AD AMERICAN DYNAMICS ™

SpeedDome® Ultra VII

PROGRAMMABLE DOME CAMERA

The current state-of-the-art, SpeedDome Ultra VII features a 22x optical zoom, combined with its 11x digital zoom, provides the power of 242x total zoom.

Digital signal processing (DSP 5) provides enhanced clarity, color and detail in well lit or low light applications.

The dome's internal multi-protocol receiver enables the dome to be connected directly to a host of systems including those from other vendors.

An optional feature freezes the image when moving to a preset thereby reducing hard drive space when the video is digitally recorded.

Privacy zones can be set up to prevent users from viewing sensitive areas. The dome's direction indicators, which can be displayed on the monitor, denote the direction the dome is pointing, the direction in which it is moving, and the dome's azimuth (degree of tilt). The dome supports up to sixteen user-definable areas. The dome's advanced alarm handling enables alarms to be processed internally by the dome, externally by the controller, or by both the dome and the controller. A "home position" feature allows users to establish a default preset or pattern for the dome when the dome is not in use. The dome has the ability to provide statistics on pan, tilt and zoom usage.

Other features include password protection, dome-generated programmable on-screen text, and user-definable settings for features such as line-lock, maximum zoom, direction indicators, proportional flip, AGC and white balance.

The dome also provides two "twistlock" mounting base options. The standard base is the value priced mounting base alternative; the I/O board base provides unsurpassed ease of installation, service, and maintenance.

The SpeedDome Ultra Outdoor Housing is available to extend surveillance to outdoor environments. The housing now features a reinforced Outdoor Housing as standard and a heavy duty Vandal Resistant Housing Kit option.

FEATURES

- Advanced DSP ExView HAD CCD camera
- 22x optical zoom with 11x digital magnifier (242x total zoom)
- Accepts select competitors' protocols (see your sales representatives for details)
- Freeze frame on presets (user-selectable on/off)
- Open shutter to capture images in very low light
- Continuous autofocus
- Zoom adjusted programming
- Unshielded Twisted Pair (UTP) wiring video transmission enabled as standard
- Supports SensorNet, RS-422, and Manchester protocols

- Dome usage statistics
- Dome-generated on-screen text including direction indicators
- Up to eight privacy zones
- Two mounting base options
- Programmable presets, patterns and area names
- DirectSet feature provides fast access to the most frequently used dome features
- 96 presets (controller dependent)
- Alarm inputs and outputs
- Password protection
- Automatic home position
- Automatic proportional flip and Automatic Gain Control, line-lock and white balance (user-selectable on/off)

FEATURES

- The camera's 22x optical zoom is enhanced with an 11x digital magnifier, providing a total of 242x zoom.

- The SpeedDome Ultra VII's advanced low-light performance can clearly distinguish scenes and colors in lighting conditions as low as 0.02 lux. The black and white version of the camera can view scenes in light levels as low as 0.004 lux .

- In addition to SensorNet, Manchester, and SEC RS-422 codes, the dome can be controlled via other select manufacturer's protocols making it a perfect choice for installers wanting to replace older PTZs.

- Up to eight different sized privacy zones can be programmed to prevent users from viewing sensitive areas. The zones automatically change size proportionally.

- The dome maintains statistics on how long it has been on, duration of pan/tilt/zoom movements, number of presets selected and other usage information.

- Users can adjust the white balance manually or have the camera set it automatically. White balance is normally compensated for by the Automatic Tracing White Balance (ATW). However, in some lighting conditions it may be necessary to manually adjust the red and blue settings for optimal viewing.

- Users can set the Automatic Gain Control (AGC) on/off, and when it is turned off, users can manually set the gain. AGC helps compensate for low lighting conditions.

- Focus Preference provides continuous autofocus with manual override.

- Users can set automatic dome flip on/off. With this feature turned on, the dome will automatically turn 180° when the camera tilts to its lower limits and stays in that position for a brief speed-proportional delay. Turned off, users can still manually flip the dome.

- The dome supports up to three Patterns. Preprogrammed default spiral pan pattern ("apple peel") covers the entire viewing area.

- DirectSet feature provides fast access to the most frequently used dome features, when used with a suitably equipped controller.

- The dome supports up to 96 Presets when used with suitably equipped controllers.

- When using the Freeze Frame feature, before moving to a preset, the dome image will freeze which minimizes hard drive usage when video is digitally recorded.

- Zoom Adjusted Program (ZAP) automatically adjusts pan and tilt speeds in proportion to zoom position, even at maximum magnification.

- Unshielded Twisted Pair (UTP) wiring video transmission enabled as standard saves on wiring and installation costs.

- Instant digital zoom on presets. When calling a preset, at the end of the optical zoom range the digital zoom setting is instantly implemented.

- Alarms can be processed internally by the dome, externally by the controller, or by both the dome and the controller. Each of the dome's alarm inputs can automatically call a preset or run a pattern when the alarm is activated.

- The dome supports up to 16 areas. Users can assign names (up to 19 characters long) and boundaries to these areas; each area can be a different size.

- "Home position" is the position that a dome returns to after it remains inactive for a specific period of time. This ensures that even when the dome is unattended, it will always be pointing to a key area of the facility. The user can define that preset or pattern, and also how long (from 1 to 60 minutes) before a dome returns to its home position.

- The dome generates on-screen text including Dome, Area, Preset, Pattern, and Alarm names, as well as direction indicators. These indicators show users the direction the dome is currently pointing, as well as the direction in which it is moving. In addition, the direction indicators display the dome's azimuth (degree of tilt).

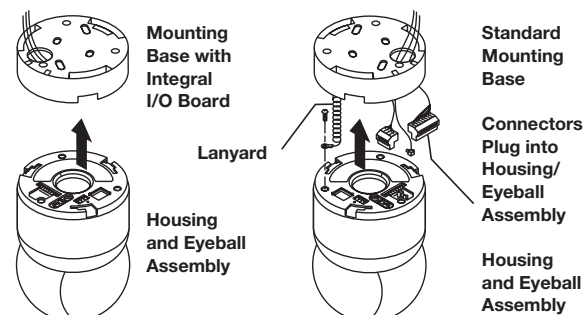- On-screen text also indicates zoom, focus, and iris status. All name information is user-definable and can be turned on or off. When on it can be set for solid or translucent white, and with or without black outline.

- On-screen text supports six languages: English, French, Italian, Spanish, German and Portuguese.

- Password protection prevents unauthorized use of the configuration utility.

- The dome incorporates an innovative twist-lock release from the mounting base for easy installation and servicing.

- The fully isolated power supply helps eliminate ground loops.

- Users can set line-lock on or off. Line-lock is enabled to help prevent vertical rolling in multi-camera applications.

- Vertical sync phase adjustment is provided to help compensate for different phases of power when line-lock is enabled, making it ideal for single and multi-phase power installations.

- Sensing of 50/60 Hz line is automatic and does not require manual adjustment.

- Surge protection is provided for video, code, alarms and power connections.

- Daisy chain configuration of control wiring is enabled:
  - For RS-422: 10 domes at a maximum distance of 1 km (3000 ft) on two 22 AWG shielded twisted pairs (STP).
  - For SensorNet: 32 devices at a maximum distance of 1 km (3000 ft) on one 22 AWG unshielded twisted pair (UTP).
  - For Manchester: 3 domes at a maximum distance of 1500 meters (5000 ft) on one 18 AWG shielded twisted pair (STP).
  - For AD-UTC*: Maximum distance per dome is 700 m (2300 ft) on 20 AWG RG59U cable.

    *This distance is for the AD-UTC data only. See cable manufacturers specifications for video capabilities.

- The features of the SpeedDome Ultra VII can be extended to outdoor environments via the SpeedDome Ultra Outdoor Housing. The outdoor housing, designed especially for the SpeedDome Ultra's small, unobtrusive size, makes it the perfect protection for the dome. The Housing now features a Reinforced Outdoor Housing as standard and a heavy duty Vandal Resistant Housing Kit option.

TWO MOUNTING BASE OPTIONS

The I/O board base connects the housing/eyeball assembly in one step. Power, communication, and video cables (or composite cable) are connected one time to an I/O PC board in the mounting base, so the assembly is simply "twist-locked" onto the base. Service and maintenance are easy and can be accomplished – without a ladder or lift– via the Installation/Removal Tool. The I/O board mounting base supports four alarm inputs and four alarm outputs as well as power and communication LEDs.

The standard base connects the housing/eyeball assembly in two steps. First, power, communication, and video cables (or composite cable) are inserted through the base and attached to the assembly. Then the assembly is connected to the base. The standard mounting base supports one alarm input and one alarm output. The Installation/Removal Tool cannot be used to install this configuration.

Mounting Base with Integral I/O Board

Lanyard

Housing and Eyeball Assembly

Standard Mounting Base

Connectors Plug into Housing/ Eyeball Assembly

Housing and Eyeball Assembly

SPECIFICATIONS

Operational

Manual Pan/Tilt Speed . . . . 0.25°-100° per second
(based on zoom position)
Preset Pan/Tilt Speed . . . . 220° per second, maximum
Pan Travel . . . . 360° continuous
Tilt Travel . . . . 110°
Pan/Tilt Accuracy . . . . ± 0.5°
Zoom/Focus Accuracy . . . . ± 0.5%
Total Zoom 242x
Optical Zoom 22x
Digital Zoom 11x
Zoom Pause . . . . 22x or 33x
Zoom Stop . . . . Selectable: 33x, 44x, 66x, 88x
(default), 110x, 132x, 154x, 176x,
198x, 220x, and 242x
Programmable Patterns 3

	Programmable Presets		
Controller	SensorNet	Manchester	RS-422
ADTT16E	96	N/A	N/A
ADTT16E via RCSN422	N/A	N/A	4
MegaPower 48	96	64	96
MegaPower 168 via CCM	64	64	64
MegaPower 168 via AD2091	N/A	64	N/A
MegaPower 168 via AD2083-02B	N/A	N/A	16
MegaPower 1024 via AD2091	N/A	64	N/A
MegaPower 1024 via AD2083-02B	N/A	N/A	16
AD2150	N/A	64	N/A
AD2150 via AD2083-02B	N/A	N/A	16
VM96	Unlimited	N/A	Unlimited

Programmable Areas 16
Programmable Privacy Zones 8
Direction Indicators . . . . Yes
Auto Synchronization
   Line-Locked . . . . Remote V-phase adjustment
   Internal . . . . Built-in sync generator
Address Range
   RS-422/RS-485 1-99
   Manchester 1-64
   SensorNet 1-255
Alarm Inputs
   With I/O Board . . . . 4 dry contacts/3.5 mA sink
   Without I/O Board . . . . 1 dry contact/3.5 mA sink
Alarm Outputs
   With I/O Board . . . . 4 open collector drivers at 12 VDC, 40 mA
   Without I/O Board . . . . 1 open collector driver at 12 VDC, 40 mA
Menu Languages . . . . English, French, German, Italian, Spanish, Portuguese

Electrical

Input Voltage . . . . 16 to 30 VAC, 50/60 Hz Class 2 LPS
Design Tolerance . . . . 20 to 36 VAC, 50/60 Hz
Power . . . . 16 watts
Power On In-Rush Current . . . . 1.5 amps
Allowable Drop-Out . . . . 100 µsec
Surge Protection
   Video . . . . Low-capacitance Zener suppressor of 6.5 V, 1500 watts

   SensorNet/Manchester . . . . Isolation transformer coupled, 2000 Vrms; PTC resettable fuse protects transformer; 9.8V/1A, 500 watts, 8/20 µsec impulse; 10kA impulse rated gas tube
   RS-422/RS-485 . . . . TVS rated at 9.8V/1A, 500 watts, 8/20 µsec impulse
   Alarm Input/Aux Outputs . . . . TVS rated at 9.8V/1A, 500 watts, 8/20 µsec impulse
   Power Line . . . . TVS rated at 60V, 250 A, 1.5 joules, 8/20 µsec impulse

Cameras

NTSC
   Effective Pixels . . . . 768 (H) x 494 (V) pixels
   Scanning . . . . 525 lines, 60 fields, 30 frames
   Horizontal . . . . 15.734 kHz
   Vertical . . . . 59.9 Hz
   Shutter Speed . . . . Auto/manual (1/2 - 1/30,000)
PAL
   Effective Pixels . . . . 752 (H) x 582 (V) pixels
   Scanning . . . . 625 lines, 50 fields, 25 frames
   Horizontal . . . . 15.625 kHz
   Vertical . . . . 50 Hz
   Shutter Speed . . . . Auto/manual (1/1.5 - 1/30,000)

EIA
   Effective Pixels . . . . 768 (H) x 494 (V) pixels
   Scanning . . . . 525 lines, 60 fields, 30 frames
   Horizontal . . . . 15.734 kHz
   Vertical . . . . 59.9 Hz
CCIR
   Effective Pixels . . . . 752 (H) x 582 (V) pixels
   Scanning . . . . 625 lines, 50 fields, 25 frames
   Horizontal . . . . 15.625 kHz
   Vertical . . . . 50 Hz
All Cameras
   White Balance . . . . Through the Lens (TTL) Automatic Tracing White Balance (ATW)
   Imager . . . . Interline transfer 1/4-inch CCD array
   Scanning System . . . . 2:1 interface
Video Output . . . . 1.0 Vp-p, 75 Ω composite
S/N Ratio . . . . >50 dB (typical)
Color Camera Only
   Horizontal Resolution . . . . 470 lines
   Minimum Illumination . . . . 0.3 lux (20 IRE, AGC on) 0.02 lux with 1/4 sec open shutter
Black/White Camera Only
   Horizontal Resolution . . . . 500 lines
   Minimum Illumination . . . . 0.008 lux (20 IRE, AGC on) 0.004 lux with 1/4 sec open shutter

Lens

Design . . . . Aspherical
Aperture f1.6
   4 mm . . . . 47.0° (H) x 35.2° (V)
   88 mm . . . . 4.0° (H) x 3.0° (V)
Focal Length . . . . 4 to 88 mm

Field of View Formulas
   Horizontal View = $(.8 \times A)/B$
   Vertical View = $(.6 \times A)/B$
     A = distance from camera in meters or feet
     B = zoom power (e.g. 1-242x)

SPECIFICATIONS

Mechanical

Height . . . . .205 mm (8 in)
Diameter . . . . .120 mm (4.7 in)
Weight
   Housing and Eyeball . . . . .1.18 kg (2.6 lbs)
   Base (standard) . . . . .0.09 kg (0.20 lbs)
   Base (with I/O board) . . . . .0.16 kg (0.35 lbs)

Environmental

Operating Temperature . . . .-10° to 50°C
                                   (14° to 122°F)
Humidity . . . . 0 to 95% RH
                                   (non-condensing)
Storage Temperature . . . .-20° to 65°C
                                   (-4° to 149°F)

Regulatory

Emissions . . . . .FCC: 47 CFR Part 15
                                   Subpart B Class A
                                   CE: EN55022 Class B
                                   CE: EN6100-3-2
                                   CE: EN6100-3-3
                                   AS/NZS 3548, Class A
                                   CISPR22
                                   ICES-003
Immunity . . . . .CE: EN50130-4
Safety . . . . .UL: UL1950
                                   CUL: CSA 22.2 No. 950
                                   CE: EN60950
                                   IEC950

Model Numbers

Housing/Eyeball Assembly without Mounting Base
   RAS915LS . . . . .Black and White EIA (black camera body)
   RAS915LS-1 . . . . .Black and White CCIR (black camera body)
   RAS916LS . . . . .Color NTSC (black camera body)
   RAS916WLS . . . . . . .Color NTSC (white camera body)
   RAS916LS-1 . . . . .Color PAL (black camera body)
   RAS916WLS-1 . . . . . .Color PAL (white camera body)

Mounting Base Without Housing/Eyeball Assembly
   RUPTB . . . . .Standard Base (black base)
   RUWPTB . . . . .Standard Base (white base)
   RUIOB . . . . .I/O Board Base (black base)
   RUWIOB . . . . .I/O Board Base (white base)

Housing/Eyeball Assembly with Mounting Base
 Dome with Standard Base
   RAS915LSP . . . . .Black and White EIA (black assembly and base)
   RAS915LSP-1 . . . . . .Black and White CCIR (black assembly and base)
   RAS916LSP . . . . .Color NTSC (black assembly and base)
   RAS916WLSP . . . . . .Color NTSC (white assembly and base)
   RAS916LSP-1 . . . . . .Color PAL (black assembly and base)
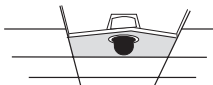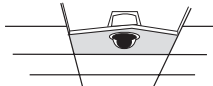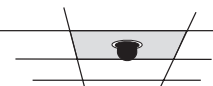   RAS916WLSP-1 . . . .Color PAL (white assembly and base)
 Dome with I/O Board Base
   RAS915LSI . . . . .Black and White EIA (black assembly and base)
   RAS915LSI-1 . . . . . . .Black and White CCIR (black
                           assembly and base)
   RAS916LSI . . . . .Color NTSC (black assembly and base)
   RAS916WLSI . . . . . . .Color NTSC (white assembly and base)
   RAS916LSI-1 . . . . . . .Color PAL (black assembly and base)
   RAS916WLSI-1 . . . . .Color PAL (white assembly and base)

Options

Optional Bubbles for RHIUTH Top Hat Mount
   RUCLR . . . . .Clear Bubble (f0)
   RUSLV . . . . .Silver Bubble (f2.0)
   RUSMK . . . . .Smoked Bubble (f1.0)
   RUGLD . . . . .Gold Bubble (f2.0)
Note: Bubble diameter = 176 mm (6.93 in); bubble depth = 86.5 mm
(3.4 in); bubble weight = 0.13 kg (4.4 oz) with trim ring
Installation and Removable Accessory
   RHIRT . . . . .Installation and Removal Tool

DOME KITS

SpeedDome Ultra VII can be ordered as pre-configured kits. A kit includes a color camera module, base, mount and housing. Bubbles may be included as noted. Refer to the following chart for a description of the components within each Dome Kit.

Model Numbers	What's included
RAS916IH	RAS916LSI RHIUTH RHIUHC
RAS916IHS	RAS916LSI RHIUTH RHIUHC RUSMK
RAS916I2X2	RAS916LSI RHIU2X2M
RAS916I2X2S	RAS916LSI RHIU2X2M RUSMK
RAS916OPC	RAS916LS RHODUL-03
RAS916OPCW	RAS916LS RHODUL-03 RHOLW