

# 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



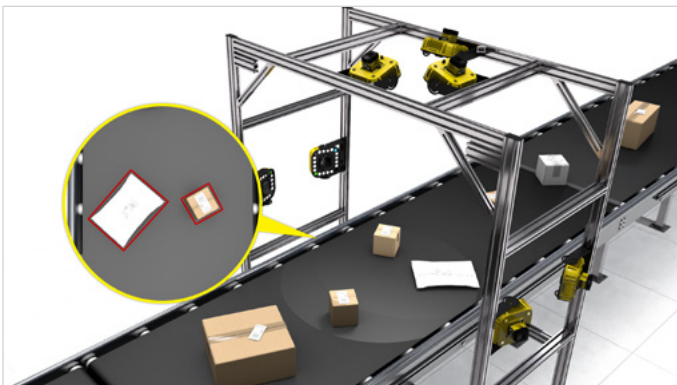
## Standalone side-by-side detection

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

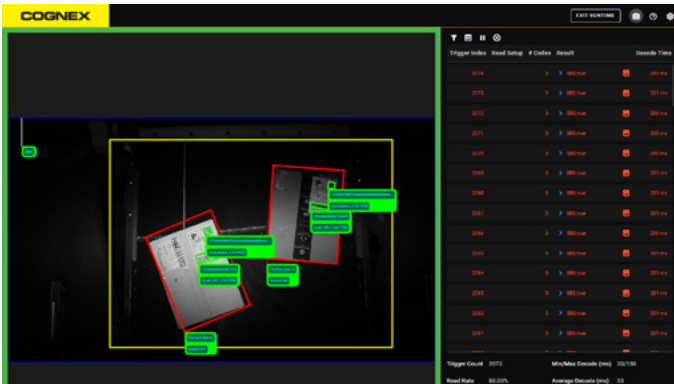
Increase sorting efficiency and reduce mis-sorts by adding side-by-side detection to ship sorters.



## 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.



## 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.



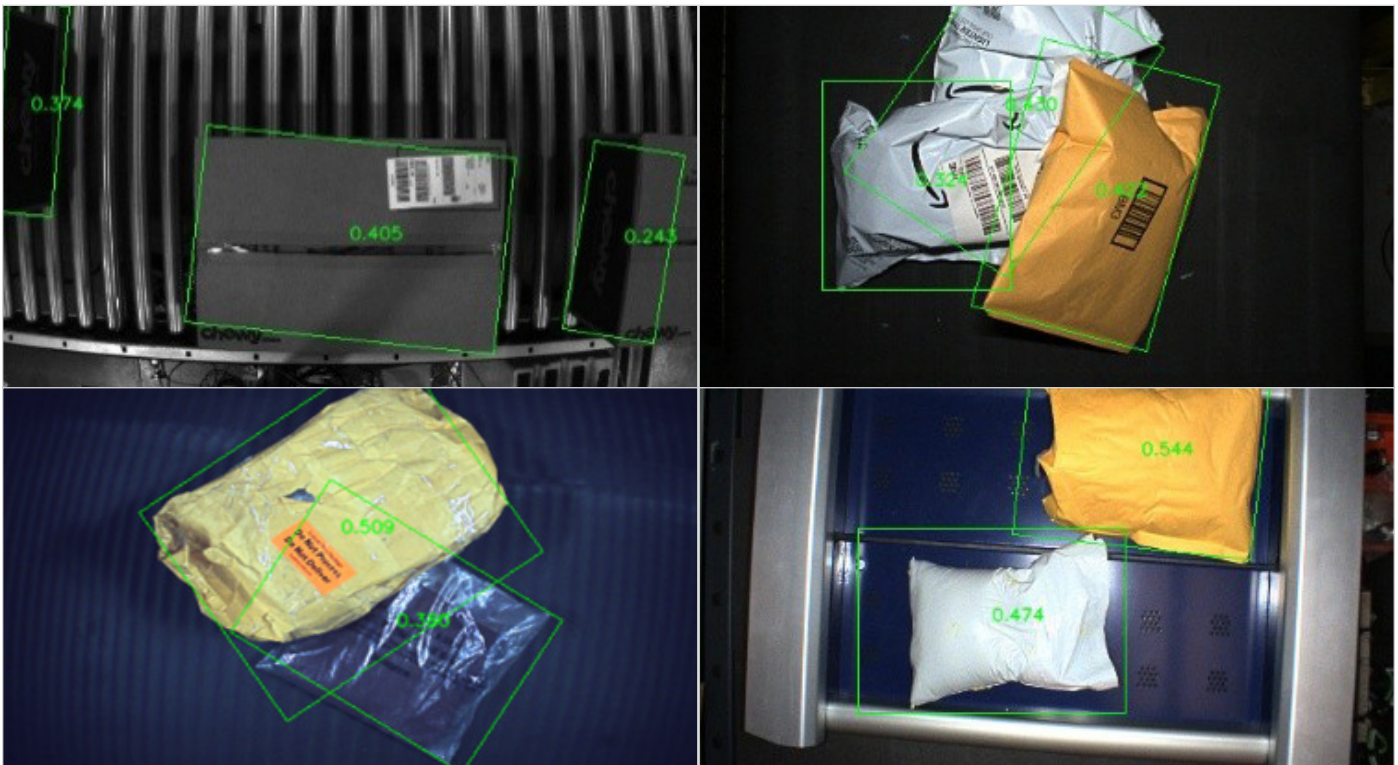
## Have it both ways: high speeds, high read rates

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
- SIOC's

### 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.

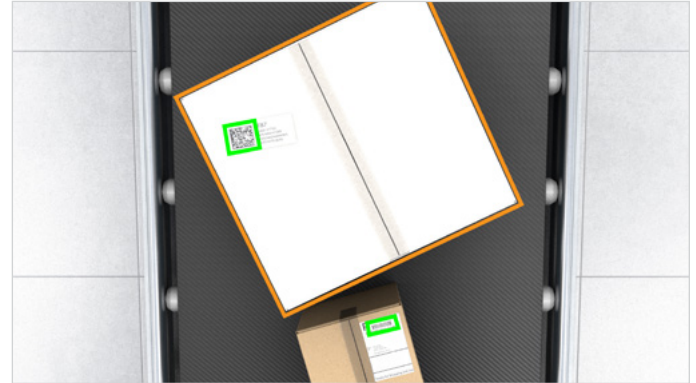
\* Please consult with your local Cognex Logistics Sales Engineer for specific criteria and application guidance.

# Key features



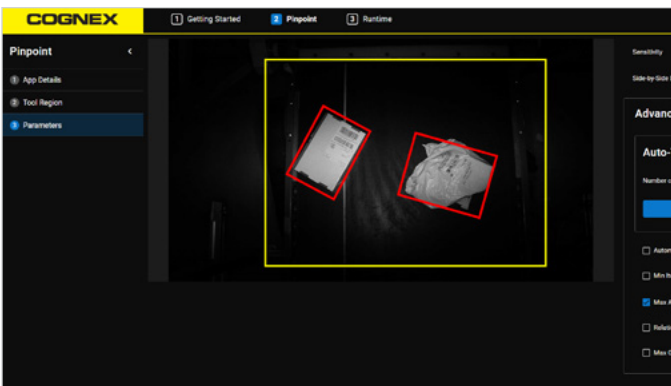
## Point-and-shoot inspection

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

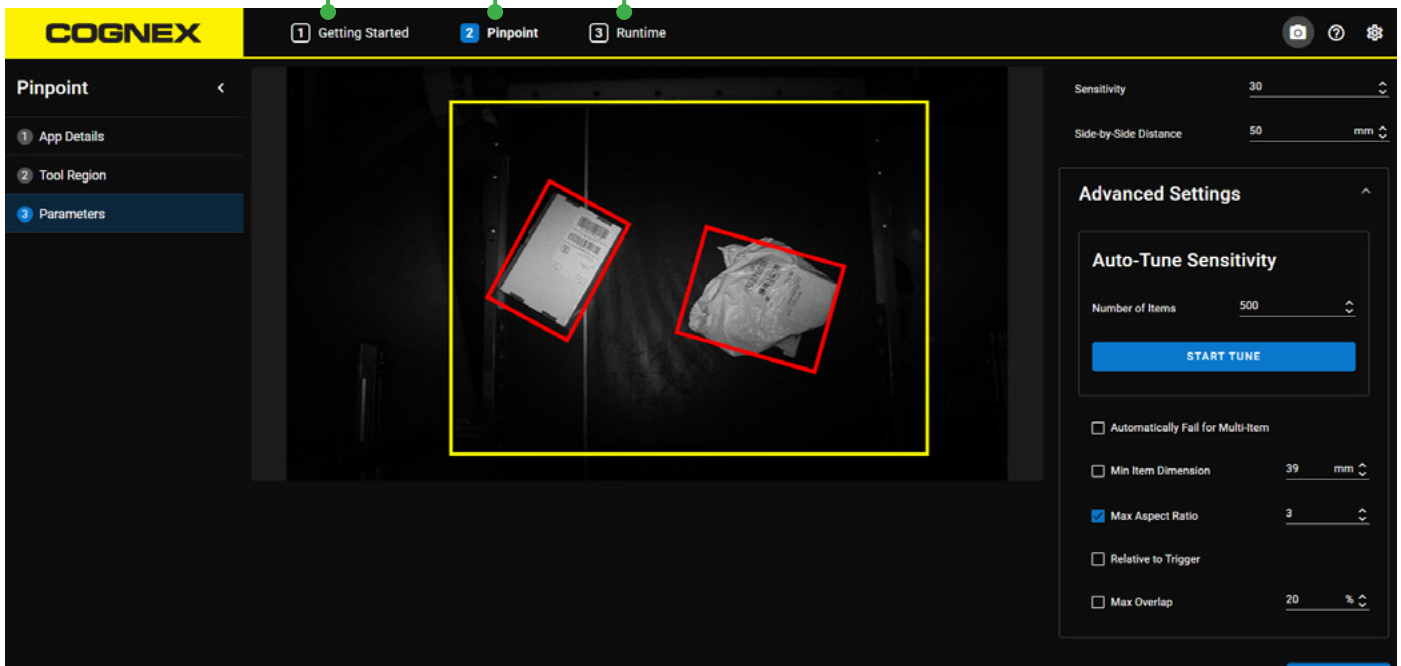
Find the device and open the home screen.

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)
<b>Functionality &amp; Tool Sets</b>		
Tool Set	QuickSort barcode reading	QuickSort barcode reading, AI-powered item segmentation
Tool Use	Single tool	Single tool, or combined
<b>Imaging &amp; Performance</b>		
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)	
<b>Connectivity &amp; Communications</b>		
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	
<b>Power &amp; Electrical</b>		
Power Requirements	24 VDC ± 10%	
Power Consumption	≤ 40 W	
<b>Physical &amp; Environmental</b>		
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)	
<b>Compliance</b>		
Certifications	CE, China RoH, EU RoHS, FCC, KCC, TÜV SÜD NRTL	

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EtherNet/IP is a trademark of ODVA, Inc.

## Components and accessories

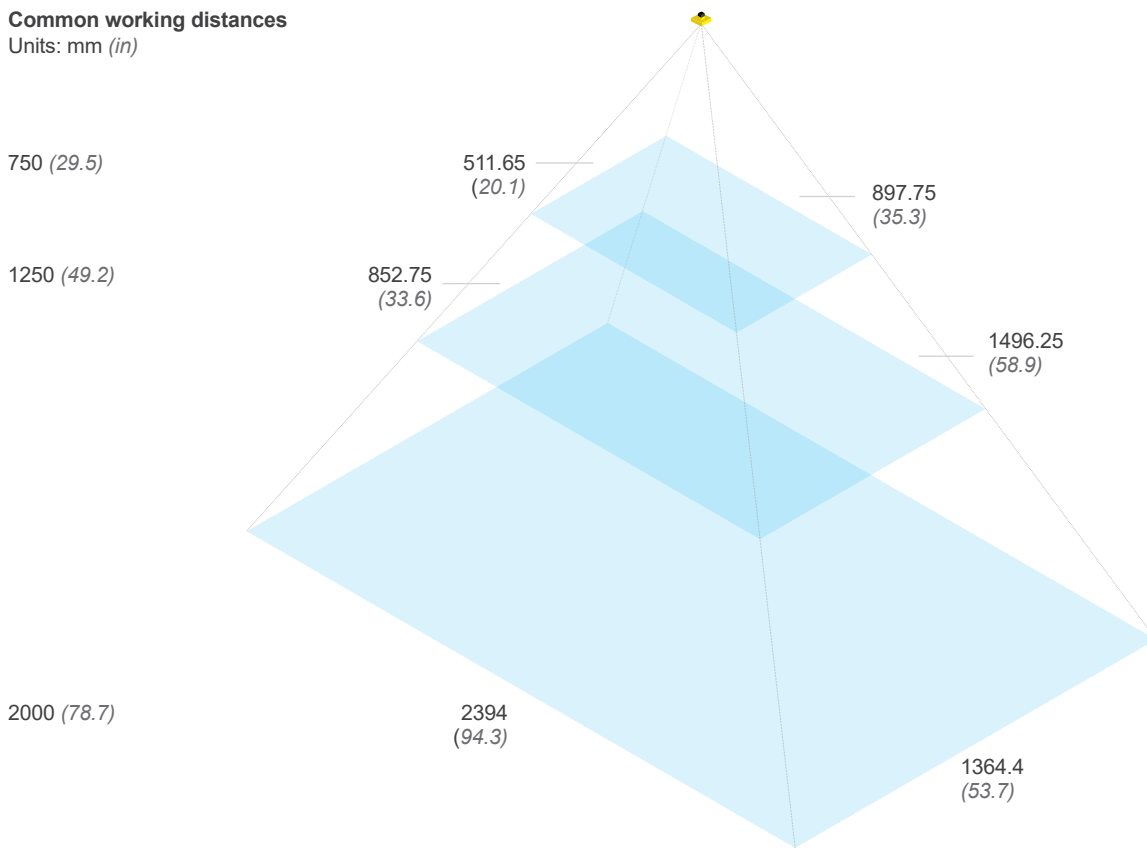
Power, I/O, and Connectivity		
	Product ID	Description
	CPS-8A-78-L	Emparro Power Supply 8A 7/8" - L
	CIO-MB-PNP	Master Breakout Board PNP
	CIO-PD-4	Power Distribution Board (PDB)
	CIO-HS-4	Hybrid Switch (HS)
	CIO-PB-4	Power Breakout (PB)
	CCB-CIO-P4141-XXX	Power chain L-coded
	CCB-CPS-A3E11-XXX	Emparro 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

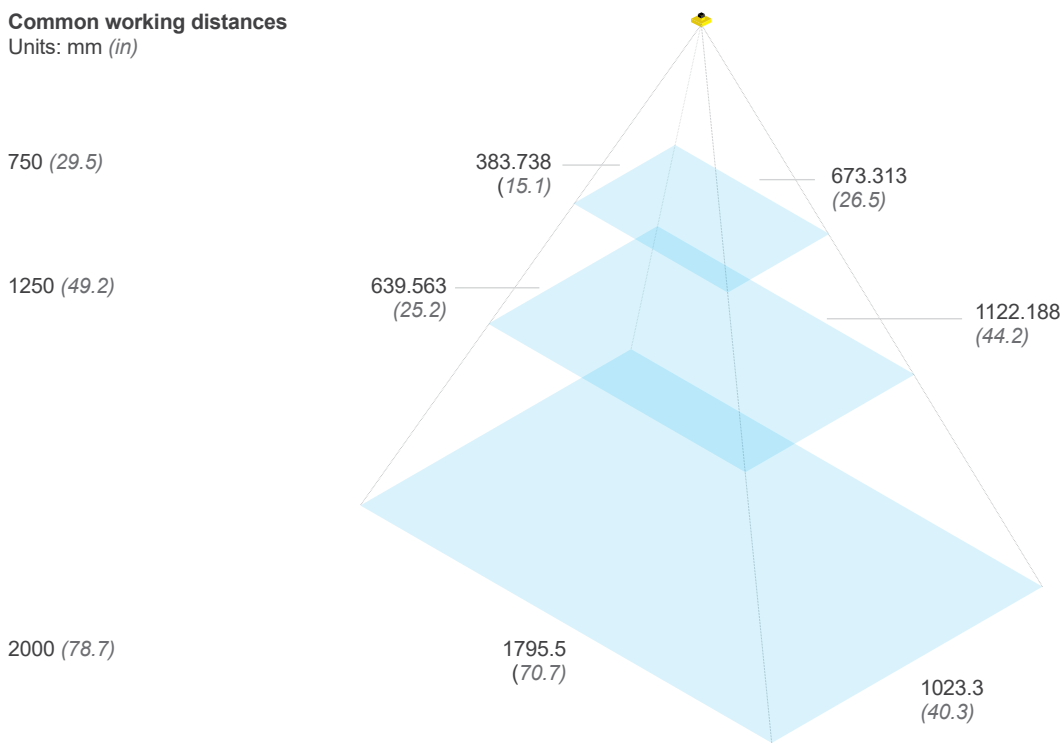
## 16 MP with 12mm variable aperture lens

Common working distances  
Units: mm (in)



## 16 MP with 16mm variable aperture lens

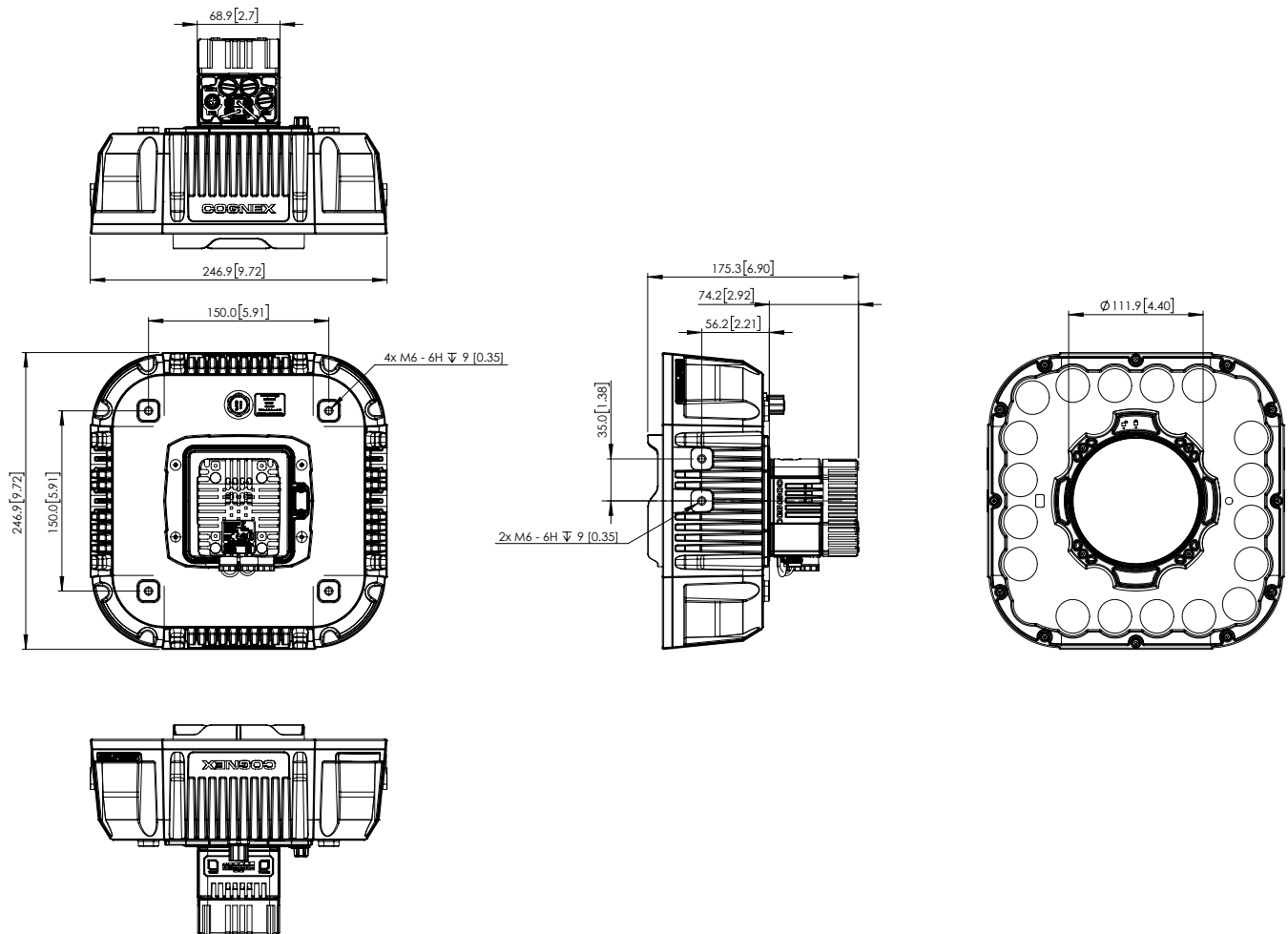
Common working distances  
Units: mm (in)



# 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



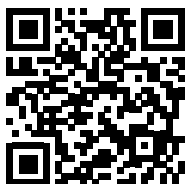
Expand & Optimize

## 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](https://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

## COGNEX

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