

## Features of Dynaview active pixel camera

- \* Extremely sensitive in low levels of light giving better performance than any available ICCD camera
- \* Dynagain functions giving a very wide dynamic range over image
- \* Rugged and robust design with C-Mound optics ( 1 inch array )
- \* Integrated signal processor giving outstanding performance controlling the special CCD circuits we use.
- \* Analog and digital USB 2 outputs with computer controlled settings
- \* High reliability and low maintenance, long trouble free life time

## Dynaview active pixel camera

This is the real state of the art camera for demanding applications in security and surveillance. The technology is based on a special CCD array with active avalanche amplified pixels giving outstanding performance in deep darkness.

The technology do as well work in daylight and with the Dynagain features it is also a state of the art day- time B/W camera. Integrated signal processor controls all functions automatically or by demand over the USB 2 / RS 232 commands.

Dynaview is the ultimate replacement for ICCD intensified cameras in demanding low level of light applications. Single photon sensitivity is the target of any cameras and we can do this with high dynamic characteristics. The camera do not include any critical components making export licences problematic.

*Many of our products are protected by patents and patent applications*

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Drivers view of a camera tested in deep forests of Sweden. The camera had a 8 mm optics for a fairly large field of view. Ambient light was 80 mili Lux and frame rate 50 images per sec.

Dynagain was not used when this was tested so todays versions will see sky as darker and forest in better contrast.

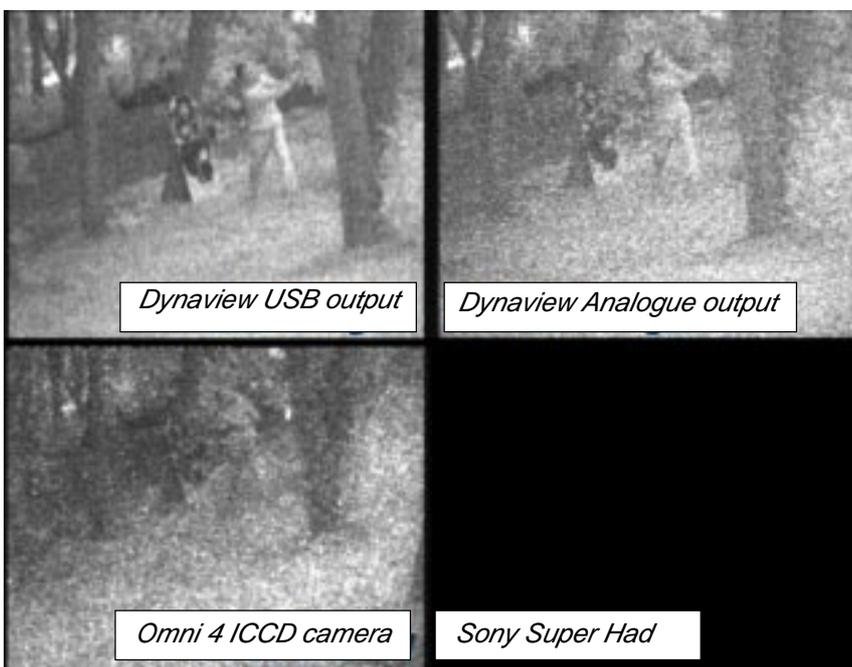
80 mili Lux is rather dark and a hard matter for Nivis systems



Drivers view at same area but here it was deep dark with only 30 mili Lux.

It was no moon and sky was cloudy. Here it is problems to detect your own hands by eyes.

Tropical nights are even darker but Dynaview can operate in tropical nights as well with no moon and heavy clouds. This is equal to the best Omni 4 standard intensified cameras and goggles. Image quality is far better of the camera compared to goggles/ICCD camera



Sub star light level in a forest. This comparison shows the performance. USB output is best followed by the analogue output.

Omni4 is the most advanced ICCD available today only available in USA for selected customers. This is anyway far less visible in image quality. Bad contrast and full with speckles.

Sony SuperHAD is a standard often used in good surveillance cameras . This image is totally black and useless.

Dynaviews characteristics appear even better when viewed with the eyes.



### Left image

Typical high contrast area with a normal CCD camera. Illuminated areas are very white and a bit oversaturated. Darker shadows very dark and what is there is almost hidden.

This is very typical for most surveillance applications.

### Right image

The settings are adjusted for best view in darkness and this causes severe over saturation in illuminated areas. This image is hard to use.



### Dynagain corrected image by Dynaview

This image has been corrected by the internal signal processor for best dynamic content in the image. Darker areas has got more sensitivity. Illuminated areas has got less sensitivity.

Dynagain can increase the dynamic range of a single image from 45-60 DB to 100-120 DB which is a dramatic improvement.



### Dynaview versus state of the art Omni 4 ICCD camera

Photo on left is sa split screen image. Left side is the Dynaview camera system. Right side is the Omni4 ICCD camera which is considered as state of the art in nivas cameras.

Pls note the quality difference in dynamics and blurry. One lamp at fuselage is almost as normal with Dynaview when Omni 4 blurry and oversaturate highly.

Image quality is far better at Dynaview in all scenarios compared to Omni 4 cameras. In very low levels of light one Dynaview is considerable better. The single photon sensitivity is impossible to beat in sensitivity

### Technical specifications

### Dynaview high dynamic low level light camera

TV system EIA or CCIR  
Sensor EMCCD (Electron Multiplier CCD)  
1" frame transfer front-illuminated  
CCD readout noise <1e-  
Fill factor 100%  
Anti-blooming Standard  
Spectral sensitivity 400-1060 nm  
CCD effective pixels 768(H) x 488(V) EIA / 768(H) x 576(V) CCIR  
Pixel size 15 x 35.5 µm EIA / 15 x 30 µm CCIR  
Luminous sensitivity 10 microlux scene *shadowed overcast starlight, f1.4 lens, 200ms integration*  
Luminous sensitivity 2500 µA/lumen (2854K)  
Limiting resolution 576 TVL pph  
Signal to noise 15 dB (no filtering) *10-4 lux scene illumination with f1.4 lens*  
Resolution 200 TV lines pph  
(20 msec integration, no filter)  
Camera cooling Fan-assisted air or heatsink to base  
Frame transfer shutter Optional liquid crystal shutter *Storage temperature -20 °C to +70 °C, Operation temperature range -20 °C to +55 °C with intelligent FSS control*  
Analog output Composite video 1V p-p, 75 ohm EIA or CCIR  
Digital interface Digital USB2.0 (12 bit video/camera control)  
Sync Mixed sync, Field (single-ended TTL)  
Sync outputs Frame, Field, Line and Pixel (all differential)  
Strobe input Extended integration (single-ended TTL)  
Lens control Auto-iris (HR10 / 6 connector)  
Power 12V @ 800mA typical, 1.1A max  
Storage temperature range -35 °C to +70 °C.  
Relative humidity 95% non-condensing.  
Dimensions 102x71x85 mm ex optics  
Encapsulation IP 54 level ex extras

T350 lens required for bright sunlight operation

Operation temperature range -35 °C to +55 °C

Standard operational ceiling 30,000ft

Weight about 1 kg ex optics

### User selectable features

- Remote control via interface or RS232
- On-screen display for camera set-up
- Automatic or manual gain control
- Peak or Average exposure
- Gamma 1.0 or 0.45
- Optional backlight compensation via one f-stop overdrive
- Optional spatial and temporal filtering
- Extended integration on chip up to 15 field periods

### Applications

- 24-hour high performance surveillance
- Covert perimeter and area surveillance
- UAV reconnaissance
- 24-hour pilotage
- Driver viewer enhancement
- Situational awareness



**Image in 2 parts** Left is Dynaview .Right is the Omni4 high tech. ICCD standard camera. Lamps are similar in brightness but the Dynaview do not blur and oversaturate as much as the ICCD.

Most cameras have similar characteristics but Dynaview is a giant step ahead to a more visible image. Omni4 image is really useless with blurr and oversaturation