



LRB 3000PRO

LASER RANGE FINDER BINOCULAR

In USA: 2331 Superior Ave. Cleveland, OH 44114
In Canada: 105 Sparks Ave., Toronto, ON M2H 2S5

IMPORTANT INFORMATION

Read prior to activation

You have just purchased a complicated electronic device, which emits invisible laser radiation. To operate it properly, please read this manual carefully. Here are some common precautions that must be noted.

- **NEVER** direct laser radiation at the eyes of people or animals
- **NEVER** stare into direct, scattered or reflected laser beam
- **NEVER** aim the unit at the sun or bright sources
- **NEVER** subject the unit to impact while operating or being transported
- **NEVER** transport the unit without the case
- **NEVER** disassemble the unit. This device contains high voltage components, which may be hazardous for you!
- **NEVER** reverse polarity of the battery
- **ALWAYS** keep the unit out of the reach of children
- **ALWAYS** remove the battery when the device is not in use for a long period
- **ALWAYS** store in a warm dry place when the device is not in use
- **Caution** - use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure
- **Caution** - the use of optical instruments such as binoculars, loupes, mirrors, lenses, etc. with this product increases eye hazard

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10. QUALITY CERTIFICATE

The LRB 3000PRO has passed the quality inspection.

Production date _____

Serial number _____

Quality Inspector signature _____

Purchase date _____

Salesman _____

9. CUSTOMER SUPPORT

Should you experience any difficulties with your Newcon Optik product, please consult the enclosed manual. If the problem remains unresolved, contact our customer support department at +1-416-663-6963 or toll free in North America at 1-877-368-6666.

Our operating hours are 9am-5pm, Monday - Friday, Eastern Standard Time.

At no time should equipment be sent back to Newcon without following the instructions of our technical support department. Newcon accepts no responsibility for unauthorized returns.

To locate NEWCON Authorized Dealer call:

Tel: +1-416-663-6963 Fax: +1-416-663-9065

Email: newconsales@newcon-optik.com

Web site: <http://www.newcon-optik.com>

The defective products should be shipped to:

From USA: 2331 Superior Ave. Cleveland, OH 44114

From all other countries: 105 Sparks Ave., Toronto, ON M2H 2S5, CANADA

Features of the LRB 3000PRO Laser Range Finder Binocular

- Latest digital circuitry allows targeting through most types of glass
- First, last or the most reflective target acquisition
- Meters/Yards/Degrees/KMH/MPH display
- Last 10 readings recall
- Selectable reticle shape (+ or □)
- Target quality indicator
- Speed detector and digital compass

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8. WARRANTY

NEWCON OPTIK warrants this product against defects in material and workmanship for one year from the date of the original date of consumer's purchase, but no more than 18 months from the date of manufacturing. If your Newcon product proves to be defective during this period, please bring the product securely packaged in its original container or an equivalent, along with proof of the date of original purchase, to your Newcon Dealer. Newcon will repair (or at its option replace with the same or comparable model), the product or part thereof, which, on inspection by Newcon, is found to be defective in materials or workmanship.

What This Warranty Does Not Cover:

NEWCON is not responsible for warranty service should the product fail to be properly maintained or fail to function properly as a result of misuse, abuse, improper installation, neglect, damage caused by disasters such as fire, flood, lightning, improper electrical current, or service other than by a NEWCON Authorized Service. Postage, insurance, or shipping costs incurred in presenting your NEWCON product for warranty service are your responsibility. Please include a check or money order made out to NEWCON OPTIK for the amount of \$15.00 to cover shipping and handling. This covers products shipped in USA or Canada only.

7. TROUBLESHOOTING

The range-measuring mode does not work. The display is transparent.

Check whether the battery is installed properly. Check the charge of the battery. Replace it if it is weak

The range-measuring mode temporarily does not work. The display indicates results of the last measurement or transparent.

Wait for 8 seconds, and press the Action button again.

Compass readings are equal to zero at any direction.

Wait for 8 seconds, and press the Action button again. If this does not help, perform the compass calibration.

There are black dots in the image.

A LCD (Liquid Crystal Display) is installed in the optical channel of the device. Due to manufacturing imperfections in the production process of the LCD, small black dots, scratches and other blemishes might be visible. Those blemishes are strictly regulated for maximum allowed number, size and location. It does not degrade the product's performance.

Range measurement cannot be obtained.

- Check if range detection mode is activated (message READY appears on the display)
- Make sure that neither your hand nor finger is blocking objective lens, laser emitting lens or receiver lens.
- Hold the unit firmly (avoid hand tremor) while you are pressing the Action button.
- Check that the target is within measuring range of the device.

CAREFULLY READ ALL THE INSTRUCTIONS BEFORE USING!

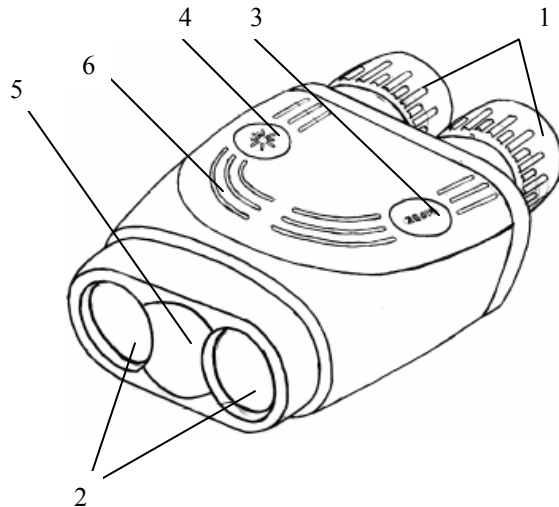
FAILURE TO OBEY THE INSTRUCTIONS WILL VOID THE WARRANTY!

1. BRIEF DESCRIPTION

LRB 3000PRO Laser Rangefinder Binocular is an advanced Laser Range Finder system that provides instant distance, speed, and angular measurements consistently and accurately. The outstanding optics provides a sharp, clear image under all conditions. LRB 3000Pro utilizes a revolutionary digital design, which outperforms any other product in its class and price range.

The unit sends an invisible, eye safe laser beam pulses to the target. The returned beams are captured by the digital circuitry. The time differential allows us to calculate the distance to the target. Incorporated digital compass measures clockwise the angle between the optical axis and direction to the North Pole.

2. APPEARANCE OF THE DEVICE



1 – Eyepieces; 2 – Objective lens; 3 – Mode button;
4 – Action (*) button; 5 – Battery compartment cover;
6 – Rubber grip

Fig. 1

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6. STORAGE AND MAINTENANCE INSTRUCTIONS.

Precautions: LRB 3000Pro is a sophisticated precision optical instrument equipped with electronics. Therefore, it should be handled with due care.

- Keep your device away from direct sunlight, impacts, dust, moisture, and sudden changes of temperatures.
- Do not use the device at temperatures higher than 50°C (122°F).
- Do not touch the optical surfaces with fingers. Doing so may damage the anti-reflection coating.
- Avoid shocks and sharp jolts.
- Cleaning of optical surfaces is allowed with professional camera lens cleaning supplies only.
- To clean the exterior of the device, use a soft clean cloth.
- Keep away from heating appliances and central heating.
- Remove the battery when storing the device for long time.
- All repair works must be performed by an authorized service only.

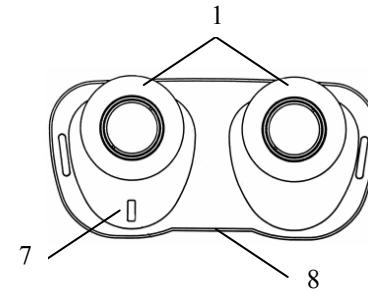
voltage of the primary 9-Volt battery drops below 7.2 Volts. At this point the System is still functional but the battery should be replaced as soon as possible. The System can operate at the voltage level above 7 Volt.

The System remains in the active displaying state for 8 seconds after pressing of any of the operating buttons and after 8 seconds it enters the passive zero power state. Ni-MH rechargeable type of batteries with extended capacity capable to sustain current drain up to 250 mA should be used for powering the System.

5.5. Test modes

Mode 16 is designated to test the display. When you choose this mode all segments and indicators will flash during 8 seconds. This time should be enough for extensive display testing.

Mode 17 calibrates the digital compass. If the System was exposed to a strong magnetic field or it was inoperable for a long time the compass stops working. This is normal. To return the compass back into working condition enter Mode 17 and rotate the System in horizontal plane during approximately one minute. You must perform at least two rotations. The normal compass operation will be restored.



1 – Eyepieces with diopter adjustment; 7 – Interpupillary distance adjustment lever; 8 – Identification label (located at the bottom)

Fig. 2

3. SUPPLIED ACCESSORIES

LRB is supplied in the following assembly:

- Device	1 pc.
- Carrying case	1 pc.
- Neck strap	1 pc.
- User’s manual	1 pc.
- Warranty card	1 pc.
- 9V/200 mAh Ni-MH rechargeable battery (optional)	1 pc.
- Charger (optional)	1 pc.

4. TECHNICAL CHARACTERISTICS

1. Optics	Magnification, x	7
	Objective lens diameter, mm	40
	Exit pupil diameter, mm	5.7
	Field of view	6°
	Type of coating	Fully multi-coated glass optics
2. Range Finder	Type	Class 1, eye safe, 905nm
	Measuring range, m	20 – 3,000
	Accuracy, m	± 1
	First, last and auto target acquisition	Yes
	Meters/Yards display	Yes
	Last 10 readings recall	Yes
	Reticule shape	+ or □
	Target quality indicator	Yes
3. Speed Detection	Measured speed range, KMH / MPH	5 – 400 / 5-250
	Accuracy, KMH or MPH	± 1
4. Compass	Measured azimuth range, degrees	360
	Accuracy, degrees	±2
5. Misc.	Battery	9 V standard or rechargeable
	'Low Battery' indicator	Yes
	Tripod thread	¼" x 20
	Operational temperature range	-25 / +50°C (-13 / +122°F)
	Storage temperature range	-45 / +65°C (-49 / +149°F)
	Weight without battery, g	970
	Dimensions, mm	158 x 145 x 69

Distance measuring procedure includes instant statistical processing of the package of single measuring sessions for each laser pulse. Qualitative result of the statistical processing is presented on the Display as a message **TARGET REFLECTION (5)**.

There are three statistical qualifications of the reflected signal:

- **TARGET REFLECTION LOW** – when the number of steady received reflected signals is just enough to make acceptable conclusion about the measured distance;
- **TARGET REFLECTION MED** - when the number of steady received reflected signals is in medium range and enough to make positive conclusion about the measured distance;
- **TARGET REFLECTION HIGH** - when the number of steady received reflected signals is qualified to be enough to make reliable conclusion about the measured distance.

The displayed statistical qualification of the reflected signal characterizes variation in expected recurrence of measurements. At qualification **HIGH** each consequent measurement of the same target will give you the same result with accuracy of ±1m. At lower rates of statistical qualification the expected recurrence may degrade.

The display presents **LOW BATTERY** warning, when

5.4. Additional display information

The System operates in the setting Modes that are displayed as follows (refer to Fig.3):

Y/M – units of distance measurement: yards or meters (3).

KMH/MPH – units of speed measurement: km/hour or miles/hour (3).

° - units of angular measurement: degrees (3)

Shape of the reticle: cross shape or rectangular shape (2).

rEC1 - recall function. Upon pressing the Action button (4) (fig. 1) the Display will sequentially show results of last 10 measurements, starting from the latest one. The number appearing after word "rEC" shows the number of the measurement counted back in the sequence. When the System is in inactive state the 10 previous measurements are stored within the System and may be recalled at any time.

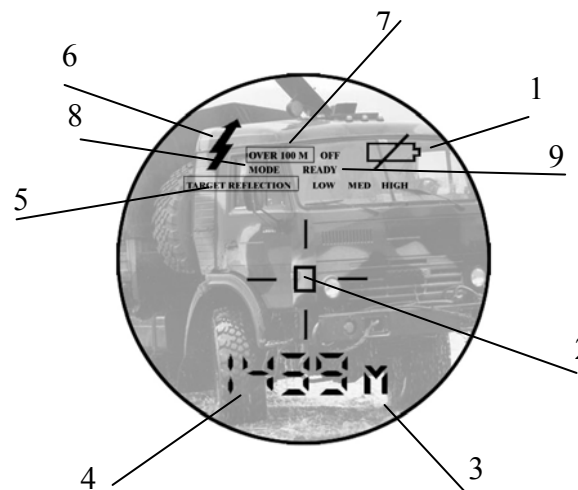
cLr - clear data function: upon pressing the A button (4) (fig. 1) the entire data on all previous measurements will be erased. This function doesn't change the chosen modes. You can erase the assigned mode only by assigning a new one.

OVER 100 m – indicates that the gating is on. **Note:** This is an optional indicator, which is not activated in this model.

Optional nighttime illuminated display allows more hours of use and easier readings at dusk, dawn and all night. **Note:** This is an optional feature, which may be absent in your unit.

5. OPERATION INSTRUCTIONS

Liquid Crystal Display (LCD)



- 1 – Low battery indicator; 2 – Reticle (cross or rectangular selectable);
- 3 – Units of measurement (Yards, Meters, KMH, MPH, Degrees); 4 – Measurement result;
- 5 – Target quality indicator; 6 – Laser active indicator;
- 7 – “Over 100M” gating indicator (optional); 8 – Setup mode indicator;
- 9 – Ready mode indicator

Fig. 3

5.1. Preparing the device for operation.

- Rotate counterclockwise and open the battery compartment cover (5) located between the objective lenses (fig. 1).
- Insert one 9V Ni-MH battery into the battery compartment observing correct polarity.
- Close the battery compartment cover (5).
- Adjust the interpupillary distance with lever (7) (fig.2).
- Adjust the eye relief distance by moving the left collapsing eyepiece (1) in lengthwise direction.

Note: After changing the battery, it is recommended to run the Compass Calibration mode (refer to the mode selection procedure).

5.2. Measuring procedure

When the Rangefinder is in the passive, zero power consumption state, the LCD Display is blank (transparent). Press the **Action (A)** button (4) (Fig.1) and hold for 0.5 sec. to activate the System. Initially the System always assumes **READY** mode of operation and word 'READY' appears on the Display. Pressing and releasing the **A** button (4) (Fig. 1) at this point triggers a measuring session, and the result will be displayed in numerical form (4) (Fig. 3) (if measurement is unsuccessful then four dashes '----' will appear in the numerical area). Please note that the target must be over 20m away. The measured data will correspond to the mode selected (see below). The units of measurement will be indicated in the field of view (3) (Fig.3).

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- **rEc** – recall function. Upon pressing the Action button (6) (fig. 1) the Display will sequentially show results of last 10 measurements, starting from the latest one. The number appearing after word "rEc" shows the number of the measurement counted back in the sequence. When the System is in inactive state the 10 previous measurements are stored within the System and may be recalled at any time.
- **cLr** - clear data function: upon pressing the Action button (6) (fig. 1) the entire data on all previous measurements will be erased. This function doesn't change the chosen modes. You can erase the assigned mode only by assigning a new one.

The full trek of all possible modes available is depicted on Figure 4.

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- **Cd12** – this mode sets the target selection to First. No other parameters of those, which were previously set, are influenced.
- **Cd13** – this mode sets the target selection to Auto. No other parameters of those, which were previously set, are influenced.
- **Cd14 KMH** – the unit will measure and display two parameters at once as distance in meters and speed in kilometers per hour. The target selection and the reticle shape inherit the previous value.
- **Cd15 MPH** – the unit will measure and display two parameters at once as distance in yards and speed in miles per hour. The target selection and the reticle shape inherit the previous value.
- **Cd16** – this is the self-test mode. All segments on display will blink during 8 seconds. None of the parameters, which were set before, will change.
- **Cd17** – this is the self-test mode, performing compass calibration. None of the parameters, which were set before, will change.

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If you choose more than one parameter to measure (for instance, distance and azimuth), the measured results will appear on the display every half second.

If the **A** button is held (pressed) the System automatically enters **SCANNING** mode. At this mode, the System repetitively performs distance measuring and displaying. The time interval between measurements is approximately 0.25 second. The maximum measuring distance range for most objects will be about 3000 meters. The maximum measured distance varies greatly depending on the reflectivity of the target, weather conditions and more.

Target reflectivity depends on its color, surface finish, shape etc. Bright colors are more reflective than darks. A polished surface is more reflective than a rough one. Larger targets are easier for distance measuring. Measuring a target faced at 90° (perpendicular to the laser beams path) provides optimal results. Bad weather conditions (rain, fog, snow, mist) will reduce the maximum measured range. Bright sunny days will reduce performance as well. While the unit will work through many glass types, measuring through glass will affect the results. Hand tremor also influences the results. Use tripod to measure distance to far-away objects.

The unit can estimate distance to up to 7 targets simultaneously. The mode selection logic allows choosing the nearest ('first'), the farthest ('last') or the most reflective ('auto') target. This mechanism helps to choose a correct target

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behind bushes, wires, flakes, or, opposite, measure a distance to wire, which hangs in front of the building wall. However, it cannot be guaranteed that the device will always measure the needed distance. It can happen that there will be no pulses bounced off the desired object at all.

5.3. Mode switching procedure

By pressing **Mode (M)** button (3) (Fig.1) when the System is in **READY** mode, you enter the Mode selecting state. Pressing the **M** button sequentially scans the Modes. The Mode under selection is indicated on the Display by flashing of the selectable feature. The "flashing" feature can be selected by pressing the **A** button (4). If you don't find some of the modes described below, it means they were not installed on your system. Two modes, "Codes" and "Recall" have submenus. You enter submenu by pressing the **A** button from the corresponding mode. After that you can select the sub-item with the **M** button and choose your option by pressing the **A** button. Each time when you make your choice, you return to the **READY** state.

Note: Depending on user's requirements, the unit can be made with a special sub selection, providing only the options required for the particular task.

Note: Depending on the installed software, the situation, when the mode is accessible but inoperable, also may occur.

- **Cd4, Cd5, Cd6, Cd7** – reserved for the future extension and are not available in this model.
- **Cd8** – the unit will measure two parameters at once as distance in yards and horizontal angles in degrees. Target selection is set to Auto. The reticle shape is set to crosshair. This is the third standard mode.
- **Cd9 +** – this mode sets the reticle shape to crosshair. No other parameters of those, which were set before, are influenced.
- **Cd10 □** – this mode sets the reticle shape to rectangle. No other parameters of those, which were set before, are influenced.
- **Cd11** – this mode sets the target selection to Last. No other parameters of those, which were previously set, are influenced.

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If you want to leave the mode switching procedure without remembering your choice, you should press and keep held the **M** button for more than two seconds. This works like “Escape” key on a computer keyboard. The rangefinder will remain in the last set mode and return to the **READY** state.

Below is the full list of all modes available in the main menu and submenus. The flashing symbols, which you see on the display during the mode selection procedure, are marked in bold in the text.

- **Std1** – the unit will measure three parameters at once as distance in meters, horizontal angles in degrees, vertical angles in degrees. The target selection is set to Auto. The reticle shape is set to crosshair. This choice turns off the gating, if it was turned on before.
- **COdE** – if you choose this option, you will enter into codes submenu.
 - **Cd1 M** – the unit will measure and display the distance in meters only. The target selection and the reticle shape inherit the previous value.
 - **Cd2 Y** – the unit will measure and display the distance in yards only. The target selection and the reticle shape inherit the previous value.
 - **Cd3 -°** – the unit will measure and display the horizontal angle in degrees only. The target selection and the reticle shape inherit the previous value.

There is one default preset mode, Standard1 (Meters, Degrees, Crosshair shape reticle, Auto target selection), which opens the mode trek.

Another standard mode is assigned to Code 8. It determines measurement units and features as Yards, Degrees, Crosshair shape reticle, Auto target selection.

After you have selected one of these modes, you can override its reticle type and target selection with the sub selection code. For example, Standard1 mode implies crosshair shape reticle. If you choose rectangular reticle (sub selection Code 10), you change the reticle shape and leave all other parameters of this mode intact. If then you choose Standard1 again, the reticle will turn back crosshair. The last set mode overwrites all features that it controls.

All other modes determine only one parameter to measure. For example, Code 14 allows to measure speed of the objects as kilometers per hour. The shape of reticle and target selection will remain the same, as they had been set before you selected the Code 14. Now you can choose a new reticle shape, still remaining in the speed measuring mode. This example demonstrates that Codes 9-13 replace one selected feature independently, and all other codes can replace more than one feature in a bunch.

Mode	Screen display	Distance	Speed	Azimuth	Reticle	Target type
↵ 1) Standard1 Select this mode	↓ M M - ° ° - - Go to next mode	Meter		Degree	- -	Auto Target
↵ Codes Go to next mode	↵ Go into submenu					
↵ Code1 Select this mode	↓ M Cd M Go to next mode	Meter				
↵ Code2 Select this mode	↓ M Cd 2 Y Go to next mode	Yard				
↵ Code3 Select this mode	↓ M Cd 3 - ° Go to next mode			Degree		
Not used	Cd 4					
Not used	Cd 5					
Not used	Cd 6					
Not used	Cd 7					
↵ Code8 Select this mode	↓ M Cd 8 Go to next mode	Yard		Degree	- -	Auto Target
↵ Code9 Select this mode	↓ M Cd 9 - - Go to next mode				- -	
↵ Code10 Select this mode	↓ M Cd 10 □ Go to next mode				□	

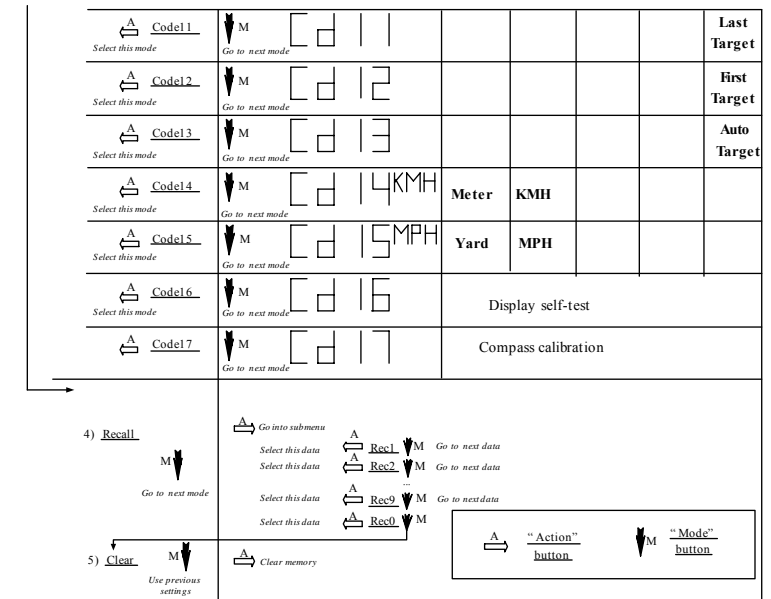


Fig.4 Mode switching trek

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