



Hot Hercules

1280 X 1024, 15 μm pitch,
Digital XBn MWIR

Defense Applications



General Description

Hercules is a Mega-Pixel IR detector, which is now available at high operating temperature.

HOT Hercules is based on SCD's latest FPA technology which enables a very high FPA operating temperature of 150K without compromising on detector performance. This results with reduced SWaP (Size, Weight and Power) and high reliability of more than 20,000 hours.

This is achieved by the combination of an advanced IR detectors manufacturing technologies available today:

- 15 μm pitch XBn technology (150K operation)
- Digital ROIC - 0.18 μm Si-CMOS
- Compact, Stiff Dewar
- Compact and light Integral rotary Stirling cooler

Applications

- IRST
- MWS
- Long Range Surveillance
- 24/7 Applications
- Navigation Payloads
- Reconnaissance

Main Features

- 100 Hz Frame Rate at full window
- Long-term NUC stability
- Digital output with Camera Link interface
- High image quality
- Reduced component volume and power consumption
- High Reliability





Typical Performance

Parameter	Performance
Detector type	XBn
Array Format	1280x1024
Focal Plane Temperature	150K
FPA spectral range	3.6 ÷ 4.2 μ m *
Pixel Pitch	15 μ m
Integration modes	ITR/IWR
Pixel capacity and Floor noise (FN)	6Me- (900e-); 1Me- (250e-)
Maximum frame rate @ 14 BIT resolution	100 F/S @ Full window
Digital resolution	Up to 15bit
Readout mode	Normal/ Dilution
Windowing	Flexible: at 2 row steps
Readout direction	Up-down, left-right
NETD	20mK@50% well fill capacity
Residual Non Uniformity	<0.04% STD/DR@10-90% well fill capacity
Cooler	Ricor K508/K508N or similar, 0.5W cooling power
Cooler MTTFF	>20,000 hours
Operation Temperature	-40°C ÷ 71°C
Storage Temperature	-54°C ÷ 80°C
Dimensions (with Ricor K508N)	Weight - ~ 750 gr. Length (optical axis) - 149 mm

* Cut-on is filter dependent