



CAM/IR 2220

GYRO-STABILIZED ULTRA LIGHT AIRBORNE THERMAL IMAGER

For Helicopter, Fixed Wing and UAV Security and Surveillance Applications

With Exclusive **SunTech®** Technology
(US and International Patents Pending)

Thermal Imager Specifications

- Customizable absolute temperature colorization
- White-hot or black-hot polarity selectable
- Electronic Zoom from 2x to 5x and electronic iris
- Optional selectable temperature indication at central crosshair

Focal Plane Array

Material, Structure, & Format	Amorphous Silicon Microbolometer (160 x 120 pixel array)
Spectral Response	7-14 μm (filter bandwidth)
Thermal Sensitivity	<50mK
Refresh Rate	Real-time 30Hz
Resolution	320 x 240 interpolated 160 x 120 pixel array

Performance

Start-up Time	2.4 sec +/-10% (@25°C)
Contrast/Brightness	Automatic/Advanced Image Processing
Saturation Temperature	1100°F (600°C) +/-10% w/automatic electronic iris
Range to Detect Human Activity	11°FOV: Up to 1500' (475 meters); 17°FOV: Up to 1000' (305 meters); 32°FOV: Upto 550' (170 meters)

Optics

Focal Length	25mm	16mm	8.5mm
Field Of View	~11°x 8°	~17°x 12°	~32°x 24°
Focus Method	Manual		

Power

Input Voltage	8-32 VDC
Input Power	~1.2 W @25°C ambient, 3VDC

Physical Characteristics

Weight	2.38 oz (67.5 g)
Operating Temperature	-4°F to 185°F (-20°C to 85°C)
Storage Temperature	-40°F to 221°F (-40°C to 105°C)
OEM "Seal-Ready" Design*	11°FOV: Yes 17°FOV: Yes 32°FOV: No

Video

Analog Output	NTSC; Real-Time 30hz Frame Rate PAL; Real-time 25hz Frame Rate
Digital Output (optional)	Full-resolution, 16-bits (corrected or uncorrected) or 24-bits, plus control signals; 30hz Frame Rate (NTSC) or 25hz Frame Rate (PAL)
Output Resolution	NTSC: 640 x 480 pixels for higher clarity thermal images & symbology overlay PAL: 768 x 574 pixels for higher clarity thermal images & symbology overlay

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Optional Visual Camera Specifications

Image Sensor	1/6" IT CCD
Signal System	NTSC
Picture Elements	Approximately 680k pixel
Lens	25x Zoom f=2.4mm (wide) to 60 mm (tele), f1.6 to f2.7
Digital Zoom	12x (300x with optical zoom)
Angle of View (H)	45 degree (wide end) to 2.0 degree (tele end)
Electronic Shutter	1/4 to 1/10,000 sec. 20 steps
White Balance	Auto, ATW, Indoor, Outdoor, One Push WB, Manual WB
Gain	Auto/Manual (-3 to 28 dB, 16 steps)
AE Control	Auto, Manual, Priority Mode, Bright, Exposure Compensation, Back light Compensation
Flicker Compensation	Auto
Focusing System	Auto(Sensitivity:Normal, Low), One-Push AF, Manual, Infinity, Interval AF, Zoom Trigger AF
Picture Effects	Negative/Positive Reversal, Black & White (monochrome image)
Camera Operation Switch	Zoom tele, Zoom Wide
Aperture Control	16 Steps
Serial Interface	VISCA protocol (TTL), 9.6 Kbps, 19.2 Kbps, 38.4 Kbps, Stop bit 1/2 bit

Pan-Tilt Specifications

	D46U17	D46U70
Max. unloaded speed (@30VDC)	300°/second	60°/second
Pan-Tilt Resolution	3.086 arc minutes (0.051428°)	0.771 arc minutes (0.012857°)

Acceleration/Deceleration: Trapezoidal. On-the-fly speed and position changes.
 Tilt Range (approx): 31° up and 69° down (100° range)
 Pan Range (approx): ±180° (360° range)

Mechanical

Weight: 6.25 lb. (2.83 kg)
 Dimensions: 7.75"H x 2.75"W x 5.5"D (single camera version)

Connections

Connector Type: AMP PT02A-14-19S or compatible (MIL-C-26482)
 Video out: NTSC
 Input Power: 10.5-30VDC unregulated

- 18.8W continuous peak (full-power mode)
- 10.3W continuous peak (low-power mode)
- 3.8W continuous peak (holding power off mode)

 Computer Controls: RS-232 standard (9600 baud), unit addressable;
 Built-in option of multidrop RS-485 networking

* All specifications are subject to change without notice *