Diode-Pumped Eye-Safe Laser Range Finder with Integrated Boresight Source

**PRODUCT OVERVIEW**

The Miniature Laser Range Finder (MLRF)-2B is the latest addition to the L-3 ALST Diode-Pumped Eye-Safe Laser Range Finder product family. Weighing just over 1kg, firing with nominal 5 mJ output energy, optimized beam divergence, an integrated visible Boresight source, and sensitive APD receiver, the MLRF-2B provides even the most demanding users with exceptional performance and ease of system alignment in a ruggedized, lightweight package.

**FEATURES**

- Up to 25 km ranging capability, 39.9 km range gate
- 5 mJ nominal energy
- Total weight < 1020 gm
- Dimensions 8 in. L X 3.6 in. W X 2.1 in. H
- Diode-Pumped Erbium: Glass
- Avalanche Photo Diode Detector (APD)
- Pulse Repetition Frequency ≤ 2 Hz
- 14 to 32 VDC
- MIL-STD Tested Environments

**ABOUT L-3 ALST**

Part of L-3 Communications, a global leader in defense technologies and services, Advanced Laser Systems Technology (ALST) is an ISO 9001 certified full-service designer and manufacturer of military grade Eye-Safe Laser Range Finder, Laser Designator, and Multi-Function Laser Systems.
DP-ELRF I MLRF-2B

Diode-Pumped Eye-Safe Laser Range Finder with Integrated Boresight Source

SYSTEM
Max Range: See Figure 1
Min Range: 50 m
Transmitter Boresight Accuracy (relative to nominal emission axis): ≤ ± 300 µrad (all environments)
Boresight Retention over operating temperature (relative to initial factory alignment): ≤ ± 100 µrad (all environments)
MTBF: 11,000 hours (uninhabited airborne cargo environment @ 40 °C - system powered and firing 25 % of time at 1 Hz firing rate)
7,500 hours (composite wheeled environment @ 50 °C - system powered and firing 25 % of time at 0.25 Hz firing rate)

LASER
Wavelength: 1535 nm ± 5
Class: Class 1 IAW ANSI-Z136.1-2007
Pulse Rate: ≤ 2 Hz
Laser Shot Life: > 1,000,000 shots
Beam Divergence: Note: 1
Energy Output: Note: 1
Pulse Width: Note: 1

RECEIVER
Range Resolution: 1 m
Range Accuracy: 5 m 2 σ
Range Logic: First / Second / Last
Multi-target discrimination: ≥ 30 m Short Range (< 100 m) ≥ 25 m All Other Ranges
Detector Type: Note: 1
Receiver Sensitivity: Note: 1

BORESIGHT PROJECTOR
Wavelength: Visible
Divergence: Between 0.4 to 1.5 µrad (inclusive)

MECHANICAL
Weight: < 1020 g (2.25 lb)
Dimensions: 203.2 mm (8.00 in.) X 92.0 mm (3.61 in.) X 53.0 mm (2.09 in.) (see Figure 2)
Environmental Enclosure: Sealed Transmitter Cavity, Enclosed Electronics and Receiver

ELECTRICAL
Communications Protocol: RS-232 Std (RS-422 and RS-485 available)
Input Voltage: 14 VDC to 32 VDC
Power Consumption: ≤ 50 W

ENVIRONMENTAL
Operating Temperature: -40 °C (-40 °F) to +75 °C (+167 °F)
Environmental Standards: MIL-STD-810F and MIL-STD-461F

NOTE 1: These parameters, together and in combination with the atmospheric and target characteristics shown, provide the user with the achievable range performance shown in Figure 1.

Figure 1: DP-ELRF I MLRF-2B
Ranging Performance Using Various Targets (FAR ≤ 0.1 %)

Figure 2

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