
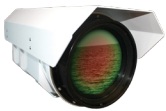






**L3HARRIS™**  
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# 1280 X 1024 LONG-RANGE MWIR CONTINUOUS ZOOM CAMERA

Wide Area Long-Range Surveillance Sensor  
(WALRSS HD)

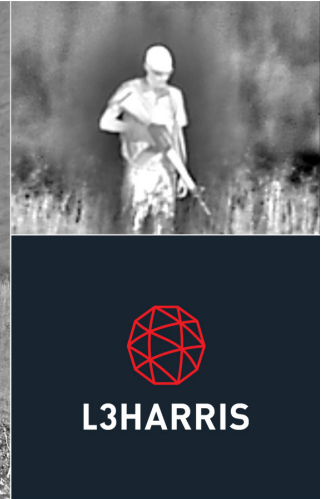
WALRSS-HD	CARBON FIBER HOUSING	ALUMINUM HOUSING	OPEN FRAME
<b>Camera System Parameters</b>			
<b>Part Number</b>	937570	957599	937570
<b>Sensor Type</b>	MWIR InSb reticulated	MWIR InSb reticulated	MWIR InSb reticulated
<b>Sensor Size</b>	1,280 x 1,024 pixels 15 µm pitch	1,280 x 1,024 pixels 15 µm pitch	1,280 x 1,024 pixels 15 µm pitch
<b>Spectral Band</b>	3.6-to-5.0 µm with CO <sub>2</sub> notch	3.6-to-5.0 µm with CO <sub>2</sub> notch	3.6-to-5.0 µm with CO <sub>2</sub> notch
<b>Sensor Bit Depth</b>	14-bit	14-bit	14-bit
<b>Cryocooler</b>	B1000, long-life split Stirling	B1000, long-life split Stirling	B1000, long-life split Stirling
<b>Lens Parameters</b>			
<b>FOV Change</b>	Continuous zoom	Continuous zoom	Continuous zoom
<b>Wide FOV</b>	200 mm (5.5 ° x 4.4 °)	200 mm (5.5 ° x 4.4 °)	200 mm (5.5 ° x 4.4 °)
<b>Narrow FOV</b>	1200 mm (0.9 ° x 0.7 °)	1200 mm (0.9 ° x 0.7 °)	1200 mm (0.9 ° x 0.7 °)
<b>Mechanical/Environment</b>			
<b>Weight</b>	< 55 lb	< 67 lb	< 35 lb
<b>Size</b>	29.4" L x 14.9" W x 12.5" H	28.1" L x 13.1" W x 13.5" H	24.6" L x 12.0" W x 12.0" H
<b>Operating Temperature</b>	-40 °C to +65 °C	-40 °C to +65 °C	-40 °C to +71 °C
<b>Storage Temperature</b>	-55 °C to +85 °C	-55 °C to +85 °C	-55 °C to +85 °C
<b>Power/Comms</b>			
<b>System Control</b>	RS-232	RS-422	RS-422
<b>Power Source</b>	28 VDC	28 VDC	28 VDC
<b>Power (Typical)</b>	42 W / 110 W during cool down	42 W / 110 W during cool down	42 W / 110 W during cool down
<b>Cool Down Time</b>	< 6 min; 4 min typical	< 6 min; 4 min typical	< 6 min; 4 min typical
<b>Digital Video</b>			
<b>Video Format</b>	HD-SDI @ 720P29.97 / 30 / 59.94 / 60 (10-bit) HD-SDI @ 1080P29.97 / 30 / (10-bit)	HD-SDI @ 720P29.97 / 30 / 59.94 / 60 (10-bit) HD-SDI @ 1080P29.97 / 30 / (10-bit)	HD-SDI @ 720P29.97 / 30 / 59.94 / 60 (10-bit) HD-SDI @ 1080P29.97 / 30 / (10-bit)
<b>Synchronization (Optional)</b>	N/A	Tri-level sync input	Tri-level sync input
<b>Digital Video Data</b>			
<b>Camera Link (Optional)</b>	N/A	Base	Base
<b>Exportability</b>	Subject to EAR, ECCN 6A003.6.4.a		
<b>Optional Lens Window</b>	Optional Diamond-Like Carbon (DLC) coated protective window		
			



The Wide Area Long-Range Surveillance Sensor (WALRSS HD) is a true HD (1,280 x 1,024) cryogenically cooled, mid-wave IR camera designed for long-range surveillance and tracking applications. Video output and image processing configurability, combined with availability in multiple physical configurations, enable integration flexibility for a wide range of applications. Additionally, embedded L3Harris image-enhancement processing keeps more pixels on target in degraded and cluttered conditions. This camera is a proven workhorse having a rich heritage being deployed in maritime, desert and cold environments as well as supporting surveillance, situational awareness and high-end tracking missions. Finally, WALRSS HD is fully designed and manufactured in the United States all the way down to the image processing algorithms, cryogenic coolers and reticulated focal plane arrays from our foundry in Mason, Ohio.

## VIDEO PROCESSING FEATURES AND CAPABILITIES:

- > AGLC/ALC/manual brightness/manual contrast
- > Turbulence mitigation
- > Interpolated electronic zoom up to 4x
- > Edge enhancement
- > Electronic image stabilization, adjustable over six strengths
- > Super-resolution 2x
- > Full autofocus, re-focus and manual focus
- > Built-in test
- > Commanded 1-point offset external or full non-uniformity correction
- > Adaptive temporal noise reduction
- > Local area contrast enhancement – proprietary detail enhancement algorithm
- > Windowing on 16 pixel boundary horizontal and vertical for frame rates up to 240 fps (camera link only)



TARGET SET	TASK	ASPECT	$\Delta T$ (K)	CHARACTERISTIC DIMENSION (M)	PROBABILITY	RANGE (KM)
<b>12 Tracked Vehicles</b>	ID	All Aspects	4	3.1	70%	> 12
<b>Military Vehicles (Tracked, Wheeled-Armored, Wheeled-Soft)</b>	Rec	All Aspects	4	3.1	70%	> 15
<b>Vehicles (Moderate Clutter)</b>	Det	All Aspects	4	3.1	70%	> 34
<b>Humans (Moderate Clutter)</b>	Det	All Aspects	3	0.75	70%	> 10
<b>Human Activities (hostile, non-hostile)</b>	ID	Front Aspects	3	0.75	70%	> 5
<b>Two-Handheld Objects (Weapon/Non-Weapon)</b>	Rec	Front Aspects	2	0.25	70%	> 2
<b>Two-Handheld Objects (Weapon/Non-Weapon)</b>	Rec	All Aspects	2	0.25	70%	> 1
<b>Two-Handheld Objects (Weapon/Non-Weapon)</b>	ID	Front Aspects	2	0.25	70%	> 2
<b>Two-Handheld Objects (Weapon/Non-Weapon)</b>	ID	All Aspects	2	0.25	70%	> 1
<b>Standard NATO Target</b>	ID	All Aspects	1.25	2.3	70%	> 8
<b>Standard NATO Target</b>	Rec	All Aspects	1.25	2.3	70%	> 10
<b>Standard NATO Target</b>	Det	All Aspects	1.25	2.3	70%	> 22

### DRI calculations based on the following:

- > NV-IPM recommended V50 table
- > US standard modtran atmosphere
- > Rural 23km visibility
- > Low turbulence

### 1280 x 1024 Long-Range MWIR Continuous Zoom Camera (WALRSS HD)

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1025 W. NASA Boulevard  
Melbourne, FL 32919  
t 800 852 5105 | f 513 573 6290  
InfraredSales.cin@L3Harris.com