



The RFID with Best ROI™

## LR-2000HiLoMA™ Extra Long-Range Reader Set

AWID's LR-2000HiLoMA™ Long-Range Reader set is a special reader for mixed small and large vehicles, for mixed UHF tags and cards, for special conditions of the roadway, and for identifying people walking at a portal. The "HiLo" reader set consists of an LR-2000 master reader and a remote antenna in separate enclosures. The two units are connected to each other by a coaxial cable. The master reader is specially programmed so that the RF fields transmitted by each unit alternate with a 50% duty cycle. The two units of the "HiLo" set may be close to each other with no interference from their RF fields. When using mounting brackets, the two units are typically up to 4 feet apart.

The LR-2000HiLoMA uses the same 5 vehicle-mounted tags and 2 hand-held cards that AWID offers for the LR-2000 reader. LR-2000 single readers and LR-2000HiLoMA reader sets may be interfaced with the same Automated Vehicle Identification (AVI) or gate access system.



The LR-2000HiLoMA provides all of the features and benefits of the LR-2000 single reader. In addition, it spreads out the effective RF field so that the field covers a larger space, extended either vertically or horizontally, according to the needs of the application. The reading distance for the "HiLo" set is the same as for the LR-2000 single reader. But with the "HiLo" set, the cross-section of the field's area can be almost twice as large. This makes the "HiLo" set ideal for special site conditions

- *Combination of big trucks or buses with passenger cars* – Vehicle tags may be different types and attached at different locations in or on the vehicles. Each unit of the "HiLo" set is aimed optimally for the tags of just one of the vehicle types.

- *Vehicles with combination of tags and cards* – Some cars have tags inside the vehicles, while in other cars the drivers hold cards out of the side window. One "HiLo" unit may be high to look through the windshield; the other unit may be low facing across the lane at the side of the car.
- *Turning or merging lanes, or wide lane* – The units of the "HiLo" set are aimed to spread out the RF field horizontally at the tag reading location. This creates a wide zone, or two separate zones, in which tags will be read.
- *Change in grade at the reading location* – When the slope or grade of the roadway changes as the tag passes through the reader's reading zone, as in a parking ramp, vertical spreading of the effective RF field assures reliable reading of the tags.

The LR-2000HiLoMA reader set uses the same power, cable, wiring, and input reader port in the host system as a single LR-2000 reader. The two units of the LR-2000HiLoMA set share the same reader address in the system.



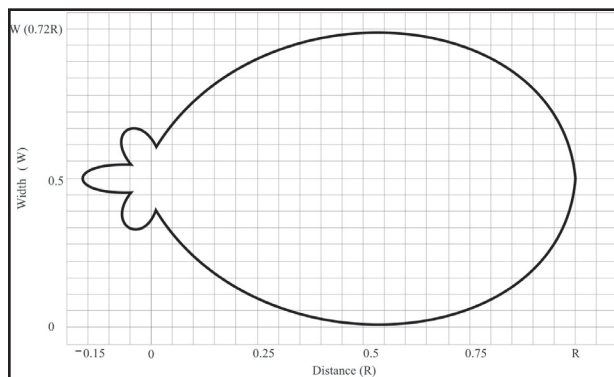
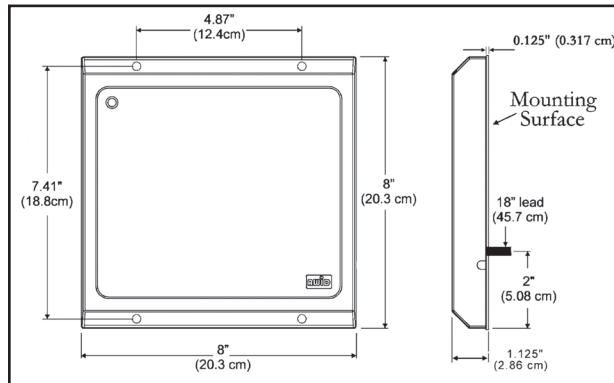
### FEATURES

- Larger space to read tags and cards . . .  
*Each antenna generates a full RF field*
- Long reading distance . . .  
*Up to 15 feet between reader and tag*
- Small, attractive reader units . . .  
*Each unit with antenna, 8" x 8" x 1-1/8"*
- Easy reader installation . . .  
*No programming; simple wiring*
- Big selection of credentials . . .  
*5 vehicle tags, and 2 hand-held cards*
- Unlimited tag or card life . . .  
*Passive battery-free credentials*
- Data output to fit the system . . .  
*Selectable read repeat rate*
- No interference between units . . .  
*The 2 RF fields alternate – 50% on/off*
- Use "HiLo" sets in neighboring lanes . . .  
*Reduce field strength to prevent overlap*
- RF transmission only as needed . . .  
*Use vehicle sensor to arm the RF circuit*
- "HiLo" set mixes with other readers . . .  
*Uses same code format as prox readers*
- Easy interfacing to control systems . . .  
*Both Wiegand and RS-232 data output*
- Complies with certifications . . .  
*ISO-9001:2000; FCC Part 15; IC*
- Eliminates stop-and-wait entry . . .  
*Cars continue slowly past reader units*
- For outdoor applications . . .  
*Housings available for rain and sun\**
- Easy to buy and own . . .  
*Installer needs no FCC registration*
- Worry-free installation . . .  
*Instructions, installation kit, and ready technical support*

\* NOTE: WHEN INSTALLED OUTDOORS AND EXPOSED TO RAIN OR SNOW, OR TO DIRECT SUN IN A HOT ENVIRONMENT, LR-2000 MUST BE MOUNTED INSIDE A HOUSING WITH MINIMUM IP64 RATING.

# LR-2000HiLoMA™

## UHF Extra Long-Range Reader



### ACCESSORIES AND SUPPLIES

- [LR-2000KIT Installation Kit](#) – A **requirement** for all installers. An effective way to demonstrate the “HiLo” set, to prove its operation, to measure its performance, to locate tags, and to aim the reader. A one-time purchase.
- [Mounting bracket](#) – Pan-and-tilt adjustable, for aiming the LR-2000 at the tags’ reading location. AWID offers LR-MB-0-0. LR-2000HiLoMA requires 2 brackets.
- [Power supply](#) – Each “HiLo” set requires 1 separate, independent, dedicated power supply. Ask AWID for specifications. AWID offers PS12-3.3A-0-0.
- [Protective housing](#) – To avoid rain, snow, hot sunlight, visibility or vandalism. AWID suggests two Model PCH196 Lexan housings from The Housing Company.
- [Mounting devices](#) – Consult with supplier for poles, posts, pedestals, bollards, barriers, etc. LR-2000HiLoMA needs 2 brackets, but may use a single pole.
- [Installation & Operation Manual](#) – Download Manual from AWID’s Web site.
- [HH-6600 UHF Handheld Reader](#) – Check codes in tags and cards up to 6 feet.

### CREDENTIAL OPTIONS

- [Vehicle-mounted tags](#) – Tags for permanent or movable applications, inside or outside vehicles.
- [Hand-held cards](#) - Clamshell-type and graphics-type cards(for UA-612 also)

**Ask AWID about tag selection and mounting methods.**

### OPERATING CHARACTERISTICS

- **Reading Distance:**  
Up to 15 feet (4.6 meters)
- **Frequency Band:**  
902 to 928 MHz (in USA)  
Frequency-hopping technology
- **Antenna Output:**  
Circular-polarized RF field
- **Power Supply (1 supply for “HiLo” set):**  
7 to 15 volts DC – linear, regulated  
At 12 VDC, rated for 1.5 A or more  
Separate, independent, dedicated
- **Communications Protocols:**  
Wiegand and RS-232, simultaneous
- **Code Formats:**  
Determined by AWID’s tags & cards  
programmed with 26 bits to 50 bits
- **Cables (For Wiegand Interface):**  
Power – 2 conductors, 18 gauge  
Data – 3 conductors, 22 gauge  
Stranded, color-coded, shielded  
Up to 500 feet long
- **Field-Programmable Features:**  
Read repeat rate; RF power level

### PHYSICAL CHARACTERISTICS

- **Dimensions of Each Unit:**  
8 x 8 x 1.125 inches (20.3 x 20.3 x 2.86 cm)
- **Weight of Each Unit:**  
37.5 ounces (1.06 kg)
- **Material (Color):**  
ABS enclosure (beige); aluminum backplate
- **Cable (Integrated with Master Reader):**  
10 conductors, 32 inches long  
Overall shielded, plastic sheathed
- **Coaxial Cable for Reader’s 2 Units:**  
Type RG-58 cable, 6 feet long  
2 RP-SMA connectors, gold-plated
- **Mounting (Supplied by Installer):**  
Pan-and-tilt adjustment for aiming

### ENVIRONMENT

- **Operating Temperature:**  
At 50% duty cycle –  
-31 to +150 F (-35 to +65 C)  
At 100% duty cycle –  
-31 to +115 C (-35 to +45 C)
- **Operating Humidity:**  
0% to 95%, non-condensing
- **Protection from Environment:**  
Use Lexan housings when reader is exposed  
to rain, snow or to bright sun in hot areas

### CERTIFICATION

ISO-9001:2000; FCC Part 15; IC



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