

**INSTALLATION INSTRUCTIONS**  
**WHELOCK ELUXA 2-WIRE HORN STROBE,**  
**HORN AND STROBE WITH PRE-WIRE/PRE-TEST**  
**WALL MOUNT (CLEAR AND AMBER LENS)**

Use this product according to this instruction manual. Please keep this instruction manual for future reference.

**GENERAL:**

The Wheelock Eluxa Series ELHN horn, ELST strobe, and ELHS horn/strobe appliances are designed for easy installation with a pre-wire capable mounting plate. All models are for 24V operation. The ELHN horn is also for 12V operation. ELST and ELHS are for wall mount only. ELHN can be wall or ceiling mounted.

The Wheelock Eluxa Series meets NFPA 2016 20 millisecond light pulse duration code requirements. In addition, the Wheelock Eluxa and LED3 product lines have been UL/ULC listed as compatible with all Fire Alarm Control Panels (FACP) and accessories that have been determined to be compatible with Wheelock model RSS Strobe based products including the RSS, CH, E, EH, ET, ST, HS, MT, S8, SA, STH and Z Series. The maximum number of Eluxa devices per NAC is determined by dividing the maximum current rating of the FACP NAC by the total current rating of one Eluxa device, with a maximum of 105 Eluxa (or LED3) devices per NAC. Refer to FACP installation instructions for more detail. The Wheelock Eluxa Series and Exceder LED3 Series strobes may be installed in the same notification zone and field of view with any RSS Strobe based product.

Wheelock Eluxa Multi-Candela Strobes can provide a non-synchronized strobe appliance when connected directly to a Fire Alarm Control Panel (FACP), or provide a synchronized strobe appliance when used in conjunction with an FACP that incorporates the Cooper Wheelock sync protocol, a Dual Sync Module (DSM), or the Wheelock Power Supply.

**⚠WARNING: PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE USING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THE FOLLOWING INSTRUCTIONS, CAUTIONS AND WARNINGS COULD RESULT IN IMPROPER APPLICATION, CANDELA SETTING, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

**⚠CAUTION: Do not change factory applied finishes. "DO NOT PAINT".**

**⚠ATTENTION: Ne pas modifier les finitions appliquées en usine. "NE PAS PEINTURER"**

Table 1: Specifications	
Agency	ELST, ELHS: UL 1971, ULC-S526-16; ELST-A: UL1638*, ULC-S526-16 ELHS, ELHN: UL 464: ULC-S525-16
Environmental	Indoor Use Only. 0° C - 50° C (32° F - 122° F) 93% R.H.
NAC Characteristics	Max. line resistance: 35Ω
Horn Patterns	Non-Sync: Continuous, Code 3 (field selectable). Wheelock Sync Protocol: Code 3 Sync, Code 4 or T3/T4 Sync Selectable (with DSM) Coded Operation: Use Continuous Setting on <u>ELHN Horn Only Model</u>
Horn Sound Output	High (H), Low (L) (field selectable)
Input Power	DC or FWR, 24V Regulated, 16 to 33V (All models) DC or FWR, 12V Regulated, 8 to 17.5V (ELHN only)
Strobe Candela	15, 30, 75, 110, 135, 185cd (field selectable)

**\*UL1638 is an on axis rating where the following applies: effective candela rating per UL1971.**

Table 2a: ELHN and ELHS dBA Sound Output					
Description	Reverberant dBA Per UL 464			Anechoic dBA Per ULC-S525-16	
	Volume	ELHN at 12V	ELHN, ELHS at 24V	ELHN at 12V**	ELHN, ELHS at 24V
Continuous Horn	High	80	80	85	91
	Low	78	78	79	86

\*\*Sound output at 12V does not meet ULC-S525 requirements.

Table 2b: ULC Directional Characteristics	
-3dB	+ / - 80 Degrees horizontal, + / - 80 vertical
-6dB	+ / - 90 Degrees horizontal, + / - 90 vertical

**NOTE:** The Code 3 temporal pattern (1/2 second on, 1/2 second off, 1/2 second on, 1/2 second off, 1/2 second on, 1-1/2 off and repeat) is specified by ANSI and NFPA 72 for standard emergency evacuation signaling. (Available with Sync or Non-Sync operation)

**NOTE:** The Code 4 temporal pattern (100 ms on, followed by 100 ms off, for 4 cycles, followed by 5 seconds of silence and repeat), is specified by ANSI and NFPA 720 for carbon monoxide emergency signaling. (Available with Sync operation only). Code 4 (T4) may not synchronize on multi-NAC (multi-zone) installations. To improve synchronization, NAC's must be energized simultaneously.

Table 3: ELST and ELST-A Strobe Current Draw (Amps) @ 24 volts						
Strobe Candela Settings (cd)						
Current	15cd	30cd	75cd	110cd	135cd	185cd
DC	0.022	0.030	0.060	0.086	0.125	0.185
FWR	0.036	0.050	0.092	0.142	0.196	0.274

Table 4: ELHS Horn/Strobe Current Draw (Amps) @ 24 volts							
Strobe Candela Settings (cd)							
Current		15cd	30cd	75cd	110cd	135cd	185cd
DC	High Continuous	0.037	0.046	0.077	0.109	0.146	0.208
	Low Continuous	0.030	0.039	0.070	0.102	0.139	0.201
FWR	High Continuous	0.064	0.078	0.130	0.180	0.230	0.310
	Low Continuous	0.057	0.071	0.123	0.173	0.223	0.303

Table 5: ELHN Horn Current Draw (Amps)			
Current	Horn Settings	12 volts	24 volts
DC	High Continuous	0.025	0.028
	Low Continuous	0.020	0.021
FWR	High Continuous	0.045	0.048
	Low Continuous	0.035	0.038

**NOTES:**

1. Candela and Horn Setting will determine the current draw of the product.
2. Strobes will produce 1 flash per second over the "Regulated Voltage" range.
3. Strobes are not designed to be used on coded systems in which the applied voltage is cycled on and off.
4. When calculating the total currents use Tables 3-5 to determine the highest value of RMS current for an individual appliance, then multiply these values by the total number of appliances. Be sure to add the currents for any other appliances, including audible signaling appliances powered by the same source, and to include any required safety factors.
5. Make sure that the total rms current required by all appliances that are connected to the system's primary and secondary power sources, Notification Appliance Circuit (NAC), sync module, DSM sync modules, or Wheelock power supplies does not exceed the power sources' rated capacity or the current ratings of any fuses on the circuits to which these appliances are wired. Refer to Sync Module instruction sheets DSM (P83177) or Wheelock Power Supplies for additional information.
6. Check the minimum and maximum output of the power supply and standby battery and subtract the voltage drop from the circuit wiring resistance to determine the applied voltage to the strobes.
7. These appliances were tested to the regulated voltage limits of 16.0-33.0 Volts for 24 volt models and 8.0-17.5 Volts for 12 volt models using filtered DC for the 12 volt range and either filtered DC or unfiltered DC for the 24 volt range voltage. Do not apply voltage outside of this range.
8. These notification appliances are UL Listed as "Regulated". They are intended to be used with Fire Alarm Control Panels (FACPs) whose notification circuits are UL Listed as "Regulated". Refer to the FACP instructions or the Wheelock Strobe Compatibility Data Sheet (P85328) for special application and strobe synchronization compatibility. When using Horn Only models on a FACP Listed as Special Application, do not exceed 85% of Maximum NAC current Rating.

**⚠WARNING: AMBER STROBES ARE NOT TO BE USED AS A VISUAL PUBLIC MODE ALARM NOTIFICATION APPLIANCE.**

**⚠WARNING: OVERLOADING POWER SOURCES OR EXCEEDING FUSE RATINGS COULD RESULT IN LOSS OF POWER AND FAILURE TO ALERT OCCUPANTS DURING AN EMERGENCY, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

**WIRING, SETTINGS AND MOUNTING:**

- All Eluxa horn/strobe appliances have terminals that accept #12 to #18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8 inches and connect to screw terminals. Do not fully back out terminal screws.
- Break all in-out wire runs on supervised circuits to ensure integrity of circuit supervision as shown in Figure 3. The polarity shown in Figure 2, the wiring diagram, is for the operation of the appliances. The polarity is reversed by the FACP during supervision.
- T3/T4 Sync Selectable operation requires a DSM-12/24. Refer to DSM (P83177) instructions. All appliances must be set to T3/T4. Code 4 (T4) operation occurs when both Strobe NAC and Audible NAC remain active. Code 3 (T3) operation occurs when Strobe NAC is active, and Audible NAC is not active. (Audible Silence function is available only when using Continuous or T3 setting). The FACP's Notification Appliance Circuits (NAC) to DSM must be continuous DC in Alarm. Inputs to DSM may not be synchronized.

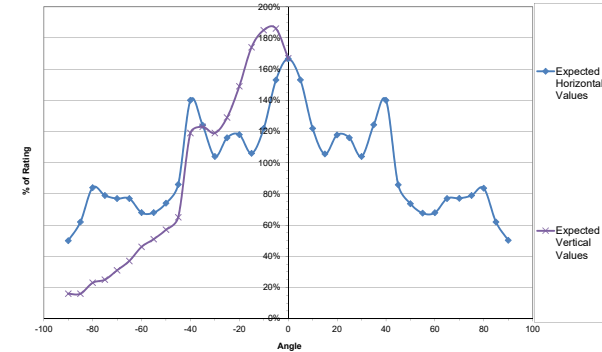


Figure 1: ELHS, ELST and ELST-A Expected Light Output

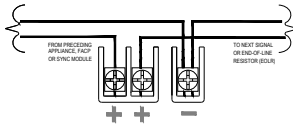


Figure 2: Horn/Strobe NAC Wiring.

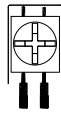
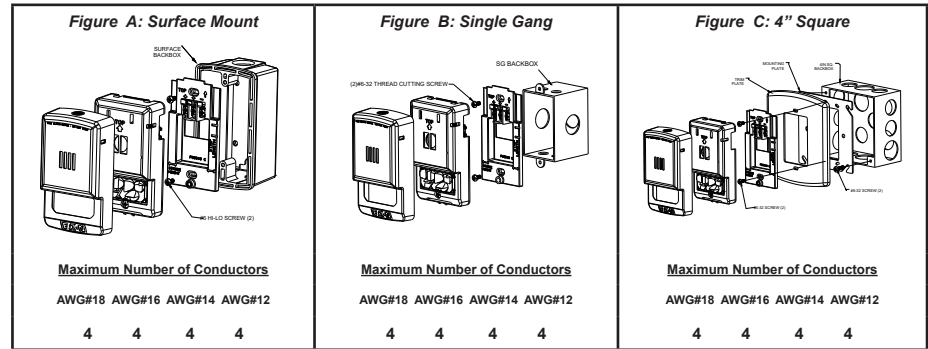


Figure 3: Wire Connection

**MOUNTING OPTIONS:**



**NOTES:** Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4-inch conduit fittings are used.

Wiring method shall be in accordance with:

- 1) In the United States, the National Electrical Code, NFPA 70, and the National Fire Alarm and Signaling Code, NFPA 72.
- 2) In Canada, CSA C22.1, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations, Section 32.

**MOUNTING PROCEDURE:**

1. Select mounting option and install the backbox as shown (Strobe height is indicated on mounting plate). ELSBB can be used for surface mounting. Single gang backbox must be flush with the wall surface. Screws are provided. Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product. Do not pass additional wires (used for other than the signaling appliance) through the backbox. Such additional wires could result in insufficient wiring space for the signaling appliance.
2. Install the Mounting Plate on the backbox with "TOP" facing up. Use 6-32 screws for Single Gang back-box or hi-lo screws for the ELSBB surface box. ESB-KIT trim plate (Figure C) may be used with 4" square box and single gang mud ring.
3. **Pre-Wire:** Connect field wires to terminals on mounting plate (Reference Figure 2 and 3). Use care and proper techniques to position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the signaling appliance.
4. **Pre-Test:** Mounting Plate contains a SHUNT between adjacent "+" terminals to facilitate testing before device is attached. Note: Shunt will open permanently when device is installed on mounting plate.
5. Verify appliance settings are correct for your application. Factory settings are T3(H) for horn (Code 3/High dB), and 15 cd for strobe. Settings are shown in Figure 4. Horn setting is visible on the left side with cover removed. Use Code 3 for fire emergency only, and Code 4 for carbon monoxide emergency only.
6. Place the ELUXA appliance over the mounting plate. See Figure A, B and C. Engage TOP hook on mounting plate, then secure with screw at the BOTTOM. Use care to prevent damage when driving the screw.
7. Align cover to the ELUXA appliance with strobe opening over LED lens. Then, snap the cover in place.
8. To remove the appliance, insert a small flat-bladed screwdriver into the bottom opening 1/2" as shown in Figure 5. Then pry off beauty cover with the screwdriver.
9. Accessories for ELUXA Single Gang: ESB-KIT (Red: CN120533; White: 120534); ELSBB (Red: CN110752; White: CN110753).

NOTE: Final acceptance is subject to Authorities Having Jurisdiction.

**CAUTION:** Do not over tighten mounting screws. Excessive torque can distort the base and may affect operation. When using power tools to screw down the mounting plate to the electrical backbox, ensure the torque is set to the lowest setting available.

**CAUTION:** Check the installation instructions of the manufacturers of other equipment used in the system for any guidelines or restrictions on wiring and/or locating Notification Appliance Circuits (NAC) and notification appliances. Some system communication circuits and/or audio circuits, for example, may require special precautions to assure immunity from electrical noise (e.g., audio crosstalk).

**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 the 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.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Any material extrapolated from this document or from Cooper Wheelock manuals or other documents describing the product for use in promotional or advertising claims, or for any other use, including description of the product's application, operation, installation and testing is used at the sole risk of the user and Cooper Notification will not have any liability for such use.

IN NO CASE WILL SELLER'S LIABILITY EXCEED THE PURCHASE PRICE PAID FOR A PRODUCT.

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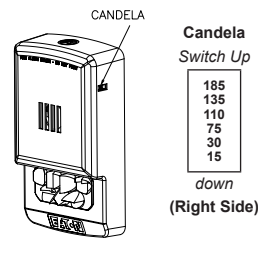


Figure 4: Settings

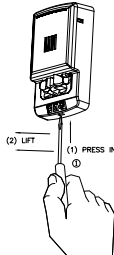


Figure 5: Cover Removal

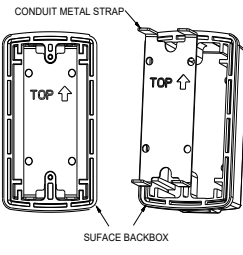


Figure 6: ELSBB Surface Box

**WARNING:** WHEN INSTALLING STROBES IN AN OPEN OFFICE OR OTHER AREAS CONTAINING PARTITIONS OR OTHER VIEWING OBSTRUCTIONS, SPECIAL ATTENTION SHOULD BE GIVEN TO THE LOCATION OF THE STROBES SO THAT THEIR OPERATING EFFECT CAN BE SEEN BY ALL INTENDED VIEWERS, WITH THE INTENSITY, NUMBER, AND TYPE OF STROBES BEING SUFFICIENT TO MAKE SURE THAT THE INTENDED VIEWER IS ALERTED BY PROPER ILLUMINATION, REGARDLESS OF THE VIEWER'S ORIENTATION.

**WARNING:** A SMALL POSSIBILITY EXISTS THAT THE USE OF MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW, UNDER CERTAIN CIRCUMSTANCES, MIGHT INDUCE A PHOTO-SENSITIVE RESPONSE IN PERSONS WITH EPILEPSY. STROBE REFLECTIONS IN A GLASS OR MIRRORED SURFACE MIGHT ALSO INDUCE SUCH A RESPONSE. TO MINIMIZE THIS POSSIBLE HAZARD, COOPER WHEELOCK STRONGLY RECOMMENDS THAT THE STROBES INSTALLED SHOULD NOT PRESENT A COMPOSITE FLASH RATE IN THE FIELD OF VIEW WHICH EXCEEDS FIVE (5) HZ AT THE OPERATING VOLTAGE OF THE STROBES. COOPER WHEELOCK ALSO STRONGLY RECOMMENDS THAT THE INTENSITY AND COMPOSITE FLASH RATE OF INSTALLED STROBES COMPLY WITH LEVELS ESTABLISHED BY APPLICABLE LAWS, STANDARDS, REGULATIONS, CODES AND GUIDELINES.

**NOTE:** NFPA 72/ANSI 117.1 conform to ADAAG Equivalent Facilitation Guidelines in using fewer, higher intensity strobes within the same protected area.

**IMPORTANT:** Strobe device has only one mounting orientation. LED light element should be oriented toward the floor.

**CAUTION:** The following figures show the maximum number of field wires (conductors) that can enter the backbox used with each mounting option. If these limits are exceeded, there may be insufficient space in the backbox to accommodate the field wires and stresses from the wires could damage the product.

Although the limits shown for the mounting option comply with the National Electrical Code (NEC), Cooper Wheelock recommends use of the largest single gang backbox option available and the use of approved stranded field wires, whenever possible, to provide additional wiring room for easy installation and minimum stress on the product from wiring.