

**INSTALLATION INSTRUCTIONS
WHEELOCK ELUXA HIGH FIDELITY SPEAKER
AND SPEAKER STROBES WITH PRE-WIRE/PRE-TEST
CEILING 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 ELSPC and ELSPSTC Series High-Fidelity Multi-Candela Speaker Strobes are designed for easy installation with a pre-wire capable mounting plate. The Speaker Strobes with Amber lens are for Private Mode Emergency General Utility Signaling. Amber lens strobe appliances also comply with the polar distribution requirements in the UL Standard 1971 for Indoor Fire Protection Service and NFPA-72 for Mass Notification Systems.

ELSPC and ELSPSTC series High-Fidelity Multi-Candela Speakers Strobes are designed for multiple power requirements with high dBA output at each power tap. ELSPC and ELSPSTC series Speakers are UL rated to meet the NFPA 72 requirement for 520Hz signals in sleeping areas when used in conjunction with Wheelock Safepath products (see SP40S manual for more details)

The design incorporates a high efficiency speaker for maximum output at minimum power across a frequency range of 300-8000Hz. The strobes can provide non-synchronized strobe operation when connected directly to a Fire Alarm Control Panel (FACP), or provide synchronized strobe operation when used in conjunction with a Dual Sync Module (DSM), or Wheelock's Power Supplies.

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.

⚠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	ELSPSTC: UL1971, ULC-526-16. ELSPSTC-A: UL1638*, ULC-526-16 ELSPKC: UL1480, ULC-541-16
Environmental	Indoor Use Only, +32°F to +122°F (0°C to +50°C) 93% RH
NAC Characteristics	Max. line resistance: 35Ω
Input Voltage	Audio: 25Vrms or 70.7Vrms Strobe: DC or FWR, 24V Regulated, 16 to 33V
Settings	Strobe: 15, 30, 75, 110, 150, 177cd (field selectable) Speaker: 1/8W, 1/4W, 1/2W, 1W, 2W, 5W (field selectable)

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

Table 2a: UL/ULC Listed Speaker Models and Ratings

Model	Speaker Voltage	Reverberant dBA at 10 Feet Per UL 1480					Anechoic dBA at 10 Feet Per ULC-S541-16						
		1/8	1/4	1/2	1	2	5	1/8	1/4	1/2	1	2	5
ELSP	25	75	79	82	85	87	---	75	79	82	85	87	---
	70.7	75	79	82	85	---	87	75	79	82	85	---	87
ELSPST	25	75	79	82	85	87	---	75	79	82	85	87	---
	70.7	75	79	82	85	---	87	75	79	82	85	---	87

Table 2b: ULC Directional Characteristics

-3dB	+/- 80 degrees horizontal; +/- 80 degrees vertical
-6dB	+/- 90 degrees horizontal; +/- 90 degrees vertical

Table 3: Strobe Current Draw (Amps) @ 24 volts

Strobe Candela Settings (cd)						
Current	15cd	30cd	75cd	110cd	150cd	177cd
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

NOTES:

1. Candela 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 Table 3 to determine the highest value of "RMS Current" for an individual strobe (across the expected operating voltage range of the strobe), then multiply these values by the total number of strobes; be sure to add the currents for any other appliances, including audible signaling appliances, powered by the same source and 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, NAC Circuits, DSM Sync Modules or Cooper Wheelock Power Supplies do 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. Strobe appliance was tested to the regulated voltage limits of 16.0-33.0 Volts for 24 volt models using filtered DC or unfiltered DC. Do not apply voltage outside of this range.
8. Strobe 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.

⚠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.

⚠CAUTION: Always operate audio amplifiers and speakers within their specified ratings. Excessive input may distort sound quality and may damage audio equipment. Improper input voltage can damage speaker. If distortion is heard, check for clipping of the audio signal voltage with an oscilloscope and reduce the amplifier input level or gain level to eliminate any clipping.

⚠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 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 conforms to ADAAG Equivalent Facilitation Guidelines in using fewer, higher intensity strobes within the same protected area.

WIRING INFORMATION:

A blocking capacitor for DC supervision of audio lines by the FACP is factory wired in series with the speaker input. Supervision voltage must not exceed 33 volts DC.

1. ELSPST Speaker Strobe models 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.
2. Break all in-out wire runs on supervised circuits to assure integrity of circuit supervision as shown in Figure 2. The polarity shown in Figure 1, the wiring diagram is for operation of the appliances.
3. Using the slide switch shown in Figure 3, select voltage and wattage as shown in Table 4 below. Each letter corresponds to a position of the switch located on the printed circuit board. The ELSP comes pre-set on setting F (70V @ 1/2 W).
4. Each doubling of rated Watts increases sound output by 3 dBA.

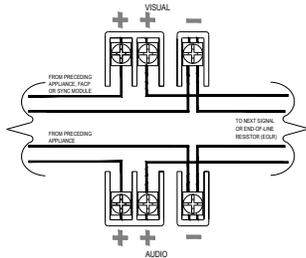


Figure 1: Speaker Strobe Wiring

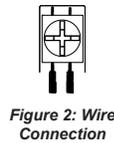


Figure 2: Wire Connection

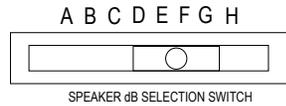


Figure 3: Speaker Setting Switch Shown on Factory Setting "F"

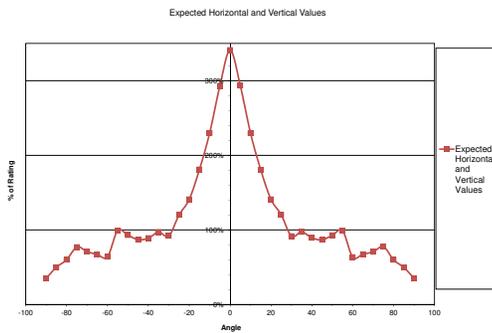


Figure 4: ELSPSTC and ELSPSTC-A Expected Light

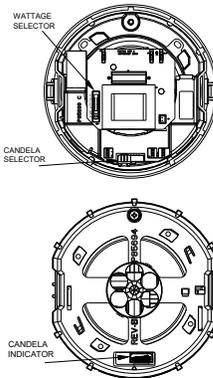


Figure 5: Candela and Wattage Settings

Position	25V	70V
A	2W	-----
B	1W	-----
C	1/2W	-----
D	1/4W	5W
E	1/8W	1W
F	-----	1/2W
G	-----	1/4W
H	-----	1/8W

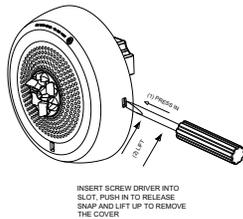


Figure 6: Grille Removal

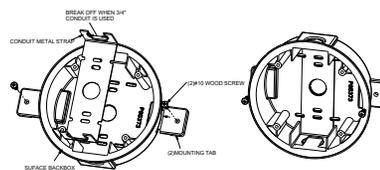
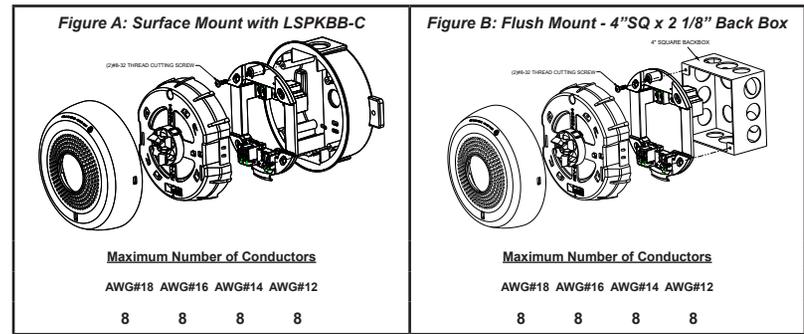


Figure 7: Surface Backbox

NOTE: Surface backbox (LSPKBB-C) shown in Figure 7, is compatible with wiremold and conduit. Mounting holes are for single-gang, double-gang, and #10 wood screws for surface mounting. If metal conduit is installed onto top and bottom conduit entrances, then an insulated grounding wire (18 AWG, supplied) must be connected between the top and bottom plate by using thread cutting screws (supplied) to provide electrical continuity per UL 50.

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.

MOUNTING OPTIONS:



CAUTION: 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" 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 PROCEDURES:

1. Select a mounting option and **install the backbox**. LSPKBB-C requires 6 1/4" spacing for surface mounting. 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**. Use 8-32 screws for 4" back-box or hi-lo screws for the LSPKBB-C.
3. **Pre-Wire:** Connect field wires to terminals on mounting plate (reference Figure 1 and 2). Ensure the speaker wiring is connected to speaker terminals only, and strobe wiring is connected to strobe terminals only. 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. Selector switch locations are shown in Figure 4. Strobe settings are 15cd, 30cd, 75cd, 95cd, 150cd, 177cd. Speaker Setting Chart is shown in Table 4. Factory settings are (F) 70V, 1/2W and 15cd.
6. **Place the ELUXA appliance** over the mounting plate. Engage HOOK on mounting plate, then secure with screw on opposite side. Use care to prevent speaker cone damage when driving the screw.
7. **Align cover** to the ELUXA appliance with Candela Window over Candela Selector. Then, **snap** the cover in place.
8. **To remove the cover**, insert a small flat-bladed screwdriver into the bottom opening 1/2" as shown in Figure 6. Then pry off beauty cover with the screwdriver.
9. **Accessories** for ELUXA Speaker Strobes: LSPKBB-CR (Red), LSPKBB-CW (White)

NOTE: Final acceptance is subject to Authorities Having Jurisdiction.

If this appliance is required to produce a distinctive three-pulse Temporal Pattern Fire Alarm Evacuation Signal (for total evacuation) in accordance with NFPA 72, the appliance must be used with a fire alarm control unit that can generate the temporal pattern signal. Refer to manufacturer's installation manual for details.

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 electrical noise immunity (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.

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