



LANTIS CS1425



**Ultra Long-range Visual, SWIR & Cooled Thermal Imaging
Surveillance System**

LANTIS-CS1425

Long range Visual, SWIR & Cooled Thermal Imaging Tracking Reconnaissance System

The RP Optical USA unique LANTIS system.

The LANTIS-CS1425 integrates with main systems to accurately:

- Acquire and track inbound targets
- Predict target's future position
- Slew main system modules (Slew to Cue) to the correct position

The EO payload combines thermal cameras, SWIR camera, Visual channel modules all installed on a heavy duty high accuracy stabilized 2 axes PT unit with differential GPS module for stand alone north finding capabilities: providing exceptional performance designed to meet the user's needs

All 4 channels (Thermal / SWIR / VIS LONG / VIS SONY block) are H.264 compresses and conveyed via single ethernet channel.

LANTIS/-CS1425 CONFIGURATION

The system is comprised of the following modules:

- The EO unit comprises of:
 - 2 Axes (mems) stabilized PT unit with differential GPS module (for self) north finding
 - Electro-Optical Payload with Cooled Thermal Imager, SWIR and Visual:
 - Thermal module Continuous zoom 1400mm SD (640 x 512 x 15u) detector resolution
 - SWIR/VIS ultra tele dual channel with SWIR HD continuous 500-2500mm and VIS module with VIS HD Dual FOV 400/1600mm (including motorized filter with NIR filter selection)
 - Short Tele ZONY Block Camera VIS channel
- Control and tracking embedded SW inside EO payload



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Long Range Thermal / SWIR / Visual surveillance system

LANTIS-CS1425 SPECIFICATION

P/T STABILIZED MODULE SPECIFICATION		
2 AXES (STABILISED) PEDESTAL SPECIFICATIONS		
PARAMETER	VALUE	NOTES
SYSTEM		
Type	2 Axes pedestal	
Communication Protocol	RS-422 Full Duplex	Baud rate 115,200
Power Requirements	24-32 VDC, 220W at peak	Average nominal power
Controls	Fully Remote controlled	
Total System Weight	Approx. 55 Kg total weight	Including EO payload
Mount / Mechanical Interface	Please refer to Mechanical ICD	
Operating / Storage Temp	-20°C to +60°C / -40°C to +71°C	Additional configurations available
Shock and Vibrations	Per applicable standard	
Sealing	As per IP66	To meet marine conditions
Dynamics		
Azimuth range	N x 360 °	Via Slipping
Elevation range	-30° to +60°	Full range
Effective range for stabilization	-30° to +40°	With full stabilization performances
Azimuth angular rate	30 °/Sec	
Elevation angular rate	20 °/Sec	
Aximuth Accuracy / Repeatability	Better than 100uRad	
Stabilization		
Gyro type	MEM's type gyro	
Stabilization accuracy	Better than 200uRad	For stationary installations
Elevation range	-30° to +40°	With full stabilization performances

THERMAL ZOOM CAMERA SPECIFICATION		
LRC3Z – D1400 F/5.5 70-1400mm		
Continuous Zoom Thermal MWIR Cooled Imaging Camera		
PARAMETER	VALUE	NOTES
SYSTEM		
Video Format	Analog + Digital	SD-SDI / Camera link
Communication Protocol	RS-232 or RS-422 Full Duplex	
Controls	Fully Remote controlled	
Electronic Zoom	X1.5 / X2 / X4	
Focus control	Manual / to infinity / Automatic	Auto Focus available
Shock and Vibrations	Per applicable standard	
Sealing	As per IP67	
Front element coating	DLC on front surface of front element	To witness marine grade conditions
SENSOR		
Detector FPA	Thermal Imaging MWIR Cooled 640X512 pixels, 15 um pitch	
Sensitivity	< 25mK	
OPTICAL		
Focal length	70-1400mm	Focal length
F#	F/5.5	F#
Spectral Range	3.6-4.9 μm	Spectral Range
FOV	Wide FOV: 7.8°(H) x 6.2° (V) Narrow FOV: 0.4° (H) x 0.32° (V)	
Focus / Zoom mechanism	Motorized, remotely controlled	Focus / Zoom mechanism



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SWIR / VIS MODULE SPECIFICATIONS		
Magnolia 500X5CZ Continuous Zoom SWIR Camera - CHANNEL		
PARAMETER	VALUE	NOTES
SYSTEM		
Video Format	HD 720p	
Communication Protocol	RS-232/RS-422 Full Duplex	Baud rate 115,200
Controls	Fully Remote controlled	
Electronic Zoom	X2 / X4	
Focus control	Manual / to infinity / Automatic	Auto Focus available
Mount / Mechanical Interface	Please refer to Mechanical ICD	Customized interfacing - available
Shock and Vibrations	Per applicable standard	
Sealing	As per IP67	
Front element coating	Per MIL 675C on front window	To witness marine grade conditions
SENSOR		
Detector FPA	HD 1,280 x 1,024, 10 um pitch	InGaAs SWIR detector
OPTICAL		
Focal length	500-2500mm	
F#	F/4-16	
Spectral Range	0.9-1.7 μ m	
FOV	Wide FOV: 1.22°(H) x 0.97° (V) Narrow FOV: 0.30° (H) x 0.23° (V)	
Focus / Zoom mechanism	Motorized, remotely controlled	
Motorized filter ruler	With 2 filters: 1 full 0.9 – 1.7u band 2 for NIR band 0.9 – 1.1u	

SWIR / VIS MODULE SPECIFICATIONS		
HD Dual FOV 400/1600mm Day channel		
PARAMETER	VALUE	NOTES
SYSTEM		
Video Format	HD 720p / 1080i	
Communication Protocol	RS-232/RS-422 Full Duplex	Baud rate 115,200
Controls	Fully Remote controlled	
Focus control	Manual / to Infinity	
Shock and Vibrations	Per applicable standard	
Sealing	As per IP67	
Front element coating	Per MIL 675C on front window	The window is common to the SWIR channel
SENSOR		
Image Device	CMOS 1/2"	
White Balance	Auto / ATW / Manual	
Gain	Auto / Manual	
Exposure Control	Auto / Manual	
OPTICAL		
Focal Length	Dual FOV 400/1600	
Spectral Range	Visible 0.42-0.7u	
F#	F/3-11	
FOV	Wide FOV: 0.94°(H) x 0.53° (V) Narrow FOV: 0.23° (H) x 0.14° (V)	
Focus / Zoom mechanism	Motorized, remotely controlled	



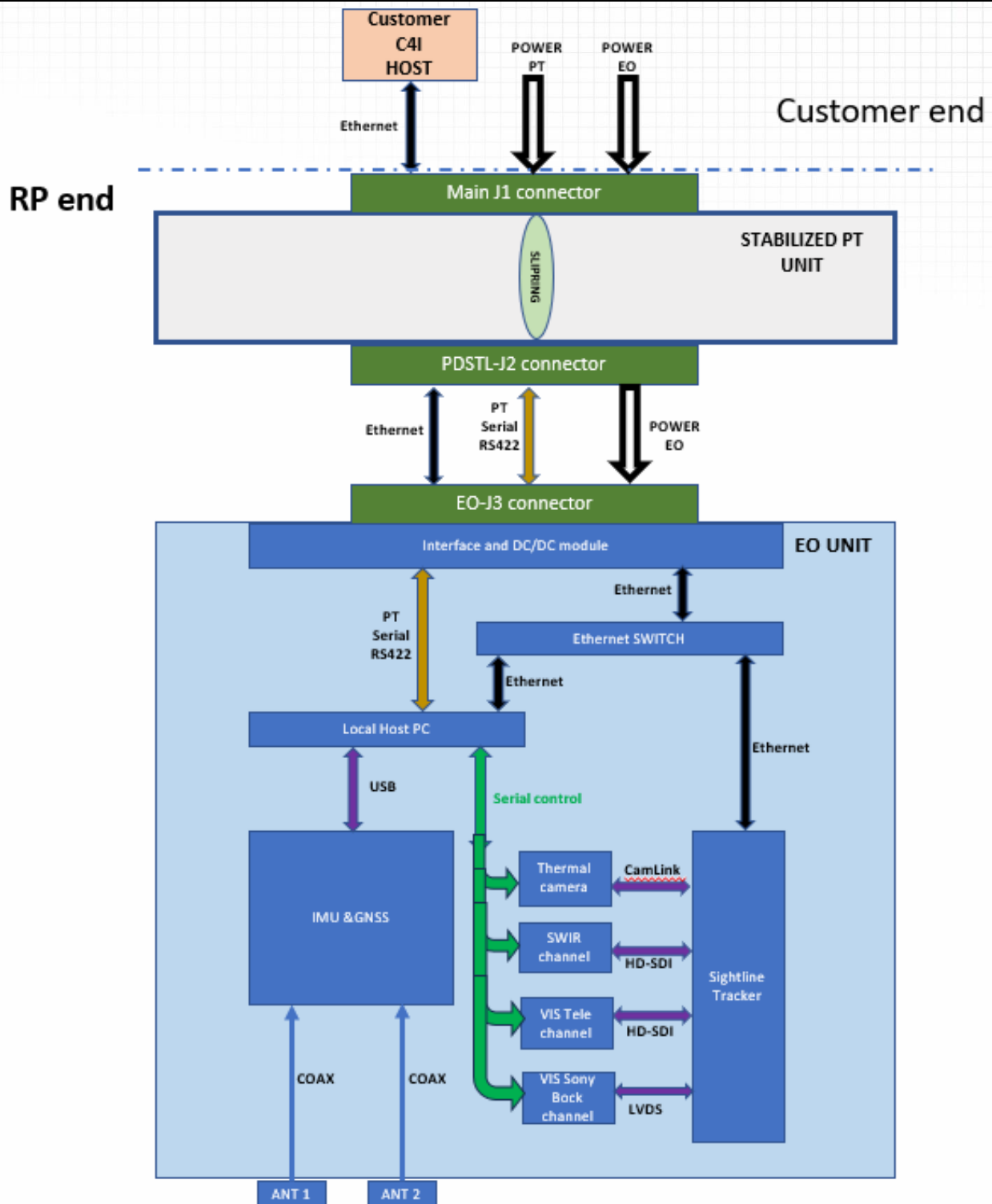
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LANTIS-CS1425 SPECIFICATION

GENERAL SYSTEM DATA

PARAMETER	VALUE	NOTES
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Geneal System block diagram



Long Range Thermal / SWIR / Visual surveillance system

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Power		
Operating voltage	24-32 VDC	Regulated
Max power in (peak)	700W	
Installation Foot print		
Free foot print	1.5 meter diameter around PT installation spot	
Front element coating	Per MIL 675C on front window	The window is common to the SWIR
Protection for all windows / optical apertures	All windows / optical apertures are protected against the environmental conditions	
Physical characteristics		
Mounting of entire system	Via 6 base screws	Please refer to system MICD
Control, Tracking and video output		
Via unified API / Control syntax.	IAW RP API / Syntax control protocol document “ <i>RP-LANTIS EO Control Protocol REV 3.00</i> ” with extension for 4 channels,	
Video output	For all 4 channels simultaneously over ethernet	All 4 x videos are compressed via H.264
Tracking	On all 4 video channels selectable	1 channel at a time
General Environmental conditions		
Operating temperature range	-20 to +55°C	
Storage temperature range	-32 to +71°C	
Vibrations	The vibrations level shall be Vertical –1.45 grams , Transverse – 1. 00 grams, Longitudinal – 1.00 grams. Test Time – 30 minutes per axis all IAW MIL-STD-810G, method 516.6, Table 514.6C-IV. Category 4 - Composite two-wheeled vibration exposure	
Shock	Shock level shall be 20g, 11msec IAW MIL-STD-810G, method 516.6	
Enclosure / sealing level protection	EO Payload: IP67 compatible / PT unit: IP66 compatible	
Salt Fog	The material, coatings and items shall withstand the effects of salt fog environment (5% salt solution) in its operating and non-operating states, and shall maintain its specified performance when exposed to such environment for continuous periods IAW MIL-STD-810G Method 509.5: 2 Cycles of: 24 hours salt fog + 24 hours drying, Total 96 hours	
Wind conditions	Operation: at 40Km/Hr wind conditions / Survival: at 60km/Hr wind conditions	



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