KIMBALL MIDWEST

Pocket Rangefinder – Laser Distance Meter

Instruction Manual
84-1405

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INTRODUCTION

Thank you for purchasing our Pocket Rangefinder. It is the owner and/or operator's responsibility to study all WARNINGS, operating, and maintenance instructions contained on the product label and instruction manual prior to operation of this product. The owner/operator shall retain product instructions for future reference.

IMPORTANT SAFETY RULES

Failure to follow all instructions included with this product could result in dangerous laser emission damage, electric shock, personal injury and/or property damage.

DO NOT alter the performance of the laser

DO NOT stare into beam

DO NOT operate the tool at eye level or any position which may cause the beam to reflect off windows or mirrors into a person's eyes

DO NOT allow children or untrained persons to operate this tool

DO NOT attempt to repair the meter without authorization. If you have any questions or require assistance with damaged or missing parts, please contact your local distributor

DO NOT use the meter in flammable or explosive environments

DO NOT use the meter to aim directly at an airplane

♦ Electromagnetic radiation may interfere with other equipment and/or devices (i.e. pacemaker or hearing aid)

♦ Dispose of this product in a safe manner and in accordance with your local regulations of disposing of laser products

♦ Keep out of reach of children

OVERVIEW

Technical Specifications

Measurement accuracy (in room)	+/- 3mm
Unit of measure	m//in/ft
Smallest unit displayed	1mm
Measurement range (no reflector)	0.05~60m (200 ft)
Measurement time	0.1-3s
Laser Light Level	Class II
Laser Light type	635nm, <1mw
Dust proof and waterproof	IP54
Automatic laser light switch off	60s
Automatic switch off	3 minutes of inactivity
Illumination	White LED
Battery type	AAA alkaline battery, 1.5v (2)
Working temperature range	32°F~104°F (0°C~40°C)
Storage temperature range	-13°F~140°F (-25°C~60°C)
Weight	104g

Note:

- Use target plate for longer range
- In unfavorable conditions (such as excessive strong ambient lighting or excessive strong or weak reflective material), the error rate will increase +1mm+40PPM
- In unfavorable conditions where the sunlight is too excessive or the reflective light is weak, use sighting target

OVERVIEW (Continued)

Keyboard Functions (refer to diagram 1)

1. Start button / Single measurement
2. Area / Volume / Pythagorean
3. +/- function / Unit of Measure
4. Reference Edge / LCD Backlight Display
5. Clear / Shutdown
6. Data Storage / Function Set

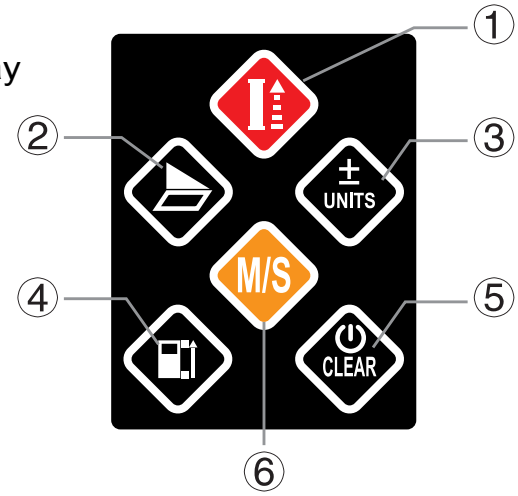

Diagram 1

Display Screen Indicators (refer to diagram 2)

7. Laser
8. Reference edge measuring
9. Area / Volume / Legs of a triangle
10. Laying off
11. Battery Level
12. Data Storage
13. Data Storage Number
14. Signal Strength
15. Unit (including power and cube)
16. Secondary display area
17. Main display area

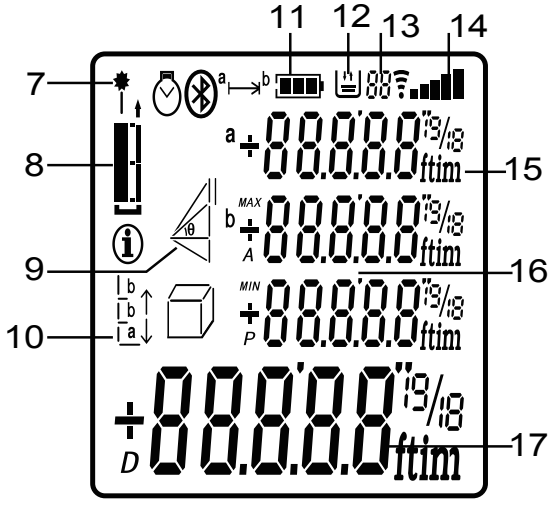

Diagram 2

PREPARATION FOR USE

Install/Replace Batteries
This unit comes with (2) AAA Batteries.

The battery compartment is located on the back of the meter. To replace the batteries, remove the screw holding the faceplate and take the faceplate off. Replace the batteries and screw faceplate back on.

Removing the batteries is recommended for storage of the range finder.

Battery Level Indicator
The battery level indicator consists of 3 segments. When all 3 are shown, it indicates the battery level is full. The fewer segments displayed on the battery icon, the lower the battery level. When the battery icon is empty, the low battery indicator will appear on the display (#11) and the batteries should be replaced.

OPERATION/FUNCTIONS (Refer to diagrams for any # in parenthesis)

Starting Up/Shut Down
The meter will turn on as soon as the battery is installed. If not, press the Start (#1) button. To turn off the meter, press and hold the Shutdown (#5) button. The laser and the backlight will turn off automatically within 1 minute. The unit will automatically shut down after 3 minutes of inactivity.

Setting Functions
Press and hold down the function set (#6) button until the icon on the display flashes. You can then set the automatic turn on or turn off of the laser light and the buzzer. Press the +/– to set the parameters. Press the single-machine measurement (#1) button to toggle between functions.

Reference Edge
The reference edge by default is at the back end of the meter. You can switch the reference edge by pressing the Reference Edge (#4) button. The default will be restored when the meter turns off.

Units
Hold down +/- (#3) button to switch between 6 different units of measure (see diagram 3). The meter will remember the last displayed unit.

length	area	volume
0.000m	0.000m_2	0.000m_3
0.00m	0.00m_2	0.00m_3
0.00ft	0.00ft_2	0.00ft_3
0.0'$^{1/18}$	0.00ft_2	0.00ft_3
0.0in	0.00ft_2	0.00ft_3
0$^{1/18}$in	0.00ft	0.00ft

Diagram 3

OPERATION/FUNCTIONS (Continued)

Clear Function
To clear the last measurement (area or volume), press the Clear (#5) button.

Illumination
Press and holding down the LCD Backlight Display (#4) button will turn on or off the display backlight

Data storage/removal
Press the Data Storage (#6) button to enter into storage function until  displays on the screen. Review any data stored by pressing the +/- (#3) button. This device can hold up to 20 results. To delete any stored data, press and hold the same+/- (#3) button.

MEASUREMENT

Measuring
Press the single measurement (#1) button to turn on the laser light. The laser indicator (#7) on the display will flash. Press the single measurement (#1) button again to begin the measurement.

Signal Strength Indicator
Signal strength is measured as bar segments on the right hand corner of the screen. The more segments displayed, the better the measuring signal.

Continuous Measurement
Press the single measurement (#1) button to turn on the laser light. Press and hold the single measurement (#1) button to start continuous measurement. Release the single measurement (#1) button to stop.

During continuous measurement, the real time measurement value is shown on the main display area. The maximum value (MAX) and the minimum value (MIN) are displayed on the secondary display area.

When continued measurement is in general measurement pattern, the secondary display area shows the minimum value.

When continuous measurement is in functional measuring pattern, the secondary display shows the max default of the hypotenuse measurement and displays the minimum default of horizontal measurement. Holding the Unit key (#3) button during measurement will toggle between the maximum and minimum value.

Cumulative or Regressive Measurement
The measurement of a single distance, area, or volume can be measured through cumulative or regressive measurements while in +/- mode. Pressing the unit key (#3) button will toggle between addition and subtraction. The operational symbol will be displayed in the main display area.

Area Measurement
Press the Area (#2) button until  is displayed on the screen. Press the single measurement (#1) button to complete the measurement of the first line. Press the single measurement (#1) button again to complete the second line. The area will be calculated automatically and the result will be displayed in the main display area.

Volume Measurement
Follow the area measurements steps but make sure  is displayed on the screen and include the third line measurement. The volume will be measured automatically. The result will be displayed in the main display area.

Pythagorean Measurement
Pythagorean measurement is used to measure the target distance that cannot be targeted directly, by using the Pythagoream Theorem. Press the Pythagorean (#2) button until  is displayed on the screen. Press the Single measurement (#1) button to complete the right-angle side measurement or hypotenuse right-angle side measurement in accordance with the indicator displayed on the screen. The measurement will be calculated automatically and the result will be displayed in the main display area.

Press the Pythagorean (#2) button and the Single Measurement (#1) button until  is shown on the display. Press to finish collecting the 3 measurement values in accordance with the indicator in the screen. When collecting the second measurement, it should be vertical to the objects side or select the minimum value automatically using the continuous measurement method. The result will be shown on the main display area.

Note:

- When measuring under the Pythagorean pattern, the length of right-angle side should be shorter than that of the hypotenuse, or the meter will show as an error
- When measuring under the Pythagorean pattern, double-check that the measurement is started from the same initial point in the hypotenuse right-angle side pattern

Laying Off Measurement

Press and hold Laying off (#2) button to set Laying Off. Before laying off, regard the value shown in the secondary display area (#10) as the initial value of “a”. Regard the value shown in the main display area as the initial value of “b”. When setting laying off, enter in the setting of “b”. When the second number in the main display flashes, adjust the number by pressing + or -. One press adds 1 and goes up to 9. Adjust the flashing position by pressing the Single-measurement (#1) button. Holding down the Single-measurement (#1) button will end the laying off setting and enter into laying off mode.

Note:

- In Laying off mode, press Single-measurement (#1) button to end the measurement. The values set when setting up laying off will remain on the display screen
- Press Laying off (#2) button again during the setting of “b” will switch to the setting of “a”. Press Laying off (#2) button again during the setting of “a” will end the setting and the meter will enter into laying off mode
- When in Laying off mode, the secondary display area shows set distance value in the nearest Laying off position. Positive value means that it is longer than the laying off position distance and vice versa. When the distance to the nearest laying off position is less then 0.1m, the buzzer will activate. Buzzer will continually change while it reaches the laying off position
- The distance of the laying off position is “a” + “b” x “n” (“n” is a natural number that excludes “0”)

ERROR CODES AND TROUBLESHOOTING

During the use of the instrument, the following prompts may appear:

Prompt	Reason	Solution
b.L	The battery level is too low	Replace with a new battery
t.L	The temperature is too low	Raise the meter temperature
t.H	The temperature is too high	Lower the meter temperature
d.H	Data overload	Remove data/Re-measure
S.L	The signal is too weak	Material has poor reflective properties, use sighting target
S.H	The signal is too strong	Materials reflective properties are too strong, use sighting target
H.F	Wrong hardware	Restart the meter. Contact local distributor if meter stops working after several startups & shutdowns

MAINTENANCE

To clean meter, use a damp, soft cloth to gently wipe down. Do not immerse the meter in water.

Clean the surface of the laser light radiating window and the signal receiver lens with camera lens cleaner.