



# OEM FIBER LASER BASED RANGEFINDER FOR LAND, AIRLAND AND NAVAL EO SURVEILLANCE AND FIRE CONTROL SYSTEMS

## LRF 1550 SR



Not a contractual picture

### DESCRIPTION

This new OEM Laser Rangefinder is meant as a solution for a big challenge: to meet the different "SWaP" (Size, Weight and Power) requirements of multi-function optronic solutions with the same system.

The LRF-1550-SR is a unique OEM telemeter able to detect target over a distance of more than 8 km in a package as light as a bird's plum (<230 g).

Our very innovative design is based on a fiber laser as the light source for long range measurements, performance and product reliability.

### DATASHEET

#### Optical specifications / Performances

|                                       | Min.    | Typ. | Max.   | Units | Comments                                                                              |
|---------------------------------------|---------|------|--------|-------|---------------------------------------------------------------------------------------|
| Wavelength                            | -       | 1556 | -      | nm    |                                                                                       |
| False Alarm Rate                      | -       | -    | 1      | %     |                                                                                       |
| Measurement rate                      | 1       |      |        | Hz    | Options in table "Range performance VS frequency and laser safety class" <sup>1</sup> |
| Eye safety per IEC 60825-1            | Class 1 |      |        |       |                                                                                       |
| Detection range on beamfilling target | 12,5    | -    | -      | km    | Beamfilling target ; 50% reflectivity ; 50km visibility                               |
| Detection range on NATO targets       | 8,0     | -    | -      |       | 2.3m x 2.3m target ; 30% reflectivity ; 20km visibility                               |
| Detection range on human target       | 4,2     | -    | -      |       | 1m x 1m target ; 10% reflectivity ; 10km visibility                                   |
| Detection range                       | 30      | -    | 20 000 | m     |                                                                                       |
| Accuracy                              | -       | -    | 0,5    | m     | +/- 2σ, measured @ 11km                                                               |
| Divergence                            | -       | -    | 0,35   | mrاد  |                                                                                       |
| Multiple targets                      | 2       |      |        | -     | Distances to targets are transmitted in ascending order of distance                   |
| Target discrimination                 | -       | 30   | -      | m     | Between echoes                                                                        |

#### Electrical specifications

|                         | Min. | Typ. | Max. | Units | Comments                                                      |
|-------------------------|------|------|------|-------|---------------------------------------------------------------|
| Communication interface | -    | -    | -    | -     | USB, RS422                                                    |
| Operating mode          | -    | -    | -    | -     | Sleep, ready-to-fire, firing                                  |
| Measurement mode        | -    | -    | -    | -     | Single shot & continuous mode                                 |
| Supply voltage          | 8    | -    | 32   | V     |                                                               |
| Restitution duration    | -    | -    | 140  | ms    | Time between the end of laser firing and distance restitution |
| Consumption             | -    | 0,05 | -    | W     | Sleep mode                                                    |
|                         | -    | 5    | -    |       | Ready-to-fire mode                                            |
|                         | -    | 6    | -    |       | Firing mode: average @1Hz                                     |

#### Mechanical specifications

|                        | Min.          | Typ. | Max. | Units | Comments                                                     |
|------------------------|---------------|------|------|-------|--------------------------------------------------------------|
| Boresight alignment    | -             | -    | 0,5  | mrاد  | Max deviation between mechanical references and optical axis |
| Architecture           | -             | -    | -    | -     | OEM                                                          |
| Dimensions (W x H x D) | 67 x 53 x 124 |      |      | mm    | Connectors included                                          |
| Weight                 | -             | 200  | 230  | g     |                                                              |



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## Environmental specifications

|                              | Min. | Typ. | Max. | Units | Comments                                                                                                                                                                                                                                                                                                        |
|------------------------------|------|------|------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating temperature range  | -35  | -    | 71   | °C    |                                                                                                                                                                                                                                                                                                                 |
| Storage temperature range    | -40  | -    | 85   | °C    |                                                                                                                                                                                                                                                                                                                 |
| Thermal qualification (*)    | -    | -    | -    | -     | MIL-STD-810G: Operating [-40°C ; +71°C], Storage [-46°C ; +85°C], thermal shock -55°C to +55°C                                                                                                                                                                                                                  |
| Mechanical qualification (*) | -    | -    | -    | -     | MIL-STD-810G: Acceleration 3,5g, Transport vibrations composite wheeled vehicle, Rotary wing aircraft - helicopter vibrations, Shocks 20g, 11ms                                                                                                                                                                 |
| EMI qualification (*)        | -    | -    | -    | -     | "AECTP-500: Conductivity NCE05, 30Hz - 150MHz ; radiated emission - electric field, 10kHz - 18GHz ; 'Conducted susceptibility on power leads low frequency NCS01, 30Hz - 150kHz ; conducted susceptibility radio frequency ""bulk cable injection"" NCS07 10kHz - 200MHz ; radio frequency NRS02 50kHz - 18GHz" |

(\*) Qualified through RS422 connection

## Range performance VS frequency and laser safety class

| Frequency                             | 1    | 4   | 5 | Hz |    |
|---------------------------------------|------|-----|---|----|----|
| Class 1 (**)                          |      |     |   |    |    |
| Detection range on beamfilling target | 12,6 | 9,3 | 9 |    | km |
| Not eyesafe - Class ≥ 3B (**)         |      |     |   |    |    |
| Detection range on beamfilling target | 12,6 |     |   |    | km |

(\*\*) EN60825-1 v2014 standard

## Note

|   |                                                                                                                                                                      |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | By default, the LRF is delivered with a set and fixed measurement rate. Possibility to change the rate is provided as a option. Please specify at the time of order. |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|