

High-Performance Standalone Vision Sensor

The In-Sight 3400 is the highest-performance model of the Cognex family of machine vision sensors. Together with its high-speed processing, the In-Sight 3400 is equipped with a full library of proven Cognex vision tools and a unique vision spreadsheet for fast, easy application set-up. It is designed to handle a wide range of vision tasks including part location, measurement, identification, and assembly verification. As a standalone vision sensor, the 3400 can be configured and run without using a PC. The 3400 is fully compatible with the In-Sight Explorer integrated user environment, which further enhances the simplicity of application development and network administration.

The In-Sight 3400 is comprised of a rugged vision processing unit and a compact high-speed digital camera. Industrial M12 connectors ensure the mechanical and electrical integrity of all connections, and a heavy-gauge die-cast aluminum housing protects against shock and vibration. As with most In-Sight vision sensors, the In-Sight 3400 is Ethernet-enabled, providing easy communication with other In-Sight vision sensors, as well as with devices on the factory network. This facilitates access to real-time vision data, streamlines system integration, and enables remote management, monitoring, and control of vision activity.

The 3400 extends the line of standalone Cognex vision sensors that provide complete vision application development and deployment without requiring a PC. Additionally, the 3400 provides the same form factor, handheld control pad, camera mounting, and connectivity as In-Sight 2000 and 3000 models.

Unequaled Vision Performance

The In-Sight 3400 sets a new standard for sensor-based vision processing power. Its vision tool speeds are more than three times faster than previously available on the In-Sight 2000 and 3000 models. And, users continue to achieve maximum vision processing performance, even in network-heavy applications such as remote process monitoring and reporting.

The new In-Sight 3400 vision sensor includes a full library of Cognex vision tools for unmatched vision performance. The library includes a wide range



High-speed vision processing, combined with built-in Ethernet communications, make the In-Sight 3400 (shown with optional display) ideal for demanding applications.

of image processing and analysis tools, including PatFind™, a revolutionary supertool for locating parts under a wide range of challenging conditions. All tools are based on the same robust vision technology found in more than 175,000 Cognex vision systems in use worldwide. The In-Sight 3400 also features discrete I/O, a standard VGA output for real time display, and a 10/100 Base-T Ethernet port.

Simplicity... From Set-up Through Administration

The patent-pending In-Sight vision spreadsheet, the development environment for all In-Sight vision sensors, enables application portability between platforms. Standard spreadsheet elements used in the In-Sight vision configuration interface allow users to insert tools and parameters from drop-down menus into worksheet cells, which can then be linked together to create a vision application.

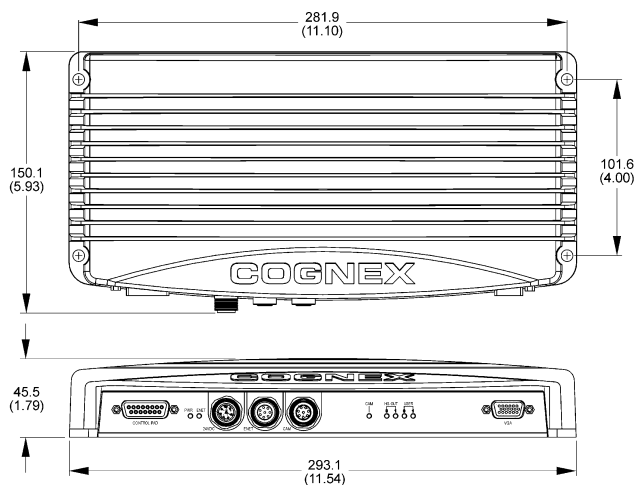
Extending simplicity beyond development, the In-Sight Explorer user environment integrates the vision spreadsheet with simple utilities for system set-up, monitoring, and management. Through the familiar Microsoft® Windows® interface, this easy-to-use environment greatly accelerates deployment and facilitates sensor administration ... translating into lower cost of ownership of vision applications on the factory floor.

Advantages

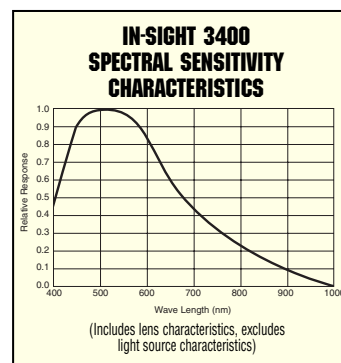
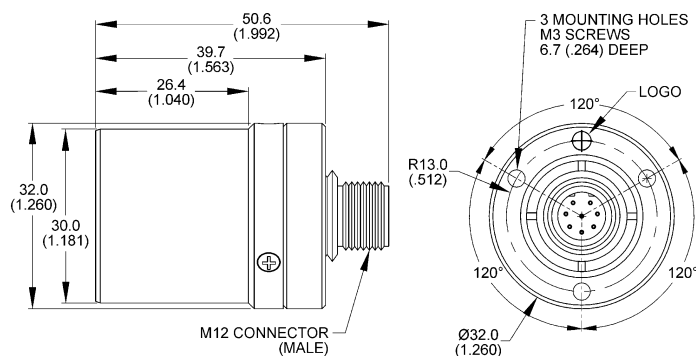
- ▶ Highest-performance model of the In-Sight vision sensor family
- ▶ Full library of proven Cognex vision tools
- ▶ Vision spreadsheet for easy application set-up
- ▶ Industrial M12 connectors provide reliable connections
- ▶ Standalone operation, no PC required
- ▶ Small, lightweight, vibration-tolerant camera can be mounted on robotic arms and moving stages

Specifications

Processor



Camera



Memory	
Job and program	16MB non-volatile flash memory; Unlimited storage via remote storage network device
Image acquisition and processing	64MB SDRAM
I/O	
Trigger	1 opto-isolated, acquisition trigger input Remote software commands via Ethernet and RS232
Inputs	Eight Discrete inputs, using optional I/O Expansion Module
Outputs	2 built-in, high-speed outputs Eight Discrete outputs, using optional I/O Expansion Module
Status LEDs	Seven total: POWER, ENET Status, CAMERA Status, 2 High-speed Status and two User defined
Communications	
Network	1 Ethernet port, 10/100 BaseT, TCP/IP protocol Supports DHCP (factory default) or static IP address
Serial	RS-232C port (1,200 to 230,400 baud rates)
Mechanical	
Material	Painted, cast aluminum housing
Mounting	Four 6.86mm (.27") through-holes
Weight	1094g
Power	
Power consumption	24VDC ± 10%, isolated, 500mA
Environmental	
Operating temperature	0°C to 60°C (32°F to 140°F)
Operating humidity	95%, non-condensing
Storage temperature	-40°C to 85°C (-40°F to 185°F)
Storage humidity	95%, non-condensing
Dust penetration	IP52 and UL 50 (NEMA 12)
Shock	30G per IEC 68-2-27
Vibration	2G from 10-2000Hz as per IEC 68-2-6
Certifications	
Approvals	CE, CUL, FCC (Pending)

Image	
Sensor	1/3-inch CCD (5.84 x 4.94mm 6mm diagonal) 640 x 480 pixel display (307,200 sq. pixels, 7.4 x 7.4µm) Electronic shutter speed: .032ms to 1000ms
Acquisition	Rapid reset, progressive scan (supports partial scan), full-frame integration 256 gray levels (8 bits/sec) Gain controlled by software Up to 38 frames per second
Lens type	CS-mount; C-mount (with adaptor)
Mechanical	
Material	Anodized, cast aluminum housing
Mounting	Three M3 mounting holes
Weight	68g
Environmental	
Operating temperature	0°C to 50°C (32°F to 122°F)
Operating humidity	95%, non-condensing
Storage temperature	-40°C to 85°C (-40°F to 185°F)
Storage humidity	95%, non-condensing
Water penetration	30-minute immersion per IP67 (NEMA 6) with optional industrial enclosure
Shock	80G per IEC 68-2-27
Vibration	10G from 10-500Hz with per IEC 68-2-6 (See accessory kit note on following page)
Certifications	
Approvals	CE, CUL, FCC (Pending)

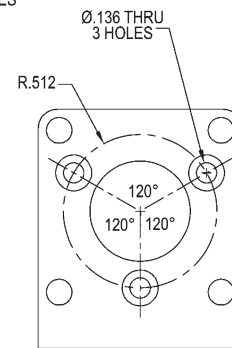
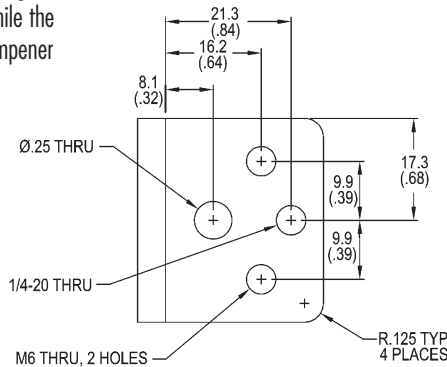
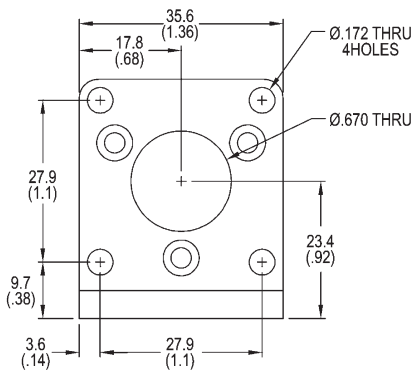
Camera Mounting

Note
The In-Sight 3400 vision sensor camera is supplied with a mounting bracket, vibration dampener, and related mounting hardware. While the bracket alone is sufficient for most installations, the vibration dampener is required for the following installations:

- Vibration levels over 3G
- Use of the Cognex 75mm lens (LNS-HF75HA1-00)
- Use of the Cognex 55mm telecentric lens (114-0050)
- Use of lenses weighing more than 55 grams (1.94 ounces)

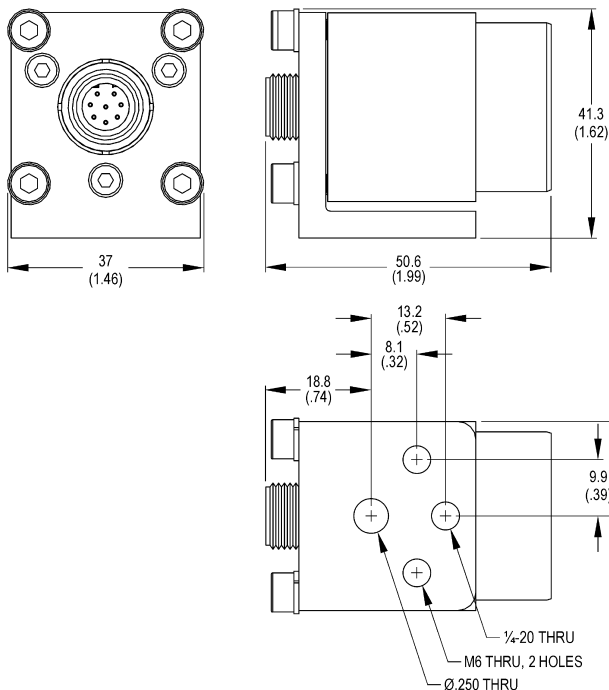
All measurements shown on this page are provided in millimeters. Numbers in parenthesis are in inches.

Camera mounting bracket

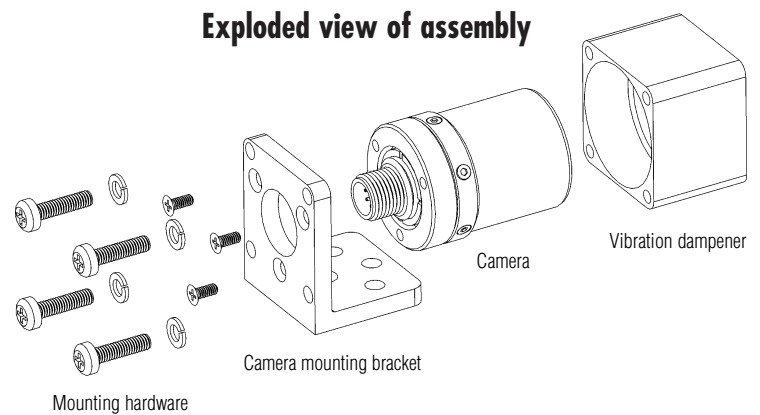


Camera, mounting bracket, and vibration dampener assembly

(See note at top of page)



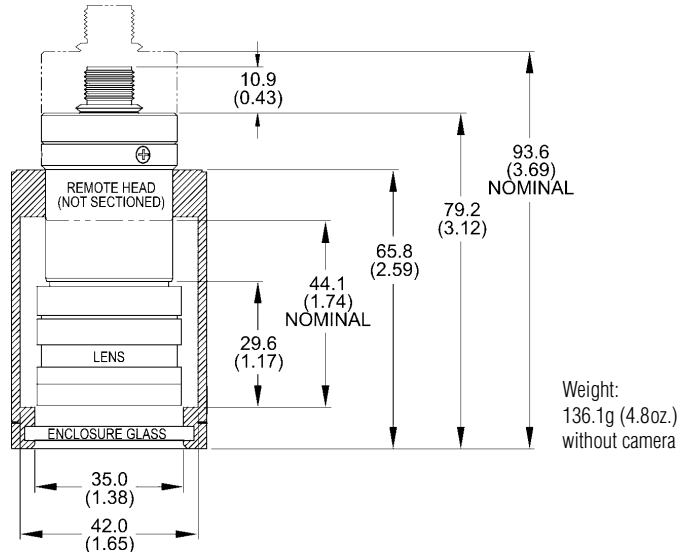
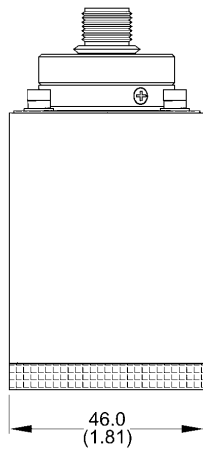
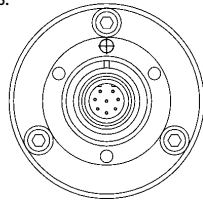
Exploded view of assembly



Optional industrial camera enclosure

(Not for use with vibration dampener)

Protects the camera from harsh factory conditions.
Rated for IP67 (NEMA 6) environments.



The In-Sight 3400 vision sensor is one of a variety of models available to meet the specific cost and functionality requirements of the application. Each sensor is equipped with a full library of proven Cognex vision tools, a spreadsheet interface for quick set-up, and the tools with which to administer a vision sensor network. Additionally, Ethernet communication is built into most models, so that multiple In-Sight sensors can be linked across the factory, vision activity can be managed from remote locations, and inspection results can be shared among all levels of the organization.

Whether for experienced machine vision users or for those just getting started, In-Sight vision sensors help solve inspection tasks more efficiently, reliably, and affordably than ever before. Very simply, it's machine vision that works.



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