# SUPERHAWK MEDIUM WAVE INFRARED DETECTOR



The SuperHawk infrared detector is a 1280 x 1024 array of pixels on an 8µm pitch, manufactured using a Metal Organic Vapour Phase Epitaxy (MOVPE) process with Mercury Cadmium Telluride (MCT) detector material grown on low cost substrates.

The SuperHawk detector offers four times as many pixels in the same active image area as conventional 640 x 512 16µm pitch products. In addition, the SuperHawk offers a 1280 x 720 mode of operation, providing an easy High Definition upgrade in a smaller optical footprint than alternative 15µm Standard Definition products.

Using mesa diode structures, the 8µm pitch pixels in the SuperHawk detector have negligible blur from optical scattering, electrical cross-talk or carrier diffusion to achieve a near perfect modulation transfer function (MTF), resulting in the sharpest images typically characterised by the company's unique technology.

## MAIN FEATURES

- Medium waveband (3.7-5µm)
- > 1280 x 1024 format
- 8µm x 8µm pixels
- SXGA format
- Selectable 720-HD format
- ${\boldsymbol{\mathsf{*}}}$  Easy SXGA upgrade from 16µm sensors
- Easy HD upgrade from 15µm SD formats
- Negligible pixel blur
- >>110K Operation
- > 120 frames per second.

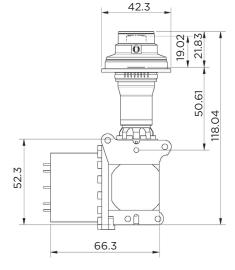
## **KEY BENEFITS**

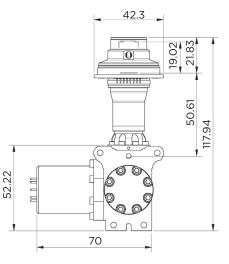
- Compact
- > Low power
- High resolution
- More pixels on target
- > Easy interface with digital proximity electronics.











### **TECHNICAL SPECIFICATION**

#### FORMAT

- Array size: Mode 1: 1280 x 1024 pixels, Mode 2: 1280 x 720 pixels
- Pixel pitch: 8µm
- > Active area: Mode 1: 10.24 x 8.19mm, Mode 2: 10.24 x 5.76mm
- > Image diagonal: Mode 1: 13.1mm, Mode 2: 11.75mm

#### **ELECTRO-OPTIC**

- > Spectral bandwidth: 3.7µm to 4.95µm
- > f-number: f/2.8 (standard) other f-number options available
- > Cold stop: 19mm above FPA
- > NETD: 20mK (typical)
- Pixel operability: >99.8% (typical)
- > Operating temperature: 110K

#### ROIC

- Snapshot modes: ITR or IWR
- > Windowing: Programmable

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#### Electronics Division

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- > Charge handling capacity: 5Me-/3Me- selectable
- > Linearity: ±0.5%
- > Number of outputs: 8
- > Pixel rate: 160Mpix/sec

#### **PROXIMITY ELECTRONICS**

- Supply voltage: 5V
- > Power: <2.5W
- > Interface: Digital
- > ADC resolution: 14 bits
- > Video output: Serial LVDS

#### **IDCA**

- > Cooler: RM2 (standard) other cooler options available
- > Weight: 350g (with RM2)
- > Cooldown time: <5 minutes
- > Power consumption: from 6W
- Operating temperature: -40°C to +70°C

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