SEG10 – Dual Channel (EO-LWIR) Stabilized Gimbal System

Ruggedized Dual Channel Thermal Imaging System for,

Unmanned Ground Vehicles, EOIR Defense & Surveillance

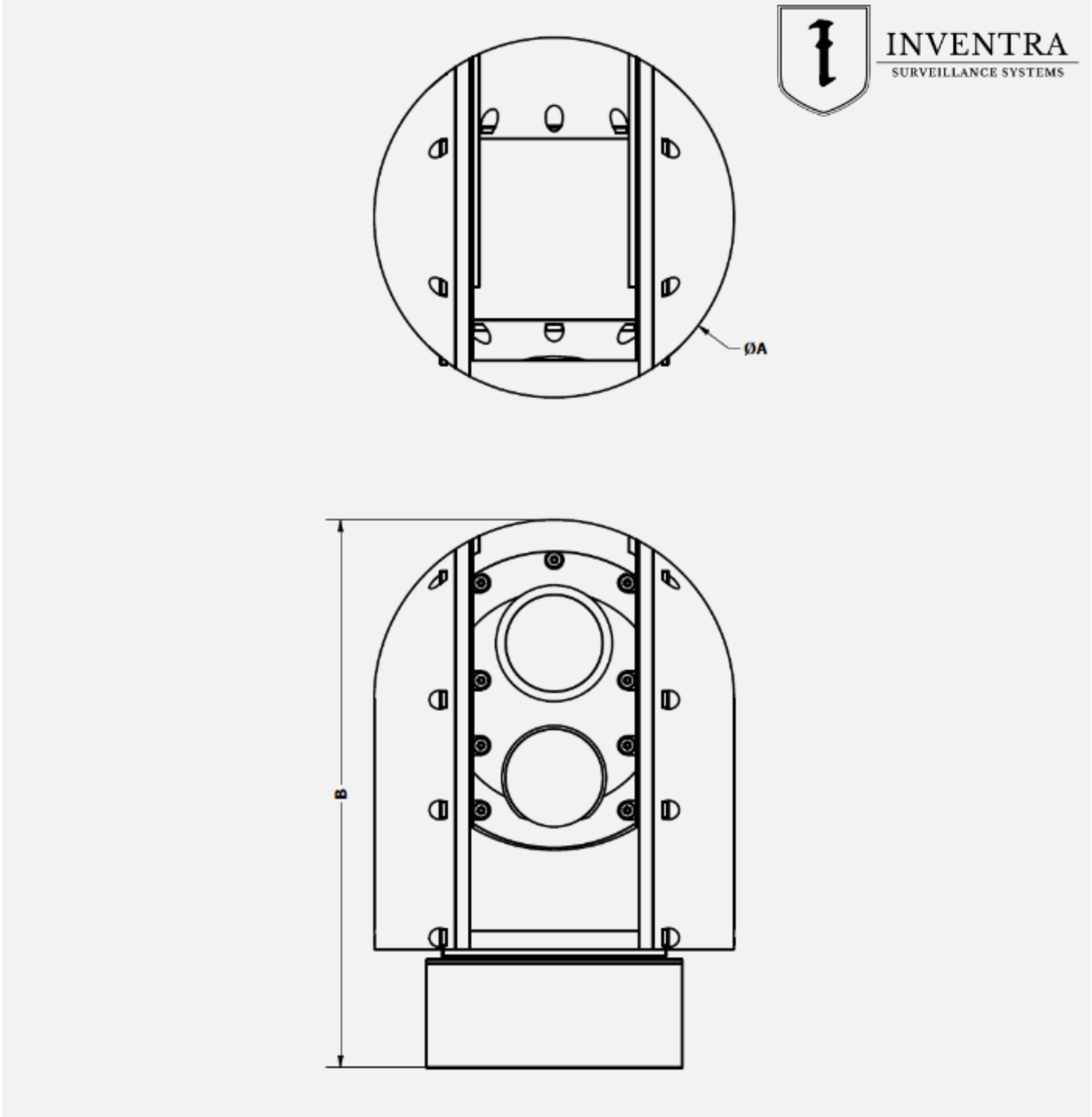
Distinctive Features

- **Ruggedized Design for Ground Vehicles:** Designed to endure harsh conditions, the gimbal features a highly ruggedized design that effectively mitigates vibrations and shocks. This resilience makes it an ideal choice for integration onto ground vehicles.
- **Dual-Sensor Clarity and Stabilization:** The gimbal provides a sharp and clear image through its 1080p full HD EO sensor with 30x optical zoom, coupled with a 640x512 LWIR thermal sensor. Simultaneously displaying thermal and day sensors on a single screen enhances situational awareness. The 2-axis stabilization ensures the gimbal can effectively lock onto and track moving targets.

Main Features

- Sharp and clear image with 1080p full HD EO - 30x Optical Zoom and 640x512 LWIR thermal sensors
- Simultaneous display of thermal and day sensors on a single screen
- Locking on moving targets with 2 axis stabilization

Configuration Breakdown	S (Sensors) – E (Electromechanical) – Gimbal (G) – 10 (Product Class) – Thermal Imager (**L**WIR-**6**40x512-**12**µ) – EO Camera (1080p – 30X) – Customization Codes
Part Number	SEG10-L0612-E30
Available Customizations	Communication Protocol, Output Speed, FOV, Video Output Format, Mechanical Interfaces
Combinable Sub-Platforms	MES01 – Ultra Compact Electromechanical Mast MES02 – Compact Locked Electromechanical Mast MES10 – Locked Electromechanical Mast



	Parameters / Configurations		SEG10-L0612-E30
PERFORMANCE PARAMETERS	Pan/Tilt Axis Speed	°/s	180°/s
	Pan/Tilt Axis Range	°	Pan: 360° Continuous / Tilt: ±45°
	Connector Type	-	MIL-DTL-38999
	Communication to the Unit	-	RS-485
	Operating Voltage	V	20-32
	Power Consumption (Max)	W	150
	Weight	kg	4.4
	Video Output	-	HD-SDI, HDMI, Ethernet
	Diameter (ØA)	mm	155
	Height (B)	mm	235
TRACKER	Data Refresh Rate	Hz	25 Hz
	Output Lag	ms	<100 ms
	Stabilization	-	Two Axis IMU and Encoder Based Dual Loop Stabilization
	Target Size	pixels	16x16 ~ 128*128
THERMAL IMAGER	Wave Length	µm	Uncooled Longwave (8 µm - 14 µm)
	Detector Pixels	-	640 X 512
	Pixel Size	µm	12µm
	Focusing	-	Athermalized
	Emissivity Correction	-	0.01 ~ 1 (Adjustable)
	NETD	mK	≤50mK @25°C
	MRTD	mK	≤500mK
	HFOV	°	17.7°
	Automatic Non-Uniformity Correction Function	-	Yes
	Digital Zoom	-	2X 3X 4X

EO CAMERA	**Image Sensor**		-	1/2.8-type Exmor R CMOS
	Resolution		-	1920 X 1080
	Minimum Illumination	**High Sens.**	-	0.01 lx (F1.6, AGC On, 1/30s)
		Normal Mode	-	0.1 lx (F1.6, AGC On, 1/30s)
	S/N Ratio		**dB**	> 50 dB
	Gain		**dB**	0 dB - 50.0dB
	Shutter Speed		**1/s**	1/1s - 1/10,000s, 22 Steps
	Exposure Control		-	Automatic
	Aperture Control		-	16 Steps
	Lens		-	30x Optical Zoom f = 4.3mm (Wide) - 129.0mm (Tele) f1.6 - f4.7"
	Digital Zoom		-	12x (360x With Optical Zoom)
	Focusing System		-	Automatic
	Horizontal Viewing Angle (H-FOV)		°	63.7° (Wide) - 2.3° (Tele)
	Minimum Object Distance		**mm**	10mm (Wide) - 1200mm (Tele)
ENVIRONMENTAL QUALIFICATIONS	**Temperature**		**°C**	MIL-STD-810G, Method 502.5 Procedure II – Operational, -32°C MIL-STD-810G, Method 501.5 Procedure II – Operational, +60°C MIL-STD-810G, Method 501.5 Procedure I – Storage; +70°C MIL-STD-810G, Method 502.5 Procedure I – Storage; -40°C
	Vibration		-	MIL-STD-810G, Method 514.6 Procedure I Category 20, Figure 514.6C-3
	Shock		-	MIL-STD-810G, Method 516.6 Procedure I Functional Shock, 20g 11ms
	Rain		-	MIL-STD-810G, Method 506.5 Procedure I – Rain

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Barkan – Autonomous Unmanned Ground Vehicle Developed by **Havelsan**
Aslan – Armed Unmanned Ground Vehicle" Developed by **Aselsan**