

# Exceder LED Low Frequency Sounder Strobes and Sounders



## Description

Eaton's Cooper Notification business has developed the Wheelock Exceder LED Low Frequency Sounder Strobes and Sounders to meet the new National Fire Protection Association (NFPA) low frequency sounder requirements for sleeping rooms - NFPA 72 for fire alarm and NFPA 720 for Carbon Monoxide (CO) alarm. In a single device, the Exceder LED Low Frequency Sounders can provide alarm signals for dual applications- T3 (Fire) and T4 (CO) tones. It is the first product in the industry to be listed to the audibility requirements of UL 2034 and UL 2075 for CO applications.

The Exceder LED Low Frequency Sounder Strobes and Sounders feature multiple 520 Hz modes of operation: T3 (fire), T4 (CO), Continuous, T3/T4 Sync Control.

The 520 tone is generated within the appliance itself. When the selector switch is set for T3 or T4, the sound pattern is also generated within the appliance. When the selection switch is set to continuous, the product is listed for coded operations. The T3/T4 pattern or other pattern must be generated by the FACP according to the alarm condition sensed by the panel (fire or CO alarm).

When the device is set to T3/T4, the appliance can switch from T3 to T4 based upon the condition sensed by the FACP and passed to the Wheelock DSM module.

Like the entire Wheelock Exceder LED product line, the Low Frequency Sounder Strobes will utilize Light Emitting Diode (LED) as the light source—a breakthrough optical design, resulting in best-in-class efficiency that enables material and system cost savings, allowing for a greater number of appliances on the notification appliance circuit and fewer power supplies. All LLFHS strobe models include a 110 candela setting.

Providing a sleek aesthetic appearance, the Exceder LLFHS and LLFHN models feature one of the industry's smallest footprints and a sleek, modern, low-profile design. Installers will benefit from its comprehensive feature list, multiple 520 Hz modes of operation, lowest current draw, no tools needed for setting changes, and convenient mounting options. These products are suitable for indoor wall-mount applications. The Sounder and Sounder Strobe models are for 24V operation.

Exceder LED Sounder Strobes may be synchronized when used in conjunction with the DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol. Wheelock synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.


The Exceder LED Low Frequency Sounders and Sounder Strobes are UL Listed for indoor use under Standard 1971 and 464 and ULC under S525 and S526. The appliances are Restriction of Hazardous Substances (RoHS) compliant and contain no mercury or other hazardous substances.



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## Features

- Meets dual low frequency sounder codes for sleeping rooms in a single device
  - NFPA 72 for fire alarm
  - NFPA 720 for CO alarm
- 4 Settings in 1 device
  - T3 (fire)
  - T4 (CO)
  - Continuous (Coded)
  - T3/T4
- Energy efficient
  - Patented LED technology provides industry's lowest current draw
- Low-profile design
  - Smallest footprint with sleek, modern aesthetics
- 110 candela setting
- Easy-to-install
  - Finger slide switches—No tools needed for setting changes
  - Built-in level adjustment feature and snap-on grille cover
  - IN/OUT screw terminals using #12 to #18 AWG wires
  - Mounting Options include Exceder LSPKBB backboxes and 4" square backboxes
- Strobe synchronization components
  - Meet synchronizing standards with Wheelock's DSM Sync Modules or PS-6/8 Power Supplies
- Compliance
  - UL 2034, UL 2075, UL 1971, UL 464, ULC S525, ULC S526
  - California State Fire Marshal (CSFM)
  - ADA/NFPA/ANSI/OSHA
  - RoHS

**Note:** All CAUTIONS and WARNINGS are identified by the symbol . All warnings are printed in bold capital letters.

## WARNING

**PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT [WWW.COOPERNOTIFICATION.COM](http://WWW.COOPERNOTIFICATION.COM) OR CONTACT COOPER NOTIFICATION FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, 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.**

## General Notes

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range." Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL 1971.

## Drawings

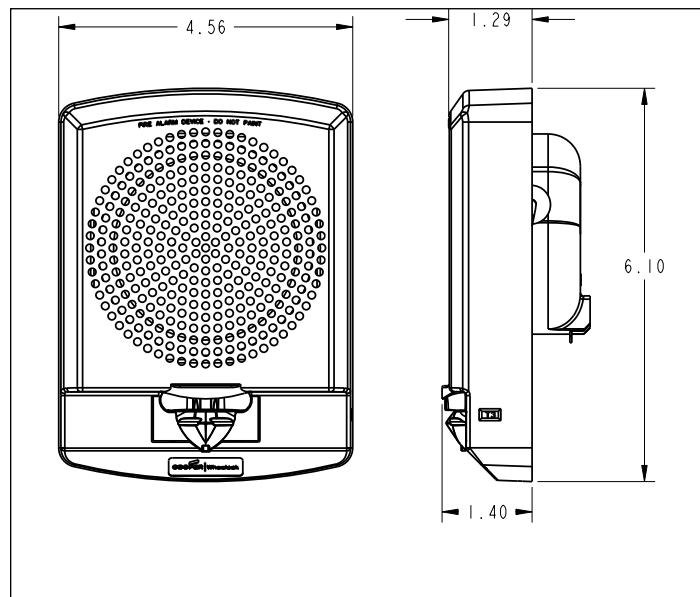


Figure 1. Wall Low Frequency Sounder Strobe

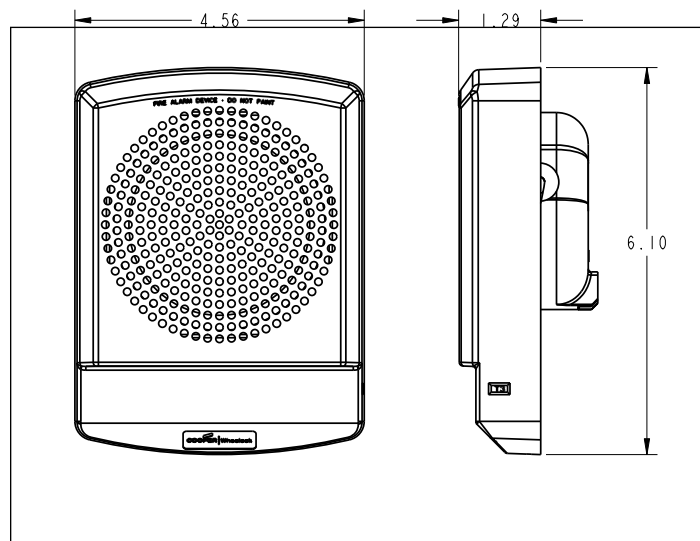


Figure 2. Wall Low Frequency Sounder

Table 1. Horn Strobe Current Draw

Exceder LED Sounder Strobes		UL/ULC Max Current <sup>a</sup>
		24VDC
		16-33 Volts 110 cd
Model	Horn Setting	
LLFHS	Continuous	0.292
	Code 3	0.292
	Code 4	0.292
	Code 3/Code 4	0.292

Table 2. Horn Only Current Draw

Exceder LED Sounders		UL/ULC Max Current <sup>a</sup>
		24VDC
		16.0-33.0
Model	Horn Settings	
LLFHN	Continuous	0.113
	Code 3	0.113
	Code 4	0.113
	Code 3/Code 4	0.113

**Table 3. Sound Output (SPL) - UL**

<b>LLFHS/LLFHN 24V Reverberant dBA per UL 464</b>			
<b>Description</b>	<b>16.0V</b>	<b>24.0V</b>	<b>33.0V</b>
Continuous	80	80	80
Code 3	76	76	76
Code 4 <sup>b</sup>	85	85	85
Code 3/Code 4	76	76	76

**Table 4. Sound Output (SPL) - ULC**

<b>LLFHS/LLFHN dBA per ULC S525-07<sup>c</sup></b>			
<b>Description</b>	<b>16.0V</b>	<b>24.0V</b>	<b>33.0V</b>
Continuous	80	80	80
Code 3	80	80	80
Code 4	80	80	80
Code 3/Code 4	80	80	80

**Table 5. Specification & Ordering Information**

<b>Model</b>	<b>Strobe Candela</b>	<b>Red</b>	<b>White</b>	<b>Lettering</b>	<b>Sync w/ DSM or Wheelock Power Supplies</b>
<b>Sounder Strobes</b>					
LLFHSR	110	X		FIRE	X
LLFHSW	110		X	FIRE	X
LLFHSR-AL	110	X		ALERT	X
LLFHSW-AL	110		X	ALERT	X
LLFHSR-CO	110	X		CO	X
LLFHSW-CO	110		X	CO	X
LLFHSR-N	110	X		No Lettering	X
LLFHSW-N	110		X	No Lettering	X
<b>Sounders</b>					
LLFHNR-AL		X		ALERT	X
LLFHNW-AL			X	ALERT	X
LLFHNR-CO		X		CO	X
LLFHNW-CO			X	CO	X
LLFHNR-N		X		No Lettering	X
LLFHNW-N			X	No Lettering	X
<b>Accessories</b>					
LSPKBB-R	0756	<b>Description</b>		<b>Red</b>	<b>White</b>
LSPKBB-W	0757	Exceder LED Backbox		X	
		Exceder LED Backbox			X

**Table 6. Specifications**

<b>Physical</b>	
Material	Red or white textured UV stabilized, colored impregnated engineered plastic. Exceeds 94V-0 UL flammability rating
Weight	1.10 lbs.
Lens	Light Emitting Diode (LED) in a rugged Lexan lens
Dimensions	6.1" H x 4.56" W x 1.4" D
Operating Temperature	Indoor: 33.8°F to 120.2°F (0°C to 49°C) and maximum humidity of 85%
<b>Mounting &amp; Wire Connections</b>	
Mounting (indoor only)	Wall-mount applications only. Exceder LSPKBB backboxes or to 4" square backboxes
Wire Connections	#12 through #18 AWG
<b>Power &amp; General</b>	
Operating voltage	24 VDC: 16- 33 VDC
Strobe Output Rating	UL 1971: 110 candela output
Strobe Flash Rate	Strobes are designed to flash at 1 flash per second
Synchronization Models	Strobes can be synchronized with Wheelock's DSM Sync Modules, PS-6/8 Power Supplies, using Wheelock patented sync protocol
Temporal Audible Pattern	Continuous, Code 3, Code 4 or Code 3/Code 4 Sync Control. 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. The Code 4 temporal pattern (four cycles of 100 milliseconds ± 10 percent "on" and 100 milliseconds ± 10 percent "off," followed by 5 seconds ± 10 percent "off") is specified by NFPA 720.

<sup>a</sup> RMS current ratings are per UL maximum RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33v). For strobes the UL max current is usually at the minimum listed voltage. For audibles the max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation instructions.

<sup>b</sup> Code 4 setting rated per UL 2075, UL 2034.

<sup>c</sup> For dwelling use only.

## Architects and Engineers Specifications

The low frequency sounders and sounder strobes appliances shall be Wheelock® Exceder™ LED Series LLFHN Sounder and LLFHS Sounder Strobe for wall-mount applications with a low-profile design or approved equals. The sounders shall be UL Listed under UL 464 for Fire Protective Service and to the requirements of UL 2034/UL 2075 for CO applications and ULC S525. Sounders equipped with strobes shall be listed under UL 1971 for Emergency Devices for the Hearing-Impaired and ULC S526. The Series shall be Restriction of Hazardous Substances (RoHS) compliant and contain no mercury or other hazardous substances. In addition, the sounder strobes shall meet the requirements of FCC Part 15. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP) with the ability to operate from 16 to 33 VDC.

The Series LLFHS Sounder Strobe shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Light Emitting Diode (LED) as the light source with a rugged Lexan® lens. The Series shall be of low current design. The strobe intensity shall have a 110 candela for wall mount applications.

The audible shall have a minimum of four (4) 520 Hz modes of operation: T3 (fire), T4 (CO), Continuous, T3/T4 Sync Control.

The Series LLFHS and LLFHN shall be designed for indoor surface or flush mounting. Mounting options shall include LED speaker

backboxes and to standard 4" square backboxes. The sounder and sounder strobe shall incorporate a mounting plate with a snap-on grille cover and shall mount to standard electrical hardware requiring no additional trimplate or adapter. Removal of an appliance shall result in a supervision fault condition by the Fire Alarm Control Panel (FACP). All notification appliances shall be backwards compatible.

The Series LLFHN wall model shall have a low profile measuring 6.1" H x 4.56" W x 1.29" D. The Series LLFHS wall model shall have a low profile measuring 6.1" H x 4.56" W x 1.4" D. Finish shall be red or white. Special lettering, ALERT, CO and No lettering, shall be available.

When synchronization is required, the appliance shall be compatible with Wheelock's DSM Sync Modules, PS 6/8 Power Supplies, or other manufacturer's panels with built-in Wheelock Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flash-rate and still maintain (1) flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock patented sync protocol.

UL 1971, UL 464, ULC S525, ULC S526, CSFM, FCC, RoHS

**Note:** Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Cooper Wheelock Inc., dba Cooper Notification standard terms and conditions.



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3 YEAR WARRANTY

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