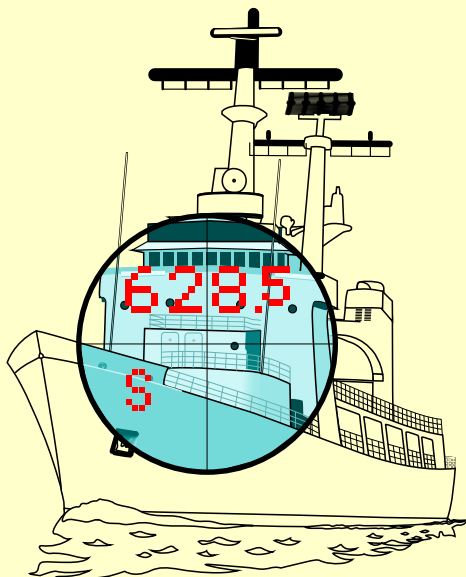


RANGEFINDER & DISTANCE METER

LASERTAPE FG21-HA

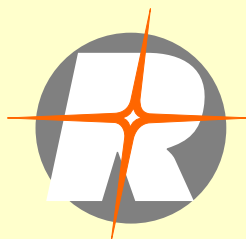
The **LASERTAPE FG21-HA** is two rangefinders in one. At the touch of a button, choose between highly accurate distance measurement or excellent long range performance.



A single operator can quickly measure the relative location of any object for:

- Aid to marine navigation
- Aid surveying in hydrography and dredging
- Map urban and remote areas
- Support collection of environmental data
- Survey of quarries and mines
- Measure the material level in tanks and silos
- Measure the height of buildings and objects

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LASER MEASUREMENT SYSTEMS

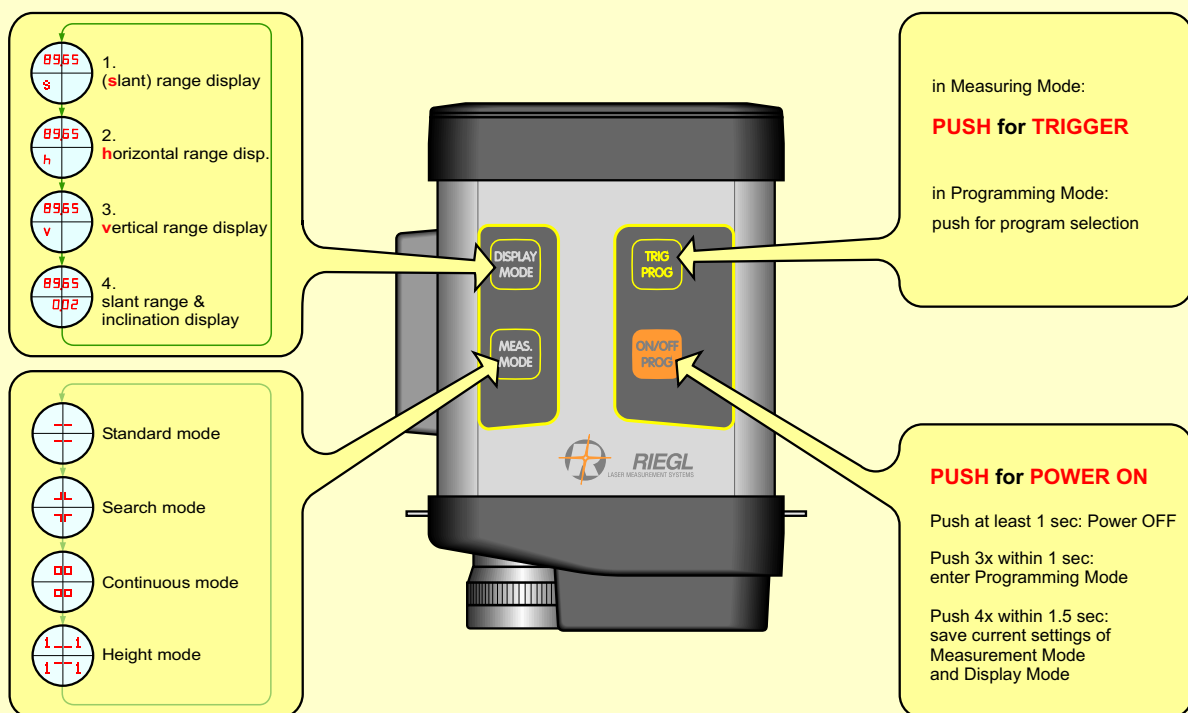
General

The **LASERTAPE FG21-HA** is an extremely compact, durable, high performance laser rangefinder for handheld use. Protected by thick rubber, it is ideal for use in harsh environments. Look through the 6x30 sighting optics at almost any arbitrary target. At the push of the trigger button, the **LASERTAPE FG21-HA** emits pulses of eyesafe laser light toward the object. The instrument then calculates the distance to the target based on the time taken for the reflected light to return. Distance and inclination are displayed in large, easily legible digits in the sighting optics typically in less than one second. Depending on the selected operating mode, the **LASERTAPE FG21-HA** offers 5 cm accuracy over 600 meters (reflectorless) or long range capability of over 1200 meters with 10 cm accuracy. Use a reflector to increase the range by a factor of up to ten. A powerful short-range suppression feature facilitates reliable use in bad weather conditions such as heavy rain, snowfall, or fog as well as measurements through a window.

Key Features

- Reliable semiconductor-laser rangefinder technology
- Not larger or heavier than a conventional pair of binoculars
- Range up to 1200 m “reflectorless”, up to 8000 m with retroreflectors
- Resolution 1 cm / 5 cm
- Short measuring time
- Display of the last or the strongest target selectable
- Adjustable short-range suppression for measurements under bad conditions (dust, rain, fog...)
- Built-in inclinometer for height measurement of objects and for horizontal path length calculation
- Display of the measured data within the sighting optics field-of-view
- Sighting optics' crosshair is coaligned with the measuring beam
- Built-in buzzer, which can be switched off for soundless operation
- Built-in standard batteries or rechargeable batteries “AA”-size
- External power supply 12 V DC
- External charger input
- RS232 data interface with NMEA or ASCII data string

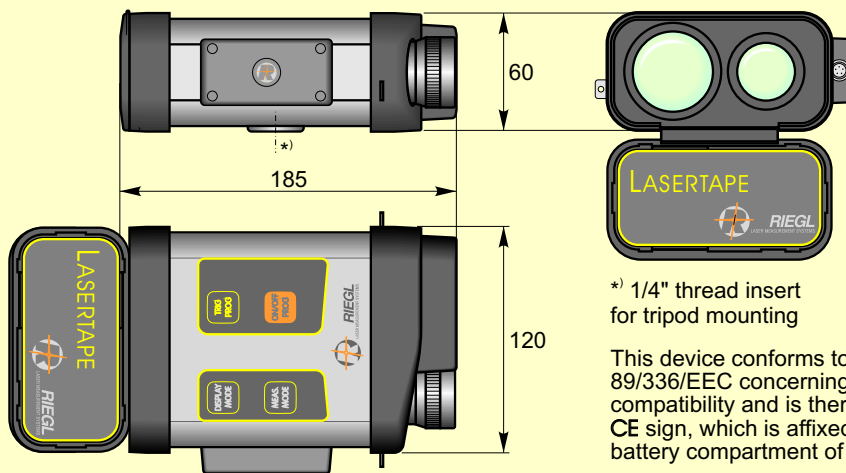
Membrane switch pad



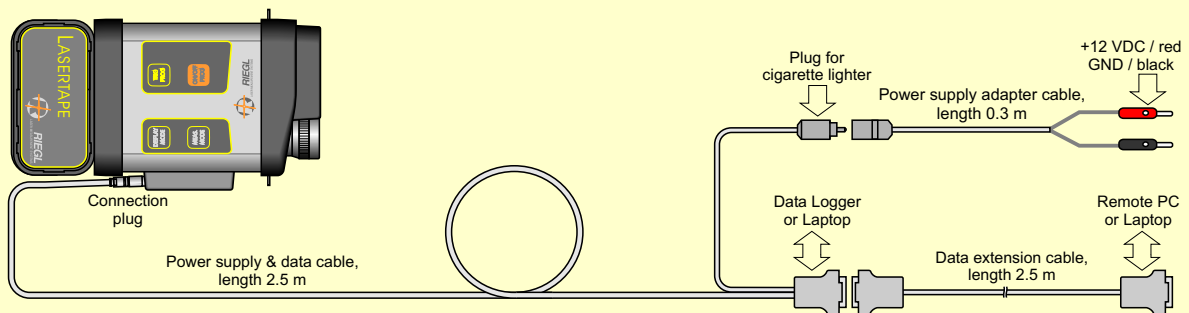
Elements of Operation and Control



Dimensional Drawings



System Configuration



Specifications Lasertape FG21-HA

Maximum operating range ^{1) 2)} depending on the reflection characteristics of the target	DISTANCE METER operating mode ³⁾	RANGEFINDER operating mode ³⁾
<i>Masonry, stones etc.</i>	600 m	1200 m
<i>Trees, bushes etc.</i>	400 m	800 m
<i>Reflecting foil ⁴⁾</i>	>1000 m	>2000 m
<i>Glass reflector prism ^{5) 6)}</i>	6000 m	8000 m
Minimum distance ^{6) 7)}	2 m	5 m
Accuracy, typically ⁸⁾	± 5 cm	± 10 cm
Resolution	1 cm	5 cm
Acquisition time	0.1 s - 0.2 s - 0.5 s - 1 s selectable or self-adapting	self-adapting
Target selection	strongest or last target	strongest target
Inclinometer	range +60° to -30°, resolution 0.1°	

- 1) Typical values at clear air, visibility 20 km, under an overcast sky
- 2) Display to be selected in meters, feet, or yards
- 3) Selectable by the programming buttons
- 4) Reflecting foil 3M DG4090 or equivalent, minimum dimensions 0.45 x 0.45 m²
- 5) Three high quality retroreflecting prism, diameter 60 mm
- 6) For retroreflecting prisms, the minimum range is 50 m.
- 7) Additional short-range suppression adjustable in steps up to 1000 m
- 8) Standard deviation, plus distance depending error ± 20 ppm

Technical Data

Physical data:

Weight
approx. 1.45 kg with batteries

Dimensions
(LxWxH) 185x120x60 mm

Temperature range
Operation -10°C to +50°C
Storage -25°C to +70°C

Internal power supply
6 Alkaline-Manganese batteries or rechargeable NiMH batteries of type "AA"

Battery lifetime
>2000 measurements (Alkaline-Manganese)
>1000 measurements (NiMH)

External power supply
10-14 V DC, 400 mA

Sighting optics:

Magnification
6 x 30 monocular

Field-of-view
approx. 100 m at 1000 m

Optical quality
all elements multi-layer coated

Display:

2x4 digit LED display within the field-of-view of the sighting optics, automatic brightness control

RS232 data interface:

ASCII-data string:
300 ... 19200 Bd, selectable
NMEA 0183 data string:
4800 Bd

Laser data:

Type pulsed semiconductor laser

Wavelength 0.9 μ m

Beam divergence 2 mrad
i.e. approx. 20 cm increase of beamwidth per 100 m of range

Laser Safety



according to IEC60825-1:1993+A1:1997+A2:2001
The following clause applies for instruments delivered into the United States:
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.

Information contained herein is believed to be accurate and reliable. However, no responsibility is assumed by RIEGL for its use. Technical data are subject to change without notice. Data sheet FG21-HA, 23/08/2006



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LASER MEASUREMENT SYSTEMS

www.riegl.com

RIEGL Laser Measurement Systems GmbH, A-3580 Horn, Austria
Tel.: +43-2982-4211, Fax: +43-2982-4210, E-mail: office@riegl.co.at
RIEGL USA Inc., Orlando, Florida 32819, USA
Tel.: +1-407-248-9927, Fax: +1-407-248-2636, E-mail: info@rieglusa.com
RIEGL Japan Ltd., Tokyo 1640013, Japan
Tel.: +81-3-3382-7340, Fax: +81-3-3382-5843, E-mail: info@riegl-japan.co.jp