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Thermal Imaging Systems



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ASELSAN offers superior capabilities to its customers with its Airborne and Naval Thermal Imaging Systems, commonly referred to as Forward Looking Infrared (FLIR). ASELSAN Thermal Imaging Systems differentiate the targets from backgrounds during day/night and in adverse weather conditions like night, fog, haze and as well as in combat conditions like dust, smoke, fire and camouflage.

The passive imaging capability of the system enables fully covert surveillance.

ASELSAN also designs and manufactures the laser units of these sensors for range finding and target designation.



ASELFLIR-200



ASELFLIR-300T

Features

In terms of the technological level, ASELSAN is one of the most capable companies in the world that can design, develop and produce thermal imaging systems.

Some of the critical thermal imaging technologies that ASELSAN utilizes are;

- **Image Processing Algorithms**

ASELSAN Thermal Imaging Systems incorporate enhanced real-time image processing algorithms in order to provide the best and most informative thermal image to the operator. With the use of highly powerful electronic components, the image processing algorithms are even further improved.

- **Target Tracking**

ASELSAN utilizes single or multiple target tracking algorithms for IR and TV images. Inertial tracking is also available on ASELFILIR Systems.

- **Line of Sight (LOS) Stabilization**

2 axis or 4 axis stabilization structure is implemented according to the system requirements for higher Line of Sight stabilization performance.

ASELSAN produced Gyroscopic Stabilized Thermal Imaging Systems are ASELFILIR-200 and ASELFILIR-300T.



ASELFIR-200 Thermal Imaging System is capable of operating during day/night and under adverse weather conditions. The Infrared Receiver installed in the Turret, converts long wavelength infrared radiation from a scene into a real time video signal to be displayed on the operator's screen.

The Line of Sight is inertially stabilized with regards to angular motions in two orthogonal axes, additionally Electronic Image Stabilization is implemented. The System has an Automatic Video Tracker capability that can direct the Line of Sight continuously on a target.

The ASELFIR-200 System includes a Laser Range Finder and a Color Day TV co-mounted with the Infrared Sensor on the gimbals housed in the Turret Unit. The Day TV Camera generates color video for daylight usage. The Laser Range Finder provides accurate range information for targets. When the Laser Range Finder information coupled with gimbal pointing angles and platform data, the system can provide target coordinates, target direction, and target velocity information.

ASELFIR-200



ASELFIR-300T Advanced Targeting System is a multi sensor electro-optical targeting and surveillance system. ASELFIR-300T System consists of a Thermal Camera, a Laser Range Finder/Laser Designator, a Laser Spot Tracker, a Color TV Camera and a Color Spotter Camera. All sensors are mounted onto four axis stabilized gimbals housed in the Turret Unit .

The image quality and the range performance are substantially improved with a superior thermal camera design and improved real-time image processing algorithms. The system has multiple target tracking capability over all three (Thermal, TV, Spotter) images. The Laser Range Finder / Laser Designator may

designate targets with desired PRF codes while providing accurate range information. As the Laser Range Finder information is combined with embedded inertial measurement unit and platform data (position, velocity, attitude ...etc.), ASELFIR-300T System can provide very precise target coordinates, target direction, and target velocity information.

The Laser Spot Tracker is used to lock automatically on a laser spot which is designated by an external source. The color TV provides continuous optical zoom up to 20x. The color spotter camera has a fixed 50x narrow field of view in order to detect and identify long range targets in daylight conditions.

ASELFIR-300T



ASELFLIR-200

Thermal Camera Field of Views (FOV's)	: Wide FOV : 22.50 x 300 (+/-10 percent) Medium FOV : 50 x 6.670 (+/-10 percent) Narrow FOV : 1.260 x 1.680 (+/-10 percent) Area/Centroid Tracking
Video Tracking	: 640 (H) x 480 (V)
Image Resolution	: 7.6 -10.5 micron
IR Detection Band	: 2x or 4x
Digital Zoom	: Wide FOV : 360 x 480 maximum
Day-TV Camera FOV's	: Narrow FOV : 20 x 2.80 minimum and 2x digital Up to 20km, ±5m accuracy
Laser Range Finder	: Azimuth : 3600 continuous
Gimbal Field of Regard	: Elevation : min.200 up; 950 down Up to 3 rad/second
Gimbal Angular Speed	: <2mradRMS
Gimbal Angular Position	: MIL-E-5400
Environmental Conditions	: MIL-STD-1553/ARINC data busses and/or discrete
Communication Interface	: 3 Analog composite (RS170 or CCIR) and 1 Digital output
Video Output	: Internal
Cooling / Heating	: Turret Unit : 41kg (full configuration)
Weight	: Electronic Unit: 23kg Turret Unit : 422.9mm (height) x 330.2mm (diameter)
Dimensions	: Electronic Unit: 306.3mm (width) x 413.5mm (length) x 199mm (height)

ASELFLIR-300T

Thermal Camera Field of Views (FOV's)	: Wide FOV : 22.50 x 300 (+/-10 percent) Medium FOV : 4.80 x 6.40 (+/-10 percent) Narrow FOV : 1.320 x 1.750 (+/-10 percent)
Video Tracking	: Multi Target Area/Centroid Tracking for all IR and TV Sensors.
Image Resolution	: 1440 (H) x 576 (V)
IR Detection Band	: 7.6 -10.5 micron
Digital Zoom	: 2x or 4x
Day-TV Camera FOV's	: 400 to 20 (optical continuous) and 12x (digital)
Spotter Camera	: Fixed Focal Length, 0.60 x 0.80 (+/-10 percent)
Laser Range Finder	: Up to 20km, ±5m accuracy
Gimbal Field of Regard	: Azimuth : 3600 continuous Elevation : min.200 up; 1050 down
Gimbal Angular Speed	: Up to 3 rad/second
Gimbal Angular Position	: <2mradRMS
Environmental Conditions	: MIL-E-5400
Communication Interface	: MIL-STD-1553/RS-422
Video Output	: 3 Analog composite (50Hz) and 1 Digital output
Cooling / Heating	: Internal
Weight	: Turret Unit : 95kg (full configuration) Electronic Unit: 23kg
Dimensions	: Turret Unit : 633mm (height) x 526mm (diameter) Electronic Unit: 315mm (width) x 470mm (length) x 255mm (height)



ASELSAN A.Ş. is a Turkish Armed Forces Foundation company.

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