

IR-011

Mid-format VOx Uncooled Thermal Camera



Features

- State of the art VOx thermal detector
- Automatic sunburn protection, detection and recovery
- Advanced image processing
- Monochrome analog output RS170/CCIR
- Digital video over Ethernet
- Programmable video palettes
- Automatic Non-Uniformity Correction (NUC)
- Remote software up-date
- 12/24VDC power input with automotive compliance

Description

The IR-011 is a Mid-format thermal camera based on a state of the art 25um VOx thermal detector. Due to advanced analog power and control circuitry, the camera provides high-quality analog and digital video outputs. Optimal power management flexibility is provided due to the advanced TEC control circuit offering programmable FPA temperature and TEC current.

To provide NUC calibration the IR-011 features a fast and silent shutter solution with superior shock resistance, even in power-off mode. The shutter holding torque is software controlled, thus providing flexible user-defined tradeoff between power consumption and shock resistance.

Digital video streaming is provided through the 100Mbit Ethernet interface. For video streaming and camera control on a Windows platform, the IR-011 is shipped with a video streaming and camera control software API. This API includes a series of control functions that allows easy integration with custom software applications. The IR-011 software API supports Windows 2000 and Vista.

For digital video out-of-the-box, the IR-011 is shipped with a camera control application for Windows 2000 and Vista. Basic control features include: Freeze/Live, Horizontal and vertical flip, Black-Hot/White-Hot, Color palettes control, Video recorder, NUC control, Histogram display, Automatic Contrast Enhancement, Gamma correction, digital zoom.

Analog video is provided through a Mini-BNC connector. IR-011 supports 8-bit RS170/CCIR video and PAL/NTSC colour video with 18-bit 5:6:5 RGB colour format. For 18-bit colour video, the colour output is based on either a default palette or a user-defined colour palette.

For non-Windows host applications the camera can be fully controlled through a serial RS-232/RS-485 interface.

Applications

General specifications

Detector type	Vanadium Oxide Microbolometer
Detector formats	384x288(PAL) or 320x240(NTSC)
FPA diagonal size	12 mm
Pixel pitch	25 um
Spectral range	8-14 um
NETD	<50mK (300K scene, f/1, 50Hz)
Detection temp.range	-35 to 85 °C (default configuration)
Shutter cycle	600 ms with 1:84 gear (Optional 1:256 gear is available on request)
Shutter holding torque	Programmable, 8-bit
FPA temp. change	1 °C/s (programmable TEC current)
Turn-on time	20 s Max.
Power cons.	Typical 3 W
Input voltage	8-30V DC (Automotive compliance)
Lens	20 mm, f = 0.65 (others on request)
Weight	550 grams
Dimensions	85 x 85 x 89 mm
Operating temp.	-20 to +80°C (ambient)
Storage temp.	-40 to +70°C (ambient)
Humidity	5-85% non condensing
Vacuum Integrity	>15 years

Analog Video

Analog video	RS170/NTSC or CCIR/PAL
Colour formats	8-bit monochrome or 18-bit colour 5:6:5 RGB format
Framerate	25 Hz (PAL), 30 Hz (NTSC)
Connector	Mini-BNC

Digital video

Digital video	Ethernet 10/100 BaseT
Protocols	UDP for video streaming TCP/IP for async control and setup
Framerate	25 Hz (PAL), 30 Hz (NTSC) **
Colour output formats	Full 24 bit RGB (18-bit to 24-bit RGB colour conversion is done by IR-011 software API)

IR-011 Software API

File format	32-bit DLL for Windows OS
Windows OS	Windows 2000 and Vista OS **
Correction	Colour conversion Non-Uniformity Correction (NUC) Bad Pixel Replacement (BPR) Automatic Contrast Enhancement (ACE) Gamma correction
Conversion	Black-Hot/White-Hot Horizontal and vertical flip 10 different colour palettes (digital)