

INSTRUCTION MANUAL
Bird-X Laser
LASER BIRD REPELLER (INDOOR)



I. INTRODUCTION

Bird-X, Inc., the world's leading bird control specialists and suppliers of unique, effective and ecologically safe bird repelling products, is proud to announce "The Next Generation" in bird control. We have successfully utilized the latest in Space Age Technology and electronics to develop the **Bird-X Laser Bird Repeller**. For safe operation, read this manual before powering or installing the fixture, follow the safety precautions listed below, and observe all warnings printed in this manual and on the fixture.

Bird-X, Inc. has been recognized worldwide as the bird control experts since 1964.

Bird-X, Inc. is the only company anywhere that sells a complete line of bird repelling products including a variety of ultrasonic and sonic machines, visual repelling devices, non-toxic chemical roosting inhibitors, iridescent diffraction foil, netting and spike strips. New products are continuously being developed.

Bird-X, Inc. specialists have become experts through extensive experience and research. As a result, sales consultants are able to analyze problems and make recommendations based on each customer's specific situation and needs. In addition, **Bird-X, Inc.** maintains and avails to customers a library of application case histories and other reference materials.

II. WHY CONTROL BIRDS?

- A. **Bird droppings are unsightly** and cause dangerous, slippery working conditions.
- B. **Bird droppings are corrosive** to many materials including steel and concrete, especially when combined with the effects of salt (from oceans or roads) and/or harsh weather. This corrosion can and does weaken structural integrity.
- C. **Bird droppings are unhealthy** - even potentially fatal. At least sixty transmissible diseases have been associated with birds and their excrement.
- D. **Bird droppings cost money.** Time and materials for "cleaning up" represent costs unrecoverable by revenues.
- E. **Birds are destructive.** They deface floors, walls and equipment. They halt operations and make repairs necessary by entangling themselves in machinery or downing power lines. They spoil inventory by eating spillage, contaminating pallets of food, drugs or chemicals, or by bombarding aircraft and other durable goods with uric acidic excrement. They nibble at, or even tear out insulation.
- F. **USDA, OSHA, local health boards** and other governmental organizations can cite companies for bird mess problems. If the problems are not corrected, companies can be fined or shut down.

III. BIRD MANAGEMENT PROGRAM

No two bird infestation problems are exactly the same. Treat yours as you would any well engineered project, and begin with research. Success depends on timing, organization and diversity.

Collect information related to the bird problem:

- A. **Survey the birds and their habits.** Gather specific data as to the type and population of birds, flight and time patterns, entries and exits, and nesting, feeding and roosting habits.
- B. **Inspect your property.** Discover what the birds find attractive about your area, and if the same conditions prevail in neighboring properties.
- C. **Remove all inducements.** Before installing the **Bird-X Laser**, make sure to clean the area of all evidence of birds: nests, fledglings, droppings, dead birds, and the residual scent. (Adult birds are likely to return to their young in order to protect them or to assist them in leaving the area.) Remove food spillage, garbage, nesting material and other items that may be appealing to birds.
- D. **Maintain a clean and changing environment.** For maximum effectiveness, periodically clean the area of nests and droppings, relocate or reposition the **Bird-X Laser**, vary the output, or turn off the unit for a short time.
- E. **Install early.** It is always best to install the **Bird-X Laser** before "bird season" begins, as it is easier to keep the birds away than to rout them out once they have already established a living pattern.
- F. **Use products synergistically.** Two or more different kinds of devices (the **Bird-X Laser** plus a sound repeller and/or a physical barrier like spikes needle strips or sticky repellent gel) will produce a synergistic effect – i.e., in combination, the products will yield much greater effectiveness than the **Bird-X Laser** alone. Contact **Bird-X, Inc.** at (312) 226-2473 (BAN BIRD) for information on "companion" products.

- G. **Consider alternate locations.** Make educated guesses as to where the birds will go when they are repelled from their current infestation area. It may be very easy for birds to relocate to the other side of a warehouse, or to an adjacent loading dock. Units should be purchased to cover these alternate areas as well.
- H. **Note the legal and public relations environment.** Find out about related environmental laws in your area.

IV. BIRD-X LASER BIRD REPELLER

BRIEF DESCRIPTION OF UNIT AND HOW IT WORKS

LASER is an acronym for Light Amplification by Stimulated Emission of Radiation. Energy is amplified to extremely high intensity by an atomic process called stimulated emission. The term "radiation" is often misinterpreted because the term is also used to describe radioactive materials or ionizing radiation. The use of the word in this context, however, refers to an energy transfer using visible or invisible light.

Lasers are a well-established method of deterring birds, most notably the use of handheld lasers on airfields to prevent devastating loss of time, equipment and lives from bird strikes. The **Bird-X Laser** development expands this proven technology and fills the need identified by our many years of customer input and experience with bird problems at municipal, industrial and commercial buildings: a unit that works constantly, eliminating the labor-intensity of hand held lasers, and exponentially increasing the potential uses.

Bird-X Laser Bird Repeller uses Class 3R "fat beam" laser diodes featuring strong 50 - 100 milliwatt (mW) beams in three colors: green, red and yellow, combined in a multicolor pattern. (The human eye will preferentially notice the green light, but all three are present in the beam.) These colors are shown to be the most effective against pest birds. The beams create multiple patterns occurring in random order. Diode laser technology was developed quite early in the history of lasers, becoming widely available in the early 1980s. Diode laser is ideal for bird repelling because of many of its advantages – small size, lower power consumption and low cost. For safe operation, read this manual before powering or installing the fixture, follow the safety precautions listed below, and observe all warnings printed in this manual and on the unit.

SETUP AND INSTALLATION

Bird-X Laser can be operated with 110v, 220v or 240 v power supply. It comes with a six-foot power cord, 2 keys, remote control, mounting hardware (hanging bracket & attachment screws) and an instruction manual. Unpack carefully and be sure that no damage has occurred during shipping. If anything is missing or appears to be damaged please contact us.

Power Connection: This unit has been designed to function on a main power supply of either 120V, 220V or 240 v and has been supplied with either a 120V, 220V or 240 v power plug (depending on your order), for use with your local voltage.

** Use only the plug and power adapter supplied with the unit.

Ensure you are using a grounded circuit. Ensure your source voltage matches the required voltage for your **Bird-X Laser** before plugging it in; incorrect voltage selection will detrimentally affect the unit's operation. When connected to the mains power supply power LED will be on and the laser will begin to warm up and then function. For remote control use including timer, see below.

Installation/Mounting: Mount the **Bird-X Laser** right side up SO IT IS LEVEL HORIZONTALLY (do not mount to a vertical or diagonal surface). Mount it properly using the mounting bracket supplied. Use in a well-ventilated area. Do not block any ventilation slots. If desired, block unwanted beams (the beams that would normally point *down*, for example), by adjusting the thumbscrews on the metal "door" covers on the front aperture.

Laser Automatic Cycling

The Bird-X Laser has been pre-programmed to prevent acclimation of the pests to an unchanging stimulus. This consists of a cycle of ON / OFF operation with intervals



varying between 5 and 15 minutes OFF time for every 5 minutes ON. This cycle will be maintained as long as the Bird-X Laser is in operation.

First Time Use:

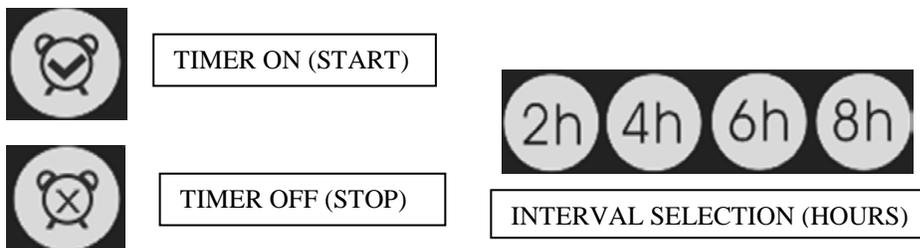
To turn on the Bird-X Laser:

1. Put the key in and turn it clockwise, to the right.
2. Use the power switch to turn the Bird-X Laser on. You will hear the fan turn on, then you will see the colored fan beam laser lights begin their constantly moving and changing display.
3. The remote control may be used to turn the unit off and on, and also to operate for specified durations (2,4,6 or 8 hours). One remote will control multiple units (within its coverage range – if units are mounted at a distance from one another, the remote must be activated close enough to each unit for the signal to reach it.)

Remote Control & On-Unit Control including Timer Operation:

The unit operation can be controlled in a number of ways:

- Direct
- Remote Control. The unit may be switched on and off using the remote control provided. The remote has a range of approximately 65 feet.
- Timed operation (using the remote control).



When using the remote control, first remove the plastic sheet at the base of the remote. (Save it to reinsert if the Remote will not be used for a long time, as this will save power.)

NOTE: The effective receiving distance of infrared remote signal is approx. 23 feet (7 meters). Effective receiving distance of radio frequency remote is about 65 ft (20m).

To use the timer, press the remote's TIMER ON button. Unit will flash twice to show it has received the signal. Pressing the TIMER ON button defaults to 2 hours of operation. To select a different duration, press the desired hour button following Timer START.

To cancel timer operation, press the TIMER OFF button. Unit will flash twice to show it has accepted the signal.

CARE/CLEANING

To prolong the life of the unit, allow 30 minutes cooling after 6 - 8 hours of operation.

Cleaning frequency depends on the environment. During cleaning (except for mirrors), or when the unit is not in use, close the aperture completely by using the thumbscrews to prevent dust.

Unplug the unit. Use a soft cloth to clean the outside casing. To clean mirrors (inside the front aperture) use a cotton swab and rubbing alcohol. Twirl slowly and press gently to avoid damage.

Be sure all parts are dry before plugging the unit back in.

SPECIFICATIONS

Laser Power: Red: 650nm100mW; Green: 532nm50mW

Unit Power: 4.9mW RED+4.9mW GREEN

Power Consumption: 50 watt

Laser Color: Red + green

Net Weight: 1.5kg

Power: AC100-240V,50-60Hz

Electric Current: 100mA

Classification: CLASS 3R

Size (mm): L(18.5)*W(14.8)*H(7.0) CM

Fuse: 2A

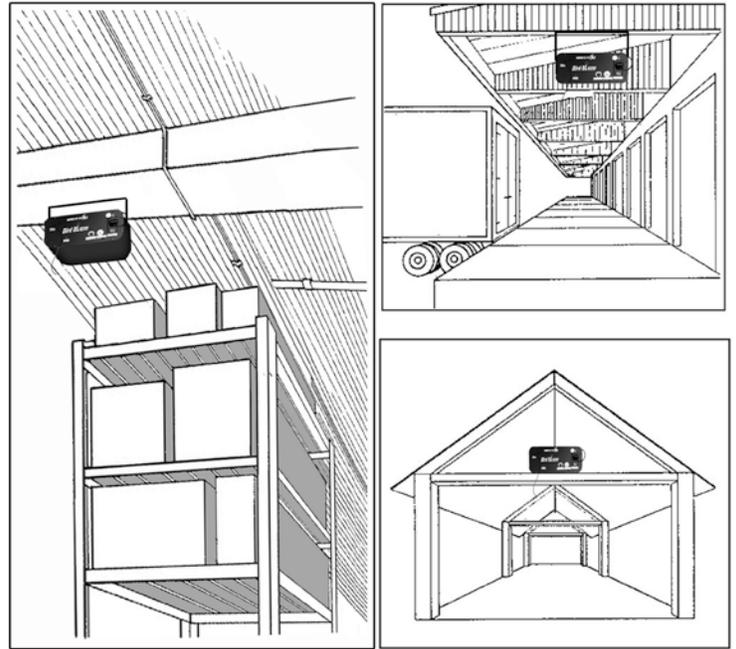
Housing: Cast aluminum

Beam Divergence: 60°

Operating Temperature: 0°C-40°C

Safe Temperature for Use: 0°C-35°C

Origin: Made in China



V. COVERAGE/VISUAL DISTRIBUTION PATTERN

Total spatial coverage is dependent on environmental surroundings: more visible in the dark than in the light, more visible in a more-enclosed area where light will bounce off walls, more visible in a relatively open facility than one with many stored contents that would block beams, etc. This laser beam has a maximum range of 1000 feet/300 meters in the dark. Maximum coverage is approximately 10,000 square feet. Keep in mind that this is unidirectional coverage, with beams emanating from the aperture in the shape of a slice of pie. Angle of spread = 30 degrees maximum. Depending on placement, a *second* unit will offer increased synergistic coverage; therefore multiple units are strongly recommended, especially in stubborn or long-term infestations.

VI. APPLICATIONS

The **Bird-X Laser** is designed to act as an important aid in chasing birds from their infestations in plants, warehouses, loading docks, railroad sidings, tunnels, breezeways, underpasses and storage sheds. Other locations include: hangars, silos, barns, stadiums, arenas, boat houses and bell towers.

VII. TROUBLESHOOTING

Every bird infestation presents a unique challenge. No two problems are identical, as numerous variables affect each one. Besides the obvious differences (such as type of bird, size of infestation, type of structure and physical location), there are many additional environmental factors that make it impossible to state rigid rules for the optimum utilization of the **Bird-X Laser**. There is no magic or “correct” use or placement to maximize the effectiveness of the unit; experimentation is often required to find the ultimate solution. The use of variables creates changing environments to repel roosting birds – in fact, change is one of the best tools in the repelling of birds, as birds are creatures of habit and they do not grow accustomed to a dynamic environment. Change location of the laser unit, change direction the aperture faces, turn off unit, etc., on a *monthly* basis to prevent any acclimation, or change more often as necessary.

- If fixture does not project beams: Check main power supply.
- If beam seems weak/fuzzy:
- This could be due to a long time of operation without a break, or a high operating temperature, neither of which is recommended. If this is occurring in a normal temperature environment with periodic breaks, try

turning off the unit to cool for 30 minutes before turning it on again. After 5 minutes (longer in cold weather) the beam should no longer be weak/fuzzy.

- This could be due to a dirty mirror. Check mirrors and clean (according to “cleaning” section).
- If problems cannot be solved please contact your dealer for service

In particularly stubborn and/or long-term infestations, it may be necessary to consider a combination approach to further decrease the desirability of the facility to birds. Please see the SYNERGY AND OTHER PRODUCTS section below.

Housekeeping is very important! As mentioned in the Bird Management Program, the problem area should be cleaned of all evidence of birds. Nest, fledglings, droppings, dead birds, and the residual scent should all be removed. Check the area for unusual incentives. Remove food spillage, garbage, nesting materials and other items that may be appealing to birds.

VIII. PRECAUTIONS

This laser is Class I. The power of each laser point is no more than 1 milliwatt, which is not harmful to the human body or eye.

- **Never look directly into laser beams, or into the specular reflection(s) of any beam. Wear safety goggles to protect your eyes when necessary.**
- **DO NOT point towards other people.**
- **DO NOT direct laser beam up into the sky AT ANY TIME. Significant disruption to safe airplane operation may result, punishable by federal law.**
- **Wear antistatic wrist strap while servicing to prevent electrostatic damage.**
- **Do not spill liquids into or onto unit. If this happens, disconnect the power immediately.**
- **Power directly off of a switched circuit; never with a dimmer or rheostat (even a 0 to 100% switch).**
- **Disconnect unit from main power before inspecting, installing, making any type of connection, or replacing any components.**
- **Locate this unit with adequate ventilation, at least 15 cm from a wall, and mount in a safe, stable manner.**
- **To prevent fire or shock hazard, do not expose this unit to a high temperature or high humidity area. Unplug unit when not in use.**
- **Keep combustible materials away.**
- **Do not place unit in or near water. Do not mount while standing in or surrounded by water.**
- **Lasers are regulated by the FDA. Accession numbers are on file. You may also visit the FDA web site for more information.**
- **Mount at or above a height of 3 meters. Project beams above eye level.**
- **Do not project beams onto specular (reflective) material – for example, mirrors.**
- **Do not project beams at room entrances.**
- **Use indoors. Outdoor use voids all warranties.**
- **Do not use near humans or pets.**
- **Conform to temperature ranges in “specifications”. Diode laser is extremely sensitive to temperature, and output power is indirectly proportional to temperature. If temperature is too low, laser may need extra time to warm up to optimum output. If temperature is too high, turn up air conditioning. If temperature remains too high, it can cause damage or degradation to the diode and the long-term performance.**
- **The Interlock Connector is a safety device for radiation, through which the factory has access to the area if repairs are needed if that does not allow the customer to access the source laser radiation, but in case repairs are needed, the factory has the key to access this area.**

- Refer service to a qualified technician.
- **Caution - Use of controls or adjustments or performance of procedures other than as specified herein may result in hazardous radiation exposure!**

IX. REPLACEMENT PARTS

Remote Control (universal) # BIRD-X LASER-REMOTE

Safety Key (universal) # BIRD-X LASER-KEY

X. WARRANTY AND GUARANTEE

Manufacturer's Warranty: Bird-X Laser is warrantied against defects in materials and workmanship for a period of six months from shipping date. At its option, **Bird-X, Inc.** will either replace or repair the defective unit. An extended warranty (total protected time of thirty months) is available; please contact Bird-X, Inc. for details.

Performance Guarantee: If customer is not satisfied with the **Bird-X Laser's** effectiveness within 30 days from the shipping date, it may be returned, at the customer's expense, FOR CREDIT ONLY. Prior written authorization and a returned goods authorization (RGA) number is necessary from **Bird-X, Inc.** Credits are subject to a 15% restocking fee. NO RETURNS, OTHER THAN UNITS WITH DEFECTS IN MATERIALS AND WORKMANSHIP, ARE ACCEPTED AFTER 30 DAYS FROM PURCHASE. RETURNS ACCEPTED ONLY WITH WRITTEN AUTHORIZATION FROM OUR CHICAGO OFFICE.