

## MEDIUM WAVE INFRARED DETECTOR

The Falcon 720 infrared detector uses the latest focal plane technology to provide high definition infrared images compatible with commercial 720p HDTV signal formats. The 12 $\mu$ m-pitch focal plane array enables this highdefinition detector to be offered in a compact, low-cost, low-power format.

The Falcon Medium Wave Infrared (MWIR) detector is a compact and lightweight 1280 x 720 Mercury Cadmium Telluride (MCT) Integrated Detector Cooler Assembly (IDCA). The Falcon MWIR detector is designed for high performance, low cost imaging in the 3 - 5 $\mu$ m waveband.

Using the MCT process, the Falcon MWIR detector provides the highest environmental integrity along with the superior performance of focal plane detectors.

### MAIN FEATURES

- Integrate-then-read (ITR) or Integrate-while-read (IWR) operation
- Simple to use
- Medium wave 3 - 5 $\mu$ m
- Small element pitch enables miniaturisation of the Dewar assembly and optics
- High electro-optic performance with low crosstalk, automatic anti-blooming at the pixel level and excellent sensitivity
- Windowing gives enhanced frame rates over selected areas of the array
- Electronic boresighting provides low-cost method for precision alignment of FPA to optical axis
- Higher operating temperature than InSb
  - Longer cooler life
  - Less in-service support
  - Lower through-life cost.

# FALCON 720



## KEY BENEFITS

- Low cost
- Lightweight
- Compact
- High resolution.

## TECHNICAL SPECIFICATIONS

FORMAT	
Array	1280 x 720 pixels
Pixel Pitch	12um
Active Area	15.36 x 8.64mm

TYPICAL PERFORMANCE	
NETD (median)	19mK
Pixel Operability	>99.8%

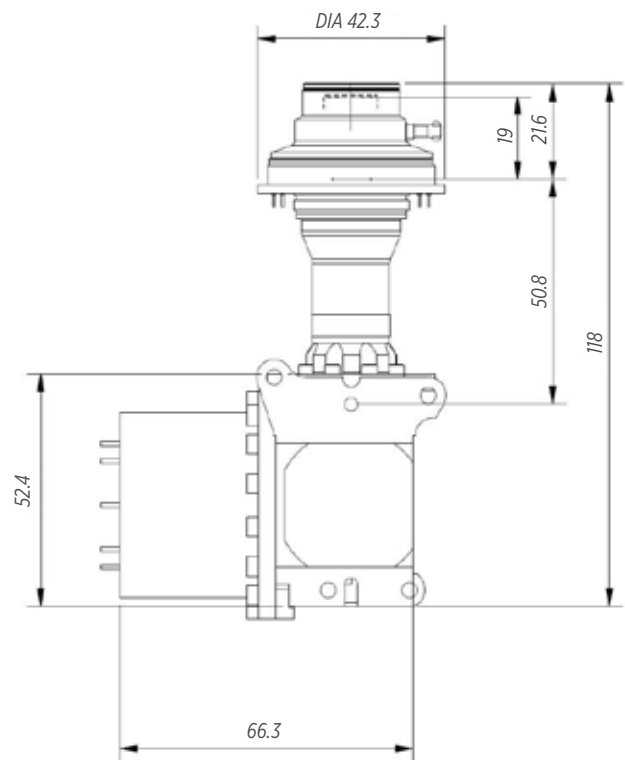
INTERFACE PARAMETERS	
Modes	ITR or IWR
Configuration Control	Single serial interface
Charge Capacity	4 x 10 <sup>6</sup> electrons
Number of Outputs	8
Pixel Rate	Up to 10MHz per output
Array Operating Temperature	80 to 100K
Window Material	Germanium
Window Thickness	1.73mm
Cold Filter Material	Silicon
Cold Filter Thickness	0.4mm

ROTARY COOLER	
Weight	500g
Power Consumption	6W steady state
Cooling Engine	Rotary Stirling engine
Operating Temperature Range	-40°C to +70°C

LINEAR COOLER	
Weight	1100g
Power Consumption	8W steady state
Cooling Engine	Linear Stirling engine
Operating Temperature Range	-40°C to +70°C
Cooler MTTF	40,000 hours

Alternative cooler options are available

## Rotary Cooler



All dimensions in mm