Stalker Lidar XLR │ Laser Speed Measurement

Operator's Manual

StalkerRadar.com

MAX SPEED km/h RANGE

MIN FAIL XMIT PWR
LO V TEST RFI T / D

STALKER

MENU HUD MODE PANEL

LONG RANGE POLICE LIDAR

XLR LIDAR

ISO 9001:2015 Certified
TRC
The Registrar Company

BUY AMERICAN ACT
STALKER
COMPLIANT
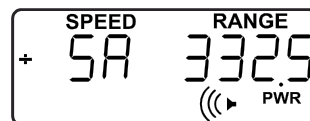
STALKER ®

Power to Enforce.

S T A L K E R   L I D A R
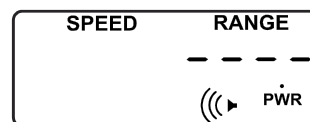
Quick Start

XLR

Sight Alignment Test – press and hold **trigger**, then press **TEST** - ⁵ᴿ will appear then release **TEST**.
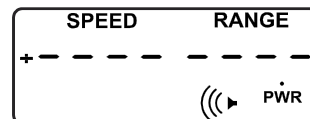
HUD Brightness – press **HUD** repeatedly to desired level.

RANGE Only – press **MODE** switch to obtain "- - - -" only in RANGE window.

SPEED/RANGE Mode – press **MODE** switch to obtain "- - - -" and "- - - -" in SPEED and RANGE windows.

HUD Speed and Range – to set for range only, or range and speed showing in the HUD, press **MENU** switch. Continue pressing **MENU** until HUd⁵ or HUdꞰ appear. To turn off either or both, use the UP/DN arrows. To save and return to normal operation, press and hold the **MENU** switch until a beep is heard and the display returns to normal mode.

Audio – press speaker/volume button – 4 levels plus off unless restricted in your unit.

POWER DOWN Limits – press **MENU** switch – press **MENU** until ᴾ⁻dⁿ appears. Use UP/DN arrows to set value in minutes. "0" is off. Press and hold MENU key to exit.

Inclement Weather Mode – press and hold **MODE** switch until nonE appears in Speed window. Press UP/DN arrows to scroll through available options. When InC on is displayed, press and hold **MODE** switch to accept. – C will appear at end of SPEED window. Minimum operating distance is 250' (76 meters). To clear, press and hold **MODE** switch.

SPEED	RANGE
nonE	PWR

SPEED	RANGE
InC	on PWR
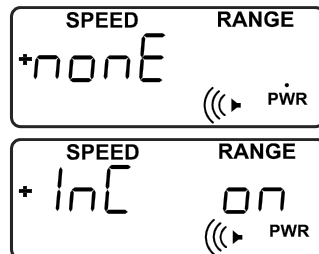
Zone Mode – press and hold **MODE** switch until nonE appears in Speed window. Press UP/DN arrows to scroll through available options. When ZonE appears, press and hold **MODE** switch and follow prompts to measure furthest and closest reduced speed signs. Speeds will only be shown when target vehicle is within the "zone" set by the signs.   To clear, press and hold **MODE** switch.

SPEED	RANGE
nonE	PWR

SPEED	RANGE
ZonE	on PWR
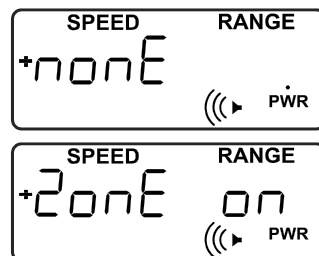
Auto-Obstruction mode (XLR only) - press and hold MODE switch until nonE appears in speed window. Press UP/DN arrows to scroll to obS on. Press and hold the MODE switch until you hear a beep and L appears at the end of the speed window. Unit is in LEARN mode. Aim at moving targets through the obstructions and pull the trigger to track. When a target is detected (max 5 sec.), unit will display speed and target range. Press and hold the MODE switch to accept (a beep will be heard). Now the unit will ignore all obstructions out to a maximum of 800' (244 meters) and only display vehicle speeds/range.

STALKER®

Power to Enforce.

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800-STALKER

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STALKER LIDAR XLR

INTRODUCTION

STALKER LIDAR XLR is a laser device that measures the speed of vehicles, indicates the distance of the vehicle and whether the vehicle is coming toward or going away from the device. It can be operated hand-held or mounted in a stationary position.

STALKER LIDAR XLR is a small, lightweight and well-balanced device that has a built-in HUD (Heads Up Display) that allows the operator to track the target vehicle while observing nearby traffic.

STALKER LIDARX XLR's electronic design is microprocessor based with signal processing and precision cast optics. This allows the unit to be upgraded with future performance features by simply installing new computer software using a laptop computer, which prevents obsolescence and insures the Customer the ability to benefit from future enhancements.

STALKER LIDAR XLR provides Tracking mode. Tracking mode provides continuous tracking and immediate, real-time speed updates as long as the trigger is depressed. This coupled with our unique Target Speed Tone gives the operator excellent tracking history and target identification. It sends out 130 pulses per second and operates at a wavelength of 905 nanometers.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications to the *STALKER LIDAR XLR* not expressly approved by Applied Concepts, Inc. could void the user's authority to operate the equipment.

Beam Width

The **LIDAR XLR** produces a very narrow beam width, which when properly used, allows the operator to monitor individual targets to the exclusion of others.

However, because the size of the beam width is directly proportional to the distance of the target, it is important to understand the relationship between distance and beam width. The **XLR** produces a beam whose width is 0.003 times the range to the target. The following table shows the Beam Width vs. Range to Target for a number of distances.

Range to Target	Beam Width
100 feet	0.3 feet (3.6 in.)
300 feet	0.9 feet (10.8 in.)
500 feet	1.5 feet
1000 feet	3.0 feet
1500 feet	4.5 feet
2000 feet	6.0 feet
3000 feet	9.0 feet
5000 feet	15.0 feet

As this table shows, the narrow beam width permits a single vehicle to be selected at shorter distances. However, depending on the width of the vehicle, the beam becomes wide enough that some separation between targets is necessary to insure accurate target identification at longer distances. The beam does get proportionally wider as distances increase. It is suggested, in heavy traffic and multi-lane usage, that speeds be obtained at the shorter distances to assure proper target identification.

Radio Frequency Interference

Due to the inherent properties of the LIDAR (highly collimated coherent light) and the vast differences from radio waves, LIDAR devices are generally not affected by RFI. The **XLR** has been shielded against RFI entering the device and also has an RFI detector circuit. If RFI is present and causes interference, the RFI detector disables the **XLR** from operating and displays "RFI".

Eye Safety

The **XLR** is designed and tested to meet the F.D.A (Federal Drug Administration) eye safety requirements for a Class I laser device, and thereby complies with CFR 1040.10 and 1040.11. Class I levels of laser radiation are not considered to be hazardous.

To prevent inadvertent exposure to potentially hazardous laser radiation, all servicing of the **XLR** must be performed at the manufacturer.

We do, however, recommend that certain reasonable precautions be taken when operating the unit. A person should not stare directly into the lens for an extended time, especially at close distances.

CAUTION – The use of optical instruments with this product will increase eye hazard. Therefore do not point the LIDAR XLR at an observer using instruments such as binoculars, telescopes, or cameras.
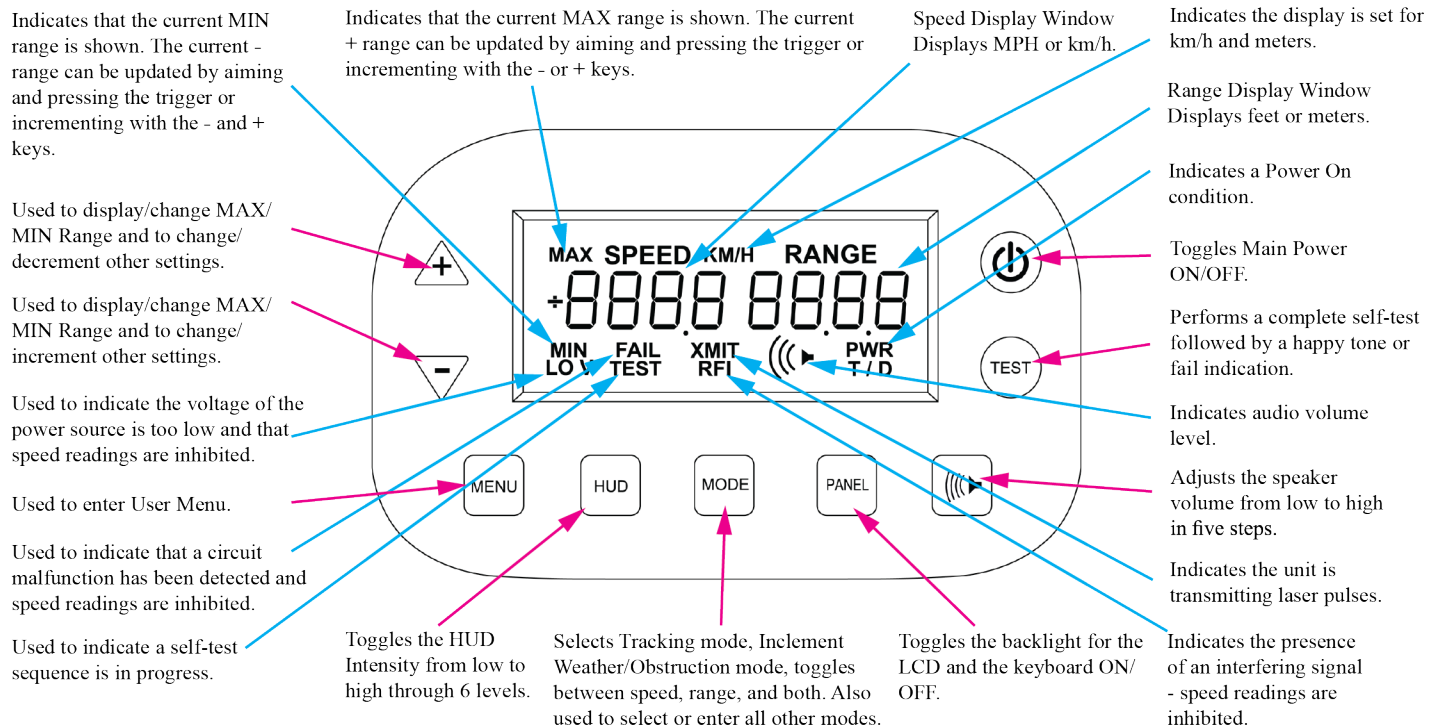
INVISIBLE LASER RADIATION

DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
Complies with CFR 1040.10 (Class I Laser product)

OPERATOR CONTROLS

Indicates that the current MIN range is shown. The current - range can be updated by aiming and pressing the trigger or incrementing with the - and + keys.

Indicates that the current MAX range is shown. The current + range can be updated by aiming and pressing the trigger or incrementing with the - or + keys.

Speed Display Window Displays MPH or km/h.

Indicates the display is set for km/h and meters.

Range Display Window Displays feet or meters.

Indicates a Power On condition.

Used to display/change MAX/ MIN Range and to change/ decrement other settings.

Toggles Main Power ON/OFF.

Used to display/change MAX/ MIN Range and to change/ increment other settings.

Performs a complete self-test followed by a happy tone or fail indication.

Used to indicate the voltage of the power source is too low and that speed readings are inhibited.

Indicates audio volume level.

Used to enter User Menu.

Adjusts the speaker volume from low to high in five steps.

Used to indicate that a circuit malfunction has been detected and speed readings are inhibited.

Indicates the unit is transmitting laser pulses.

Used to indicate a self-test sequence is in progress.

Toggles the HUD Intensity from low to high through 6 levels.

Selects Tracking mode, Inclement Weather/Obstruction mode, toggles between speed, range, and both. Also used to select or enter all other modes.

Toggles the backlight for the LCD and the keyboard ON/ OFF.

Indicates the presence of an interfering signal - speed readings are inhibited.

Display labels: MAX SPEED KM/H RANGE · ÷ 8888 8888 · MIN LOW FAIL TEST XMIT RFI PWR T/D · Keys: + − MENU HUD MODE PANEL · Power · TEST

Rear Panel Display Functions

RANGE: The right, four-digit LCD window is the range window. This window displays the range of the last target measured in feet (or meters for metric operation) in whole numbers or tenths.

SPEED: The left, four-digit LCD window is the speed window. The speed window displays the target speed in **MPH (km/h** for metric operation) in whole numbers (Note: For special applications, the target speed displayed in **Knots** is available, with the range displayed in feet). The "sign" character in the left side of the speed window indicates target direction. A "**+**" indicates the target is approaching, while a "**–**" indicates the target is receding.

PWR: The **PWR** icon indicates that the unit is on. Blinking at one-second intervals indicates 15-30 minutes of battery power remaining. (The remaining battery time may be less in cold temperatures.)

XMIT: The **XMIT** icon indicates that *XLR* is transmitting.

TEST: The **TEST** icon indicates that a self-test sequence is in process.

(((► The ((((► icon is used to adjust the volume up or down. No bars indicates" off" and four bars indicate loudest.

FAIL: The **FAIL** icon indicates that a circuit malfunction has been detected, in which case speed readings are inhibited and the unit should be removed from service and repaired. **FAIL** will remain in the LCD along with an error code until reset by being powered off.

Lo V:

The **LoV** icon illuminates when the battery voltage is too low. Operation is inhibited while this icon is displayed, but normal operation will resume automatically when the input voltage is restored to a normal voltage.

RFI:

The **RFI** icon indicates the presence of an interfering signal. Operation is inhibited during an **RFI** indication. Normal operation will resume automatically when the RFI condition ceases.

km/h:

The **km/h** icon indicates that the unit is measuring using kilometers.

T/D:

The **T/D** icon indicates that Time/Distance mode is selected (not available in North America).

MAX:

The **MAX** icon indicates when maximum range is shown. When **MAX** is shown on the LCD, the current maximum range can be updated by aiming at the new target and pressing the trigger or incremented and decremented with the **MAX** and **MIN** keys.

MIN:

The **MIN** icon indicates when the minimum range is shown. When **MIN** is shown on the LCD, the current minimum range can be incremented and decremented with the **MAX** and **MIN** keys.

Keyboard Functions

+:

The + key is used to increment the setting while in the Max Distance, Min Distance, or Menu modes.

-:

The - key is also used to decrement the setting while in the Max Distance, Min Distance, or Menu modes.

MENU:

The **MENU** key is a dual-function key. It is used to enter the User Menu and to select Time/Distance mode.

A short press of the **MENU** key will enter the User Menu and step between parameters within the User Menu. A long key press will exit the User Menu and return to normal operation.

HUD:

The **HUD** key toggles the HUD intensity from low to high through six levels when pressed. The first key depression displays the current intensity. Subsequent depressions toggle the intensity from **1** (lowest intensity) through **6** (highest intensity), then back to **1**.

MODE:

The **MODE** key is used to select Tracking mode, Inclement Weather/ Obstruction mode, and to toggle between SPEED only display, RANGE only display, and simultaneous SPEED and RANGE display. The current mode is indicated by " **- - - -** " in the SPEED and/or RANGE windows.

Pressing and holding the **MODE** key for two seconds will cause the unit to enter the **MODE MENU**. Press the **MODE** key to exit Inclement Weather mode, MAX/MIN set mode, or TIME/DIST mode (if available).

PANEL:

The PANEL light key toggles both the LCD backlight and the keyboard backlight on and off.

(((► : The (((► key is used to adjust the volume of the speaker from low to high in five steps. The number of speaker bars changes (zero bars to four bars) to indicate the setting. Zero bars turn off the Target Speed Tone but leaves other tones enabled at low volume.

TEST: The TEST key performs a complete self-test, including verification of crystal accuracy. A "happy tone" and the message PASS on the LCD Range display are used to indicate successful completion.

⏻ : The ⏻ key is the main On/Off power switch.

Audible Indicators

Self-Test tones - A 4-beep "happy" tone indicates the successful completion of a self-test operation. A failure is indicated by a repeating beep code consisting of one to eighteen beeps. The display will also show the Beep Number. The self-test operation is explained in the **TESTING THE *LIDAR XLR*** section.

HUD Features

The Heads Up Display (HUD) is the viewfinder on the top of the LIDAR XLR gun. It is used to sight the desired target in LIDAR mode. The alignment of the HUD is verified in Sight Alignment Mode by panning past test targets while listening to the sight tone. See the **TESTING THE *LIDAR XLR*** section for a full description of these modes.

AIMING RETICULE: The aiming reticule consists of a hollow red square in the middle of the HUD viewfinder. This reticule approximates the size of the transmitted beam and is used for targeting

TARGET RANGE: The upper, four-digit LED that appears in the HUD window. This window displays the same distance information that appears in the Rear Display's Range field unless tenth's range display is selected, in which case whole-number range will be shown on the HUD and tenths on the Rear Display.

TARGET SPEED: The lower, three-digit LED that appears in the HUD window. This window displays the same speed information that appears in the Rear Display's Speed field, unless the tenth's speed display is selected, in which case whole number speed will be shown in the HUD and tenths on the rear display. The "sign" character in the left side of the speed window indicates target direction. A "+" indicates the target is approaching while a "–" indicates the target is receding.

HUD SWITCH: As described in the previous Keyboard Functions section, this switch allows the HUD LED brightness to be adjusted through six levels from **1** (lowest intensity) to **6** (highest intensity).

TESTING THE LIDAR XLR

The following tests check for proper display, aiming and accuracy of the *STALKER* LIDAR XLR.

Power-On Self Test

A complete self-test is performed at power-on. The unit goes through a self-test sequence and the LIDAR XLR unit's serial number, for example: Lr07 9229. Successful completion of this self-test is indicated by the display of **PASS** and an audio "happy" tone. Self-test fail is indicated by a repeating beep code consisting of one to eighteen beeps, which is also shown on the display. If the unit fails upon power-on, please listen and note the number of beeps (one to eighteen). The unit should be taken out of service and the factory should be contacted for further instructions. If the unit beeps once upon power-on, this indicates the battery voltage is too low to operate the unit. Either replace the battery handle or plug in the charging cable.

Manual Self-Test

A self-test can be run at any time by pressing the **TEST** key. Successful completion of self-test is indicated by the display of **PASS** and an audio "happy" tone. If the test is unsuccessful, the **FAIL** icon appears instead.

NOTE: If the **FAIL** icon appears in the Display Window of your *XLR*, the unit must be turned OFF and then back ON to reset the FAIL mode.

Differential Distance Test (if enabled)

If your agency requires a differential or delta distance test, i.e., measuring two known distances then having the Lidar compute the speed of an object as if it traveled that distance in $1/3^{rd}$ of a second, press the TEST button to activate. You will notice DIFF TEST appear after the unit has completed the Self-Test sequence. When activated, the X-Series Lidar will automatically display DIFF TEST after the initial test sequence, followed by dISt 1. Aim the unit at the first target and press the trigger to obtain a distance reading. Press the TEST button to accept this distance. Then dISt 2 will be displayed. Aim the unit at the second target and press the trigger to obtain a distance reading. Press TEST to accept this reading. The Lidar will display the difference distance between the two targets and a speed in the Speed window corresponding to the calculated speed assuming the separation distance was travelled in $1/3^{rd}$ of a second. This speed is normally 2 times the difference distance. Example: the first sign is placed at 75 feet and the second sign at 100 feet. The difference would be 25 feet and the speed shown would read 50 mph.

To exit the test, press the trigger.

Note: the minimum operating distance of 50 feet is turned off during this test.

Sight Alignment Test

This test is designed to ensure the operator that the IR light beam of the LIDAR XLR is aligned properly with the Red Square aiming reticule in the HUD. If the HUD alignment is not correct, it may cause improper sighting of targets and will produce difficulty in tracking vehicles resulting in display error messages. We suggest this test be performed before each shift or at the beginning of the day. Some departments may want to perform this test at the end of operations as well, much like the testing of radar.

To perform this test, follow these simple instructions:

1. To enter Sight Alignment Mode, pull trigger then press the **TEST** key and release. **SA** appears in the Speed Display Window indicating Sight Alignment mode. You now can pan the unit across a test target, such as a sign, a pole or overhead power wire. A tone sounds when the laser pulses are being reflected by the target. Verify that the target square is symmetric with the target both horizontally and vertically.

2. Select a pole or overhead wire with a clear background. (At least 100 feet away)

3. Aim the Red Square directly at the pole or sign and press the trigger to transmit. A distance reading should appear.

4. Continue to press the trigger and <u>slowly</u> move the Red Square across the target. You will hear an audio tone.

Figure 1

5. As the Red Square goes off the target, the distance reading should disappear and the audio tone will stop. This checks the horizontal alignment.

6. Slowly move the Red Square from the right to left and left to right. Again the distance should disappear and the audio will stop whenever the Red Square is off the target.

7. When targeting a pole or overhead power wire, simply rotate the LIDAR XLR 90 degrees and move from side to side again.
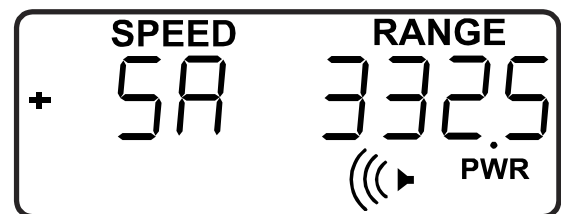
8. To exit this mode, press the TEST key.

Note: You may notice that the audio tone continues briefly after the Red Square moves past the pole or sign. Remember that the beam gets wider as distance is increased. The Audio tone gives you an indication of the beam width at the target distance.

Optional Sight Alignment Test
1. If the TILT Sensor is turned off, place the XLR Lidar in RANGE only mode, by pressing the MODE button until the "- - - -" lines only appear in the RANGE window. Then continue the tests as above starting with number 1. You will hear short beep tones instead of a steady tone when the XLR is receiving laser reflections from the test object.

Distance Test

1. Locate one or two known distances in a convenient location; i.e., to a sign and to a pole.

2. Mark an "x" or other mark on the pavement where the officer should stand with the *XLR*. Measure the distance from the "x". Place the front of the lidar unit (lens) over the mark.

3. Set the *XLR* to range mode. Obtain a reading to each known distance and verify the *XLR* is reading the measured distance within specification.

Accurate distance measurement insures the operator that the unit is operating properly and will display

both accurate distance and speed readings. The LIDAR XLR actually computes the known distance by timing the time of flight of the transmitted and received light pulses.

Selecting Tilt Sensor Angle

To activate the tilt sensor, repeatedly press the MENU key until ᵗ ᴵᴸᵗ appears. To the right of ᵗ ᴵᴸᵗ, is displayed either OFF or a number. The number represents the angle (down or when rotating the unit on its side) before the trigger is not active. The default angle is 40°. Using the "+" or "-" keys on the left side of the rear panel, you can increment or decrement the numbers or turn off the tilt function. This is seen as OFF, 20°, 30°, 40°, 50°, and 60°.

The purpose of the tilt sensor is to prevent any false trigger presses, which might clear a locked speed/range reading due to the unit being placed in the car seat and the trigger pressing against the seat belt buckle. With a locked speed/range, once the angle of the unit exceeds the selected tilt angle, the trigger is no longer functional. If the trigger is pressed, the locked information on the rear LCD will flash indicating the trigger has been pulled, but the unit is not allowed to clear the readings. The speed/range reading will also flash when the unit it tilted beyond the tilt angle threshold then brought back to a tilt above the angle threshold. To clear any locked speed/range reading, hold the unit in a normal operating position and the trigger becomes active again.

LIDAR XLR SETUP

The *XLR* offers a number of user-configurable settings that are accessed through the **User Setup Menu**.

User Setup Menu

To access the **User Setup Menu**:

1. Briefly press the **MENU** key. Subsequent short presses cycle through the 11-item User Setup Menu.
2. Exit by pressing and holding the **MENU** key.

While in the User Setup mode, the + & - keys are used to cycle possible choices for each menu item.

User Setup Menu Values

The table below describes the parameters that can be set according to the user's preference. The factory default for each setting is indicated by the bold underlined setting.

Menu Step	Description	Speed Display	Range Display (**bold** indicates factory default
1	Distance decimal or units display	d IS	0.1, 1
2	Serial Port Format	For	**0**, 1, 2, 3, 4, 5, 6, 7, 8
3	Baud Rate	bAU	11, 15, 30, 60, 120, 240, 480, 960, 1920, **3840**, 5760
4	Charger Status	CH99—"charging" Ch9d—"charged"	
5	Inactivity Power Down Time (minute)	P-dn	**0**-60 (0 disables power down)
6	Printer Time & Date (See printer addendum 011-0018-00 for description)	d-t	
7	Internal Frequency Check	CLoC oFF	**OFF** – On
8	Tilt Sensor Adjustment	t ILt 40	OFF, 20, 30, **40**, 50, 60
9	Display Speed in HUD	HUdS	OFF - **On**
10	Display Range in HUD	HUdr	OFF – **On**
11	Anti-Jamming	JrEJ	OFF - **On**

OPERATING THE LIDAR XLR

ACI recommends testing the Lidar unit prior to use and after the last use of the shift.

Operating Location

In choosing an operating location it is important to keep the following in mind.

1. Officer safety. LIDAR devices are usually utilized in areas of high traffic density where radar cannot be utilized. Selecting an area where the officer is safe and vehicles can be stopped, out of harm's way, is an important consideration.
2. Clear line of sight to the targeted traffic. Make sure there are no obstacles such as trees, signs, and telephone poles between the LIDAR XLR and the traffic. The XLR has other modes that can be used if there are weather or obstruction concerns.
3. The XLR can be used from inside a patrol vehicle and operated through the windshield or a side window with the ACI special software that allows better targeting range than other Lidar units when operated in this mode. For maximum targeting range, position the patrol vehicle so the XLR can be used through an open side window or when used outside the patrol vehicle.
4. Greater sensitivity can be achieved by monitoring traffic traveling away from (rather than towards) the XLR. This type of operation, however, usually will require more than one officer.

Lens Condensation

If you transport the *XLR* from an air conditioned (cool) location to a warm humid location, the outside lens surfaces may fog with condensation for a few minutes. It is best <u>not</u> to clean off the condensation. The condensation will clear in a few minutes once the unit warms up to the temperature of the new location.

General Functioning of the XLR

Several operating and setup modes are available with the *XLR* to provide versatility of use. The modes and their uses are described in the next section, **MODES AVAILABLE IN THE XLR**. The XLR provides several features to make it easier to use. A back light feature is accessible by pressing the **PANEL** key. This key lights both the rear LCD display and the keyboard for use at night. The **HUD** key provides adjustment of the LED intensity of the HUD display characters. The (((⯈ key provides adjustment of the speaker volume for use in a variety of surroundings. To prolong battery life, the microprocessor automatically goes into a low power mode 10 seconds after release of the trigger or last key depression. During low power mode, all signal processing, back lighting, and the display of HUD digits are temporarily turned off. Only the rear panel LCD and the HUD's aiming reticule remain on.

Modes Available in the XLR

The XLR has one speed/range operating mode (Tracking mode), and one test mode (Sight Alignment mode). For the Lidar measurement mode, Inclement Weather/Obstruction mode can be selected depending on operating weather and obstruction conditions. The operating mode chosen depends on the purpose of the gun, as well as the needs of your department.

TRACKING MODE - Tracking mode continuously tracks a moving target as long as the trigger is pressed.

RANGE MODE - The XLR is designed to display both speed and target range (distances). When in SPEED mode, the unit will not display any speeds or distances less than 50 feet from the unit. To measure distances shorter than 50 feet, repeatedly press the MODE key until only the 4 dash lines are visible in the RANGE window. The unit will not measure speed in this mode but will display distances

down to about 5 feet. To exit RANGE mode, press the MODE key until you observe 4 dash lines in both the SPEED and RANGE displays.

INCLEMENT WEATHER/OBSTRUCTION MODE - The Inclement Weather/Obstruction Mode feature allows the XLR to track through interfering weather phenomena such as fog, snow, and rain or shoot through trees, grasses and fences which would otherwise cause the XLR to attempt to process reflections from the rain drops or other reflections as targets, preventing processing of the intended target. This mode works by inhibiting processing of any target closer than approximately 250 feet. Reflections from weather phenomena beyond 250 feet are normally too weak to cause interference.

Placing the XLR into Operation:

The **XLR** features snap-in/snap-out handles. It can be powered by either a rechargeable battery handle or a corded handle which operates from 12 volts DC. Choose which handle/power source you want to use and insert in the bottom of the unit. Verify the handle is "locked" into place.

To use the **XLR** in Tracking mode.

1. Power the unit on by pressing the "**PWR**" key. The unit will go through a Power-On Self-Test followed by a "happy" tone and **PASS** will be displayed. The LCD backlight will "light" and then turn off in approximately ten seconds unless the trigger is depressed. The unit is still on and operational. The unit will power on in Tracking mode or Range mode, whichever was last selected.

2. The "**TEST**" key can be pressed at any time to initiate a Manual Self-Test.

3. Choose the level of audio. During Tracking mode, the exclusive Target Speed Tone in the **XLR** will be heard when a target is being successfully tracked, just like Doppler audio in radar. There will be a higher pitch as the speed increases and a lower pitch as the speed decreases. The **XLR** also has a Target Return Tone. This helps the operator properly aim the XLR. No Target Return Tone is heard when no laser reflections are received. Tone repetition increases as the beam strikes the Target and signal quality increases. Once a target speed is acquired, the Target Speed Tone overrides the Target Return Tone. The Target Speed tone is a synthesized tone and used only as a reference for the operator. Lidar does not use the Doppler effect.

4. Press the **MODE** key to select Tracking mode or RANGE only mode. See the next two Operator Manual sections, to further clarify these settings.

5. Adjust the HUD brightness to user preference using the "**HUD LIGHT**" key. Normally set the HUD light to 6 for daylight usage.

6. The operator can select what information is displayed in the HUD – target speed/direction and range (distance). Default is to display both range and speed/direction. Use the MENU option to change.

7. Select Inclement Weather/Obstruction mode if weather conditions or other operating conditions demand it.

8. If the unit is in sleep mode (no activity), squeeze and release the trigger to wake up.

9. While the unit is powered on, the Red HUD Square allows target selection prior to transmitting.

10. Once the target is selected, squeeze the trigger to transmit. To "lock" a target in a target speed, simply release the trigger.   The "locked" rear panel display will stay on until the trigger is squeezed again. The "locked" HUD display will blank in 10 seconds.

11. Because of the HUD Optical Eye Relief, the operator should position his eye near the HUD to insure

that he can see the Distance Display (top numbers), the Red Square, and the Speed Display (bottom numbers). By moving one's head (or the XLR) away from this optimum position, the operator may not be able to see all of the HUD display. Once the operator is familiar with the HUD operation, eye position is not a problem. It is recommended the operator keep both eyes open when sighting targets to prevent eye fatigue.

Note: Operating the **XLR** when trying to read targets at a long distance, you may see a distance reading before you see a speed reading. You will also hear the Target Return Tone. No tone indicates the beam is off target or too weak to produce a signal. A slow beeping tone indicates a weak signal. As the signal increases in strength, the beeping tone repetition increases. This indicates correct targeting and the LIDAR XLR has been able to make a distance calculation, but has not received a strong enough signal or the proper validation data to display speed. Continue to track the target and a speed reading should display momentarily.

Shooting Through Windshields

The XLR Lidar allows the operator to shoot through windshields much easier than other Lidar units. Created in the software and hardware of the unit, this prevents laser reflections within the patrol vehicle from being detected and allows the unit to obtain speeds of target vehicles at much greater distances than seen before in other Lidar units. In the SPEED mode, the minimum operating distance is 50 feet.
If the operator is mapping an accident scene or needs to make distance measurements with the XLR LIDAR, press the **MODE** switch to place the unit in RANGE mode only, shown on the rear LCD with "- - - -" seen only in the RANGE window. This will reduce the minimum operating distance to less than 5 feet. Shooting through the windshield will not affect the accuracy, but may affect the targeting range.

Anti-Jamming Capability

Due to the availability of different jammers that interfere with the normal operation of police Lidar units, the XLR Lidar now offers an anti-jamming feature. The anti-jamming feature of the XLR Lidar unit can be selected by the operator. When enabled, (default is "ON"), the unit can be operated even while Lidar jammers are being used without any worries of false or no readings.
If the anti-jamming or "jammer reject" feature is turned off, the operator can enter the MENU at any time and reactivate this mode. Repeatedly press the MENU button on the rear panel of the unit until JrEJ on (jammer reject "ON") or JrEJ oFF (jammer reject "OFF) is displayed. To change this mode, press either the "+" (up arrow) or "-" (down arrow). When the proper on or off mode is selected, press and hold the MENU button until a second beep is heard. The unit will return to normal speed mode.

Charging the Battery

The **XLR** has 3 different methods to charge the rechargeable battery. These are illustrated in the table below:

Charging the Battery Handle while detached	
200-0944-00 Rechargeable battery handle	**200-0839-00** Battery quick charger (wall receptacle plug adapters included)

Charging the Battery Handle while attached	
Lidar XLR 12-pin connector	**200-0898-00** Inline AC battery charger (wall receptacle plug adapters included)

Charging the Battery Handle in an automobile	
Lidar XLR 12-pin connector	**200-0899-00** Inline cigarette plug battery charger

 (Note: the following procedures are only applicable if one is using the rechargeable battery handle. A full charge takes approximately 2 to 3 hours.)

USING THE BATTERY QUICK CHARGER 200-0839-00:

Connect the supplied AC power cord to the inline power supply. Plug the 2.5mm connector of the inline power supply into jack labeled "12V AC/DC" of the Stand Alone High Capacity Charger base unit.

Remove the rechargeable battery from the **XLR**.

Attach the rechargeable battery to the base unit by inserting it such that the curved feature of the battery matches the curved feature of the base (see photo). The CHARGING LED illuminates while the battery is charging and becomes extinguished when the charge is completed.

USING THE INLINE AC BATTERY CHARGER 200-0898-00:

Connect the supplied AC power cord to the inline power supply. Plug the 2.5mm connector of the battery charger into the charge adapter. (Note: European customers additionally receive an AC plug adapter)

Power down the **XLR**. Plug the 12-pin end of the charge adapter into the external serial port connector on the side of the unit, and then insert the AC plug into a standard 110V 60Hz wall outlet.

The charging status may be determined by powering up the unit, then entering the charging menu (after the P⊢-d menu). The charging status is displayed as ⊏H99 for Charging or ⊏H9d for Charged. If desired the display can be forced to update by pressing either the + or - key.

USING THE CIGARETTE PLUG BATTERY CHARGER 200-0899-00:

Plug the 2.5mm connector of the charge adapter into the 2.5mm connector of the cigarette lighter cable.

Power down the **XLR**. Plug the 12-pin end of the charge adapter into the external serial port connector on the side of the unit, and then insert the cigarette lighter plug of the now assembled cable into the cigarette lighter of the automobile.

The **XLR** may be operated while using the cigarette lighter cable or the cable may be used to charge the rechargeable battery while attached to the **XLR**. The charging status is displayed as ⊏H99 for Charging or ⊏H9d for Charged. If desired the display can be forced to update by pressing either the MAX or MIN key.

Low Battery Charge Indicator

The LIDAR XLR indicates a low battery by flashing the PWR icon in the LCD at one-second intervals (Figure 2). When the PWR icon begins flashing, 15-30 minutes of normal operation remain. (The remaining time may be less in cold temperatures.)

The PWR icon will continue to flash until the low voltage icon LOV illuminates and disables the unit (Figure 3).

Attaching another fully charged battery handle or connect the inline battery charger will restore normal operation.

Figure 2

Figure 3

Operating in Tracking Mode

Tracking Mode uses LIDAR technology to track objects. When in this mode, it is important to get a clear shot at the desired vehicle so that you can track it for several seconds. For maximum performance, it is recommended that the unit be used through an open window of the vehicle or outside of the vehicle. Targeting range will vary depending upon how steady the operator can hold the XLR. Typical handheld targeting range on approaching vehicles is over 2500 feet. When using a tripod, monopod or shoulder stock the XLR can easily target vehicles beyond 4,000 feet.

Figure 4

The unit will power on in Tracking mode or Range mode; whichever was last selected. To enter Tracking Mode when the unit is another mode, press the **MODE** key. The current mode settings are now displayed:

Press the **MODE** key to move between Tracking mode and Range-only.

Depending on how your unit is configured at the factory, tracking a vehicle in Tracking mode is performed by either:

Figure 5

1. Pressing and holding the trigger down for constant transmitting (normal factory setting), or by
2. Pressing the trigger to begin and pressing again to end transmitting (optional factory setting).

Setting Automatic Power Down

1. Press the **MENU** key seven times to reach the Automatic Power Down setup window (Figure 6).
2. Using the -- and + keys, adjust the number on the right-hand side of the display window. This number represents the number of minutes of inactivity before automatic power down, the range being 1 minute to 60 minutes. Leaving this number at 0 disables this function and leaves the XLR on until the PWR button is pressed.

Figure 6

3. Once the desired number of minutes is reached, press and hold the **MENU** key to return to normal operation.
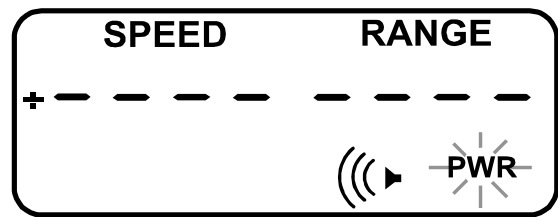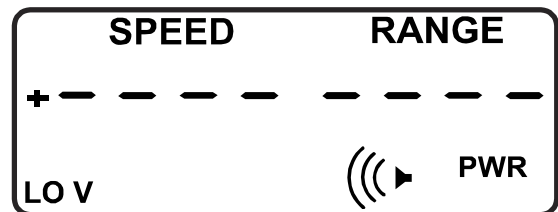
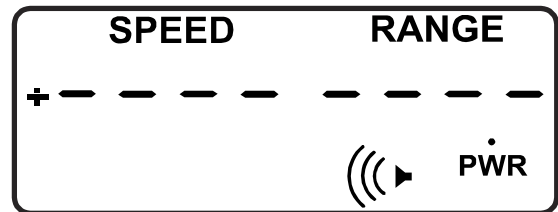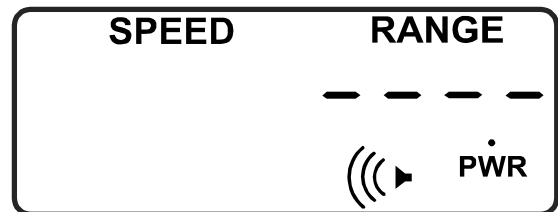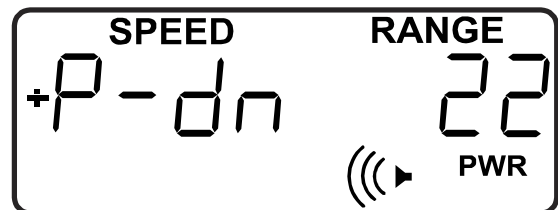# SETTING SPECIAL OPERATING MODES

Activating the Mode Menu

The XLR can be set in various modes to enable better operation under specific conditions. Beginning at the main screen (Figure 7), press and hold the **MODE** key until a second beep is heard.
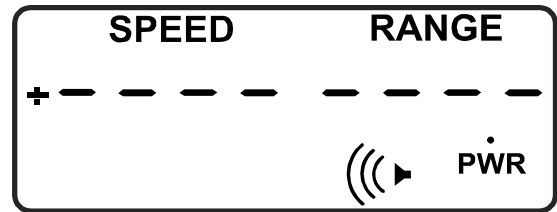
SPEED	RANGE

Figure 7

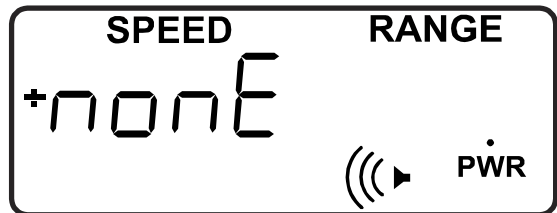A new screen containing the word 'none' is displayed, indicating no options have been selected (Figure 8).

SPEED	RANGE

nonE

Figure 8

Pressing the **+ Key** will cycle through the available selections in the Mode Menu. They are:

+ Key
❑ Inclement Weather/Obstruction Mode (Figure 9)
+ Key
❑ Construction/School Zone Mode (Figure 10)
+ Key
❑ Auto Obstruction Mode (Figure 11)
Press and hold MODE to enter any mode
❑ Press and hold MODE to Exit MODE Menu

SPEED	RANGE

InC   on

Figure 9

SPEED	RANGE

ZonE   on

Figure 10

SPEED	RANGE

obS   on
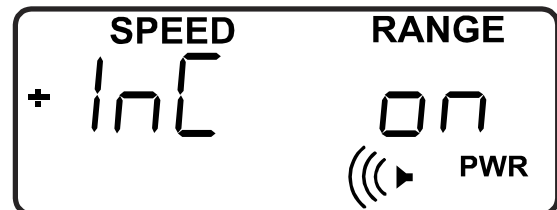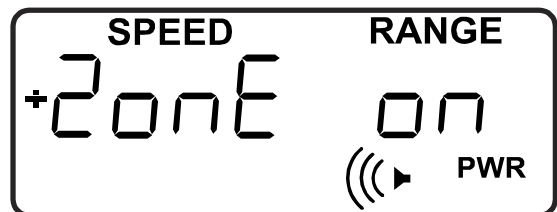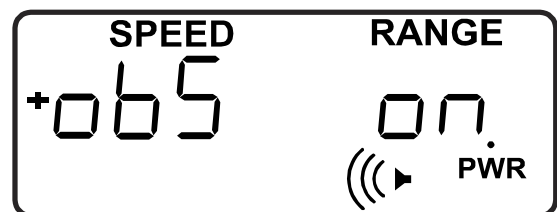
Figure 11

Inclement Weather/Obstruction Mode

The Inclement Weather/Obstruction Mode feature (Figure 12) allows the *XLR* to track through interfering weather phenomena such as fog, snow, and rain or when there may be obstructions such as tree branches, grass, power poles or wires which would otherwise cause the *XLR* to attempt to process reflections from these objects as targets, preventing processing of the intended target. This mode works by inhibiting processing of any target closer than approximately 250 feet. Reflections from weather phenomena beyond 250 feet are normally too weak to cause interference.

Figure 12

Note: Only one of the three modes can be active at any given time.

Activating Inclement Weather/Obstruction Mode

Inclement Weather/Obstruction Mode is selected by pressing and holding the **MODE** key until a second beep is heard A "c" is displayed at the end of the SPEED window as shown on the right (Figure 13).
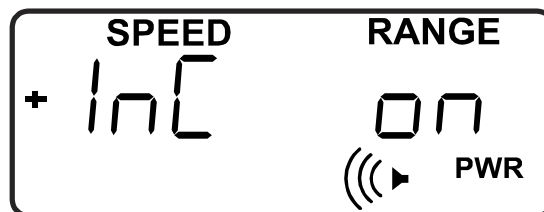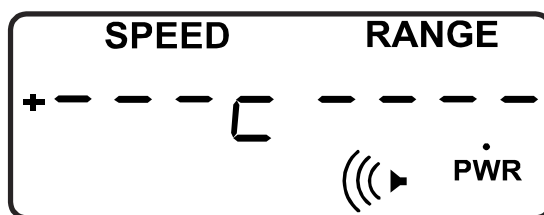
Figure 13

To return to normal operating mode, press and hold the MODE key until a second beep is heard and the "c" is removed from the display (Figure 14).
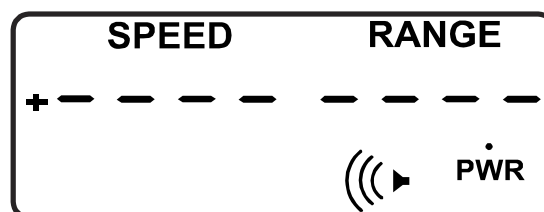
Figure 14

18

Construction/School Zone Mode

The **XLR** allows the operator can easily set the minimum and maximum operating distance, thus creating an Active Measurement Zone. This is helpful when a construction or school zone where the speed limits may be reduced. Construction/School Zone Mode allows the operator to simply shoot the back of a construction or school limit sign, then shoot the second sign, thus allowing speed readings only when the target vehicle is within this zone. The operator can also use the **+ Key** and **- Key** buttons on the rear panel to set the minimum and maximum distances, *Note: Only one of the three modes can be active at any given time.*

Enter Menu mode, then use the **+ Key** and **- Key** arrows to display ƵonE on (Figure 15). Press and hold the **MODE** switch to select. The display will read ƵonE d IS I (Figure 16). Aim the unit at either the closest or furthest sign and pull the trigger. Once a distance has been obtained, you may accept this distance or use the **+ Key** and **- Key** arrows to adjust this value to ensure the target vehicle was well within the "zone". Once the proper distance is obtained, use a long press of the **MODE** button to accept this reading. The display will read ƵonE d IS Ƶ (Figure 18). Again, aim and pull the trigger to obtain a distance to the second sign. Adjust using the **+ Key** and **- Key** arrows as necessary. Once you are satisfied the reading is correct, use a long press of the **MODE** button to accept.

A Ƶ will appear at the end of the SPEED window indicating the unit is in ZONE mode (Figure 19). The Range window will display the distance between the two signs. Now simply aim at intended targets. The unit will display speeds only while the target vehicle is within the reduced speed zone.

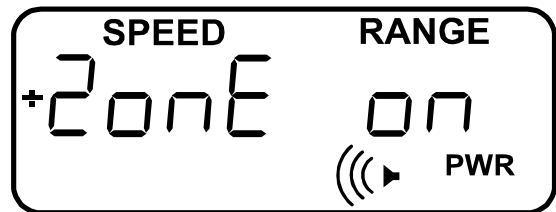To return to normal operating mode, press and hold the MODE key until a second beep is heard and the Ƶ is removed from the display (Figure 20).
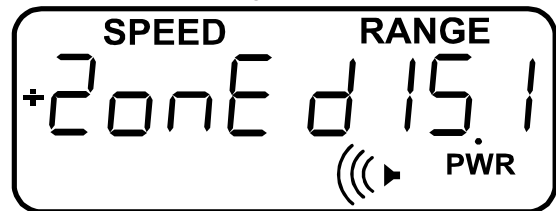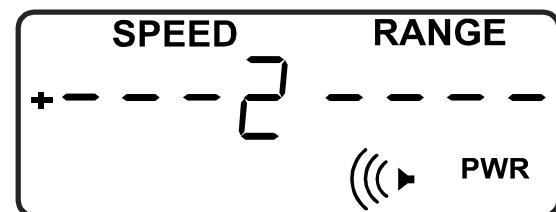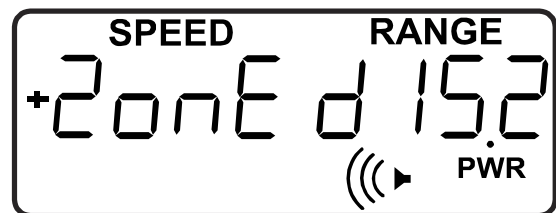

Figure 15

Figure 16

Figure 17

Figure 18
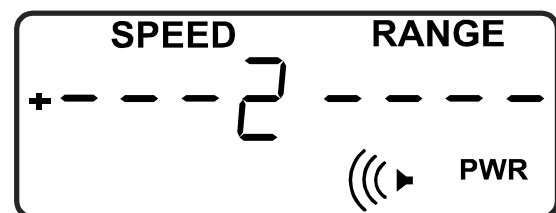
Figure 19
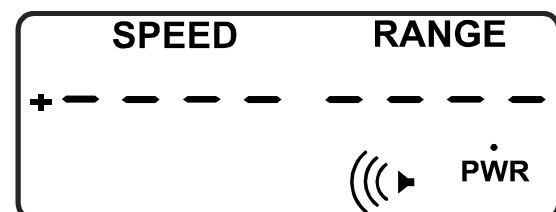
Figure 20

Setting the Active Measurement Zone
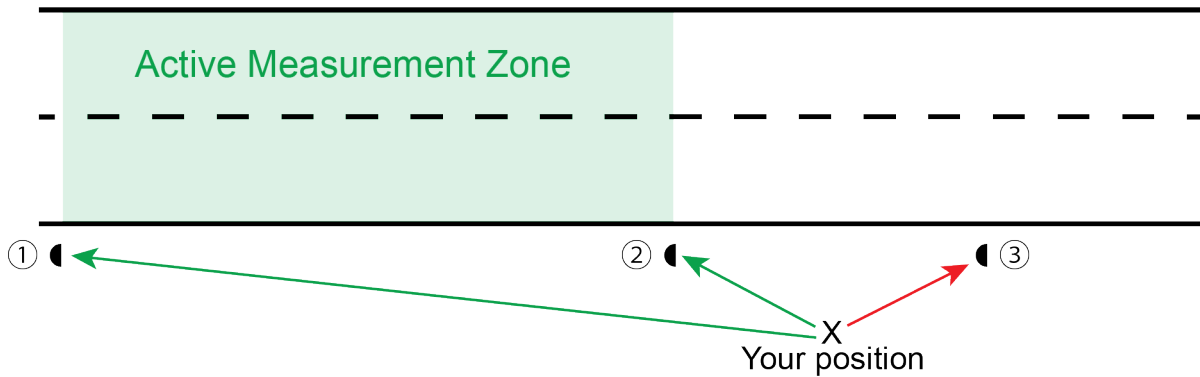
Active Measurement Zone

① ② ③

X
Your position

① Shoot an object that defines one boundary of your intended active measurement zone.
② Shoot a second object that defines the other boundary of your intended active measurement zone.
③ Don't turn and shoot an object behind you. Doing so will cause a miscalculation of the measurement zone.

Active Measurement Zone

① ② ③

X
Your position
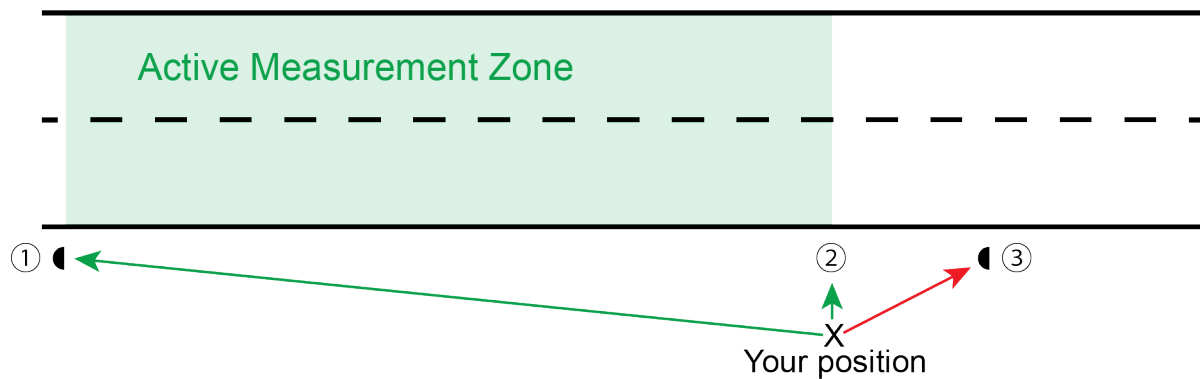
① Shoot an object that defines one boundary of your intended active measurement zone.
② Shoot down on the roadway to define the other boundary of your intended active measurement zone.
③ Don't turn and shoot an object behind you. Doing so will cause a miscalculation of the measurement zone.

Auto-Obstruction Mode

This is used when there are objects between the Lidar and intended target that are between 250 to 800 feet away, such as tree branches, fences, sign posts, guy wires, power poles, etc. Normally when these obstructions are present between the Lidar unit and the intended target vehicle, the Lidar will not display any target speeds. For obstructions that are from 50 to 250 feet away, use Inclement Weather/ Obstruction mode.

Note: Only one of the three modes can be active at any given time.

To enter the Auto-OBS mode, press and hold (long press) the **MODE** switch. The word ∩o∩Ɛ is displayed in the Speed window. Use the **+ Key** or **- Key** arrows to display **obS** in the Speed window and **on** in the Range window (Figure 21). Enter this mode by a long press of the **MODE** switch. The letter **L** (Learn) appears in the Speed window (Figure 22). The Lidar will train or learn where the obstructions are located while it searches for a moving vehicle beyond the last obstruction found. This may take several seconds. Once the last obstruction is detected, it will remember this distance and only track vehicle speeds from beyond that distance (Figure 23). It will not display speeds or distances less than the last known obstruction.

To begin, aim through the obstruction(s), pull the trigger and track moving vehicles while the unit is in the "learn" mode. The maximum amount of time for this is 5 seconds. If the unit detects obstructions, but cannot find any moving vehicles, it will automatically default to a minimum operating distance of 800 **feet** at the end of the timing cycle (Figure 24). Using a long press of the **MODE** switch, **o** will be displayed at the end of the Speed window, indicating you are in the Auto-Obstruction mode (Figure 25), and the minimum operating distance displayed in the Range window. The Lidar will now only track vehicle speeds beyond the furthest detected obstruction.

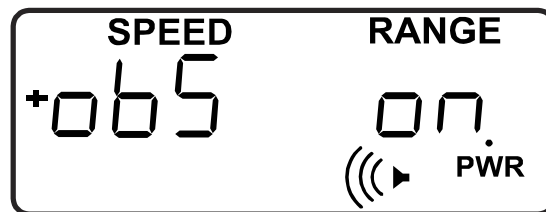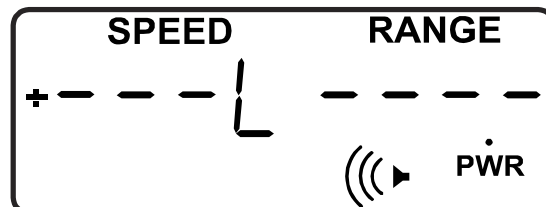To return to normal operating mode, press and hold the MODE key until a second beep is heard and the "ᴏ" is removed from the display (Figure 26).
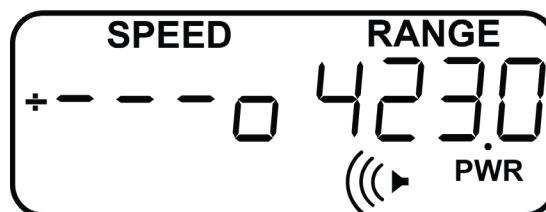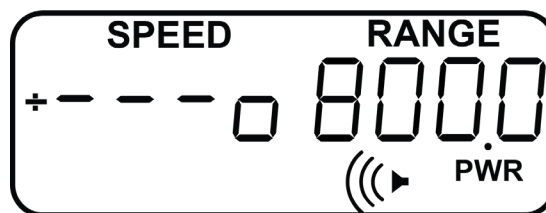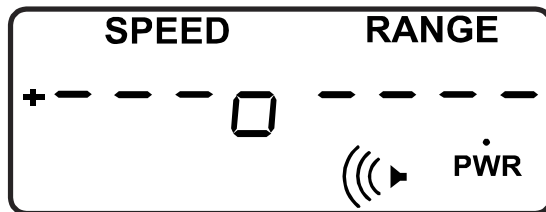
Figure 21

Figure 22

Figure 23

Figure 24

Figure 25
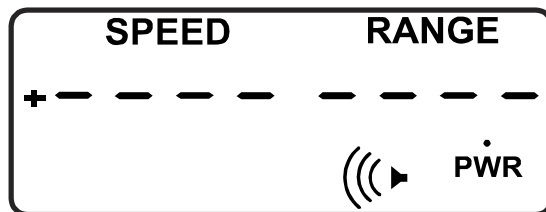
Figure 26

<u>Accuracy Test of the Internal Clock</u>

For those agencies who are required to test the accuracy of the internal quartz crystal, the XLR offers a means of sending this signal thru the I/O data connector located on the bottom of the case. When connected to a certified frequency counter, this can be used in the calibration process.

To active this mode, repeatedly press the MENU switch until CLoC oFF is displayed on the rear LCD panel. Using either the "+" or "-" keys on the left side of the rear panel, press until the rear panel display indicates CLoC on. Connect the ACI supplied cable to a frequency counter and observe the quartz crystal frequency. To exit this mode, press either the "+" or "-" keys and verify the rear panel display indicates CLoC oFF. Then press and hold the MENU key to place the XLR into regular speed/range operation.

PRINTER OPTIONS (IF PROVIDED)

1.   Setting the time and date in the Lidar

1.1 Get to the d-t Main Menu item by pressing the **Menu** key.
1.2 Press the **+** or **−** **KEY** to get to the date-time setting sub-menu.
1.3 Cycle through to the desired date-time setting by pressing the : d-Y for year (0-99, i.e, 2000 to 2099); d-n for month (1-12, i.e, Jan to Dec); d-d for day of the month (1-31); t-h for hour of the day (0-23); t-n for minute (0-59)
1.4 Change the date-time setting to the desired value using the **+** or **−** **KEY**.
1.5 Do a long press of the **Menu** key to accept any changed date-time setting(s) and get back to the Main Menu.

2.   Setting the printer format in the Lidar

2.1 Select a printer format text file such as the one in Section 6.
2.2 Connect the serial port of the computer to the Lidar serial port using the cable provided for the Lidar.
2.3 Open a serial communication tool such as Hyperterminal.
2.4 Select an appropriate COM port and set the serial port options on the computer as: Baud Rate: 9600; Data bits: 8; Parity: None; Stop bits: 1; Flow Control: None.
2.5 Connect to the Lidar using a serial port utility such as Hyperterminal on the computer.
2.6 Cycle through the Main Menu of the Lidar and change the For to 0.
2.7 Transfer the selected printer format text file such as as the one in Section 6 using "Send Text File".
2.8 On successful transfer to the Lidar you will see prnt For on the Lidar display and hear a "happy tone" from the Lidar as an acknowledgement.

3.   Printing Tickets using the Lidar

3.1 Cycle through the Main Menu of the Lidar and change the For to 5.
3.2 Cycle through the Main Menu of the Lidar and change the bdu to 960 for 9600 baud.
3.3 Get a valid speed reading on the Lidar.
3.4 With the speed reading on the display do a long press of the **Test** key to print the original ticket.

3.5 Print one duplicate ticket with a long press of the **Test** key again. The maximum number of duplicate tickets that can be printer are configured by the "\px" key string in the printer format text file (x in digit format (0-9) being the maximum number). The maximum number is the lower of x and 5.

4. Error messages when printing tickets

4.1 `"no data"`: There is no speed reading on the display. There is a five beep error audio tones as well.

4.2 `"copy done"`: The maximum number of duplicates have been printed. There is a five beep error audio tones as well.

4.3 `"prnt off"`: The Lidar Main Menu format is not set to "5". There is a five beep audio tones as well.

5. Lidar Printer Format Text file

5.1 The file shall start and end with the "?" character. This character can't be used anywhere else.

5.2 The last escape character duet needs to be "\e".

5.3 The body of the message starts with the "\b" character duet.

5.4 The body can have the following character duets within it

    1.1.1. "\f": To insert the Original or Duplicate ticket banners

    1.1.2. "\d": To insert date in mm/dd/yyyy or dd/mm/yyyy format

    1.1.3. "\t": To insert time in 24 hour format (no seconds)

    1.1.4. "\s": To insert speed in mph or kph

    1.1.5. "\r": To insert range in feet or meters

    1.1.6. "\#": To insert the ticket number followed by the Lidar Serial number

NOTE: Any other text in the body is printed as is. The body is terminated by a valid escape character duet other than those above.

5.5 The section outside the body can have the following character duets

    1.1.7. "\o": What follows it is used as the Original banner

    1.1.8. "\c": What follows it is used as the Duplicate ticket banner

    1.1.9. "\m": The date format is set to dd/mm/yyyy

    1.1.10. "\M": The date format is set to mm/dd/yyyy

    1.1.11. "\px": The maximum number of duplicate tickets is set to x, where x is a decimal digit

    1.1.12. "\ky": Initializes the ticket number to y, where y can be a 1 to 10 digit number (<= 4294967295)

NOTE: Any other text lines outside the body and not following the character duets in 5.5.1 to 5.5.6 are ignored

6.   Example Lidar printer Format Text File (*.txt)

```
?
\o** Original **
\c** This is a Duplicate **
\k 123456
This text is ignored
\p *3
\b
Applied Concepts Stalker Lidar
\f
Date: \d
Time: \t
Department:
Ticket Number: \#
Speed: \s
Range: \r
\e
This line's text and will be ignored
?
```

If the speed is 32.3 mph, range is 276.1 feet, and it is the 3rd ticket issued following printer format configuration the following is printer on the first long press of the "Test" key.

```
Applied Concepts Stalker Lidar
** Original **
Date: 07/30/2012
Time: 11:06
Department:
Ticket Number: 12358
Lidar Serial Num: LR100157
Speed: 32 mph (51 km/h)
Range: 276 feet (84 meters)
```

7.   Defaults

If the Lidar printer format is not configured the following defaults take effect.

7.1 Initial ticket number = 1

7.2 Max number of duplicate tickets = 1

7.3 Day-month format: mm/dd/yyyy

7.4 The security code to reinitialize printer format EEPROM: 4867 (HudLight-Test-PanelLight-Audio). This sequence is the reverse of the regular EEPROM initialization to defaults.

Display Messages

EXX: (Where XX is an error number) This message indicates that an error has occurred (Figure 27). Below are the definitions for error messages that can appear on the *XLR's* display.

NOTE: If the message number received is not listed below, then the message is a combination of two errors. For example, if the error message is E-03, this indicates that both errors 1 and 2 exist.

The following is a list of errors and their meaning:

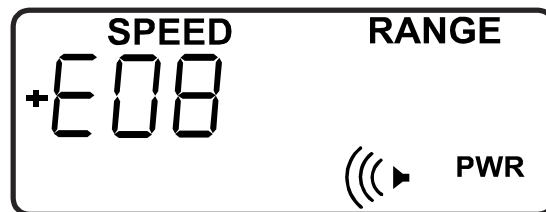|		
E01	=	laser high voltage pulse error
E02	=	APD bias voltage error
E03	=	Combination of E01 and EO2
E04	=	Jamming signal detected
E08	=	Sweep error detected
E16	=	Insufficient signal quality
E24	=	Combination of E08 and E16

Figure 27

Display Version Number

To determine the version of the software used in your unit, power the XLR on by momentarily pressing the **PWR** key while holding down the **TEST** key until the unit beeps.

The version number appears in the Speed field, and the code **SUP** (for Setup), appears in the Range field (Figure 28). Press the trigger to return to LIDAR mode.
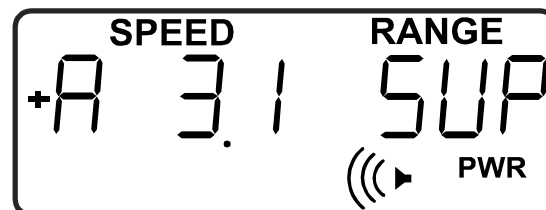
Figure 28

Restore Factory Defaults

To restore the *XLR* to factory defaults, power the unit up while pressing the **TEST** key. Once the power-on process is complete, press **AUDIO**, **PANEL**, **TEST**, then **HUD** keys in sequence.

INTERFERENCE SOURCES AND REMEDIES

A variety of sources, both natural and man-made, can cause misleading indications or poor performance. The operator should note the symptoms described below, and take steps to avoid the problem, or ignore the misleading indications.

Terrain

LIDAR signals will not pass through most solid objects, including sign posts, power lines, or tree foliage. Make certain the path between the LIDAR XLR and target vehicle is unobstructed or activate the Inclement Weather/Obstruction mode or the Auto-Obstruction mode Successful speed measurements require uninterrupted visual tracking of the target. A glass window is a partial reflector of LIDAR; therefore, some reduction in range will be experienced when aiming through vehicle windows, and/or the glass may be recognized as a target.

Rain

Rain and snow absorbs and scatters the LIDAR XLR signal. This reduces the range and in some cases may prevent obtaining any speed readings. Consider using the Inclement Weather/Obstruction mode.

Electrical Noise

Electrical noise sources include neon signs, radio transmitters, power lines, and transformers. These influences may cause reduced range or intermittent readings. When electrical noise interference is present, the RFI indicator will activate and suppress all readings.

Vehicle Ignition Noise

Since the XLR is normally battery operated, vehicle electrical noise will not interfere with the Lidar unit. If the XLR is plugged into the vehicle's electrical system close observation of the speed readings is suggested. A steady, consistent speed reading indicates no vehicle electrical interference is present..

REQUIRED MAINTENANCE

Other than periodic cleaning, no user maintenance is required on the **XLR**. However, if any problems are experienced during testing procedures or normal operation, the unit should be taken immediately to your department's LIDAR specialist to determine the extent of the problem. If a malfunction has occurred, the unit will require servicing. Since there are no user serviceable parts inside the **XLR**, only the manufacturer can service the **XLR**. Servicing by untrained personnel can result in exposure to high voltage and potentially hazardous laser radiation as well as affecting overall performance. Normal care should be taken by the user in handling the **XLR** to preserve the life and usefulness of the equipment.

Lens Condensation

If you transport the XLR from an air conditioned (cool) location to a warm humid location, the outside lens surfaces may fog with condensation for a few minutes. It is best not to clean off the condensation. The condensation will clear in a few minutes once the unit warms up to the temperature of the new location.

Optical Surfaces

All of **XLR's** optical surfaces have optical coatings and care should be taken to protect these surfaces from scratches or damage, which can reduce effective range and ease of use. In particular, the front lens surfaces should be clean and dry.

All optical surfaces may be cleaned in the following manner:

1. Place a few drops of either pure alcohol or lens cleaning solution on either a lint-free cotton cloth or a lens cleaning tissue. These cleaning materials are inexpensive and are readily available at retail photographic supply stores. Never use items harmful to the coated optical surfaces (e.g., paper towels, abrasive cleaners, household "glass" cleaners, or sharp instruments).
2. Gently wipe the surface using a circular motion.
3. Repeat using a clean portion of the cloth or new tissue, until the surface is free of contamination.

TROUBLESHOOTING

PWR key does not function:
- ❑ Check with two different power sources or two different battery handles.
- ❑ If using a battery handle, make sure it is charged

Low or no speaker volume:
- ❑ Check to insure that the volume control setting is not in the "OFF" position. Lidar must be transmitting.

No speed and/or range readings in the HUD
- ❑ Check the MENU settings to verify that speed and range are selected "ON"

LIDAR XLR has short range:
- ❑ Check the HUD alignment. Refer to the **SIGHT ALIGNMENT TEST** section.
- ❑ Verify the MAX range setting hasn't been shortened.

NOTE: Vehicles with missing or dirty license plates, different color vehicles, poor weather conditions, etc. can all affect the sensitivity of the XLR resulting in short range.

The LIDAR XLR includes extensive self-test routines at power-on and operator-initiated using the TEST key. A self-test failure will be indicated by one of two types of error codes.
1. During the power-on self-test, all failures are indicated by a beep code which repeats until the unit is powered off. The number of beeps pauses indicates the type of failure.
2. During the other test modes, a failure is indicated by an error code on the LCD rear panel display. The form of the error code is EXX, where XX will be a two-digit number.

For either error, make a note of the indicated error code and contact the factory for assistance.

CASE LAW

Police Traffic LIDAR was first utilized in 1989. The first documented court cases soon followed. Legal precedence has clearly been established for Radar devices in regards to its accuracy and admissibility as evidence. Many of the same principles used for Radar can be applied in LIDAR cases. Check with your local prosecutor's office for local case law.

Lidar Tracking History

Like police Radar units, the Lidar operator should perform Tracking History on the target. Lidar is only a tool to be used by the operator in determining the speed of any target vehicle.

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Operating in Tracking Mode

Tracking Mode uses LIDAR technology to track objects. When in this mode, it is important to get a clear shot at the desired vehicle so that you can track it for several seconds. For maximum performance, it is recommended that the unit be used through an open window of the vehicle or outside of the vehicle.

WARRANTY

Manufacturer warrants this LIDAR XLR to the original purchaser to be free of defects. At its discretion, the manufacturer agrees to repair or replace all XLR components that fail due to defective materials or workmanship for a period of <u>one</u> (1) <u>year</u> from the date of purchase.

During the warranty period, there will be no charge for repair labor or parts. Purchaser shall return the failed unit to the factory or authorized service center, freight prepaid. The manufacturer will pay return shipping.

This warranty applies only to internal electronic components and circuitry. Warranty excludes normal wear-and-tear such as frayed cords, broken connectors, scratched or broken cases, or physical abuse. Manufacturer reserves the right to charge for defects and/or damages resulting from abuse or extraordinary environmental damage to the unit during the warranty period at rates normally charged for repairing such units not covered under warranty.

Seller warrants the XLR devices manufactured by Applied Concepts, Inc. are designed to perform the function of determining the speed of motor vehicles. The foregoing warranty is exclusive, in lieu of all other warranties, of quality, fitness, or merchantability, whether written, oral, or implied.

As a further limit on warranty, and as an expressed warning, the user should be aware that harmful personal contact may be made with seller's XLR devices in the event of violent maneuvers, collisions, or other circumstances, even though said XLR devices are installed and used according to instructions. Applied Concepts, Inc. specifically disclaims any liability for injury caused by the LIDAR XLR devices in all such circumstances.

Note: We have several Factory Authorized Service Centers located throughout the country.

For the Service Center nearest you, call the factory at 1-800-*STALKER* (1-800-782-5537).