

# LAS test station

Field tester of laser range finders



Fig. 1. Photo of the LAS test station

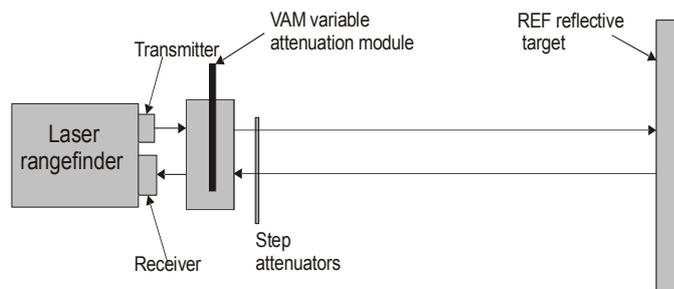


Fig.2. Block diagram of the LAS test system

## BASIC INFORMATION:

LAS station is a test station designed to enable final performance tests of laser range finders at field conditions.

Such tests are typically done by shooting the LRF into direction of the REF reflective target placed at some distance (typically from about 0.5 to 1 km), attenuating radiation emitted by the LRF using VAM variable attenuator module, and checking at what attenuation level the LRF stops giving proper distance indications. In this way Extinction Ratio understood as an maximal attenuation (in dB) when tested LRF is still capable to work properly is determined.

ER is the most important parameter of medium/long range LRFs that enables precision prediction of possible operational range of tested LRFs.

LAS test station can be also used for direct range tests when attenuators are not used but distance to REF reflective target is gradually increased until tested LRF cannot give proper distance indications.

LAS station can be used for testing all main types of LRFs (monopulse/multipulse, typical wavelengths: 910nm, 1064nm, 1550nm, 1530nm, 1570nm).

LAS test station is also a perfect tool to calibrate laboratory test stations to be used for direct or indirect measurement of maximal operational range of LRFs. It is recommended to recalibrate LTE/LTE test stations manufactured by Inframet using LAS station.

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## Field tester of laser range finders

### BLOCKS

LAS test station is a modular test station built from following blocks: REF reflective target, MTW mobile target wall, VAM variable attenuation module, and a set of exchangeable attenuators.

### TEST CAPABILITIES

- Measurement of ER at field conditions (final performance tests)
- Direct tests of operational range
- Recalibration of LTE/LTE test stations (measurement of ER)

### WHY LAS?

Tests at field conditions look apparently easy to be done using ad-hoc targets and optical attenuators. Practically it is a difficult task to do field tests that could generate repeatable, accurate results due to several reasons. 1) Near perfect Lambertian diffusive coating on the reference target of precisely known reflectance is needed, 2) A two channel attenuation system of large optical aperture and ultra high regulation dynamic (at least 40dB) is needed, 3) User-friendly equipment to be easily operated at field conditions is needed.

### FEATURES:

- Professional station for testing LRFs at field conditions
- Mobile, easily transportable test station. Ability to carry out test of LRFs at field conditions.
- It is not necessary to remove tested laser range finder from its mechanical carriers (helicopters, ships, vehicles, etc) to carry out its tests. Several laser range finders can be tested at the same time
- Lambertian diffusive reference target
- User friendly method to regulate attenuation

### PARAMETERS

Parameter	Value
Active area of REF reflective target	2.3x2.3m (standard NATO target) other sizes possible
Number of reflectance plates	Typically one (option up to five targets)
Reflectance of REF target	Typically about 0.3 <sup>1</sup> (option other values from 0.1 to 0.9)
Lambertian diffusive coating	Yes
Calibrated wavelengths	910nm, 1064nm, 1550nm, 1530nm, 1570nm
Range of VAM variable attenuator	at least 3dB
Range of exchangeable step attenuators	at least 40 dB

<sup>1</sup> Reflectance of REF target can vary slightly with wavelength – detail values in test report

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