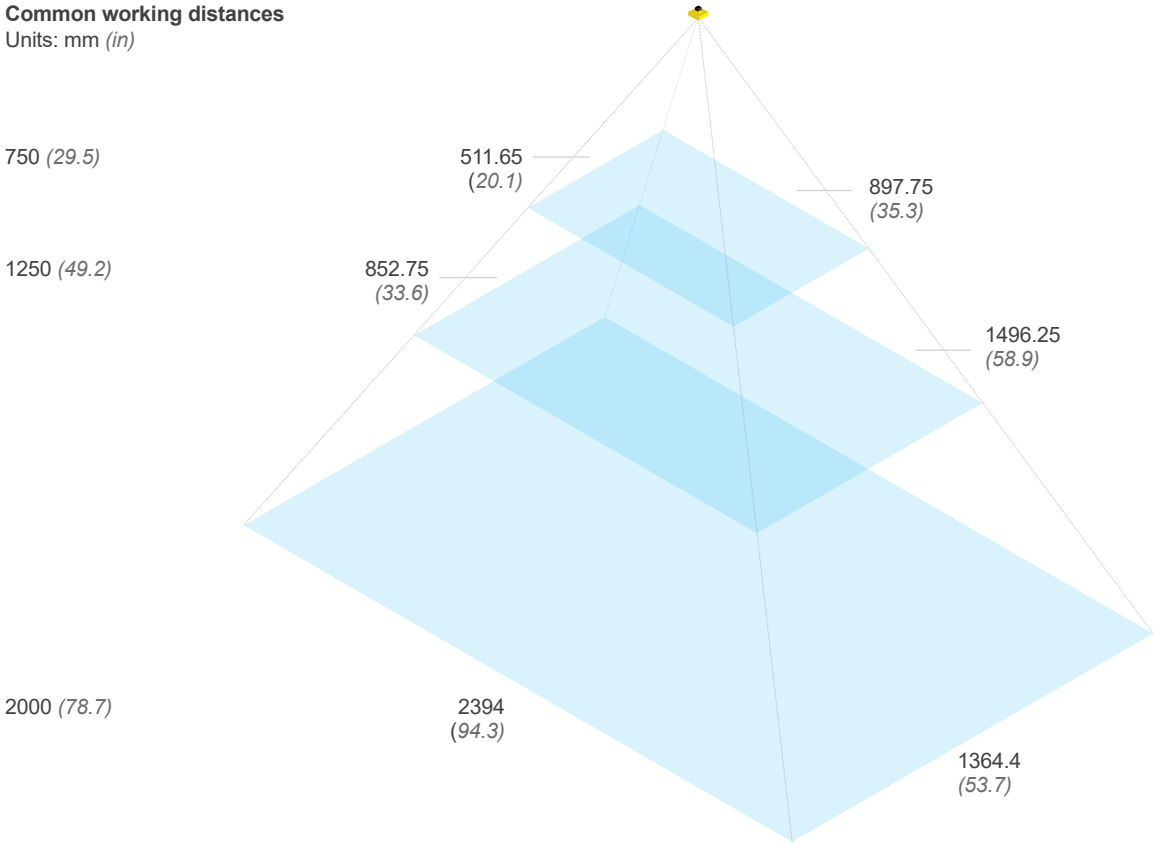
	Product ID	Description
	CCB-CIO-53001-XXX	Primary Cable 12pin
	CCB-CIO-40507-XXX	Shielded Secondary Cable 4pin
	DMA-PS-110VAC-24DC	Laptop Power Supply, 110V AC to 24V
	CCB-CIO-42751-000	Murr, M12 Cable T-Splitter
	CCB-CIO-51001-XXX	Ethernet chain X-coded
	CCB-84901-2001-XXX	X-Coded Ethernet Cable

Mounting Brackets

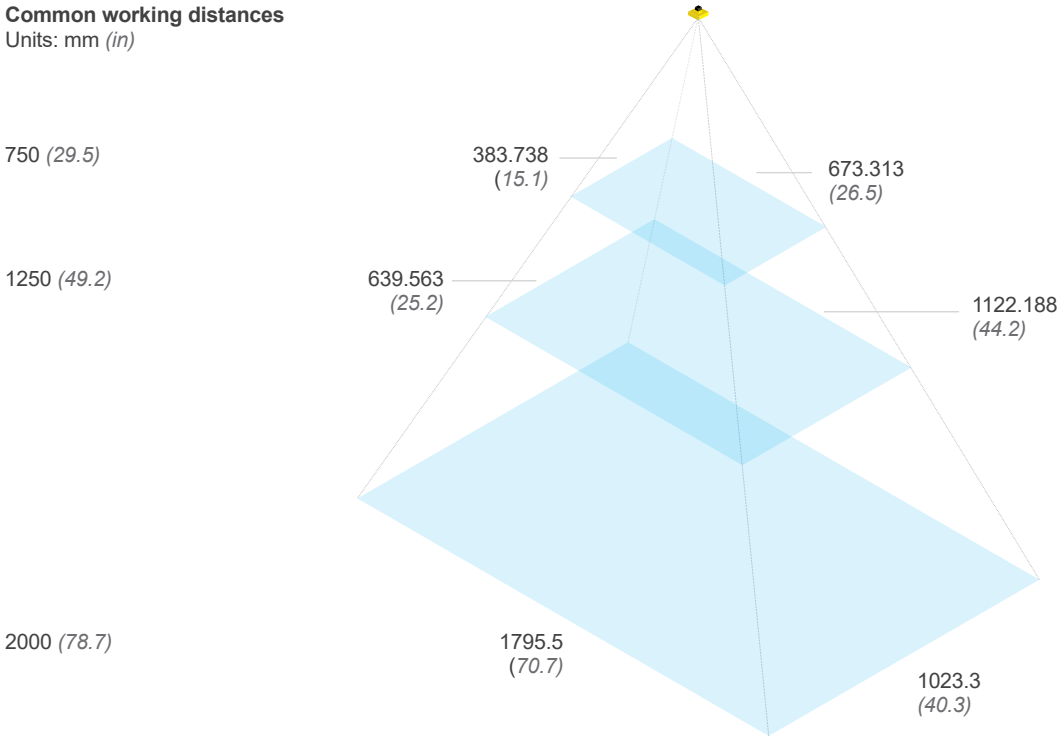
	Product ID	Description
	DMBK-PIVOT-DM380	Pivot mounting bracket, Dataman 380
	DMBK-PVT-HPIT-380	U-shaped mounting bracket for use with HPIT

Field of view diagrams

16 MP with 12mm variable aperture lens



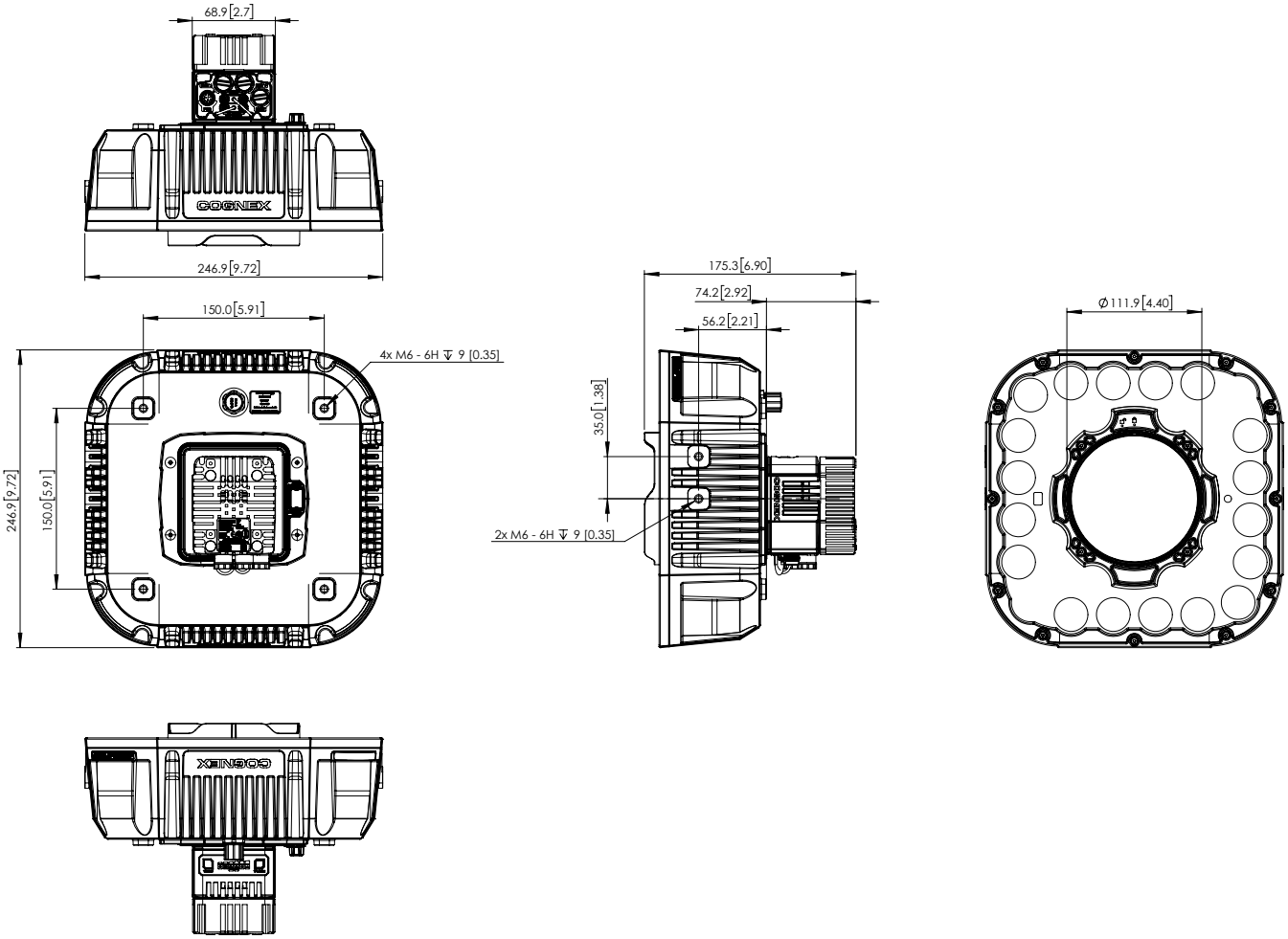
16 MP with 16mm variable aperture lens



Dimensions

SLX-3816 with High-Powered Integrated Torch

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.



COGNEX

Advanced machine vision made easy

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