

High Performance Infrared Cameras, Cores & Engines

# MIRICLE 307K

Powered by Thermoteknix 640 x 480 VGA



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## MIRICLE 307K Infrared Cameras, Cores & Engines

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The MIRICLE infrared camera range, created by Thermoteknix, sets a new level of power, performance and flexibility for the full range of infrared applications. Resulting from more than 20 years' experience in thermography, MIRICLE cameras and cores deliver *more than just an image.*

Built in the smallest footprint, MIRICLE 307K cameras, cores and engines are driven by an ultra high performance 640 x 480 microbolometer detector available in a variety of different housings and configurations incorporating the very latest low power micro-electronics technology.

Thermoteknix MIRICLE 307K infrared cores and engines provide the OEM builder with high performance thermal imaging in highly compact, lightweight, low power, rugged, modular designs. Powerful embedded software, a choice of analog video and digital video outputs and accessories put MIRICLE 307K camera engines ahead of the field. Available in a range of configurations and options, MIRICLE 307K cameras and cores provide developers, integrators and end users with flexibility to tailor mechanical and electronic integration on a single platform. MIRICLE 307 fully built camera systems are available in a range of environmentally sealed housings or with interchangeable lens mounts for rapid lens changes in the field.

### MIRICLE 307K Imaging

Based on a state-of-the art 640 x 480, uncooled alpha Silicon 7-14 μ micro-bolometer detector with 25 micron pitch, MIRICLE 307K's superbly detailed real-time imagery is unsurpassed. MIRICLE 307K cameras establish a new level of performance, free of US Government export authorization, for delivery to global markets.

From surveillance to online process inspection, MIRICLE camera systems fit outstanding features and power into the smallest and most flexible packages. For optimum imaging in varying intensity scenes and targets, MIRICLE electronics have manual and dual area of intensity auto gain to maximize target and featured background content. Multiple color palettes, smooth multi-level interpolated zoom directly in the core and auto hot/cold peak tracking throughout the whole image or user defined area of interest. For scientific and R & D imaging, multiple cameras can be gen locked for simultaneous frame mode. Standard frame rates (50/60 Hz) and high speed frame rates (100/120 Hz) address fast processes and dynamic image analysis with windowing modes up to 250 Hz. Programmable bias voltage enables custom ranging and optimum scene composition.

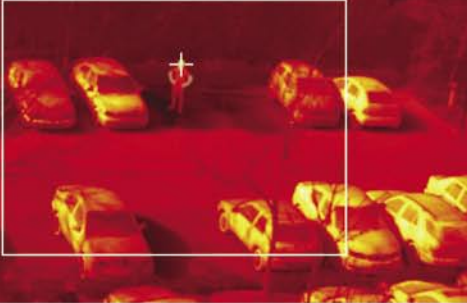
- Surveillance • Border security • Aerospace • Military • UAV • R & D • Scientific • On-line process control •



More than just an image.....

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## PERFORMANCE

<b>FPA Detector</b>	Alpha Silicon uncooled microbolometer
<b>Array size</b>	640 x 480 (307,020 effective pixels)
<b>Spectral band</b>	7 - 14 $\mu$ m
<b>Pixel pitch</b>	25 $\mu$ m
<b>Optical Fill</b>	> 80 %
<b>NEDT</b>	$\leq$ 85 mK (f/1.0, 60Hz)
<b>IFoV (Instantaneous Field of View)</b>	0.78 mrad with standard 32mm f/1.0 lens
<b>Standard Frame Rate</b>	50/60 Hz
<b>Output Format</b>	25Hz - USB2 (Standard)
<b>Dynamic Range</b>	14 bit
<b>Gain/Level Control</b>	Auto
<b>Time to image</b>	< 1 second
<b>Shutter</b>	Micro-compact. Auto NUC
<b>Power Input</b>	3.3 - 5 V
<b>Power Consumption</b>	< 2.5 W (USB2/LVDS output)

### Environmental Properties

<b>Impact</b>	25G IEC 68-2-29
<b>Vibration</b>	2G IEC 68-2-6
<b>Operating ambient temperature</b>	-15 - +50°C
<b>Humidity (Operating/Storage)</b>	5 - 95% non condensing (KS model 100%)
<b>Size (dimensions mm/inch)</b>	42 x 40 x 40 mm 1.6 x 1.6 x 1.6 inches
<b>Weight (inc. detector)</b>	(86 g) 3.0 oz
<b>Connector</b>	Lemo/Miniature USB2/Ribbon cable depending on model

### Optional Extras

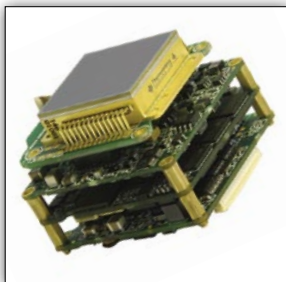
VGA / LVDS Digital / Ethernet / Analog video / External motor drive (focus)

**MIRICLE 307K camera systems are available in a choice of configuration and housings:**



### MIRICLE 307KS

A screw flange front mount allows lens interchange whilst offering a choice of environmental sealing and ruggedisation options including IP67 (NEMA 4), hermetic and space compliance



### MIRICLE 307KC

MIRICLE cameras are available in custom configurations to suit integrator and third party development. Choice of shutter assemblies, mounts, casings, outputs and features

## STANDARD SOFTWARE AND OPTIONAL PACKAGES

**MIRICLE Control Software (RS232 PC) is included with all units**  
 Functions: Freeze frame/live, Store digital frame (BMP), Black hot/White hot, Flip video: Left/Right, Up/Down

### OPTIONAL COLOUR VIDEO PACKAGE

<b>Video Output Format</b>	Black & White / Colour
<b>Communication</b>	RS232 / USB2
<b>Software Control</b>	Black hot/White hot Flip video: Left/Right, Up/Down Manual or Auto configurable NUC Zoom x2 x4 x8 around centre
<b>Gain Modes</b>	Multiple Autogain Modes: Peak, Histogram, Standard, Deviation, Span or Hot Compression
<b>Colour Palettes</b>	10

### MIRICLE ENGINEERING DEVELOPMENT TOOLKIT

- Engineering development technical support
- Miricle diagnostic and debugging development software
- Bad Pixel Replacement Tools

### OPTIONAL ACCESSORIES

*ThermaGRAM USB Digital Image Processing Software*  
*ThermaGRAM PRO USB Real Time Digital Image Capture & Analysis Software*

### LENSES

Choice of multi-element Germanium lenses with electronic focus and mount options:

Focal Length	Aperture	IFoV	HFoV	VFoV	Diag
32mm	f/1.0	0.78 mrad	28.1°	21.2°	34.7°
50mm	f/1.0	0.50 mrad	18.2°	13.7°	22.6°
75mm	f/1.0	0.33 mrad	12.2°	9.1°	15.2°
<b>60/180mm Lens:</b>					
60mm setting -	f/1.4	0.42 mrad	15.2°	11.4°	18.9°
180mm setting -	f/1.4	0.14 mrad	5.1°	3.8°	6.4°



A range of spectral transmission filters are available  
 Infrared detectors and cameras are subject to UK DTI export control and may require an export licence

Not all features present on all models. Specifications subject to change. MIRICLE is a registered trademark of Thermoteknix Systems Ltd.  
 Printed on environmentally friendly 100% chlorine free pulp

