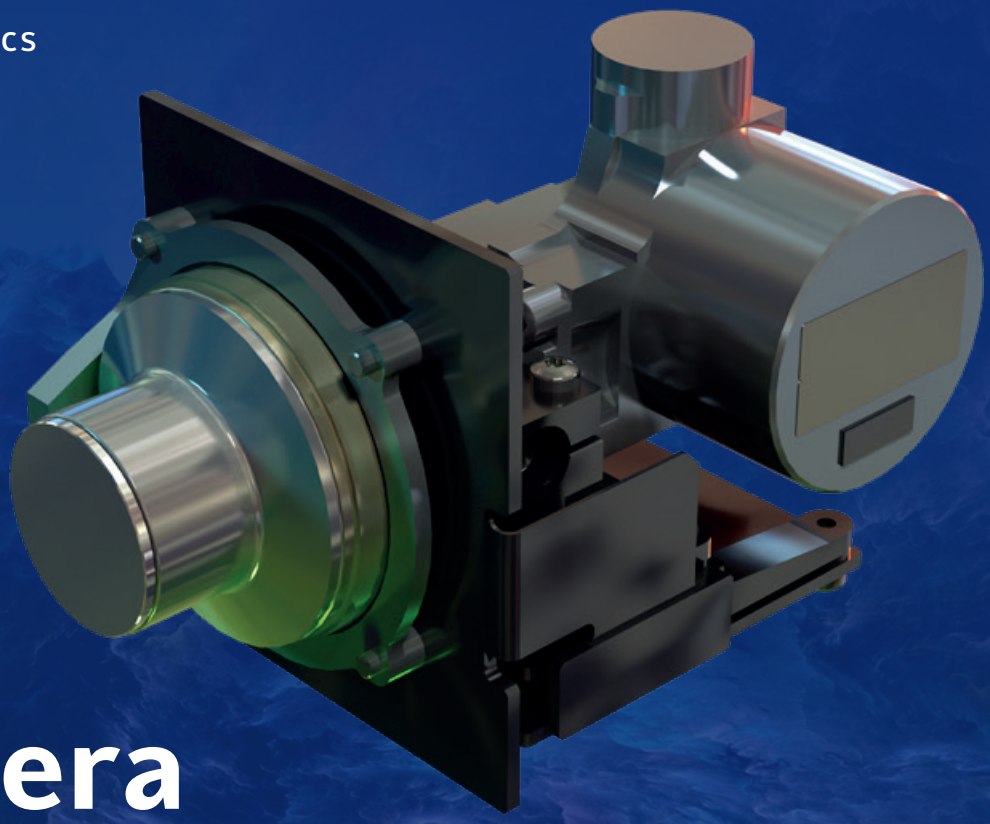
LEONARDO ELECTRONICS



Leoptera

Infrared camera core family

Flexible infrared camera core Family from leonardo

Product overview

Leoptera is a family of flexible Infrared Camera Cores offering a high-performance, ITAR free, compact thermal imaging solution designed for integration into a variety of products. This camera core provides exceptional thermal imaging capabilities and manages interfaces with a broad range of Leonardo IR detectors.

This provides advantage to system integrators such as:

- → Reduction in integration time
- → Common interface between sensors
- → Optimised design to achieve peak performance from Leonardo IR Detectors
- → Standard output format

The 'Light Core' provides corrected video out (Non-uniformity correction (NUC) and defect concealment), for the lowest SWaP offering which gives integrators greatest flexibility to integrate within existing systems. It supports MIPI-CSI for flexible connectivity to external devices and has base CamLink available as an alternative. Additional options include a thermal reference source and image processing electronics.

The processing electronics offer the full range of image processing techniques common with the Leonardo IR camera products such as world-class Horizon Thermal Imager.

This modularity allows integrators to tailor their designs to customer needs, as well as offering standardised interfaces for quicker integration. This provides quicker time to market and overall cost savings.

LEONARDO

Key Features

A range of image formats, pixel densities and wavebands suitable for a wide range of imaging applications.

Modular Design: Designed for easy integration, enabling seamless incorporation into a variety of systems such as targeting pods, surveillance turrets, vehicle sights and IR cameras. Also allows integrators to trade optional modules for optimal thermal and power management.

Image Enhancement: Processing electronics incorporate advanced image processing algorithms such as LACE, Edge Enhancement, Turbulence mitigation and Image stabilisation for improved clarity and detail.

Technical Specifications – Phase 1 IDCAs

	Low SWaP SuperHawk Leoptera Camera Core	Condor HD Leoptera Camera Core
Detector type	MCT	MCT
Pixel Pitch	8 µm	12 µm
Resolution	1280 x 1024	1280 x 1024
Waveband	MWIR	DWB (MWIR and LWIR)
F/number	F/2.8 – Others available	F/2
Weight (inc. electronics)	352g (TBC)	890g (TBC)
Dimensions (W x H x D) (inc. electronics)	54 x 59 x 95 mm (TBC)	TBC
Power consumption	7.5W (TBC)	<15W (TBC)

- → Thermal Reference Source: Used in conjunction with the Leoptera light core to provide reference scenes for the NUC
- → Processor: Provides functionality such as Local Area Contrast Enhancement (LACE), Edge Enhancement, Turbulence mitigation, Image Stabilisation, Electronic Zoom, Freeze Frame, Graphical overlays
- → Processing Electronics Interfaces include: SDI (HD-SDI & 3G SDI), DisplayPort, Ethernet (H264 / Gig-E)
- → Control Interfaces: RS422 and Ethernet

Applications

- → Airborne Gimbals
- → Border Security and Surveillance
- → Force Protection
- → Counter-UAS
- → Research and Development
- → Customer own build camera programme

Environmental Conditions

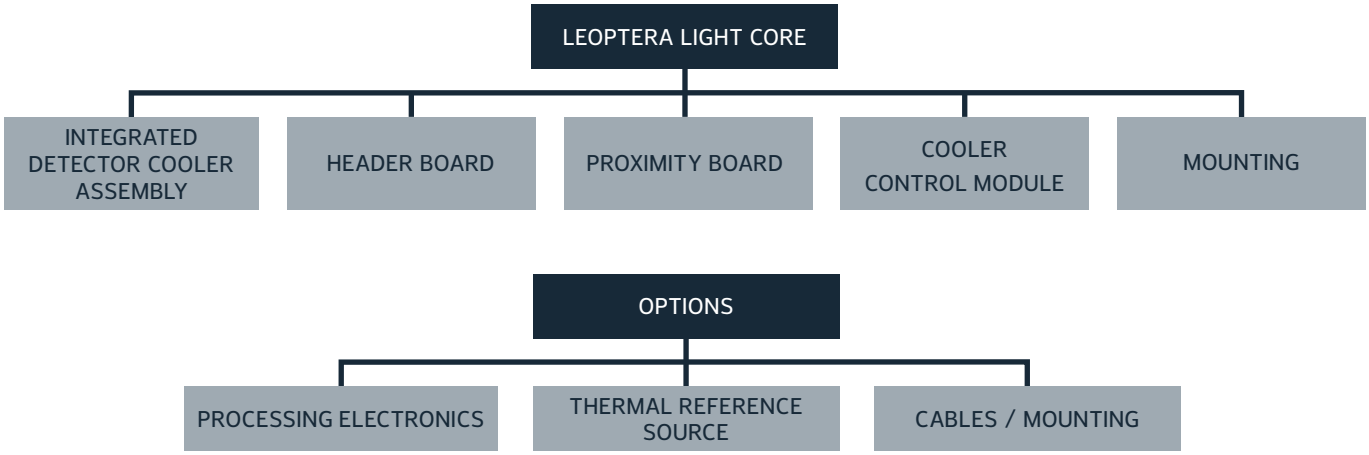
- → Operating Temperature: -40°C to +71°C
- → Storage Temperature: -46°C to +85°C

Warranty

- → 2 years warranty offered as standard

Future Provisional Options

- → Higher resolution
- → SW Avalanche Photo Diode (APD)
- → Digital ROIC
- → AI/ML processing module
- → Other waveband options



For more information:
ir.detectors@leonardo.com

Leonardo Electronics
First Ave - Millbrook - Southampton - SO15 0LG- United Kingdom
T +44 (0) 2380 514100

This publication is issued to provide outline information only and is supplied without liability for errors or omissions.
No part of it may be reproduced or used unless authorised in writing.
We reserve the right to modify or revise all or part of this document without notice.

2025 © Leonardo UK Ltd
LDO_UK23_00516 07-25

uk.leonardo.com