

TS-1 Camcorder-mounted Thermal Imager

Overview

The TS-1 Thermal Imager is the first camcorder-mounted Long Wavelength IR camera on the market to use the FLIR's newest Photon Core. This is the smallest, easy to use IR unit of its kind! There are no controls to operate or buttons to push. Photon is based on a 320x240 uncooled focal plane array (FPA) that employs 38-micron pixels. The new core has a larger array and smaller pixels which provides twice the resolution of its predecessors. The advent of micro-electronics technology has finally allowed the systems to be integrated onto one miniature, deployable, handheld platform.

The TS-1 consists of a modified Sony MiniDV or DVD Handycam Camcorder which serves as the video recording platform for both visible and thermal imaging modes. The camcorder unit has been specially modified by removing the IR cut filter in the camcorder. Most video cameras generally see visible light in the 400 – 750 nm range. This modified camcorder with the IR cut filter removed is able to view between 280 - 1200 nm. This allows the unit to see a much broader bandwidth - well into the low-end UV range as well as the high-end IR range which is just above the visible spectrum.



The altered camcorder serves as the base to which the miniature thermal imager is connected to via the supplied S-video cable. The TS-1 is "hot shoe" mounted to the camcorder and can be removed for easy storage and shipment. Both the camcorder and thermal imager can be concealed in a small hip pack for sensitive applications. Now you can record thermal imagery directly to the camcorder!

Features:

- Record/playback to the recording deck or memory stick, depending on camcorder model; camcorder sold separately
- Ultra-small size allows for easy concealment
- Thermal Imager operates for more than 3 hours on a single charge
- Powered by standard Sony P-Series batteries
- Create historical/archivable motion video for comparison at a later date
- Uses the Camcorder's screen for viewing and playback
- Thermal Imager fit into the palm of your hand
- Plug and play – just turn on the system and start viewing or recording!

THERMAL CAMERA – TYPICAL SPECIFICATIONS

Detector	Uncooled Microbolometer Vanadium Oxide (VOx)
Array	Format: Block 2 (320x240)
Pixel Size	38 µm
Spectral Response	7.5 to 13.5 µm Longwave Infrared (LWIR)
Video Output	NTSC (PAL Optional)
Digital Data	8-bit Serial LVDS or Real-time, corrected 14-bit Serial LVDS* bad pixel replaced (*pre-AGC)
Frame Rate	30 Hz (320x240) 25 Hz PAL 60 Hz (320x120) 50 Hz PAL
NEdT (subject to export license restriction)	< 85 mK @ f/1.6 Equivalent to 40 mK at f/1.0
Normalization Source shutter wink	Internal Shutter (Offset Only) 0.7 sec video freeze during
Time to Image	< 4 sec. No Thermoelectric Cooler (TEC)
Image Control	Revert 320x240 only Invert 320x240 only 2x Digital Zoom Electronic Panning Option
Camera Operation	Autonomous
Serial Command	RS-232 compatible
Operating Temp Range	-40 to +75°C External Temp
Scene Temp Range	To 150°C standard
Mounting Interface	7 heatsink attach points
Weight Camera Core	~97 g (~3.4 oz) Not including lens
Power Dissipation	~1.5 W
Lens	19.0mm 36° HFOV f/1.4

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