

# LEO-III-HD

## High Definition



- The LEO-III-HD introduces a step-change in airborne law enforcement and homeland security observation capability.
- The LEO-III-HD can simultaneously be equipped with up to nine high performance sensors.
- These sensors are designed and manufactured by Carl Zeiss Optronics and feature exclusively ZEISS optics.
- The LEO-III-HD builds on the solid reputation of the trusted LEO-II range which remains in use with law enforcement and other agencies around the world.



We make it visible.

# Technical Data

## Thermal imager

Camera type	Carl Zeiss Optronics Attica 640 2MW
Sensor type	640 x 512 CMT Focal Plane Array (FPA)
Resolution	1280 x 1024 (micro-scanned) 50Hz progressive scan
Wavelength	3-5 $\mu$ m
FOVs	20° to 0.5° Optical HFOV (up to 10 configurable zoom steps)

## Multi-spectral high-definition zoom TV camera

Camera type	Carl Zeiss Optronics high-definition, colour and near-infrared (NIR) camera and lens
Sensor type	4 x 1/2 inch SXGA FPA detectors (R,G,B & NIR)
Resolution	1280 x 1024, 50Hz progressive scan
FOVs	20° to 1° HFOV (optical continuous zoom)
Electronic zoom	2x (0.5° H), 4x (0.25° H)
Zoom ratio	80x (effective)

## Multi-spectral high-definition spotter camera (Optional)

Camera type	Carl Zeiss Optronics high-definition, colour and NIR camera and lens
Sensor type	4 x 1/2 inch SXGA FPA detectors (R,G,B & NIR)
Resolution	1280 x 1024, 50 Hz progressive scan
FOVs	0.47° to 0.12° HFOV

## System interfaces

Digital video	SMPTE 292M (HDSDI x2), SMPTE 259M (SDI x2), DVI-D x2
Analogue video	SMPTE 296M (component video (RGB) x2, composite video (PAL) x2, S-video x2)
Control	RS-485, ergonomic laptop, dual laptop or RS-422 mission computer interface
Data	RS-232, RS-422, ARINC 429, ethernet

## Environmental

Standards	DO160E
Operating temperature	-25°C to +55°C

## Power requirements

Voltage	22-32 VDC (per DO160E)
Consumption	400W (575W max)

## Laser rangefinding capability (Optional)

Laser type	Carl Zeiss diode-pumped, 1PPS medium repetition
Measuring range	80 m – 20,000 m
Resolution	+/-5m
Class	Class 1 (eyesafe)

## Laser illuminator

Power output and class	1.2W (NIR), Class 3b
Wavelength	810 nm (NIR)
Beam divergence	10 $\mu$ rad

## Laser pointer red or NIR

Power output and class	60mW (Red), 40mW (NIR), Class 3b
Wavelength	650 nm (Red), 810 nm (NIR)
Beam divergence	500 $\mu$ rad

## Mission awareness positioning system (Optional)

Fully integrated, IMU & GPS or aircraft ARINC 429 data bus integration to MAPS algorithm for MAPS (geo-pointing and target geo-location capability)

## System performance

System type	6-axis stabilisation (4 active, 2 passive)
Az. coverage	360° continuous
El. coverage	+20° to -120°

## Dimensions, weight & mounting

STA* size	500 mm clear turning diameter x 523 mm H
STA weight	< 45 kg (equipped with all sensors simultaneously)
LCU** size	(W x L x H in mm) 212 x 383 x 129
LCU weight	< 1.8 kg

## Other options & accessories

Dual laptop control interfaces, mission computer control interface, automatic video tracker, searchlight interfaces, GPS interfaces, navigation/radar interfaces, moving map system interfaces, quick-release mounts, AV mounts, microwave downlink interfaces, satellite uplink interfaces.

\* STA: Stabilized Turret Assembly

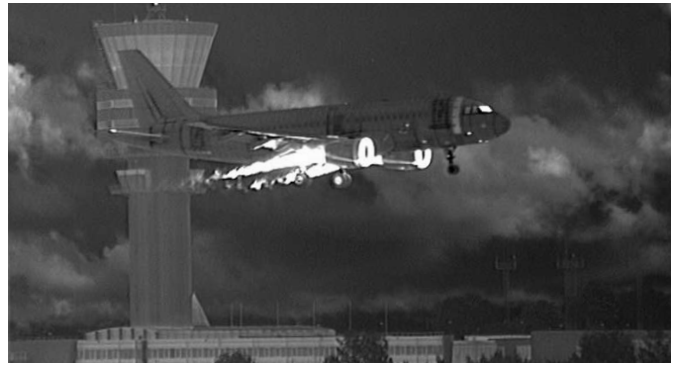
\*\* LCU: Laptop Control Unit

# Features



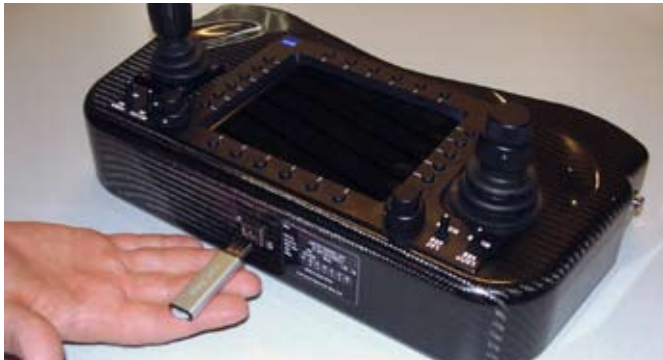
*LEO-III-HD Image Fusion*

- Unique high bandwidth, true digital video system architecture with additional reserve capacity to ensure future expansion and sensor upgradeability without requiring data compression.
- Uncompressed high-definition digital video from source to display, recorder and microwave downlink.
- Megapixel still image capture capability.



*LEO-III-HD Still Image Capture Capability*

- Advanced 4 HD focal plane array (FPA), multi-spectral HD, Carl Zeiss Optronics cameras and lenses covering an effective zoom range of 166x (20° to 0.12°) from the visible to the near-infrared (NIR) light spectrum.
- High-resolution mid-wave thermal imager with up to 10 selectable zoom positions.
- Up to nine high-performance sensors simultaneously available in a 410 mm class turret.



*LEO-III-HD Laptop Control Unit with USB Still Image Download Capability*

- Unique, ergonomically designed Laptop Control Unit with built-in colour LCD display and USB port to download still images.
- Real-time, on-board image processing such as picture-in-picture, image fusion, image enhancements and haze penetration.
- Perfect high-speed, high-resolution images with 50 Hz progressive scan, high-definition video from source to display
- Comprehensive symbology overlay simultaneously available on all video format outputs with selectable levels of overlay
- Multiple digital and analogue video outputs available simultaneously



*LEO-III-HD Laptop Control Unit Display*

## Applications

- Law enforcement.
- Paramilitary reconnaissance.
- Public safety (fire & rescue).
- Advanced utility management (e.g. power line monitoring).
- Search and rescue.
- Border/coastal patrol.
- Long-range surveillance.
- Disaster response.

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