



# Autoscope® Image Sensor - AIS-V

## Description

The *Autoscope Image Sensor-V (AIS-V) Camera* is a light-weight, compact, high-resolution color zoom camera, designed to meet the performance requirements of vehicle detection at virtually all traffic intersection and highway environments.

The *AIS-V* product line includes a compact 24-VAC camera with a 10x zoom lens, zoom controller with RS-485 link to the camera, and an *AIS-V* Interface Panel with a step-down transformer. The *AIS-V* camera uses a pigtail cable assembly for easy connection to this small camera for power, video, and zoom control. These electronic devices meet all applicable requirements of the NEMA TS2 standard document and IEC60529.

Optimized as a video source for the *Autoscope* standalone Machine Vision Processor (MVP) product suite, the *AIS-V* camera produces consistently high quality video in all weather, lighting, and traffic conditions common in today's demanding transportation environments. The image sensor has high sensitivity for accurate vehicle detection at night and during other low light conditions. The solid-state design provides maximum hardware reliability for 24/7 operation. The color image sensor minimizes streaking and blooming from bright light sources such as headlights and wet pavement that could adversely affect detection performance.

During setup, the 10x zoom auto-iris lens quickly adjusts to a field-of-view best suited for detection objectives with a convenient RS-485 hand-held controller. Focus is factory pre-set. Approached with cost-effective

maintenance in mind, the new *AIS-V* camera features a sealed enclosure for protecting the image sensor against the outdoor environment.

To reduce glare (from rain, snow, and ice that could get onto the faceplate) and to improve video contrast, an adjustable weather shield is attached to the camera. A variety of available mounting brackets enables easy installation of the *AIS-V* camera on existing poles, mast arms, or other structures. The unique bracket design speeds installation by minimizing adjustment hardware and eliminating steps in the set-up process.

## Features

- Designed for most wide-area machine vision vehicle detection applications
- Low power consumption
- Thermostatically controlled heated faceplate
- 10x zoom lens & color imager
- Minimal streaking or blooming from bright light sources (headlights)
- Easy mounting from bucket truck
- Rugged, environmentally-sealed enclosure
- High sensitivity for accurate detection at low light levels
- Auto-gain circuitry for improved detection in varying light conditions
- Aperture to protect lens from debris and extraneous light

## Camera Failsafe Operation

*Autoscope* provides both optical and electrical failsafe features. Under failed conditions, both features turn on all associated detector outputs, ensuring safe intersection operation. This electrical failsafe is the same operation as other equipment in the cabinet, as required by all major industry specifications. Since the *Autoscope* system depends on non-electrical processes, an additional failsafe is used for problems with the lens or faceplate. The *Autoscope* system provides options for poor contrast situations to maintain both the safety (during Red) and the efficiency (during Green) of intersection operations. The optical failsafe feature can be disabled for freeway and count station applications.

## Zoom Control

The *AIS-V* camera uses a RS-485 circuit to control the zoom of the lens from a handheld controller.

### Lens

- 10x continuous-focus zoom
- Horizontal: 5° to 46°
- Vertical: 4° to 35°

### Imaging Device

- ¼ in. color CCD

### Video Formats Supported

- NTSC

### Resolution

- More than 470 TVL Horizontal

### Synchronization

- Crystal lock

### Sensitivity at Lens

- Full video, no AGC, 3.0 Lux (typ.)

### Signal to Noise Ratio

- More than 50 dB

### Interface Power & Video

- Wide variety of pigtail cable lengths with connector
- Unterminated power, video coax, zoom lens control

### Housing & Sunshield

- Zoom lens image sensor sealed in waterproof and dust-tight housing
- Housing meets NEMA 4 and IP 67 standards
- Adjustable weather/sunshield with drip guard and custom aperture

Since aiming the camera is most often a one-time event, this simple zoom control helps keep the overall size of the camera small and compact. The installer can conveniently make adjustments with the hand-held zoom controller from the bucket, base of pole, or cabinet.

## Camera Pigtail Cable

The camera pigtail cable is available in a wide variety of lengths for connection of branch cabling at the base of the pole or a “homerun” back to the cabinet. The easy-to-install connector also helps keep the overall size of the camera small and compact.

## AIS-V Interface Panel

The *AIS-V* interface panel in the cabinet protects other cabinet equipment from outside surges and noise. Its several layers of protection include transformer isolation and fuses.

### Power

- Input power: 24VAC, 60 Hz, 6W max (with heater on)
- *AIS-V* Interface Panel: 120VAC, 60 Hz
- *AIS-V* 220 Interface Panel: 240 VAC, 60 Hz

### Dimensions

- Mounting: Standard camera bracket tilt-top provided
- Enclosure with weather/sunshield: 10.75 in. L, 4.8 in W, 5.6 in. H

### Weight

- 2.0 lb (0.9 kg)

### Ambient Temperature Limits

- -40°F to +140°F/-40°C to +60°C

### Humidity Limits

- Up to 100% relative humidity per MIL-E-5400T paragraph 4.3.24.4

### Warranty

- Three-year standard warranty
- Extended warranty available (up to six years)

### Product Support

- Product support and training by a team of factory-trained *Autoscope* technical support specialists

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