

## **MEDUSA MK4/B ELECTRO-OPTICAL FIRE CONTROL SYSTEM**

MEDUSA MK4/B is a lightweight Electro-Optical (EO) Fire Control System (FCS). It can be used as stand alone FCS for remote control of medium/small calibre guns, as an optical aid to more complex Fire Control System and, in general, for sea control operations. It belongs to the last generation of the Surveillance/Fire Control Systems developed by Selex ES and it is based upon state-of-the-art processing unit and last generation EO sensors.

MEDUSA MK4/B was designed for day and night surveillance tasks as well as for the control of small and medium calibre guns. The system is designed to minimize space and weight requirements and for ease of operation. It can be controlled by an operator at the Control Desk (provided with monitor, keyboard and joystick), which can be located in a sheltered area.

There is no need for external manning. MEDUSA MK4/B can be fitted with up to four sensors: B/W TV, Laser, IR; an optional colour TV can be added.

The monitor displays the TV/IR image and presents the target data (bearing, elevation, range) in addition to the other indications (Latitude, Longitude, Time).

The system can be connected to the Search or Navigation radar in order to receive target designation. It is also able to provide target indication for anti-air and surface warfare. The high reliability of the system allows to obtain a low cycle cost for its maintenance.

### **ARCHITECTURE**

The system is composed of the following units:

- An unmanned self-stabilized pedestal mounting the optronic sensor suite (TV, IR and Laser sensors) for target automatic tracking
- A power distribution and computer unit including a state-of-the-art tracking computer and ballistic computer
- A control desk provided with monitor, keyboard and joystick.

## MAIN OPERATIONAL FUNCTIONS

MEDUSA MK4/B performs the main following tasks:

- EO surveillance and search
- Target detection, recognition and identification
- Target tracking by means of the Automatic Video Tracker
- Different calibre gun control and firing
- Video recording/playback.

## STATUS

The MEDUSA MK4/B System is a fully developed item. It belongs to the MEDUSA EO System family, that is operational on board of Italian Customs Fast Patrol Boats (70 Systems). MK4/B is designed following international regulations and using COTS components. The system can be installed on board small fast boats (both patrol and attack ones).

## TECHNICAL FEATURES

### Sensor Head

|                      |                       |
|----------------------|-----------------------|
| Self-stabilized      |                       |
| Training limit       | unlimited (slip ring) |
| Training max speed   | 2 rad/s               |
| Acceleration         | 6rad/sec <sup>2</sup> |
| Elevation limits     | unlimited (slip ring) |
| Elevation max speed  | 2 rad/s               |
| Acceleration         | 6rad/sec <sup>2</sup> |
| Elevation useful arc | - 30° to + 210°       |

### TV Camera

|             |                   |
|-------------|-------------------|
| Target      | CCD               |
| Sensitivity | 10 to 200,000 lux |
| Lens        | Continuous zoom   |

### IR Camera

|                  |              |
|------------------|--------------|
| Detector         | FPA          |
| Spectral band    | 3-5 μm       |
| Two optical FoVs | Wide         |
|                  | Narrow       |
| Cooling system   | Closed cycle |



### Laser Range Finder

|                                |                 |
|--------------------------------|-----------------|
| Type                           | eyesafe         |
| Range accuracy                 | better than 5 m |
| Instrumental range             | 300 to 20,000 m |
| High rate repetition frequency |                 |

## INSTALLATION DATA

### Director (Sensors included)

|               |                     |
|---------------|---------------------|
| Dimension (h) | 650 mm (above deck) |
|               | 330 mm (below deck) |
| Diameter      | 550 mm              |
| Weight        | 65 kg               |

### Control keyboard

|                   |                  |
|-------------------|------------------|
| Dimension (h w d) | (117x635x264) mm |
| Weight            | 6,5 kg           |

### Monitor

|                   |                  |
|-------------------|------------------|
| Dimension (h w d) | (520x380x180) mm |
| Weight            | 15 kg            |

### Power Distribution and Computer Unit

|                   |                  |
|-------------------|------------------|
| Dimension (h w d) | (575x473x600) mm |
| Weight            | 40 kg            |



For more information please email [infomarketing@selex-es.com](mailto:infomarketing@selex-es.com)

Selex ES S.p.A - A Finmeccanica Company

Via Tiburtina, Km 12.400 - 00131 Rome - Italy - Tel: +39 06 41501 - Fax: +39 06 413133

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