

ET Series

Low-Profile Speaker and Speaker Strobes



Audio/Visual Devices

GENERAL

Wheelock's high performance Series ET Speakers and Series ET Speaker Strobes provide high audio output, clear audibility, dual voltage (25/70 VRMS) capability and field selectable taps from 1/8 to 8 watts. They are designed to meet the critical needs of the life safety industry for effective emergency voice communications, tone signaling and visible signaling to alert the hearing impaired.

The low profile design incorporates a speaker mounting plate for faster and easier installation. Each model has a built-in level adjustment feature and an aesthetic two (2) screw grille cover.

The Series ET Speaker Strobe models incorporate Low Current draw Series RSS Strobes.

Strobe options for wall mount models include 1575 cd or Wheelock's patented MCW multi-candela strobe with field selectable candela settings of 15/30/75/110cd or the high intensity MCWH strobe with field selectable 135/185cd.

Ceiling mount models are available in Wheelock's patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

The strobe portion of all Series ET Strobes may be synchronized when used in conjunction with the Wheelock SM, DSM sync modules or the power supply with patented Wheelock Sync Protocol. Wheelock's synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.

Series ET70 and ET90 Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing Impaired) and Standard 1480 (Speaker Appliances), and use a Xenon flashtube with solid state circuitry enclosed in a rugged Lexan® lens to provide maximum reliability for effective visual signaling. All inputs are supervised and employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring.

Color options for Series ET speakers and speaker strobes are red or white plated.

Wheelock's Weatherproof Low Profile Speaker Strobe, Series ET70WP-2475W-FR appliance has an extended temperature range of -40° F to 150° F (-40° C to 66° C) that will satisfy virtually all outdoor and severe environment applications.

For outdoor applications the ET70WP-2475W-FR must be wall mounted to a Weatherproof Back Box (IOB). Models are available for surface mounting to Wheelock weatherproof backboxes on walls or ceilings. The optional WP-KIT allows the weatherproof backboxes (IOB, WPBB or WPSBB) to be mounted to a recessed electrical box for concealed conduit installation. For semi-flush installation, the WPA and WFPA kits allow a customer to mount the weatherproof appliances to a recessed electrical box without the need for an external weatherproof backbox.

FEATURES

- ADA/NFPA/UFC/ANSI compliant.
- Meets OSHA 29 Part 1910.165.
- Wall mount models are available with Field Selectable Candela.
- Settings of 15/30/75/110cd or 135/185cd (Multi-Candela models) or 1575cd (Single Candela model).



ET70 Series
Speaker Strobe



ET90 Series
Speaker



Multi-Candela Indicator
(bottom of strobe lens)

- Ceiling mount models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (multi-candela models).
- Strobes produce 1 flash per second over the regulated voltage range.
- 24 VDC with wide UL "Regulated Voltage" using filtered DC or unfiltered VRMS input voltage.
- Synchronize with Wheelock SM, DSM or power supply with built-in Wheelock sync protocol.
- Field selectable taps for 25 or 70 VRMS operation from 1/8 watt to 8 watts.
- High efficiency design for maximum output at minimum wattage across a frequency range of 400 to 4000 HZ.
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires.



WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. 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.

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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 Standard 1971.
- Series ET Speaker Strobes and Series ET Speakers are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 85%.
- Wheelock Weatherproof Appliances are designed to operate over an extended temperature of -40° F to 150°F (-40°C to 66°C) and all candela ratings represent minimum effective strobe intensity based on UL 1638. Maximum humidity of 93% RH + 2%.
- “Regulated Voltage Range” is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology “Listed Voltage Range”.

ARCHITECTURAL/ENGINEERING SPECIFICATIONS

The speaker appliances shall be Wheelock Series ET Speakers and speaker strobe appliances shall be Wheelock Series ET Speaker Strobes or approved equals. The speakers shall be UL Listed under Standard 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL Standard 1971 for Signaling Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class B.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt

to 8 watts. All models shall have listed sound output of up to 93 dB at 10 feet and a listed frequency response of 400 to 4000 Hz. The speaker shall also incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes.

The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The strobe shall be of low current design. Where, Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mount and 15/30/75/95 cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 1575 strobe shall be specified when 15 candela UL Standard 1971 listing with 75 candela on-axis is required (e.g. ADA compliance).

When synchronization is required, the strobe portion of the appliance shall be compatible with Wheelock’s SM, DSM sync modules or a power supply with built-in Wheelock Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

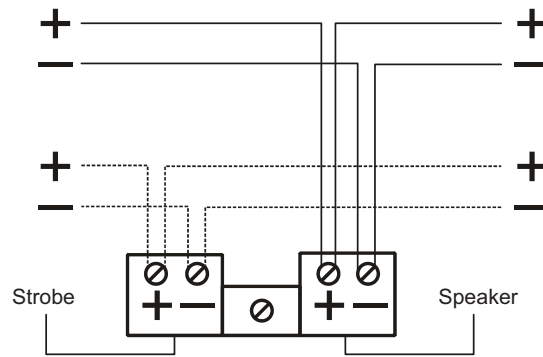
The speaker and speaker strobe appliances shall be designed for indoor surface or flush mounting. The speaker and speaker strobe shall incorporate a speaker mounting plate with a grille cover which is secured with two screws for a level, aesthetic finish and shall mount to standard electrical hardware requiring no additional trimplate or adapter. The finish of the Series ET speakers and speaker strobes shall be white, red or nickel plate. All speakers and speaker strobes shall be backward compatible.



WARNING: CONTACT WHEELOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS (P83983) SERIES NS-24MCW, (P84234) SERIES NS-12 AND 24 VDC SINGLE CANDELA MODELS, (P83600) SERIES NH AND “GENERAL INFORMATION” SHEET (P82380) ON THESE PRODUCTS. THESE DOCUMENTS UNDERGO PERIODIC CHANGES. IT IS IMPORTANT THAT YOU HAVE CURRENT INFORMATION ON THE PRODUCTS. THESE MATERIALS CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ PRIOR TO SPECIFYING OR INSTALLING THESE PRODUCTS, INCLUDING:

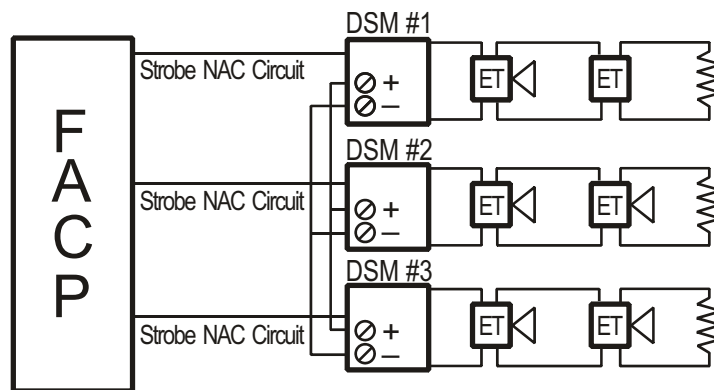
- **TOTAL CURRENT REQUIRED BY ALL APPLIANCES CONNECTED TO SYSTEM SECONDARY POWER SOURCES.**
- **FUSE RATINGS ON NOTIFICATION APPLIANCE CIRCUITS TO HANDLE PEAK CURRENTS FROM ALL APPLIANCES ON THOSE CIRCUITS.**
- **COMPOSITE FLASH RATE FROM MULTIPLE STROBES WITHIN A PERSON’S FIELD OF VIEW.**
- **ADDING, REPLACING OR CHANGING APPLIANCES OR CHANGING CANDELLA SETTINGS WILL AFFECT CURRENT DRAW. RECALCULATE CURRENT DRAW TO INSURE THAT THE TOTAL AVERAGE CURRENT AND TOTAL PEAK REQUIRED BY ALL APPLIANCES DO NOT EXCEED THE RATED CAPACITY OF THE POWER SOURCES OR FUSES.**
- **THE VOLTAGE APPLIED TO THE PRODUCTS MUST BE WITHIN THEIR “REGULATED VOLTAGE RANGE.”**
- **INSTALLATION OF 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS.**
- **INSTALLATION IN OFFICE AREAS AND OTHER SPECIFICATION AND INSTALLATION ISSUES.**
- **THESE APPLIANCES ARE NOT DESIGNED TO BE USED ON CODED SYSTEMS IN WHICH THE APPLIED VOLTAGE IS CYCLED ON AND OFF.**
- **FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS OR GENERAL INFORMATION SHEETS COULD RESULT IN IMPROPER INSTALLATION, APPLICATION, AND/OR PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**
- **CONDUCTOR SIZE (AWG), LENGTH AND AMPACITY SHOULD BE TAKEN INTO CONSIDERATION PRIOR TO DESIGN AND INSTALLATION OF THESE PRODUCTS, PARTICULARLY IN RETROFIT INSTALLATIONS.**

WIRING DIAGRAMS



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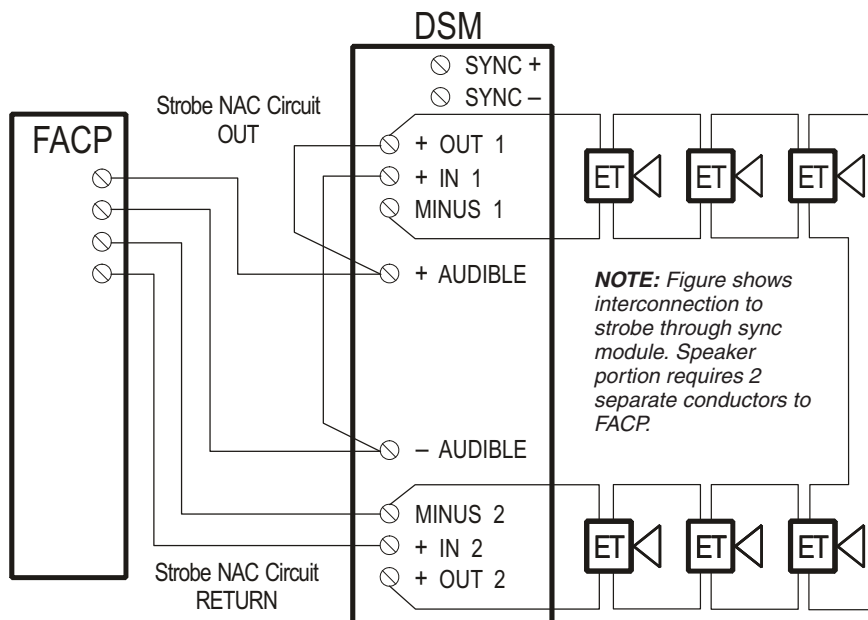
Series ET Speaker and Strobe Operate Independently (Non-Sync or Sync)



2225bd2.wmf

DSM Interconnecting wiring shown. Maximum of 20.

Series ET Speaker Strobes Synchronized with DSM Module Single Class "A"



2225bd3.wmf

NOTE: Figure shows interconnection to strobe through sync module. Speaker portion requires 2 separate conductors to FACP.

Series ET Speaker Strobe Appliances Synchronized with DSM Module Single Class "A"

SPECIFICATIONS

ET70/ET90 Speaker Strobes	ET70 Strobe Current - Wall Mount							ET90 Strobe Current - Ceiling Mount					
	241575W	24MCW				24MCWH		24MCC				24MCCH	
	1575cd	15cd	30cd	75cd	110cd	135cd	185cd	15cd	30cd	75cd	95cd	115cd	177cd
16-33 VDC	0.090	0.060	0.092	0.165	0.220	0.300	0.420	0.065	0.105	0.189	0.299	0.300	0.420

NOTE: UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For audibles the max current is usually at the maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.

Watts	1/8	1/4	1/2	1	2	4	8
ET Speaker	75.0	78.0	81.0	84.0	87.0	90.0	93.0
ET Speaker Strobe	75.0	78.0	81.0	84.0	87.0	90.0	93.0
ET70WP-2475W	78.0	81.0	84.0	87.0	90.0	93.0	95.0

**NOTE: dBA ratings based on UL testing under UL Standard 1480.

LISTINGS AND APPROVALS

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in progress. Consult factory for listing status.

- UL Listed: S2652 (Speakers); S2652/S5391 (Strobe/Speakers)
- CSFM: 7125-0785:146; 7125-0785:152; 7320-0785:134
- MEA: 151-92-E Vol. 21

ORDERING INFORMATION

Model	Strobe Candela	Non-Sync	Sync w/ SM, DSM	Model Color	Wall/Ceiling	Agency Approvals (* Pending)				
						UL	MEA	CSFM	FM	BFP
ET70-24MCW-FR	15/30/75/110	X	X	Red	Wall	X	X	X	X	X
ET70-24MCW-FW	15/30/75/110	X	X	White	Wall	X	X	X	X	X
ET70-241575W-FR	15 (75 on axis)	X	X	Red	Wall	X	X	X	X	X
ET70-241575W-FW	15 (75 on axis)	X	X	White	Wall	X	X	X	X	X
ET70WP-2475W-FR	75	X	X	Red	Wall	X	X	X	*	*
ET90WP-2475W-FW	75	X	X	White	Wall/Ceiling	X	X	X	X	X
ET90-24MCC-FR	15/30/75/95	X	X	Red	Ceiling	X	X	X	X	*
ET90-24MCC-FW	15/30/75/95	X	X	White	Ceiling	X	X	X	X	*
ET90-24MCCH-FW	115/177	X	X	White	Ceiling	X	X	X	X	*
ET70-R	-	-	-	Red	Wall/Ceiling	X	X	X	X	X
ET70-W	-	-	-	White	Wall/Ceiling	X	X	X	X	X

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This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.



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Series CH

Chimes and Chime Strobes



Audio/Visual Devices

General

The Wheelock Series CH Chimes and Chime Strobes minimize alarm system power supply requirements and wiring costs with a low current draw and a patented chime mounting plate for fast, easy installation. Each model has a built-in level adjustment feature and an aesthetic two-screw grille cover.

These unique solid-state chime appliances provide field selectable single-stroke or vibrating operation with Anechoic sound levels adjustable up to 83 dB and tone adjustable from 800 to 1200 Hz.

Strobe options for wall mount models include 15/75 candela or Wheelock patented MCW multi-candela strobe with field-selectable candela settings of 15/30/75/110 cd or the high-intensity MCWH strobe with field-selectable 135/185 cd.

Ceiling-mount models are available in Wheelock patented MCC multi-candela ceiling strobe with field-selectable intensities of 15/30/75/95cd, or the high-intensity MCCH strobe with field selectable 115/177cd.

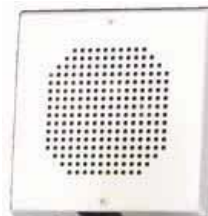
The strobe portion of all Series CH Chime Strobes may be synchronized when used in conjunction with the Wheelock SM, DSM Sync Modules or the Wheelock PS-24-8MC Power Supply with patented Sync Protocol. Wheelock's synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy as well as meeting the requirements of NFPA 72 and UFC.

The Series CH Chime Strobes are UL Listed for indoor, wall or ceiling mount applications under Standard 1971 for Signaling Devices for the Hearing-Impaired and under Standard 464 for Private Mode Audible Signal Appliances. They are available in two attractive package styles for flush mounting to standard electrical boxes or convenient surface mounting. All models include IN/OUT wiring terminations that accept two 12 AWG to 18 AWG wires at each terminal. Inputs are polarized for compatibility with industry standard reverse-polarity supervision.

Features

- Various models comply with UL Standards 1971 and 464. Check listings and approvals information.
- ADA/NFPA/UFC/ANSI compliant.
- Complies with OSHA 29 Part 1910.165.
- Wall-mount models are available with field-selectable candela settings of 15/30/75/110 cd or 135/185 cd (multi-candela models) or 1575 cd (single-candela model).
- Ceiling-mount models are available with field-selectable candela settings of 15/30/75/95 cd or 115/177 cd (multi-candela models).
- Low current draw with temperature compensation to reduce power consumption and wiring costs.
- Strobes produce 1 flash per second over the regulated voltage range.
- 24 VDC with wide UL "Regulated Voltage" using filtered DC or unfiltered VRMS input voltage.
- Synchronize with Wheelock SM, DSM or the Wheelock PS-24-8MC Power Supply with built-in sync protocol.

3468ch70.jpg



**Series CH70
Chime**

3468ch90.jpg



**Series CH90
Chime**

3468ch70.jpg



**Series CH70
Chime Strobe**

3468ch90.jpg



**Series CH90
Chime Strobe**

- Adjustable volume and tone control.
- Single-stroke or vibrating operation.
- Fast installation with IN/OUT screw terminals using 12 AWG to 18 AWG wires.

Note that all CAUTIONS and WARNINGS are identified with a triangular exclamation point (!) symbol. All warnings are printed in BOLD CAPITAL LETTERS.

! WARNING!

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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 Standard 1971.

- Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series NH horns are listed under UL Standard 464 for audible signal appliances (indoor use only).
- “Regulated Voltage Range” is the newest terminology used by UL to identify the voltage range. Prior to this change, UL used the terminology “Listed Voltage Range.”

applied to the chime will activate the chime at one-second intervals.

2. The volume and tone controls have been adjusted at the factory to insure maximum dBA output. However, once the mode is selected, the installer may want to fine-tune the signal to better suit the application.

3. Anechoic dBA is measured in an anechoic chamber with peak meter response. Reverberant dBA is rated per UL Standard 464.

4. Chime inrush current is 0.100 A maximum with filtered DC input (0.140 A with VRMS input voltage) with a time duration of 100 milliseconds.

Application Notes for Current Table

1. The chimes are factory set in single-stroke (SS) mode. They can be changed to vibrating (VIB) mode with jumper on PC Board. **SINGLE-STROKE OPERATION:** The minimum input pulse duration must be at least 160 ms “on” time and 160 ms “off” time. The chime will only operate once each time it is pulsed. This mode is recommended for coded systems. **VIBRATING OPERATION:** Continuous input voltage

CHIME dBA RATINGS

Sound level for CH70/CH90 is 83 dBA @ 10 ft (3.048 m) anechoic room; dBA in a 10 ft (3.048 m) reverberant room is 52 dBA minimum to 58 dBA maximum.

Average RMS Current

CH70, CH90 Chimes	Chime Current	CH70 Strobe Current: Wall Mount						CH90 Strobe Current: Ceiling Mount						
		241575W	24MCW			24MCWH		24MCC				24MCCH		
cd:		1575	15	30	75	110	135	185	15	30	75	95	115	177
24 VDC	0.022	0.060	0.041	0.063	0.109	0.140	0.195	0.270	0.045	0.070	0.119	0.159	0.195	0.270
UL max.*	0.022	0.090	0.060	0.092	0.165	0.220	0.300	0.420	0.065	0.105	0.189	0.249	0.300	0.420

NOTE: *RMS current ratings are per UL average RMS method. UL maximum current rating is the maximum RMS current within the Listed voltage range (16-33V for 24V units). For strobes, the UL maximum current is usually at the minimum Listed voltage (16V for 24V units). For audibles, the maximum current is usually at the maximum Listed voltage (33V for 24V units). For unfiltered FWR ratings, see installation instructions.

Specifications and Ordering Information

Model Number	Nom.V	Strobe Candela	Mount: Wall or Ceiling	Sync Strobe w/ SM, DSM, or PS-24-8MC	Mounting Options
CH70-24MCW-FR	24 VDC	15/30/75/110	W	yes	L, O, P, Q, R, U, Y
CH70-24MCW-FW	24 VDC	15/30/75/110	W	yes	L, O, P, Q, R, U, Y
CH70-241575W-FR	24 VDC	15 (75 on axis)	W	yes	L, O, P, Q, R, U, Y
CH90-24MCC-FW	24 VDC	15/30/75/95	C	yes	Q, U, V
CH70-24-R	24 VDC	N/A	W or C	no	L, O, P, Q, R, U, Y
CH90-24-W	24 VDC	N/A	W or C	no	Q, U, V

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

Architects' and Engineers' Specifications

The chime appliances shall be Wheelock Series CH Chimes and the chime strobe appliances shall be Wheelock Series CH Chime Strobes or approved equals. The chime shall be UL Listed under Standard 464 for Audible Signal Appliances and chimes equipped with strobes shall be listed under UL Standard 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class B and shall incorporate low temperature compensation to ensure the lowest possible current consumption.

All chimes shall use solid state components and shall provide field selectable single stroke or vibrating operation with volume control and tone control. All models shall have a peak Anechoic sound output of 83 dB at 10 feet and an adjustable frequency range of 800 to 1200 Hz. All inputs shall employ terminals that accept 12 AWG to 18 AWG wire sizes.

The strobe portion of the appliance shall produce a flash rate of one flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged LEXAN® lens. The strobe shall be of low current design. Where Multi-Candela Chime Strobes are specified, the strobe intensity shall have a minimum of four field-selectable settings and shall be rated per UL Standard 1971 at: 15/30/75/110 cd or 135/185 cd for wall-mount models and 15/30/75/95 cd or 115/177 cd for ceiling-mount models. The selector switch for selecting the candela shall be tamper-resistant and not accessible from the front of the appliance. The 1575 candela strobe shall be specified when 15 candela UL Stan-

dard 1971 listing with 75 candela on-axis is required (e.g., ADA compliance).

When synchronization is required, the strobe portion of the appliance shall be compatible with Wheelock SM, DSM sync modules or the Wheelock PS-24-8MC Power Supply with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The chime and the chime strobe appliances shall be designed for indoor surface or flush mounting. The chime and chime strobe shall incorporate a chime mounting plate with a grille cover which is secured with two screws for a level, aesthetic finish and shall mount to standard electrical hardware requiring no additional trimplate or adapter.

All chime and chime strobe appliances shall be backward compatible.

Agency Listings and Approvals

The listings and approvals below apply to the Wheelock Series CH Chimes and Chime Strobes. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL** Listed: file S5391.
- **CSFM** approved: file 7125-10785:185.
- **FM** approved.
- **MEA** approved: file 151-92-E.
- **BFP** approved (*except CH90-24MCC-FW*).

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www.notifier.com

Wheelock E Series

Low-Profile Public Speakers and Speaker Strobes



Audio / Visual Devices

General

Wheelock Series E Low Profile Speakers and Speaker Strobes are designed for high efficiency sound output, with dual voltage (25/70 VRMS) capability and field selectable taps from 1/8 to 2 watts. The low profile design incorporates a speaker mounting plate for faster and easier installation. Each model has a built-in level adjustment feature and an aesthetic two (2) screw grille cover.

The Series E Speaker Strobe models incorporate the low current draw series RSS strobes.

Strobe options for wall mount models include 1575 or Wheelock's patented MCW multi-candela strobe with field selectable candela settings of 15/30/75/110cd or the high intensity MCWH strobe with field selectable 135/185cd.

Ceiling mount models are available in Wheelock's patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

Series E Speakers and Speaker Strobes provide high audio output with clear audibility and are designed to meet the critical needs of the life safety industry for effective emergency voice communications, tone signaling and visible signaling to alert the hearing impaired.

The strobe portion of all Series E Speaker Strobes may be synchronized when used in conjunction with the Wheelock SM, DSM Sync Modules or a power supply with patented Wheelock sync protocol. Wheelock's synchronized strobes offer an easy way to comply with ADA recommendations concerning photo-sensitive epilepsy.

Series E Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances), and use a Xenon flashtube with solid state circuitry enclosed in a rugged Lexan® lens to provide maximum reliability for effective visual signaling. All inputs are supervised and employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring.

Color options for the E Series Speakers and Speaker Strobes offered are colored red or white.

Features

- ADA/NFPA/ANSI compliant
- Complies with OSHA 29 Part 1910.165
- Wall mount models are available with field selectable candela settings of 15/30/75/110cd or 135/185cd (multi-candela models), or 1575cd (single candela model)
- Ceiling mount models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (multi-candela models)
- Strobes produce 1 flash per second over the regulated voltage range
- 24 VDC with wide UL "Regulated Voltage" using filtered DC or unfiltered VRMS input voltage
- Synchronize with Wheelock SM, DSM or panels with built-in Wheelock patented synch protocol
- Field selectable taps for 25 or 70 VRMS operation from 1/8 watt up to 2 watts
- High efficiency design for maximum output at minimum wattage across a frequency range of 400 to 4000 HZ



E70 Series Speaker Strobe

E90 Series Speaker Strobe



Multi-Candela Indicator(bottom of Strobe Lens)

- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires

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 Standard 1971.
- Series E Speaker Strobes and Series E Speakers are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 85%.
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

NOTE: Please read these specifications and associated installation instructions carefully before using, specifying or applying this product. 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.

Specifications and Ordering Information

MODEL	STROBE CANDELA	MODEL COLOR	WALL/CEILING MOUNT	AGENCY APPROVALS				
				UL	MEA	CSFM	FM	BFP
E70-24MCW-FR	15/30/75/110	Red	Wall	X	X	X	*	X
E70-24MCW-FW	15/30/75/110	White	Wall	X	X	X	*	X
E70-241575W-FR	15 (75 on Axis)	Red	Wall	X	X	X	*	X
E70-R	-	Red	Wall/Ceiling	X	X	X	*	X
E70-W	-	White	Wall/Ceiling	X	X	X	*	X
E70-24MCWH-FR	135/185	Red	Wall	X	*	*	*	*
E70-24MCWH-FW	135/185	White	Wall	X	*	*	*	*
E90-24MCC-FW	15/30/75/95	White	Ceiling	X	*	X	*	*
E90-W	-	White	Wall/Ceiling	X	X	X	*	X
E90-R	-	Red	Wall/Ceiling	X	X	X	*	X
E90-24MCCH-FW	115/177	White	Ceiling	X	*	*	*	*

E70/E90 Speaker Strobes	E-70 Strobe Current - Wall Mount							E90 Strobe Current - Ceiling Mount					
	241575W		24MCW			24MCWH		24MCC				24MCCH	
	1575cd	15cd	30cd	75cd	110cd	135cd	185cd	15cd	30cd	75cd	95cd	115cd	177cd
16-33 VDC	0.090	0.060	0.092	0.165	0.220	0.300	0.420	0.065	0.105	0.189	0.249	0.300	0.420

UL Max Current*

*UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For audibles the max current is usually at the maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.

watts	1/8	1/4	1/2	1	2
E Speaker	77	81	83	86	89
E Speaker Strobe	76	80	82	85	88

E70/E90 UL Reverberant dBA @ 10 Feet **

**dBA ratings are based on testing under UL Standard 1480

Architect and Engineer Specifications

The speaker appliances shall be Wheelock Series E Speakers and the speaker strobe appliances shall be Wheelock Series E Speaker Strobes or approved equals. The speakers shall be UL Listed under Standard 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL Standard 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class B.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All models shall have listed sound output of up to 87 dB at 10 feet and a listed frequency response of 400 to 4000 Hz. The speaker shall also incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The strobe shall be of low current design. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mount and 15/30/75/95cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance). When synchronization is required, the strobe portion of the appliance shall be compatible with Wheelock's SM, DSM sync modules or the power supply with built-in Patented Wheelock Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The speaker and speaker strobe appliances shall be designed for indoor surface or flush mounting. The speaker and speaker strobe shall incorporate a speaker mounting plate with a grille cover which is secured with two screws for a level, aesthetic finish and shall mount to standard electrical hardware requiring no additional trimplate or adapter.

The finish of the Series E speakers and strobe speakers shall be white, red, or nickel plate.

All speaker and speaker strobe appliances shall be backward compatible.

Wheelock products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with their installation instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

Warning:

- Current required by all appliances connected to system secondary power sources.
- Fuse ratings on notification appliance circuits to handle peak currents from all appliances on those circuits.
- Composite flash rate from multiple strobes within a person's field of view.

- Adding, replacing or changing appliances or changing candela settings will affect current draw.
- Recalculate current draw to insure that the total average current and total peak required by all appliances do not exceed the rated capacity of the power sources or fuses.
- The voltage applied to these products must be within their "regulated voltage range".
- Installation of 110 candela strobe products in sleeping areas.
- Installation in office areas and other specification and installation issues.
- Use strobes only on circuits with continuously applied operating voltage. Do not use strobes on coded or interrupted circuits in which the applied voltage is cycled on and off as the strobes may not flash.
- Failure to comply with the installation instructions or general information sheets could result in improper installation, application, 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.
- Conductor size (awg), length and ampacity should be taken into consideration prior to design and installation of these products, particularly in retrofit installations.

Agency Listings and Approvals

- UL Listed: S2652 (Speakers); S2652 / S5391 (Strobe/Speakers)
- California State Fire Marshall: 7320-0785:134 (Speakers); 7125-0785:145 , 7125-0785:152 (Strob/Speakers)
- MEA: 151-92-E Vol. 21

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E50 Series

Speaker and Speaker Strobes



Audio/Visual Devices

Description

The Cooper Wheelock Series E50 Speakers and Speaker Strobes feature high efficiency sound output, with dual voltage (25/70 VRMS) capability and field selectable taps from 1/8 to 2 watts. They are designed to provide a sleek, aesthetic appearance for emergency voice/alarm communications systems. All Series E50 models mount to standard 4" x 2-1/8" electrical boxes (with no extension ring required) and incorporate a speaker mounting plate for faster installation. The grille cover snaps on so no mounting screws are visible. Attractive surface boxes are also available for surface installations.

The Series E50 Speaker Strobe models use Cooper Wheelock low current draw Series RSS strobes for wall mounted applications. Strobe options include patented MCW multi-candela strobes with field selectable candela settings of 15/30/75/110 cd or high intensity MCWH strobes with field selectable 135/185 candela. Models with 1575 candela (75 cd on axis) are also offered.

Series E50 Speakers and Speaker Strobes provide high audio output with clear audibility and are designed to meet the critical needs of the life safety industry for effective emergency voice communications, tone signaling and visible signaling to alert the hearing impaired.

The strobe portion of all Series E Speaker Strobes may be synchronized when used in conjunction with the Cooper Wheelock SM, DSM Sync Modules or the Cooper Wheelock's PS-24-8MC Power Supply with Patented Sync Protocol. Cooper Wheelock synchronized strobes offer an easy way to comply with ADA and NFPA regulations concerning photosensitive epilepsy.

Series E50 Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances). All inputs employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring and are compatible with FACP line supervision.

Color options for the Series E50 Speakers and Speaker Strobes are red or off-white.

Features

Approvals include: UL Standard 1971, UL Standard 1480, New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM) and Chicago (BFP). See approvals by model in Specifications and Ordering Information

ADA/NFPA/ANSI compliant

Complies with OSHA 29 Part 1910.165

Wall mount speaker strobe models with field selectable candela settings of 15/30/75/110cd or 135/185cd (Multi-Candela models), or 1575cd (Single Candela model)

Field selectable taps for 25 or 70 VRMS operation from 1/8 watt up to 2 watts

High efficiency design for maximum output at minimum wattage across a frequency range of 400 to 4000 HZ

24 VDC strobes produce 1 flash per second with wide UL "Regulated Voltage" of 16 to 33 volts using filtered DC or unfiltered VRMS input voltage

Synchronize with Cooper Wheelock SM, DSM or Cooper Wheelock PS-12/24-8CP and PS-12/24-8MP Power Supply with built-in sync protocol



**Series E50
Speaker**

**Series E50
Speaker Strobe**

Mount to 4" square x 2-1/8" deep backbox with no extension ring required

Snap on grille cover with no visible mounting screws

Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires



WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT.

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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 Standard 1971.

Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).

Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).

"Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

Table 1: Average RMS Current

E50 Speaker Strobes	E50 Strobe Current - Wall Mount						
	241575W			24MCW		24MCWH	
	1575cd	15cd	30cd	75cd	110cd	135cd	185cd
24VDC	.060	.041	.063	.109	.140	.195	.270
UL max.*	.090	.060	.092	.165	.220	.300	.420

***NOTE:** RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For unfiltered FWR ratings, see installation instructions.

Table 2: E50 UL Reverberant dBA @ 10 Feet**

Watts	1/8	1/4	1/2	1	2
E50 Speaker	77	79.5	82.5	85	88
E50 Speaker Strobe	77	79.5	82.5	85	88

****NOTE:** dBA ratings are based on UL testing under UL Standard 1480

Architectural/Engineering Specifications

The speaker appliances shall be Cooper Wheelock Series E50 Speakers and the speaker strobe appliances shall be Cooper Wheelock Series E50 Speaker Strobes or approved equals. The speakers shall be UL Listed under Standard 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL Standard 1971 for Signaling Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class B.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All models shall have listed sound output of up to 89 dBA at 10 feet and a listed frequency response of 400 to 4000

Ordering Information

Model	Wall Mount	Ceiling Mount	Strobe Candela	Grill Color	Flush Mount Backbox	Surface Mount Backbox	Mounting Options	Agency Approvals				
								UL	MEA	CSFM	FM	BFP
E50-R	X	X	-	Red	4" x 4" x 2-1/8"	E50SB-R	E,O,P,Q,R,U,Y,AA	X	X	X	X	*
E50-W	X	X	-	White	4" x 4" x 2-1/8"	E50SB-W	E,O,P,Q,R,U,Y,AA	X	X	X	X	*
E50-241575W-FR	X	-	15 (75 on Axis)	Red	4" x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	X	X	X	*
E50-241575W-FW	X	-	15 (75 on Axis)	White	4" x 4" x 2-1/8"	E50SSB-W	E,Q,U,BB	X	X	X	X	*
E50-24MCW-FR	X	-	15/30/75/110	Red	4" x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	X	X	X	*
E50-24MCW-FW	X	-	15/30/75/110	White	4" x 4" x 2-1/8"	E50SSB-W	E,Q,U,BB	X	X	X	X	*
E50-24MCWH-FR	X	-	135/185	Red	4" x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	X	X	X	*
E50-24MCWH-FW	X	-	135/185	White	4" x 4" x 2-1/8"	E50SSB-W	E,Q,U,BB	X	X	X	X	*

***NOTE:** PENDING.

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

Hz. The speaker shall incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall be of low current design. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mounting. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required.

When synchronization is required, the strobe portion of the appliance shall be compatible with the Cooper Wheelock's SM, DSM sync modules or Cooper Wheelock PS-24-8MC Power Supply with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The speaker and speaker strobe appliances shall be designed for indoor flush mounting to 4" x 2-1/8" electrical boxes without need for an extension ring or surface mounting to Cooper Wheelock's E50SB or E50SSB surface boxes. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover. The finish of the Series E50 speakers and speakers strobes shall be white or red.

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. *Consult factory for latest listing status.*

- **UL Listed:** S2652 (all); S5391 (E50-241575W-FR, E50-241575W-FW, E50-24MCW-FR, E50-24MCW-FW)
- **MEA:** 151-92-E
- **CSFM:** 7125-0785-165; 7320-0785:166
- **FM Approved**
- **Bureau of Fire Protection - Chicago**

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Wheelock® Exceder™

Horns and Strobes



Audio/Visual Devices

General

The Wheelock® Exceder™ Series of notification appliances feature a sleek modern design and numerous features including eight candela options in one appliance, low current draw, no tools needed for setting changes, 12/24 VDC operation, universal mounting base and multiple mounting options.

Models with an audible feature 3 sound settings (90, 95, 99 dB). All switches to change settings can be set without the use of a tool and are located behind the appliance to prevent tampering. Wall models feature voltage test points to take readings with a voltage meter for troubleshooting and AHJ inspection.

The Wheelock® Exceder™ Series of wall and ceiling notification appliances feature a Universal Mounting Base (UMB) designed to simplify the installation and testing of horns, strobes, and combination horn strobes. The separate universal mounting base can be pre-wired to allow full testing of circuit wiring before the appliance is installed and the surface is finished. It comes complete with a contact cover for protection against dirt, dust, paint and damage to the contacts. The contact cover also acts as a shunting device to allow pre-wire testing for common wiring issues.

The contact cover is polarized to prevent it from being installed incorrectly and prevents the appliance from being installed while it is on the UMB. When the contact cover is removed the circuit will show an open until the appliance is installed. The UMB allows for consistent installation and easy replacement of appliances if required. Wall models provide an optional locking screw for extra secure installation, while the ceiling models provide a captive screw to prevent the screw from falling during installation.

Features

- Multiple voltages
- Voltage test points for quick troubleshooting and easy spot-checking (wall models only)
- 3 audible settings (90, 95, 99 dB)
- 8 Candela settings
 - Wall - 15/1575/30/75/95/110/135/185
 - Ceiling - 15, 30, 60, 75, 95, 115, 150, 177
- Finger-slide switches
- Sleek modern aesthetics
- Common base for wall and ceiling with 5 mounting options:
 - 1-gang
 - 2-gang
 - 4 inch square
 - 3.5 inch octagonal
 - 4 inch octagonal

Compatibility and Requirements

- Synchronize using Wheelock Sync Modules, or panels with built-in Wheelock patented sync protocol.
- Compatible with UL “Regulated Voltage” using filtered VDC or unfiltered VRMS input voltage
- Strobes produce one flash per second over the Regulated Voltage range.



Wall



Ceiling



General Notes

- All candela ratings represent minimum effective strobe intensity based on UL Standard 1971.
- Series Exceder Strobe products are Listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%) UL 464 (85% UL 1971).
- Series Exceder horns are under UL Standard 464 for audible signal appliances (Indoor use only).
- Product naming conventions: The Exceder line's model codes break down into easy-to-remember codes. HN = Horn, ST = Strobe, HS = Horn-strobe, C = Ceiling Mount, W = White, and R = Red. So “STRC” can be read as “Strobe, Red, Ceiling-mount.”, and “HSW” is “Horn-strobe, white, wall-mount.”
- Refer to your fire alarm panel or power supply manual when calculating the number of devices allowed per circuit.

Architects/Engineers Specifications

The notification appliances shall be Wheelock Exceder Series HS Audible Strobe appliances, Series ST Visual Strobe appliances and Series HN Audible appliances or approved equals. The Series HS and ST Strobes shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The Series HS and HN Audibles shall be UL Listed under Standard 464 (Fire Protective Signaling). All Series shall meet the requirements of FCC Part 15 Class B. 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 8 to 33 VDC. Indoor wall models shall incorporate voltage test points for easy voltage inspection.

The Series HS Audible Strobe and ST Strobe appliances shall produce a flash rate of one flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The Series shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have 8 field selectable settings at 15,

15/75, 30, 75, 95, 110, 135, 185 candela for wall mount and 15, 30, 60, 75, 95, 115, 150, 177 candela for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 15/75 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance). Appliances with candela settings shall show the candela selection in a visible location at all times when installed.

The audible shall have a minimum of three field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

MOUNTING OPTIONS

The Series HS Audible Strobe, ST Strobe and Series HN Audible shall incorporate a patented Universal Mounting Base that shall allow mounting to a single-gang, double-gang, 4" square, 3.5" octagonal, 4" octagonal or 100mm European type back boxes. Two wire appliance wiring shall be capable of directly connecting to the mounting base. Continuity checking of the entire NAC circuit prior to attaching any notification appliances shall be allowed. Product shall come with contact cover to protect contact springs. Removal of an appliance shall result in a supervision fault condition by the Fire Alarm Control Panel (FACP). The mounting base shall be the same base among all horn, strobe, horn strobe, wall and ceiling models. All notification appliances shall be backwards compatible.

PHYSICAL SPECIFICATIONS

The Series HS and ST wall models shall have a low profile measuring 5.24" H x 4.58" W x 2.19" D. Series HN wall shall measure 5.24" H x 4.58" W x 1.6" D. The Series HSC and STC

shall be round and have a low profile with a diameter of 6.68" x 2.63" D. Series HNC ceiling shall have a diameter of 6.68" x 1.50" D.

SYNCHRONIZATION

When synchronization is required, the appliance shall be compatible with Wheelock® SM, DSM Sync Modules, Wheelock® 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 one 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® synchronization protocol.

Standards and Codes

Modules in this series comply with UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), and ULC.

Agency Listings

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S5391 (Strobes); E5946 (Horns, Horn/strobes).
- **ULC Listed**
- **CSFM Listed:** 7125-0785:168.

Specification & Ordering Information

Model	Strobe Candela	12/24 VDC	Mounting Options
Horn Strobes			
HSR	15, 15/75, 30, 75, 95, 110, 135, 185	X	Universal Mounting Base
HSW	15, 15/75, 30, 75, 95, 110, 135, 185	X	Universal Mounting Base
HSRC	15, 30, 60, 75, 95, 115, 150, 177	X	Universal Mounting Base
HSWC	15, 30, 60, 75, 95, 115, 150, 177	X	Universal Mounting Base
Strobes			
STR	15, 15/75, 30, 75, 95, 110, 135, 185	X	Universal Mounting Base
STW	15, 15/75, 30, 75, 95, 110, 135, 185	X	Universal Mounting Base
STRC	15, 30, 60, 75, 95, 115, 150, 177	X	Universal Mounting Base
STWC	15, 30, 60, 75, 95, 115, 150, 177	X	Universal Mounting Base
Horns			
HNR	—	X	Universal Mounting Base
HNW	—	X	Universal Mounting Base
HNRC	—	X	Universal Mounting Base
HNWC	—	X	Universal Mounting Base
*12 VDC models feature 15 and 15/75 settings			
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March 30, 2004

DN-6796 • J-135

Wheelock HS4/HS Series Single & Multi-Candela Horn Strobe & Horn Appliance

Section: Audio/Visual Devices

GENERAL

The Wheelock Series HS4 Horn Strobe and HS Horn Appliances are an ideal choice for retrofit applications as well as new installations. They satisfy virtually all requirements for indoor, wall mount applications.

The Series HS Horn and the horn portion of the Series HS4 include a selectable continuous horn tone or temporal pattern (Code 3) with three selectable dBA settings for each tone.

Strobe options include 1575cd or Wheelock's patented MCW Multi-Candela strobe with field selectable candela settings of 15/30/75/110cd or the high intensity MCWH strobe with field selectable 135/185cd.

The Series HS4 horn and strobe inputs are electrically isolated to allow for independent operation of the strobe circuit and the horn circuit. The horn and strobe may also be wired in parallel to operate on a single circuit.

These versatile Horn and Horn Strobe Appliances may be synchronized when used in conjunction with the Wheelock SM or DSM Sync Modules or with a power supply with the patented Wheelock Sync Protocol.

All models are designed for maximum performance, reliability and cost-effectiveness while meeting or exceeding the latest requirements of NFPA 72/ANSI 117.1/UFC and UL Standards 1971 and 464 as well as meeting ADA requirements concerning photosensitive epilepsy.

FEATURES

- Field Selectable Candela Settings: 15/30/75/110cd or 135/185cd (Multi-Candela models) or 1575cd (single candela model)
- Selectable Continuous Horn or Temporal (Code 3)
- 3 Selectable dBA settings of 90/95/99 dBA in both tones
- 4-Wire Horn Strobe Appliance allows for separate operation of the horn and strobe circuits
- ADA/NFPA/UFC/ANSI compliant
- Complies with OSHA 29, Part 1910.165
- 24 VDC models with 16 to 33 VDC UL "Regulated Voltage" using filtered DC or unfiltered VRMS input voltage
- Wall mount flush to standard 4-inch square or double-gang boxes or surface mount to IOB backbox
- Synchronize with Wheelock SM, DSM Sync Module or a Power Supply with the built-in Wheelock sync protocol
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires



MEA

151-92-E



California State
Fire Marshal
7125-0785:161



SERIES HS4



SERIES HS



Multi-Candela Indicator
(Bottom of Strobe Lens)

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 Standard 1971.
- Series HS4 Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series HS horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".


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12 Clintonville Road, Northford, Connecticut 06472



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Model	Input Voltage VDC	Regulated Voltage Range VDC/FWR	Strobe Candela (CD)
HS4-24MCW	24	16.0 - 33.0	15/30/75/110
HS4-241575W	24	16.0 - 33.0	15 (75 on Axis)
HS4-24MCWH	24	16.0 - 33.0	135/185
HS-24	24	16.0 - 33.0	-

Description	Volume	Reverberant dBA @ 10ft per UL 464	Anechoic dBA @ 10 ft
		24VDC	24VDC
Continuous Horn	High	91	99
	Med	88	95
	Low	83	90
Code 3 Horn	High	87	99
	Med	84	95
	Low	79	90

* Average RMS Current is per UL average RMS method and Average Mean Current is per UL average mean method. HS/HS4 audible rating is average mean current. For rate In Rush and Peak current across the UL listed voltage range for both filtered DC and unfiltered VRMS (FWR), see installation instructions.

Note: For Total Current Draw of Series HS4 Multi-Candela or 15/75cd, add the audible and strobe Current Draws from Table 3.

HS/HS4 Series	Audible Current			Strobe Current						
	HS and HS4			HS4-241575W	HS4-24MCW			HS4-24MCWH		
	High (99) dBA	Med (95) dBA	Low (90) dBA	1575cd	15cd	30cd	75cd	110cd	135cd	185cd
16 vdc	0.035	0.020	0.014	0.101	0.062	0.102	0.192	0.265	0.300	0.420
24 vdc	0.055	0.026	0.017	0.064	0.041	0.065	0.116	0.155	0.195	0.270
33 vdc	0.069	0.035	0.021	0.047	0.032	0.047	0.081	0.107	0.145	0.190

MODEL NUMBER	INPUT VOLTAGE (VDC)	AVERAGE MEAN CURRENT @ 24 VDC	MOUNTING OPTIONS
SM-12/24-R	24	.028	W
DSM-12/24-R	24	.035	W

NOTES:

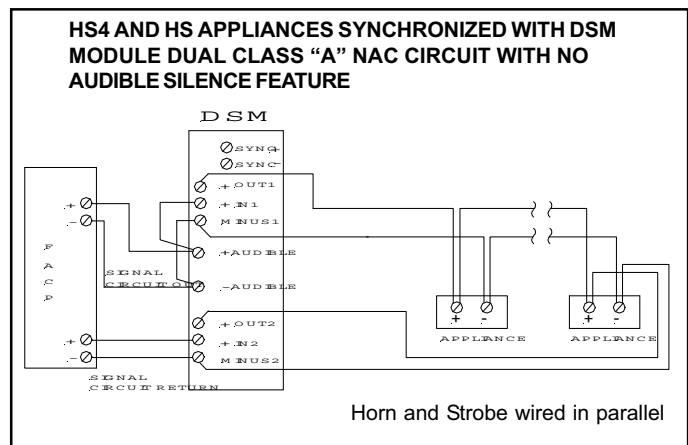
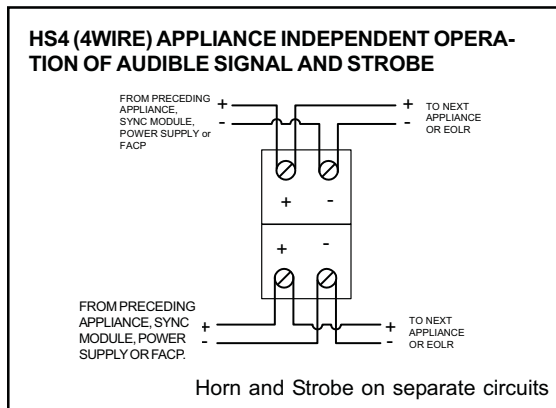
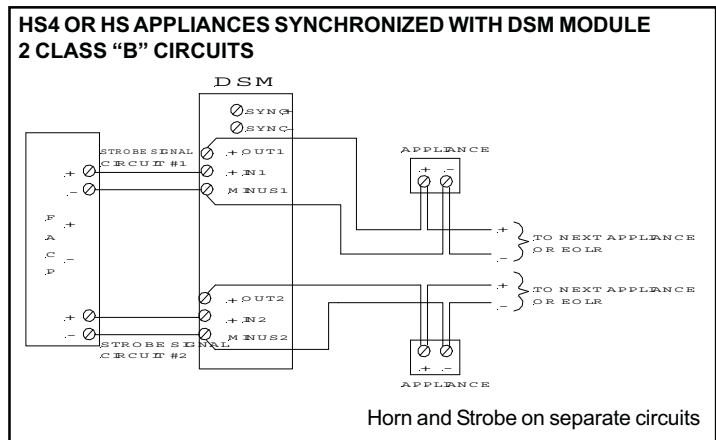
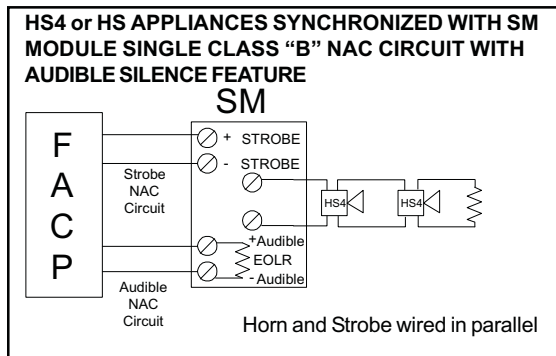
SM Sync Module is rated for 3.0 amperes @ 24 VDC.

DSM Sync Module is rated for 3.0 amperes per circuit. The maximum number of interconnected DSM modules is twenty (20). Refer to Data Sheet S3000 or Installation Instructions P83123 for SM and P83177 for DSM.

WARNING: CONTACT WHELOCK FOR THE CURRENT “INSTALLATION INSTRUCTIONS” and “GENERAL INFORMATION” SHEET (P82380) ON THESE PRODUCTS. THESE DOCUMENTS UNDERGO PERIODIC CHANGES. IT IS IMPORTANT THAT YOU HAVE CURRENT INFORMATION ON THESE PRODUCTS. THESE MATERIALS CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ PRIOR TO SPECIFYING OR INSTALLING THESE PRODUCTS, INCLUDING:

- TOTAL CURRENT REQUIRED BY ALL APPLIANCES CONNECTED TO SYSTEM SECONDARY POWER SOURCES.
- FUSE RATINGS ON NOTIFICATION APPLIANCE CIRCUITS TO HANDLE PEAK CURRENTS FROM ALL APPLIANCES ON THOSE CIRCUITS.
- COMPOSITE FLASH RATE FROM MULTIPLE STROBES WITHIN A PERSON’S FIELD OF VIEW.
- ADDING, REPLACING OR CHANGING APPLIANCES OR CHANGING CANDELA SETTINGS WILL AFFECT CURRENT DRAW. RECALCULATE CURRENT DRAW TO INSURE THAT THE TOTAL AVERAGE CURRENT AND TOTAL PEAK REQUIRED BY ALL APPLIANCES DO NOT EXCEED THE RATED CAPACITY OF THE POWER SOURCES OR FUSES.
- THE VOLTAGE APPLIED TO THESE PRODUCTS MUST BE WITHIN THEIR “REGULATED VOLTAGE RANGE”.
- INSTALLATION OF 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS.
- INSTALLATION IN OFFICE AREAS AND OTHER SPECIFICATION AND INSTALLATION ISSUES.
- THESE APPLIANCES ARE NOT DESIGNED TO BE USED ON CODED SYSTEMS IN WHICH THE APPLIED VOLTAGE IS CYCLED ON AND OFF.
- FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS OR GENERAL INFORMATION SHEETS COULD RESULT IN IMPROPER INSTALLATION, APPLICATION, 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.
- CONDUCTOR SIZE (AWG), LENGTH AND AMPACITY SHOULD BE TAKEN INTO CONSIDERATION PRIOR TO DESIGN AND INSTALLATION OF THESE PRODUCTS, PARTICULARLY IN RETROFIT INSTALLATIONS.

WIRING DIAGRAMS



NOTE: HS4 or HS must be set on Code 3 horn tone to achieve synchronized temporal (Code 3) tone. Refer to installation instruction.

ARCHITECTS AND ENGINEERS SPECIFICATIONS

The audible/visual notification appliance shall be Wheelock Series HS4 Horn Strobe and HS Horn Appliances or approved equals. The Series HS4 and HS appliance shall meet and be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired for Indoor Fire Protection Service) and Standard 464 (Fire Protective Signaling). The horn strobe shall be listed for indoor use and shall meet the requirement of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by the Fire Alarm Control Panel (FACP).

The HS Horn and the audible portion of the HS4 appliance shall have a minimum of three (3) field selectable setting for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan ® lens. The Series HS4 shall be of low current design. Where wall mount, Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 for: 15/30/75/110cd or 135/185cd. The selector switch for selecting the candela setting shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required.

When synchronization is required, the appliance shall be compatible with Wheelock's SM, DSM Sync Modules or Wheelock's PS-12/24-8MP Power Supply with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobes shall revert to a non-synchronized flash-rate.

All notification appliances shall be backward compatible.

SPECIFICATIONS AND ORDERING INFORMATION

MODEL	STROBE CANDELA	NON-SYNC	SYNC * W/SM, DSM or POWER SUPPLY	24 VDC	2 WIRE	4 WIRE	MOUNTING OPTIONS	AGENCY APPROVALS				
								UL	MEA	CSFM	FM	BFP
HS4-24MCW-FR	15/30/75/110	X	X	X	X	X	D,E,F,L,M,O,P,R	X	*	X	X	*
HS4-24MCW-FW	15/30/75/110	X	X	X	X	X	D,E,F,L,M,O,P,R	X	*	X	X	*
HS4-241575W-FR	15 (75 on axis)	X	X	X	X	X	D,E,F,L,M,O,P,R	X	*	X	X	*
HS4-121575W-FR	15 (75 on axis)	X	X	X	X	X	D,E,F,L,M,O,P,R	X	*	*	*	*
HS4-24MCWH-FR	135/185	X	X	X	X	X	D,E,F,L,M,O,P,R	X	*	*	*	*
HS4-24MCWH-FW	135/185	X	X	X	X	X	D,E,F,L,M,O,P,R	X	*	*	*	*
HS-24-R	-	X	X	X	X		D,E,F,L,M,O,P,R	X	*	X	*	*
HS-24-W	-	X	X	X	X		D,E,F,L,M,O,P,R	X	*	X	*	*

*A power supply with the built-in patented Wheelock Sync Protocol

*PENDING

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

Cooper-Wheelock NS Series Horn Strobes & NH Series Horns



NS Horn Strobe



NH Horn



Multi-Candela Indicator
(bottom of Strobe Lens)

Description

The Cooper-Wheelock Series NS Horn Strobe Appliances will satisfy virtually all requirements for indoor, wall mount applications.

The Series NH Horn and the horn portion of the Series NS include a selectable continuous horn tone or temporal pattern (Code 3) with selectable dBA settings of 90 or 95 dBA.

Strobe options include 15/75cd or Cooper-Wheelock's patented Multi-Candela strobe with field selectable candela settings of 15/30/75/110cd.

These versatile Horn Strobe Appliances may be synchronized when used in conjunction with the Wheelock SM or DSM Sync Modules or a Power Supply with the Cooper-Wheelock patented Sync Protocol. Additionally, the audible may be silenced while maintaining strobe activation.

All models of the Series NS and NH are designed for maximum performance, reliability and cost-effectiveness while meeting or exceeding the latest requirements of NFPA 72/ANSI 117.1/UFC and UL Standards 1971 and 464 as well as meeting ADA requirements concerning photosensitive epilepsy.

Features

- Field Selectable Candela Settings 15/30/75/110cd (24 VDC Multi-Candela models) or 15/75cd in 12 or 24 VDC
- Selectable Continuous Horn or Temporal (Code 3)
- 2 Selectable dBA settings of 90 and 95 dBA in both tones
- 12 and 24 VDC models with UL "Regulated Voltage" using filtered DC or unfiltered VRMS input voltage
- Patented Universal Mounting Plate
- Wall Mount
- ADA/NFPA/UFC/ANSI compliant
- Complies with OSHA 29, Part 1910.165
- NH horn is selectable 12 or 24 VDC in 1 unit
- Synchronize with Wheelock SM or DSM Sync Module or a Power Supply with built-in sync protocol
- Patent pending Universal Mounting Plate for single-gang, double-gang, 4" (10.16 cm) square, or 100 mm European backboxes, or Wheelock's SHBB shallow surface backbox.
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires

Listings

Listings and approvals below apply to the basic NS Series Strobes and NH Series Horns. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed: file E5946.
- ULC Listed: files CS243 & CS356.
- FM approved.
- MEA approved: file 151-92-E.
- CSFM approved: file 7125-0785:142

General Notes

- Strobes are designed to flash once 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 Standard 1971.
- Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".



Engineer's Specifications

The audible/visual notification appliances shall be Cooper-Wheelock Series NS Horn Strobe appliances and Series NH Horn appliances or approved equals. The Series NS appliances shall meet and be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired for Indoor Fire Protection Service). The Series NH Horn shall be UL Listed under Standard 464 (Fire Protective Signaling). The horn strobe shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by the Fire Alarm Control Panel (FACP).

The audible portion of the appliance shall have a minimum of two (2) field selectable settings for dBA levels (90 and 95 dBA) and shall have a choice of continuous or temporal (Code 3) audible outputs.

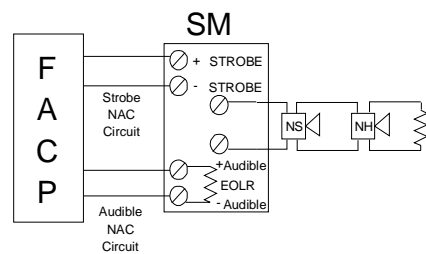
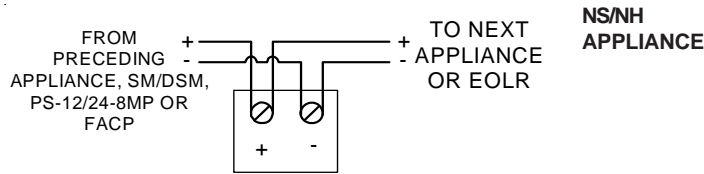
The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan lens. The Series NS shall be of low current design. Where wall mount, Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 for 15/30/75/110 candela. The selector switch for selecting the candela setting shall be tamper resistant. The 15/75 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance).

When synchronization is required, the appliance shall be compatible with Cooper-Wheelock's SM, DSM Sync Modules or a Power Supply with Cooper-Wheelock's built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobes shall revert to a non-synchronized flash-rate. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation.

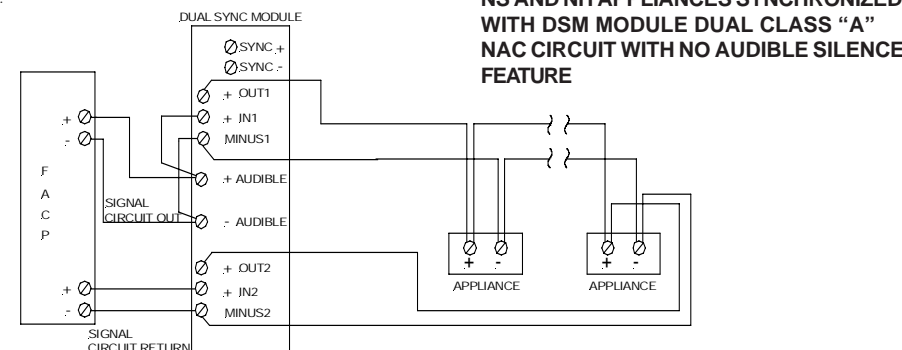
The Series NS Horn Strobes and NH horn shall incorporate a Patented Universal Mounting Plate that shall allow mounting to a single-gang, double-gang, 4-inch square, 100mm European type backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided.

All notification appliances shall be backward compatible.

Wiring Diagram



NS AND NH APPLIANCES SYNCHRONIZED WITH SM MODULE SINGLE CLASS "B" NAC CIRCUIT WITH AUDIBLE SILENCE FEATURE



NS AND NH APPLIANCES SYNCHRONIZED WITH DSM MODULE DUAL CLASS "A" NAC CIRCUIT WITH NO AUDIBLE SILENCE FEATURE

NOTE: NS/NH must be set on Code 3 horn to achieve synchronized temporal (Code 3) tone. Refer to instruction (P38983, P83600 respectively).

⚠ WARNING: CONTACT COOPER-WHEELOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS (P83983) SERIES NS-24MCW, (P84234) SERIES NS-12 AND 24 VDC SINGLE CANDELA MODELS, (P83600) SERIES NH AND "GENERAL INFORMATION" SHEET (P82380) ON THESE PRODUCTS. THESE DOCUMENTS UNDERGO PERIODIC CHANGES. IT IS IMPORTANT THAT YOU HAVE CURRENT INFORMATION ON THESE PRODUCTS. THESE MATERIALS CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ PRIOR TO SPECIFYING OR INSTALLING THESE PRODUCTS, INCLUDING:

- TOTAL CURRENT REQUIRED BY ALL APPLIANCES CONNECTED TO SYSTEM SECONDARY POWER SOURCES.
- FUSE RATINGS ON NOTIFICATION APPLIANCE CIRCUITS TO HANDLE PEAK CURRENTS FROM ALL APPLIANCES ON THOSE CIRCUITS.
- COMPOSITE FLASH RATE FROM MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW.
- ADDING, REPLACING OR CHANGING APPLIANCES OR CHANGING CANDELA SETTINGS WILL AFFECT CURRENT DRAW.
- RECALCULATE CURRENT DRAW TO INSURE THAT THE TOTAL AVERAGE CURRENT AND TOTAL PEAK REQUIRED BY ALL APPLIANCES DO NOT EXCEED THE RATED CAPACITY OF THE POWER SOURCES OR FUSES.
- THE VOLTAGE APPLIED TO THESE PRODUCTS MUST BE WITHIN THEIR "REGULATED VOLTAGE RANGE".
- INSTALLATION OF 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS.
- INSTALLATION IN OFFICE AREAS AND OTHER SPECIFICATION AND INSTALLATION ISSUES.
- THESE APPLIANCES ARE NOT DESIGNED TO BE USED ON CODED SYSTEMS IN WHICH THE APPLIED VOLTAGE IS CYCLED ON AND OFF.
- FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS OR GENERAL INFORMATION SHEETS COULD RESULT IN IMPROPER INSTALLATION, APPLICATION, 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.
- CONDUCTOR SIZE (AWG), LENGTH AND AMPACITY SHOULD BE TAKEN INTO CONSIDERATION PRIOR TO DESIGN AND INSTALLATION OF THESE PRODUCTS, PARTICULARLY IN RETROFIT INSTALLATIONS.

Specification & Ordering Information

MODEL	STROBE CANDELA	NON-SYNC	SYNC W/SM, DSM	24 VDC	12 VDC	2 WIRE	MOUNTING OPTIONS***	AGENCY APPROVALS				
								UL	MEA	CSFM	FM	BFP
NS-24MCW-FR	15/30/75/110	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NS-24MCW-FW	15/30/75/110	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NS-241575W-FR	15 (75 on axis)	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NS-121575W-FR	15 (75 on axis)	X	X	-	X	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NH-12/24-R	12V	X	X	X	X	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
	24V											

Table 1: Ratings Per UL Standard 1971

Model	Input Voltage VDC	Regulated Voltage Range VDC/FWR	Strobe Candela (CD)
NS-24MCW	24	16.0 - 33.0	15/30/75/110
NS-241575W	24	16.0 - 33.0	15 (75 on Axis)
NS-121575W	12	8.0 - 17.5	15 (75 on Axis)

Table 2: *Average RMS Current Ratings

NS-24MCW with High (95 dBA) Setting					
Voltage	15cd	30cd	75cd	110cd	
16.0 VDC	.077	.113	.195	.268	
24.0 VDC	.065	.087	.134	.174	
33.0 VDC	.069	.082	.117	.134	
NS-24MCW with Low (90 dBA) Setting					
Voltage	15cd	30cd	75cd	110cd	
16.0 VDC	.070	.106	.188	.261	
24.0 VDC	.052	.072	.126	.158	
33.0 VDC	.045	.060	.097	.114	

Table 3: *Average RMS Current Ratings

NS-241575W		
Voltage	High (95) dBA	Low (90) dBA
16.0 VDC	.120	.116
24.0 VDC	.094	.093
33.0 VDC	.102	.078
NS-121575W		
Voltage	High (95) dBA	Low (90) dBA
8.0 VDC	.341	.324
12.0 VDC	.251	.265
17.5 VDC	.216	.188

Table 4: *Average Mean Current Ratings NH Horn 24 Volt Models

Voltage	High (95) dBA	Low (90) dBA
16.0 VDC	.019	.017
24.0 VDC	.028	.022
33.0 VDC	.039	.027

*Average RMS Current is per UL average RMS method and Average Mean Current is per UL average mean method. NH models use average mean current. For rated In Rush and Peak current across the UL listed voltage range for both filtered DC and unfiltered VRMS (FWR), see installation instructions.
*** Refer to mounting options.

Table 5: dBA Ratings for Series NS/NH Horn

Description	Volume	Reverberant dBA @ 10 ft. per UL 464		Anechoic dBA @ 10 ft.	
		12 VDC	24 VDC	12 VDC	24 VDC
Continuous Horn	High	83	87	89	95
	Low	76	81	84	90
Code 3 Horn	High	79	82	89	95
	Low	72	76	84	90

SYNC MODELS/POWER SUPPLY

MODEL NUMBER	INPUT VOLTAGE (VDC)	AVERAGE MEAN CURRENT @ 24 VDC	MOUNTING OPTIONS
SM-12/24-R	24	.028	W
DSM-12/24-R	24	.035	W

NOTES:
SM Sync Module is rated for 3.0 amperes @ 24 VDC;
DSM Sync Module is rated for 3.0 amperes per circuit. The maximum number of interconnected DSM Modules is twenty (20).

Specifications and wiring information are provided for information only and are believed to be accurate. Gamewell-FCI assumes no responsibility for their use. Data and design are subject to change without notice. Installation and wiring instructions shipped with the product shall always be used for actual installation. For more information, contact Gamewell-FCI.



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