

Overview

GE Security 403 Series Bell-Strobe Plates are specially designed for use with compatible life safety communication and control equipment to alert the hearing impaired of a life safety event. Strobes are available with 15 cd, 15/75 cd, 30 cd, and 110 cd effective flash intensity. They are fully compatible with Genesis signals.

As part of the Enhanced Integrity line of products, 403 series strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a separately-installed G1M Signal Master or SIGA-CC1S Synchronization Module.

Synchronization is important because a small portion of the population have a condition which may cause them to become disoriented from multiple random flashes of light. 403 Series strobes minimize this risk.

The flash from 403 series strobes can be noticed from almost any position in the room, corridor, or large open space. Light dispersion is controlled with a specially shaped reflector that directs a minimum of 12 per cent of rated light output above and below the strobe, and a minimum of 25 per cent of rated light straight out both sides.

403 Series strobes are designed for 20 to 31 Vdc operation and must be connected to signal circuits that output a constant (not pulsed) voltage. A diode is used to allow full signal circuit supervision and polarized connections are made to 7" (175 mm) wire lead.

The rugged steel plate with smooth bevelled edges is finished in a durable, high quality, baked red epoxy polyester powder-coat.

Standard Features

- Converts GE Security 439 model bells**
 Ideal for renovation work; easily adapts to existing or new GE Security bells for conversion into Bell/Strobes. Mounts to North American one-gang, two-gang, octagon, and 4-inch square boxes.
- UL 1971-listed synchronizing strobe**
 403 Series strobes synchronize to the latest UL 1971 requirements when used with an external control module (G1M or SIGA-CC1S).
- Genesis-compatible**
 Can be mixed with Genesis signals. All Genesis and Integrity strobes on the same circuit meet UL 1971 synchronization requirements when used with an external control module.
- Approved for public and private mode applications**
 UL 1971-listed as signaling devices for the hearing impaired and UL 1638-listed as protective visual signaling appliances.
- Satisfies ADA code requirements**
 All 403 strobes provide the "Equivalent Facilitation" allowed under ADA Accessibility Guidelines. A single strobe in rooms up to 50 ft x 50 ft satisfy both ADA and NFPA codes.
- Rugged steel plate**
 Strong CRS plate with durable baked red epoxy polyester powder-coat finish.
- Field changeable field markings**
 Lens language or standard "FIRE" marking is easily changed with optional LKW series lens kits.

Bell-Strobe Plate

403-3A, -5A, -7A, -8A



403 Series c/w 439 - 6 inch Bell
(bell ordered separately)



Bell Application

Suggested sound pressure levels in each signaling zone for alarm or alert signals are at least 15 dB above the average ambient sound level or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater, measured 1500mm above the floor. The average ambient sound level is the RMS, A-weighted sound pressure measured over a 24-hour period.

Strobe Application

GE Security strobes are UL 1971-listed for use indoors as wall-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed 105 dBA (87dBA in Canada), where occupants use hearing protection, and in areas of public accommodation as defined in the *Americans with Disabilities Act* (see *application notes – USA*).

Combination horn-strobe signals must be installed in accordance with guidelines established for strobe devices.

The following guidelines are based on ANSI/NFPA 72 *National Fire Alarm Code* (1999). When applied and installed in accordance with that code, GE Security strobes meet or exceed the illumination produced by the ADA-specified 75 candela (cd) strobe at 50 feet.*

Non-Sleeping Rooms and Corridors: GE Security strobes rated at less than 110 cd per UL 1971 are intended for use in non-sleeping areas only. Install with the bottom of the device at least 80 inches (2.0 m) and no more than 96 inches (2.4 m) above the finished floor. No point in any space (including corridors) required to have strobes should be more than 50 feet (15.2 m) from the signal (in the horizontal plane).

Non-Sleeping Rooms	Use One Wall Mounted Model:
Up to 20' x 20' (6.1 x 6.1m)	One 15 cd strobe
Up to 30' x 30' (9.1 x 9.1m)	One 30 cd or two 15 cd strobes
Up to 40' x 40' (12.2 m x 12.2 m)	One 75 cd or two 30 cd strobes
Up to 50' x 50' (15.2 x 15.2m)	One 110 cd or two 75 cd strobes

Corridors	Wall Mounted - Model:
Any Length x Max. 20' (6.1m) Wide	15 cd strobes spaced at 100' (30.5 m) max. Strobes must be placed within 15' (4.5m) of each end of the corridor.

*ADA suggests using 75 cd strobes throughout an area, with spacing that never exceeds 50 ft from the strobe to any point in the protected space.

Sleeping rooms: GE Security 110 cd strobes are intended for use in sleeping rooms and should be installed along with a smoke detector. It must be wall mounted at least 80" (2.03 m) above floor level, but no closer than 24" (610 mm) to the ceiling. The distance from the strobe to the pillow must not exceed 16' (4.8 m).

Sleeping Rooms	Use One Wall Mounted Model:
Any Size	110 cd within 16 feet of pillow

Application Notes – USA

Strobes must be used to supplement audible signals wherever the average ambient sound level exceeds 105 dBA. Combination audible/visual signals must be installed in accordance with NFPA guidelines established for strobes.

ADA suggests that the following areas may require visual alarm signals:

- rest rooms, meeting rooms, and other general use areas.
- lobbies, hallways, and other common use areas.
- sleeping rooms intended for use by persons with hearing impairment (in accordance with Title 1 of ADA).
- work areas used by a person with a hearing impairment (per Title 1 of ADA).

Application Notes - Canada

(Based in part on 1995 Canada National Building Code)

The fire alarm signal sound pressure level shall not exceed 110 dBA in any normally occupied area. The sound pressure level from an audible signal in a floor area used for occupancies other than residential occupancies shall not be less than 10 dBA above the ambient noise, and never less than 65 dBA. The sound pressure level in sleeping rooms from an audible signal shall not be less than 75 dBA when any intervening doors between the device and the sleeping room are closed. Audible signal devices shall be installed not less than 1.8 m to the center of the device above the floor (per CAN/ULC S524).

The fire alarm audible signal shall be supplemented by fire alarm strobes in any floor area where the ambient noise level exceeds 87 dBA, or where the occupants of the floor area use ear protective devices, are located within an audiometric booth, or are located within sound insulating enclosures. This also applies to assembly occupancies in which music and other sounds associated with performances could exceed 100 dBA.

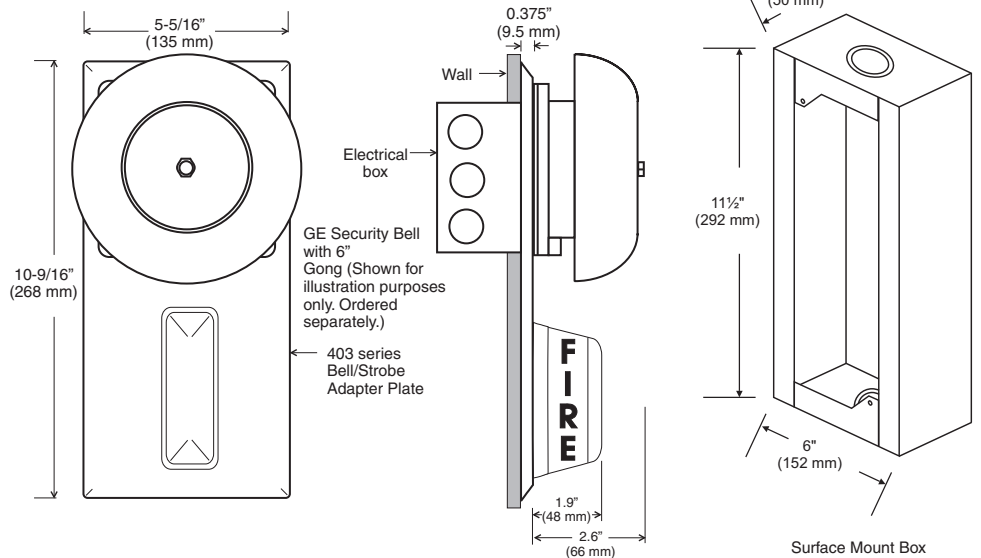
Strobes shall be installed in a building so that the flash from not less than one device is visible throughout the floor area or portion thereof in which they are installed. For maximum safety, GE Security recommends that strobes be installed as per the guidelines shown here under Strobe Application.

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, we suggest you discuss further safeguards with your local fire protection specialist. These visual signal appliances' flash intensity may not be adequate to alert or waken occupants in the protected area. Research indicates that the intensity of strobe needed to awaken 90% of sleeping persons is approximately 100 cd. GE Security recommends that strobes in sleeping rooms be 110 cd minimum.

Installation and Mounting

The 403 series bell/strobe plates install to a variety of standard, flush mounted, North-American electrical boxes. This includes one-gang, two-gang, 3-1/2 inch & 4 inch octagon, and 4 inch square. The plate must be installed along with GE Security's model 439 series 6 inch (150 mm), 8 inch (200 mm), and 10 inch (250 mm) bells (order separately). The strobe must be connected to a signal circuit which outputs a constant (not pulsed) voltage; the bell can be connected to pulsed or continuous voltage circuits.

GE Security recommends that these fire alarm bell/strobes always be installed in accordance with the latest recognized edition of national and local fire alarm codes.



Typical Wiring

SAME SIGNAL CIRCUIT

The bell and strobe can be connected to the same signal circuit (as shown) if the circuit is configured for continuous signal operation.

CAUTION: Electrical supervision requires wire run to be broken at each device.

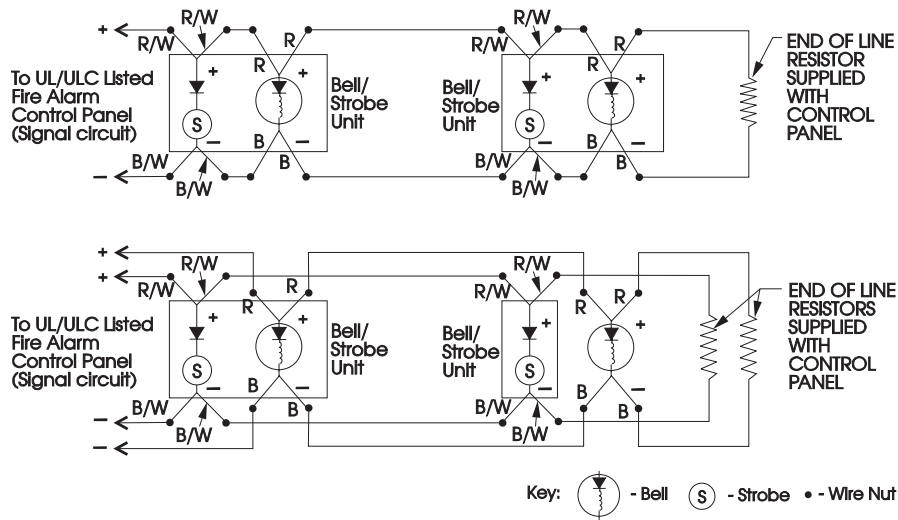
Do not loop signal circuit field wires around the Bell/Strobe units leads.

SEPARATE SIGNAL CIRCUITS

The bell and strobe can be connected to different signal circuits (as shown). The strobe is designed to be used on circuits that output a constant voltage. Do not connect strobe to a coded or pulsating voltage.

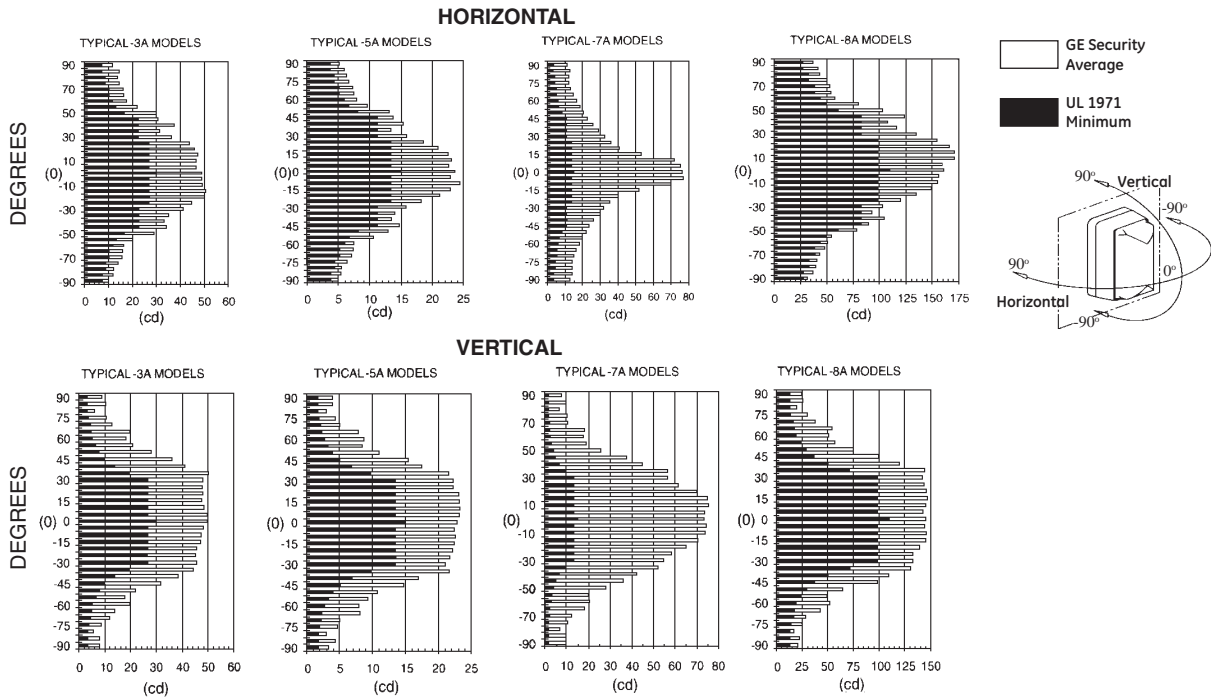
CAUTION: Electrical supervision requires wire run to be broken at each device.

Do not loop signal circuit field wires around the Bell/Strobe units leads.



Distribution Patterns

UL 1971 WALL MOUNTED STROBE LIGHT OUTPUT



Current Draw

Typical Current	15 cd			15/75 cd			30 cd			110 cd		
	RMS	Mean	Peak	RMS	Mean	Peak	RMS	Mean	Peak	RMS	Mean	Peak
20 Vdc	82	78	202	113	107	248	107	102	216	228	222	420
24 Vdc	69	66	176	90	85	214	89	85	190	180	175	360
31 Vdc	56	53	158	65	62	174	70	67	162	125	122	280
20 Vfwr	120	65	432	153	81	540	155	89	460	327	177	952
24 Vfwr	108	55	400	128	64	412	134	71	472	260	134	808

UL Rating	15 cd			15/75 cd			30 cd			110 cd		
	RMS	Mean	Peak	RMS	Mean	Peak	RMS	Mean	Peak	RMS	Mean	Peak
20 Vdc	87	83	178	121	115	277	113	107	213	248	241	402
24 Vdc	74	70	156	101	96	204	95	89	189	203	197	338
31 Vdc	60	57	135	81	76	173	75	71	160	155	151	280
20 Vfwr	124	69	354	168	97	452	157	91	420	342	202	868
24 Vfwr	110	58	356	146	79	446	138	75	402	286	159	788

Notes and Comments

1. Current values are shown in mA.
2. UL Nameplate Rating can vary from Typical Current due to measurement methods and instruments used.
3. GE Security recommends using the Typical Current for system design including NAC and Power Supply loading and voltage drop calculations.
4. Use the Vdc RMS current ratings for filtered power supply and battery AH calculations. Use the Vfwr RMS current ratings for unfiltered power supply calculations.
5. Fuses, circuit breakers and other overcurrent protection devices are typically rated for current in RMS values. Most of these devices operate based upon the heating affect of the current flowing through the device. The RMS current (not the mean current) determines the heating affect and therefore, the trip and hold threshold for those devices.
6. Our industry has used 'mean' currents over the years. However, UL will direct the industry to use the 2004 RMS values in the future.

Specifications

Catalog Number	403-5A-R	403-7A-R	403-3A-R	403-8A-R
UL 1971 Rated Strobe Output - candela (cd)	15 cd	15 cd	30cd	110cd
UL 1638/ULC S526 Rated Strobe Output	15 cd	75 cd	30 cd	110 cd
Strobe Flash Rate	Synchronized at one flash per second. External control module necessary to meet UL 1971 synchronization requirements of 10 milliseconds over a two-hour period.			
Compatible Synchronization Modules	G1M-RM, SIGA-CC1S, SIGA-MCC1S			
Strobe Operating Volts	20 to 31 Vdc (Continuous)			
Operating Environment	INDOOR: 32-120° F (0-49° C) ambient temperature. 85% relative humidity @ 30° C			
Lens Markings	Supplied with LKW-1 "FIRE" red letters, vertical both sides (Wall Mount) - see LKW series for optional markings			
Wire Connections	Strobe 7 in (175 mm) color-coded polarized leads - 2 INs/2 OUTs, Bell (see 439 series cat sheet)			
Flash Tube Enclosure	Clear LEXAN			
Strobe Plate, Finish	CRS Steel - 5-5/16 in x 10-9/16 in (135 mm x 268 mm), red baked epoxy polyester powder-coat finish			
Mounting	Fits over FLUSH mounted North-American boxes - One-gang & two-gang, 3-1/2 inch & 4 inch octagon, 4 inch square			
Agency Listings	UL 1971, UL 1638, ULC S526, CSFM, MEA, FM (All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule)			

Ordering Information

Cat. Number	Description	Ship Wt. lb (kg)
403-5A-R	Bell-Strobe Plate - 15 cd, Red	
403-7A-R	Bell-Strobe Plate - 15/75 cd, Red	
403-3A-R	Bell-Strobe Plate - 30 cd, Red	2.0 (0.9)
403-8A-R	Bell-Strobe Plate - 110 cd, Red	
403-SB	Surface box for 403, Red; 6" W x 11½" H x 2" D (152 x 292 x 50mm) -- Canada only.	

Synchronization Modules

G1M-RM	Genesis Signal Master Remote Mount (1-gang)	0.2 (0.1)
SIGA-CC1S	Synchronization Output Module (Standard Mount)	0.5 (0.23)
SIGA-MCC1S	Synchronization Output Module (UIO Mount)	0.18 (0.08)

Lens Marking Kits (see note 1)

LKW-1	"FIRE", Wall Orientation (supplied)	
LKW-1R	"FIRE", Wall Orientation, RED	
LKW-2	"FEU", Wall Orientation	
LKW-3	"FIRE/FEU", Wall Orientation	
LKW-4	"SMOKE", Wall Orientation	0.1 (0.05)
LKW-5	"HALON", Wall Orientation	
LKW-6	"CO2", Wall Orientation	
LKW-7	"EMERGENCY", Wall Orientation	
LKW-8	"ALARM", Wall Orientation	
LKW-9	"FUEGO", Wall Orientation	

* Add Suffix "W" to catalog no. for WHITE. (e.g. 757-7A-TW)

Note 1 - Change "W" to "C" for CEILING mount. (e.g. LKC-1)

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