

SuperHawk

Medium wave infrared detector

The SuperHawk infrared detector is a 1280 x 1024 array of pixels on an 8 μ m 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 16 μ m 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 15 μ m Standard Definition products.

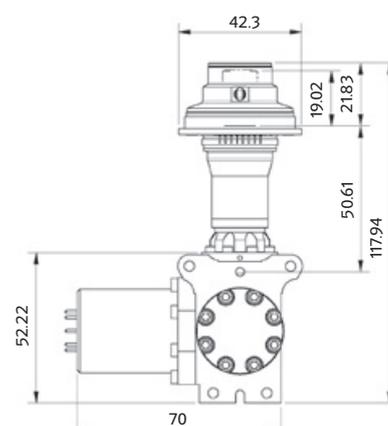
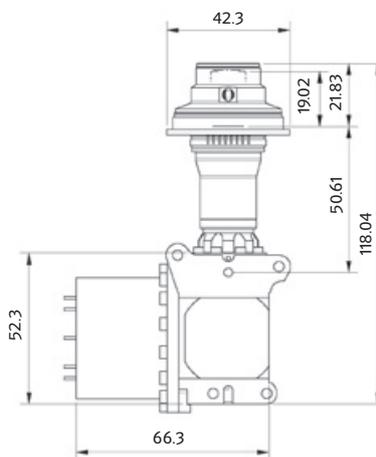
Using mesa diode structures, the 8 μ m pitch pixels in the SuperHawk detector have negligible blur from optical scattering, electrical cross-talk or carrier diffusion to achieve a near perfect modulation transfer function (MTF), resulting in the sharpest images typically characterised by the company's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

Main features

- Medium waveband (3.7-5 μ m)
- 1280 x 1024 format
- 8 μ m x 8 μ m pixels
- SXGA format
- Selectable 720-HD format
- Easy SXGA upgrade from 16 μ m sensors
- Easy HD upgrade from 15 μ m 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
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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LDO_UK23_00181 10-25

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