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Security

## NOTIFICATION APPLIANCES

Compatibility →

QuickStart

FireShield

EST2

EST3

## Field Configurable Horns and Strobes

G1 Series

### Features

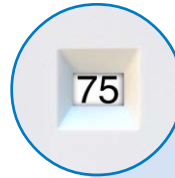
- **Unique low-profile design**
  - The most compact UL-1971/ULC-S526 listed strobe available
  - Ultra-slim – protrudes less than one inch from the wall
  - Attractive appearance
  - No visible mounting screws
- **Four field-configurable options in one device**
  - Select 15, 30, 75, or 110 cd strobe output
  - Select high (default) or low dB horn output
  - Select temporal (default) or steady horn output
  - Select public mode flash rate (default) or private mode temporal flash
- **Easy to install**
  - Fits standard 1-gang electrical boxes – no trim plate needed
  - Optional trim plate accommodates oversized openings
  - Pre-assembled with captive hardware
  - #12 AWG terminals – ideal for long runs or existing wiring
- **Unparalleled performance**
  - Industry's most even light distribution
  - Meets tough synchronizing standards for strobes
  - Single microprocessor controls both horn and strobe
  - Low current draw minimizes system overhead
  - Independent horn control over a single pair of wires
  - Highly regulated in-rush current
  - Multiple frequency tone improves wall penetration
  - Industry's first temporal strobe output

### Description

The Genesis line of signals are among the smallest, most compact audible-visible emergency signaling devices in the world. About the size of a deck of playing cards, these devices are designed to blend with any decor.

Thanks to patented breakthrough technology, GE Security Genesis strobes do not require bulky specular reflectors and lenses. Instead, an exclusive cavity design conditions light to produce a highly controlled distribution pattern. Significant development efforts employing this new technology have given rise to a new benchmark in strobe performance – FullLight technology.

FullLight strobe technology produces a smooth light distribution pattern without the spikes and voids characteristic of specular reflectors. This



Selectable 15, 30, 75,  
or 110 cd strobe!

Selectable  
High or low dB  
horn!



One or more patents pending.

ensures the entire coverage area receives consistent illumination from the strobe flash. As a result, Genesis strobes with FullLight technology go well beyond the minimum UL-required "T" pattern, significantly exceeding UL-1971 and ULC-S526 light distribution requirements.

Although all Genesis strobes are self-synchronizing, when installed with an optional synchronization module, strobe flashes from devices on the same circuit synchronize to within 10 milliseconds of each other indefinitely. This exceeds the two-hour minimum specified in the UL standards. Only one synchronization module is required per circuit.

Genesis strobes and horn-strobes offer 15 to 110 candela output, which is selectable with a conveniently-located switch on the side of the device. The candela output setting remains clearly visible even after final installation, yet it stays locked in place to prevent unauthorized tampering.

Genesis horn output reaches as high as 99 dB and features a unique multiple frequency tone that results in excellent wall penetration and an unmistakable warning of danger. Horns may be configured for either coded or non-coded signal circuits. They can also be set for low dB output with a jumper cut that reduces horn output by about 5 dB.

Genesis signals feature textured housings in architecturally neutral white or traditional fire red. An ingenious iconographic symbol indicates the purpose of the device. This universal symbol is code-compliant and is easily recognized by all building occupants regardless of what language they speak. Models with "FIRE" markings are also available.



imagination at work

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Literature Sheet #85001-0573 Issue 3

Not to be used for installation purposes. Page 1 of 6

## Application

Genesis 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.

### Strobes

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	EST wall mounted strobes*
Up to 20' x 20' (6.1 m x 6.1 m)	One 15 cd strobe
Up to 30' x 30' (9.1 m x 9.1 m)	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 m x 15.2 m)	One 110 cd or two 75 cd strobes
Corridors	
Any length. Maximum width: 20' (6.1m).	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.

**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).

For detailed spacing requirements, consult *The Handbook of Visible Notification Appliances for Fire Alarm Applications* published by GE Security Press, or contact your local GE Security representative.

**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	EST wall mounted strobe
Any size	110 cd within 16 feet of pillow

### Horns

The suggested sound pressure level for each signaling zone used with alert or alarm signals is 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 5 feet (1.5 m) above the floor. The average ambient sound level is, A-weighted sound pressure measured over a 24-hour period.

Doubling the distance from the signal to the ear will theoretically result in a 6 dB reduction of the received sound pressure level. The actual effect depends on the acoustic properties of materials in the space. A 3 dBA difference represents a barely noticeable change in volume.

### Application Notes - USA

Audible signals in the public mode should never have a sound level less than 75 dBA at 10' (3 m) per NFPA 72. Signals cannot exceed 120 dBA per ADA and NFPA 72 at the minimum hearing distance to audible appliance.

Strobe and combination horn/strobe devices should be installed 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. Horns should be installed with their tops not less than 6 inches (152 mm) below the ceiling and not less than 90 inches (2.3 m) above the finished floor.

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 requires visible signals in the following areas:

- rest rooms, meeting rooms, 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 ambient levels, and never less than 65 dBA. In sleeping rooms the sound pressure level 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 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 Spacing.

## Installation

Genesis horns and strobes mount to any standard one-gang surface or flush electrical box. Matching optional trim plates are used to cover oversized openings and can accommodate one-gang, two-gang, four-inch square, or octagonal boxes, and European 100 mm square.



Genesis Horn/Strobe with optional trim plate

All Genesis signals come pre-assembled with captive mounting screws for easy installation. Two tabs at the top of the signal unlock the cover to reveal the mounting hardware. The shallow depth of Genesis devices leaves ample room behind the signal for extra wiring. Once installed with the cover in place, no mounting screws are visible.

### Field Configuration

Temporal horn and horn-strobe models are factory set to sound in a **three-pulse temporal pattern**. Units may be configured for use with coded systems by

cutting a jumper on the circuit board. This results in a **steady output** that can be turned on and off (coded) as the system applies and removes power to the signal circuit. A Genesis Signal Master is required when horn-strobe models are configured for coded systems. Non-temporal, horn-only models sound a steady tone.

Genesis strobes and horn-strobes are shipped from the factory ready for use as **UL 1971 compliant** signals for public mode operation. These signals may be configured for **temporal flash** by cutting a jumper on the circuit board. This battery-saving feature is intended for private mode signaling only.

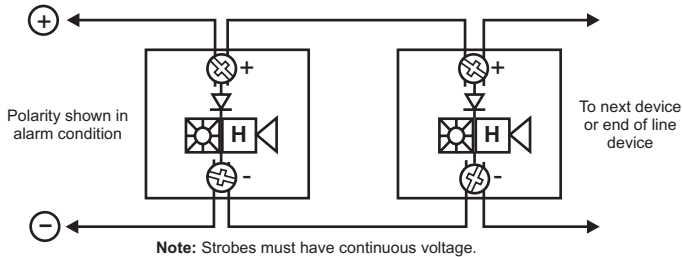
Genesis strobes and horn-strobes may be set for **15, 30, 75, or 110 candela output**. The output setting is changed by simply opening the device and sliding the switch to the desired setting. The device does not have to be removed to change the output setting. The setting remains visible through a small window on the side of the device after the cover is closed.

Horns and horn-strobes are factory set for **high dB output**.

**Low dB output** may be selected by cutting a jumper on the circuit board. This reduces the output by about 5 dB.

## Wiring

Field wiring terminals accommodate #18 to #12 AWG (0.75 mm<sup>2</sup> to 2.5 mm<sup>2</sup>) wiring. Horns, strobes, and combination horn-strobes are interconnected with a single pair of wires as shown below.



## Specifications

Housing	Red or white textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating.
Lens	Optical grade polycarbonate (clear)
Mounting (indoor wall mount only)	Flush mount: 2½ inch (64 mm) deep one-gang box Surface mount: EST model 27193 surface mount box, wiremold box, or equivalent surface-mount box With optional trim plate: One-gang, two-gang, four-inch square, octagonal, or European single-gang box
Wire connections	Screw terminals: single input for both horn and strobe. #18 to #12 AWG (0.75 mm <sup>2</sup> to 2.5 mm <sup>2</sup> ) wire size
Operating environment	Indoor only: 32-120°F (0-49°C) ambient temperature. 93% relative humidity
Agency listings/approvals	UL 1971, UL 1638, UL 464, ULC S525, ULC S526, CSFM, CE, FCC, (MEA, FM pending). (All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule.)
Dimensions (HxWxD)	Signal: 4-1/2" x 2-3/4" x 13/16" (113 mm x 68 mm x 21 mm) Trimplate: 5" (127 mm); Height – 5-7/8" (149 mm); Depth – ½" (13 mm)
Operating voltage	G1-HD series temporal-tone horns: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded when horn set to steady tone) G1-HDVM series temporal-tone horn-strobes: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded (audible NAC only) when used with optional G1M Genesis Signal Master) G1-VM series strobes: non-coded, filtered 16 - 33 Vdc or unfiltered 16-33 Vdc FWR G1-P series steady-tone horns: coded or non-coded, filtered 20-31 Vdc or unfiltered 20-27 Vdwr
Strobe output rating	UL 1971, UL 1638, ULC S526: selectable 15 cd, 30 cd, 75 cd, or 110 cd output
Strobe flash rate	G1-VM strobes and G1-HDVM series temporal-tone horn-strobes: one flash per second synchronized with optional G1M Genesis Signal Master indefinitely within 10 milliseconds (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without G1M Genesis Signal Master) Temporal setting (private mode only): synchronized to temporal output of horns on same circuit
Compatible synchronization modules*	G1M, G1M-RM, SIGA-CC1S, SIGA-MCC1S
Horn pulse rate	G1-HD temporal-tone horns and G1-HDVM series temporal-tone horn-strobes: temporal rate synchronized with optional G1M Genesis Signal Master indefinitely within 10 milliseconds (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without G1M Genesis Signal Master) G1-P steady-tone horns: continuous, steady tone only
Temporal audible pattern	½ sec ON, ½ sec OFF, ½ sec ON, ½ sec OFF, ½ sec ON, 1½ sec OFF, then repeat cycle

\* Not compatible with G1-P Series horns.

## dBa output

### Temporal Horns, Horn-strobes (G1-HD, G1-HDVM series) – High dB Setting

	UL464		Average	Peak
	Temporal	Steady	Temporal/Steady	Temporal/Steady
16 Vdc	81.4	85.5	91.4	94.2
24 Vdc	84.4	88.6	94.5	97.6
33 Vdc	86.3	90.4	96.9	99.5

### Temporal Horns, Horn-strobes (G1-HD, G1-HDVM series) – Low dB Setting

	UL464		Average	Peak
	Temporal	Steady	Temporal/Steady	Temporal/Steady
16 Vdc	76.0	80.1	86.3	89.2
24 Vdc	79.4	83.5	89.8	92.5
33 Vdc	82.1	86.5	92.5	95.3

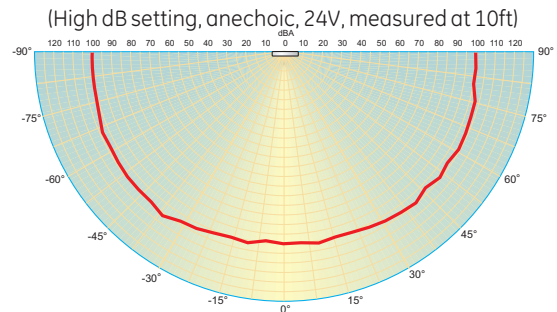
### Steady Tone Horns (G1-P series)

	UL464	Average	Peak
16 Vdc	77	90	91
24 Vdc	77	90	91
33 Vdc	77	90	91

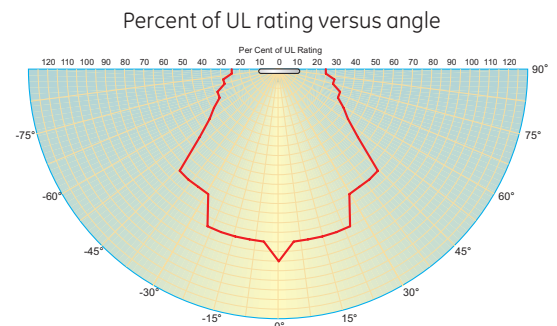
#### Notes

- All values shown are dBA measured at 10 feet (3.01m).
- UL464 values measured in reverberation room.
- Average and Peak values are measured in anechoic chamber.

## Average Sound Output (dBA)



## Light output - (effective cd)



## Current Draw

### Strobes, Horn-Strobes

#### Multi-cd Wall Strobes (G1-VM)

UL Nameplate Rating (UL1971, Effective May 2004)

	15 cd	30 cd	75 cd	110 cd
	RMS	RMS	RMS	RMS
16 Vdc	103	141	255	311
16 Vfwr	125	179	346	392

Typical Current (Measured by EST)

	15 cd		30 cd		75 cd		110 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	85	79	127	124	245	243	285	283
20 Vdc	71	66	98	96	188	186	240	238
24 Vdc	59	55	82	80	152	150	191	190
33 Vdc	46	44	64	63	112	111	137	136
16 Vfwr	119	64	169	97	332	203	376	240
20 Vfwr	103	51	143	76	253	150	331	198
24 Vfwr	94	44	129	65	218	121	262	152
33 Vfwr	87	37	112	52	179	89	205	106

#### Multi-cd Wall Temporal Horn-strobes (G1-HDVM) – High dB Setting

UL Nameplate Rating (UL1971, Effective May 2004)

	15 cd	30 cd	75 cd	110 cd
	RMS	RMS	RMS	RMS
16 Vdc	129	167	281	337
16 Vfwr	176	230	397	443

Typical Current (Measured by EST)

	15 cd		30 cd		75 cd		110 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	102	89	135	129	246	242	309	305
20 Vdc	88	77	109	104	193	190	248	243
24 Vdc	81	71	94	90	161	158	203	200
33 Vdc	74	64	72	74	124	121	154	151
16 Vfwr	144	77	182	106	352	212	393	249
20 Vfwr	141	68	162	87	274	158	362	210
24 Vfwr	136	65	152	76	235	133	282	165
33 Vfwr	125	54	144	65	201	101	232	123

#### Multi-cd Wall Temporal Horn-strobes (G1-HDVM) – Low dB Setting

UL Nameplate Rating (UL1971, Effective May 2004)

	15 cd	30 cd	75 cd	110 cd
	RMS	RMS	RMS	RMS
16 Vdc	122	160	274	330
16 Vfwr	162	216	383	429

Typical Current (Measured by EST)

	15 cd		30 cd		75 cd		110 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	96	84	130	124	243	240	302	297
20 Vdc	79	70	104	99	189	186	241	237
24 Vdc	68	61	88	84	156	154	197	193
33 Vdc	56	52	71	68	118	116	146	143
16 Vfwr	128	69	180	104	344	204	389	244
20 Vfwr	118	60	157	84	266	156	343	200
24 Vfwr	113	54	144	74	230	128	279	161
33 Vfwr	112	48	137	64	197	99	226	117

### Horns

#### Wall Temporal Horns (G1-HD)

UL Nameplate Rating (UL464 Effective May 2004)

	High dB	Low dB
	RMS	RMS
16 Vdc	26	19
24 Vdc	36	27
33 Vdc	41	33
16 Vfwr	51	37
24 Vfwr	69	52
33 Vfwr	76	70

Typical Current (Measured by EST)

	High dB		Low dB	
	RMS	Mean	RMS	Mean
16 Vdc	22	17	17	14
20 Vdc	24	19	19	16
24 Vdc	27	21	22	18
33 Vdc	32	25	26	22
16 Vfwr	34	15	30	14
20 Vfwr	40	19	34	16
24 Vfwr	45	21	38	18
33 Vfwr	52	24	47	22

#### Wall Horns (G1-P)

UL Nameplate Rating

	RMS	Mean
	16 Vdc	9
24 Vdc	11	9
33 Vdc	13	11
16 Vfwr	9	5
24 Vfwr	10	7
33 Vfwr	11	9

Measured by EST

	RMS	Mean
	24 Vdc	10
24 Vdc	11	11
31 Vdc	12	12
20 Vfwr	9	8
24 Vfwr	10	9

#### Notes and Comments

- Current values are shown in mA.
- UL Nameplate Rating can vary from Typical Current due to measurement methods and instruments used.
- GE Security recommends using the Typical Current for system design including NAC and Power Supply loading and voltage drop calculations.
- 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.
- 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.
- Our industry has used 'mean' currents over the years. However, UL will direct the industry to use the 2004 RMS values in the future.

## Ordering Information

Catalog Number		Description	Ship Wt. lbs (kg)
White Finish	Red Finish		
G1-HDVM	G1R-HDVM	Genesis Horn-Strobe (selectable 15, 30, 75, or 110 cd output, selectable high/low dB output)	0.25 (0.11)
G1-VM	G1R-VM	Genesis Strobe (selectable 15, 30, 75, or 110 cd output)	
G1-HD	G1R-HD	Genesis Temporal Horn (selectable high/low dB output)	
G1-P	G1R-P	Genesis Steady Horn (not compatible with Genesis Signal Master)	
G1F-HDVM	G1RF-HDVM	Genesis Horn-Strobe (selectable 15, 30, 75, or 110 cd output, selectable high/low dB output) – with "FIRE" marking	
G1F-VM	G1RF-VM	Genesis Strobe (selectable 15, 30, 75, or 110 cd output) – with "FIRE" marking	
G1F-HD	G1RF-HD	Genesis Temporal Horn (selectable high/low dB output) – with "FIRE" marking	
G1F-P	G1RF-P	Genesis Steady Horn with "FIRE" marking (not compatible with Genesis Signal Master)	

### Mounting Accessories

G1T	G1RT	Genesis Trim Plate (for two-gang or 4" square boxes)	0.15 (0.7)
G1T-FIRE	G1RT-FIRE	Genesis Trim Plate (for two-gang or 4" square boxes) with "FIRE" markings	0.15 (0.7)
27193-16	27193-11	One-gang surface mount box	1 (0.4)

### Synchronization Modules

G1M	Genesis Signal Master – Snap-on Mount		0.2 (0.1)
G1M-RM	Genesis Signal Master – Remote Mount (1-gang)		
SIGA-CC1S	Intelligent Synchronization Output Module (2-gang)		0.5 (0.23)
SIGA-MCC1S	Intelligent Synchronization Output Module (Plug-in UIO)		0.18 (0.08)



Genesis Horn-Strobes may be ordered in red or white, with or without 'FIRE' marking.

**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 visible signal appliances' flash intensity may not be adequate to alert or awaken 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.

Genesis and FullLight Strobe Technology are trademarks of GE Security, Inc.

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It is our intention to keep the product information current and accurate. We can not cover specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information or questions relative to this Specification Sheet, contact GE Security.