

# GeoVISION™ Borehole Video Camera Systems

The GeoVISION™ Deluxe is the most versatile and least expensive professional quality borehole camera system in the 0 to 2000 foot depth underwater range.



Five cameras are available with the GeoVISION™ Deluxe system.

Standard and Jr cameras The pictures in this brochure are not to scale.



DS micro and nano cameras



Standard camera with motorized pan and tilt



The motorized winch, tripod, and control panel provide a platform that can be adapted for use in almost any water well or borehole situation when equipped with the appropriate camera and options. The Deluxe system with a stainless steel camera has a two year warranty. See the [www.geovision.org](http://www.geovision.org) website for details.

## GeoVISION Deluxe Configuration Options

GeoVISION™ Deluxe System can be configured with:

- Five different lengths 325, 650, 1000, 1650, and 2000 feet of cable
- Seven different interchangeable cameras - Jr plastic (color and B/W), Standard stainless steel (color and B/W), color nano, and color Dual Scan micro and old micro - GeoVISION™ cameras can view in boreholes as small as one inch in diameter to very large boreholes, caves, crevices, pipes, tanks, and mines.
- Up to seven viewing modes – Standard view down, motorized pan and tilt, manual pan and tilt, Dual Scan, motorized mirror for the old micro and nano cameras only, and manual side-looking mirror, Camera lights on or off with supplemental light
- Up to three methods for determining and recording the depth of the camera – OSD, cable depth marks, and pipe string
- Many different viewing and recording options – Use any NTSC monitor and recording system such as the Sony DVD recorder, a VCR, hard drive, or laptop computer.
- Up to three ways to power the system -110 volts, 220 volts, or an inverter with power from a 12 volt battery
- Several ways of providing light - On camera LEDs plus two supplemental light systems

# Viewing and Recording



The Sony DVD recorder, provides a very convenient and easy way to make a digital recording.



The Microvision 7 inch LCD Color monitor is one of the two 7 inch monitors available.



10.4 Inch LCD color monitor



One can use the optional tie clip microphone to record comments using the system's audio circuitry.

One may use any TV monitor (NTSC) that accepts an analog signal to view and any VCR to record from the GeoVISION™ video and audio outputs. Sunshades are standard on all GeoVISION™ monitors. There are several types of video to USB adapters available from electronic retailers, They are not stocked by MPI. These devices allow one to view with and record directly to a computer.

## Built-in and Supplemental Lights



The twenty one highbrightness LEDs, of the Dual Scan micro provide both direct and indirect light and produce the best videos.



The nano camera has six built-in highbrightness LEDs



The Super 8 Light and Adjustable Super 8 Light provide supplemental light for use in boreholes, shafts, mines, and caves. Versatile brackets allow these lights to be attached at many different places on the GeoVISION™ system. Supplemental off camera light also improves the quality of the image by increasing the subject texture and by reducing glare. The two Super 8 Lights are bright and are recommended for large boreholes, shafts, and mines.



Eight high brightness LEDs are built into the standard stainless steel cameras. This camera also has a camera lights on and off circuit for use with supplemental lights. This switch helps GeoVISION™ obtain some of the best videos possible in poor quality water.



# Camera size, underwater depth limit, and system compatibility

Dimensions are at the widest point.

	Diameter	Length	in Feet	Deluxe	HD	Econo
Dual Scan Micro - color, stainless steel	1 1/8	27	<b>2000</b>	<b>Yes</b>	<b>No</b>	<b>No</b>
Nano - color, stainless steel	3/4	10	<b>2000</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Standard color or B/W stainless steel	1 5/8	2.77	<b>2000</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Jr - color, plastic	1 3/4	3.25	<b>1000</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Jr - black and white, plastic	1 3/4	3.25	<b>1000</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>



The motorized Pan and Tilt is shown left and above. The motorized pan and tilt option is used with the Jr and Standard cameras to view in any direction using a joy stick. Adjustable stainless steel centralizers as shown are standard. A close-up of the nano camera with the motorized side looking mirror is shown with a dime for scale.



The deluxe winch, the micro camera, the nano camera with motorized side looking mirror, the standard camera, the Jr camera, the motorized pan and tilt with a standard camera. They are resting on top of the deluxe carrying case which is 26 x 26 x 22 inches and foam lined. The encoder wheel and cable protector is to the side of the case.



Compass



Standard and Jr side looking mirror

## Up to Seven viewing modes are available with Deluxe GeoVISION™ systems

- GeoVISION™ system cameras are usually lowered into the borehole **viewing down**. In small and moderate size bores this is adequate. When one wants to view to the side or back up the borehole, or view into to a crevice or mine, there are several other choices.
- **Motorized Pan and Tilt option** with the Jr and Standard cameras. One may view 360 degrees by panning and tilt up and down 170 degrees with the motorized pan and tilt attachment. This option allows one to view in any direction with the operation of the joystick on the control panel.
- **One can manually pan and tilt** with the Jr and Standard cameras by using a pipe string and the GeoVISION™ supplied manual head tilting assembly. The operator can view in any direction including up by pulling on the power cable and by turning the pipe. All GeoVISION™ systems have a threaded pipe-fitting, ready for attaching a user supplied pipe string. The camera can be pushed or pulled past obstructions or pushed and pulled horizontally or overhead with a pipe string. Pipe strings can be made from many different materials.
- One can rotate the side viewing camera of the Dual Scan micro. It has twenty-one high brightness LED's in three groups.
- The **Motorized Mirrors** for the old micro & nano cameras, allow one to view to the side 360 degrees.
- An **Optional Side-looking Mirror** is available with the Standard and Jr cameras to allow side viewing in small diameter boreholes.
- **Camera Lights On-Off Circuitry**- This switch allows the eight LEDs in the Stainless Steel Standard camera and the 21 LEDs in the Dual Scan micro camera to be turned on or off. Using the supplemental lights reduces glare from suspended particles in the water, increases texture of the subject, and improves depth perception by using indirect light. When the water quality is good the built in camera lights should be turned on to provide fill light. The combination of built-in and supplemental lights achieves the best images in clear water. Generally, the best videos are obtained by using brighter off camera lights such as the Adjustable Super Eight Light.



### The GeoVISION Deluxe Control Panel

**The side panel** which is shown above, has the microphone jack, the four On Screen Depth Display control buttons (feet/meters toggle, count up, count down, reset, and position on screen), OSD input jack, the recording confirmation switch, RCA audio-In jack, RCA video-in jack, High/low voltage switch, RCA audio-out jack, RCA video-out jack, volume control, speaker volume, and 115 / 220 Volt switch.

**The top panel** has the winch motor speed control dial, motor on-off switch, the Dual Scan micro or motorized pan and tilt joy stick, the orange LCD dedicated monitor output cable, an extra RCA video output, and the camera lights on-off switch. The Dual Scan micro has three camera lights on-off switches.

The On Screen Depth Display puts the depth of the camera on the recording and the screen in either feet or meters. The display can be placed in any of five screen locations. It also has count -up, countdown, and reset functions.

## Cable Lengths Available by Winch

Depth in Feet	2000	1650	1000	650	325
or Meters	600	500	300	200	100
Winch					
Deluxe	Yes	Yes	Yes	Yes	Yes
Heavy Duty	No	No	Yes	Yes	Yes
Light Duty	No	No	No	No	Yes



The Deluxe GeoVISION™ system in field use. Note the push pole attached to the front to provide additional stability in deep boreholes.

## Major Features and Options

On Screen Depth Display	
Motorized Winch	
Dual Scan micro	
Motorized pan & tilt - Jr CPVC cameras	
Motorized pan & tilt - Standard stainless cameras	
Motorized side looking mirror - old micro only	
Motorized side looking mirror - nano only	

Depth Limit	Deluxe	Econo Heavy-Duty	Econo Light duty
2000	Standard	Yes	No
2000	Yes	No	No
2000	Standard	No	No
1000	Yes	No	No
2000	Yes	No	No
2000	Yes	No	No
2000	Yes	Yes	Yes