



- Infrared Sensor
- Remote Station
- MPEG-4 Video Compressor
- Panasonic Toughbook

### Quick Facts:

- Telescoping lens provides up to 480x power magnification of the observation area
- Focusing element provides fine-grained filter and focus adjustments
- Uses a 10 bit digital CCD camera with a progressive scan sensor
- Fine-grained azimuth and elevation control
- Infrared sensor provides thermal resolution in all lighting conditions. Selectable (dual) fields of view from 1.1 to 5.5 degrees horizontal
- Remotely controlled using custom user interface. Uses TCP/IP protocol for communication. Supports touch screen input when used with Panasonic Toughbook
- MPEG-4 compression reduces bandwidth requirements and allows for real-time, 30 frames per second (FPS) video viewing
- When used with a Panasonic Toughbook, the GE becomes a rugged and portable computer with convenient touch screen capabilities.

### Description:

ROP is a versatile remote monitoring and surveillance device. It consists of a Remote Element (RE) and a Ground Element (GE). The RE contains the optics and is usually placed in a forward deployed location. The GE is the graphical interface component used to view real-time video and for command and control of the RE component.

The ROP uses state of the art electro-optic sensors to provide surveillance capabilities in harsh environments and works equally well day and night. ROP has optics for visual spotting, infrared detection, and digital imaging.

All aspects of the ROP can be remotely controlled through a graphical interface. And communication with the ROP is performed using TCP/IP, making it easy to incorporate the ROP into most enterprises.

**The ROP has been operated over wireless IP backbones from a distance of 10 miles.**

### ROP Components:

- Acquisition Camera
- Telescope
- Focuser
- Digital Camera
- Precision Pan and Tilt Tripod

### ❖ Digital Camera

- 1024 x 1024 active pixels
- 30 Hz frame rate
- Extremely low minimum illumination of 0.04 lux
- Analog output.
- Full frame shutter
- Asynchronous reset
- 45 MHz data clock
- RS-232C interface Control
- C-mount lens

### ❖ Telescope

- Focal ratio: f/10
- Visual limiting: Magnitude
- Focal Length: 2032mm
- Optical Diameter: 8.0" (203mm)
- Maximum useful magnification: 480x

- Resolving power (arc seconds): 0.68
- Optical tube (43.2cm) Long
- Weight: 13lb (5.9kg).



## ❖ Infrared

- Detector type: InSb
- Spectral band: 3–5 microns
- Detector format: 320 x 240
- Pixel pitch: 30 microns
- Dual focal length (mm): 100/500.

## ❖ Visible

- Optical Zoom: 18x
- Digital Zoom: 12x
- Low minimum illumination: 1.6lux
- ICR: Auto (IR Cut Filter Removable)
- High speed serial communications (max. 38.4 Kbps).



## ❖ Pan and Tilt

- 1 to 2 degree increments
- 30/-15 degree tilt
- 270 degree pan.

## ❖ Power

- The internal battery is constructed of Lithium Ion cells and provides a regulated output voltage of 13.8VDC, providing up to 96 amp hours of operation. An array of eight 30W solar panels connected in parallel provide enough charge for the batteries to perform continuous night observation without replacement
- Batteries can also be charged from an optional wind turbine generator.

## ❖ Communications

- Physical
  - 2.4GHz RF
  - 13dBi, directional antenna
- Data Link
  - 802.11
- Network
  - IP
- Transport
  - TCP
  - UDP.