

### BOA<sup>™</sup> Spot XL Vision Sensors



#### FEATURES AND BENEFITS

- Fully integrated vision solution includes software, processing, lighting and optics
- » Easy setup for first time or experienced vision users
- » Versatile toolset supports widespread applicability
- Integrated factory protocols make it easy to communicate with 3rd party equipment
- » Offers features and capabilities normally found in higher-end vision solutions
- » Standard and high resolution sensor options
- » M12 or C-mount lens options
- » White, Red, Blue or external light options
- » Flexible mounting options
- » Hardware or software job switching
- » Remote monitoring and control
- » FTP image transfers
- » Built for factory environments
- » Low cost of ownership

#### **OVERVIEW**

# BOA Spot XL vision sensors offer simplicity and affordability for error-proofing, identification and guidance applications.

The BOA Spot XL vision sensor combines the power and flexibility of a BOA vision system with integrated optics, lights and easy-to-use setup software to deliver high value capabilities at a low cost of ownership.

This highly versatile sensor is fully equipped with vision tools and capabilities suiting a range of industrial applications for manufacturing, logistics and general automation. BOA Spot XL tools can be combined and used multiple times to solve simple or complex inspection tasks that go well beyond the capabilities of traditional sensors.

#### **USER INTERFACE**



The BOA Spot XL User Interface is quick to learn and applicable for both novice and expert users alike. Guided setup is supported on the top navigation bar, while the left and bottom panels are used for function-specific setup, advanced control and status reporting. The interface offers a full complement of features for both setup and runtime operation.

The application software is resident on the sensor and the user interface is conveniently accessed from the device webpage.



Part of the Teledyne Imaging Group

## **BOA<sup>™</sup> Spot XL Vision Sensors**

#### **SPECIFICATIONS**

FEATURE		BOA Spot-XL Models					
Model Features		0640M	0640C	1280M			
User Interface (GUI)		Graphical point and click					
Job Storage	# Jobs on Device	32					
Sensor	Туре	1/3" Mono Global Shutter					
	Mono/Color	Mono	Color	Mono			
	Resolution	640 x 480	640 x 480	1280 x 960			
	Rate	45 fps	30 fps	30 fps			
Lens	M12	6, 8, 12 or 16 mm (factory installed)					
	C-Mount Option	6 mm-50 mm (user installed)					
Illumination	Standard	White, Blue or Red LED Ring (factory installed)					
	Optionals	External light with strobe control					
	Alignment	4 Position Locators					
	Error Proofing	Feature Measuring					
		Verification					
		1D Code Reading					
	Identification	2D Matrix Reading					
		ISO 15415 / 16022, AIM DPM Grading					
Vision Capabilities		Character Reading (OCR)					
	Guidance	Pattern Matching					
		Calibration					
		Origin Control					
	Scripting	I/O					
		Program Customization					
		Solution Switching					
		PLC Triggering					
	Connections		Ethernet, I/O, RS-232				
Communications	Inputs	+ Trigger Ol	+ 2 general purpose / job select DN > 10VDC; OFF < 2VDC				
	Outputs	10	3 general purpose 100 mA max load at 24V				
	Protocols	Ethe	Ethernet/IP, Profinet, Modbus				
	Imaging Logging		FTP				
	Material	Aluminum					
Mechanical	Dimensions	61 mm x 58 mm x 57 mm					
	Mounting	8 x M4					
	<b>Protection Rating</b>		IP67				
Operating	Power	300 r	300 mA @ 24V (including lamp)				
	Temperature		0–50°C				
	Access	Passwo	Password Controlled (user option)				

#### **TYPICAL APPLICATIONS**

The BOA Spot XL vision sensor offers an advanced tool set suitable for a range of industrial applications.





Match

Color

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### BOA<sup>™</sup> Spot Vision Sensors



#### **Features and Benefits**

- Integrated light, lens and processing
- Standard and high resolution sensor options
- M12 (standard) or C-mount lens options
- Easy-to-use GUI
- Embedded vision tools for matching, counting, feature finding and measuring applications
- Built-in factory communication protocols
- FTP image transfers
- · Hardware relearn and job switching
- · Remote monitoring
- Compact industrial enclosure
- · Low overall cost of ownership

#### Overview

## BOA Spot vision sensors offer simplicity, affordability and reliable inspection performance for error-proofing applications.

The BOA Spot vision sensor combines the power and flexibility of a BOA vision system with integrated optics, light and easy-to-use setup software to deliver high value capabilities at a low cost of ownership.

Included within the BOA Spot vision sensor is a set of robust vision tools for part locating, counting, measuring and feature or defect detecting applications. These tools can be combined and used multiple times to solve simple or complex inspection tasks that are beyond the capabilities of traditional sensors.

Inspections using BOA Spot vision sensors can be triggered by parts in motion or from a PLC after being moved into position. Standard factory protocols, such as Ethernet/IP and PROFINET, are directly supported for communicating with 3rd party equipment or the factory enterprise. Furthermore, inspected images can be transferred to a networked drive using the FTP protocol.

The BOA Spot enclosure is compact and easy to integrate mechanically. M12 connectors are accessible on the back of the unit for Ethernet and I/O interfacing. Standard M12 cabling is supported to further reduce integration cost.

#### GUI

The software user interface is quick to learn and applicable for both novice and expert users alike. Guided setup is supported on the top navigation bar, while the left and bottom panels are used for function-specific setup, advanced control and status reporting. The interface offers a full complement of features for both setup and runtime operation.



#### MODELS

BOA Spot is being initially offered in 4 models, differentiated by sensor resolution and software capabilities. The "Standard Level" models offers a basic set of inspection tools for presence/absence and measurement applications. The "Expanded Level" models offer additional tools and advanced capabilities for more complex tasks.



# BOA<sup>™</sup> Spot Vision Sensors

		BOA Spot MODELS				
		0640M-SL	1280M-SL	0640M-EL	1280M-EL	
Setup Interface		Inspect Express				
Job Storage		32				
Sensor	Туре	1/3" Mono Global Shutter				
	Format	640x480	1280x960	640x480	1280x960	
	Rate	45 fps	30 fps	45 fps	30 fps	
Lens	M12 Models	6, 8, 12 or 16mm (installed)				
	C-Models	6mm - 50mm				
Light	M12 Models	6 LED White, Red or Blue Ring Light (installed)				
	M12 or C Models	External light with strobe control				
Communications	Connections		M12 Ethernet			
		M12 Power, I/O, RS-232				
	Inputs	3 (1 Tri	gger, 2 general	purpose/job s	elect)	
		ON > 10VDC (xmA); OFF < 2VDC (xmA)				
	Outputs	3 (general purpose)				
		100 mA max load at 24V				
	Protocols	Ethernet, Ethernet/IP, PROFINET				
		FTP, RS-232				
Vision	Location	Pattern		Pattern		
		Edge		Edge		
					Circle	
	Inspection	Pattern Edge		Pattern		
				Edge		
		Brightness		Brightness		
		Area		Area		
				Contour		
	Counting	Edge		Edge		
				Pattern		
	Measuring	Dist	Distance		Distance	
				Angle		
				Arc, Circle		
Enclosure	Material	6061 Aluminum				
	Dimensions	61mm x 58mm x 57mm				
	Mounting	8 x M4				
	Weight	0.2kg				
	Protection	IP67				
	Certification	CE, RoHS				
Operating	Power	12-30 VDC				
		250 mA maximum @ 24V; 300mA @ 24V including light				
	Temperature	0-50°C Operating				

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### BOA<sup>™</sup> Spot ID Vision Sensors



#### **Features and Benefits**

- Robust decoding of most 1D and 2D symbologies
- · Exceptionally high read rates
- Tolerates variation in print method and background
- Provides print quality grading
- Offers OCR and error proofing tools
- Easy-to-use GUI. Good for 1st-time users
- Built-in Ethernet/IP and Profinet communications
- FTP image transfers
- Remote monitoring via web browser
- · Integrated light, lens and processing
- Standard and high resolution sensor options
- M12 (standard) or C-mount lens options
- Compact IP67 enclosure
- · Low cost of ownership

#### Overview

# BOA Spot ID vision sensors deliver fast and reliable code reading performance for part identification and tracking applications

Robust, high-speed decoding of 1D barcodes and 2D matrix codes can be combined with character reading, pattern matching and error proofing tools to identify, track and verify more for less. The low-cost BOA Spot ID vision sensor offers exceptionally high read rates and provides the option to verify additional product markings or features. The all-in-one product comes with integrated optics, light and easy-to-use application software. No vision experience? No problem!

As a code reader, the BOA Spot ID offers versatile decoding of multiple symbologies and can tolerate normal variation in printing methods, marking types and background surfaces. Image filters and control parameters are provided to enhance readability of poorly printed codes and codes printed on plastic or metallic surfaces using laser/ chemical etch, ink jet or dot peen marking methods. Grading algorithms are included for verifying the quality of decoded symbols against ISO and AIM industry standards.

Inspections using BOA Spot ID vision sensors can be triggered by parts in motion or from a PLC after being moved into position. Standard factory protocols, such as Ethernet/IP and PROFINET, are directly supported for communicating with 3rd party equipment or the factory enterprise. Furthermore, inspected images can be transferred to a networked drive using the FTP protocol.

The BOA Spot enclosure is compact and easy to integrate mechanically. M12 connectors are accessible on the back of the unit for Ethernet and I/O interfacing. Standard M12 cabling is supported to further reduce integration cost.

#### GUI

The software user interface is quick to learn and applicable for both novice and expert users alike. Guided setup is supported on the top navigation bar, while the left and bottom panels are used for function-specific setup, advanced control and status reporting. The interface offers a full complement of features for both setup and runtime operation.



#### MODELS

BOA Spot ID is available in two models, each with 640x480 or 1280x960 sensor resolution. The standard IDS model includes the core 1D/2D decoders and basic error proofing tools, while the expanded IDE model adds advanced Direct Part Marking (DPM) decoding, OCR (character recognition) and pattern matching tools.



## BOA<sup>™</sup> Spot ID Vision Sensors

Feature		BOA Spot ID Models				
		0640M-IDS	1280M-IDS	0640M-IDE	1280M-IDE	
Setup Interface (GUI)			Ins	pect		
Job Storage		32				
Sensor	Туре	1/3" Mono Global Shutter, 3.75µm pixel				
	Format	640x480	1280x960	640x480	1280x960	
	Rate	45 fps	30 fps	45 fps	30 fps	
Lens	M12 Standard	8 mm				
	M12 Option	6, 12, 16 mm				
	C-Mount Option	6mm - 50 mm				
Light	Standard	6 LED White Ring Light				
	Options	External light with strobe control				
Communications	Connections	M12 Ethernet				
		M12 Power, I/O, RS-232				
	Inputs	3 (1 Trigger, 2 general purpose/job select)				
		ON > 10VDC (xmA); OFF < 2VDC (xmA)				
	Outputs	3 (general purpose)				
		100 mA max load at 24V				
	Protocols	Ethernet, Ethernet/IP, PROFINET				
		FTP, RS-232				
Vision	Location	Po	int	Pattern		
		BI	lob Blob, Point		Point	
				Edge		
	Identification	1	D	1D		
		2	D	2D (incl. DPM)		
		Charact	Character Count OCR		CR	
			Character Cou		er Count	
	Grading	ISO 1541	5, 16022	ISO 15415, 16022		
		AIM	DPM	AIM DPM		
	Inspection	Edge lo	ocation	Pattern match/verify		
		Feature	e Count	Feature Count		
				Edge Coun	t/Measure	
Mechanical	Dimensions	61 mm x 58 mm x 57 mm				
	Mounting	8 x M4				
	Weight	0.20 kg				
	Protection	IP67				
	Certification	CE, RoHS				
Operating	Power	12-30 VDC 250 mA maximum @ 24V; 300mA @ 24V including light				
					luding light	
	Temperature	0-50 °C Operating				

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