

BUILDING CLASSIFICATIONS AND CODES

OCCUPANCY GROUP: B
USE: MEDICAL OFFICE BUILDING
CONSTRUCTION TYPE: TYPE-II
STORIES: BASEMENT + 4 FLOORS
SPRINKLERED: FULLY
REQUIREMENTS: REQUIRED PER 2015 IFC

CODES: 2015 IFC 2013 NFPA 72
2015 IBC 2014 NFPA 70
2015 IMC

SYSTEM TYPE AND MONITORING

SYSTEM CLASSIFICATION: (NFPA 72, CHAPTER 26), REMOTE STATION

SYSTEM TYPE: ADDRESSABLE

WIRING CLASSIFICATION: NAC - CLASS B
SLC - CLASS B
COMMUNICATION RISER - CLASS A

NOTIFICATION TYPE: TEMPORAL PATTERN

MONITORING: THIS SYSTEM IS AND WILL CONTINUE TO BE
MONITORED BY A REMOTE SUPERVISING
STATION, PER NFPA 72 CHAPTER 26, SECTION 3.

MONITORING COMPANY: CFP
1-800-662-1711

ACCOUNT: A21-0964

SCOPE OF WORK

1. REPLACE TWO (2) EXISTING STROBES WITH HORN/STROBES FOR PROPER AUDIBILITY.
2. RELOCATE ONE (1) EXISTING HORN STROBE TO ACCOMMODATE NEW WALL LAYOUT.
3. RELOCATE TWO (2) EXISTING STROBES TO ACCOMMODATE NEW WALL LAYOUT.
4. PROVIDE AND INSTALL FIVE (5) NEW HORN/STROBES FOR CODE COMPLIANCE.
5. PROVIDE AND INSTALL THREE (3) NEW STROBES FOR CODE COMPLIANCE.

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MATRIX - SEQUENCE OF OPS

AURORA DIALYSIS CENTER UPGRADE

FIRE ALARM SYSTEM SHOP DRAWINGS FOR:

PROJECT:

DAVITA
1411 SOUTH PATOMAC ST.
AURORA, CO. 80012

FIRE ALARM CONTRACTOR

FIRE ALARM SERVICES, INC.
4800 W. 60TH AVENUE
ARVADA, CO 80003
PH:(303)466-8800
FAX:(303)466-8820
SHANNON SMITH

FIRE ALARM DESIGNER:

FIRE ALARM SERVICES, INC.
4800 W. 60TH AVENUE
ARVADA, CO 80003
PH:(303)466-8800
FAX:(303)466-8820
C. BEHLING

OWNER/GC:

SCHLEGEL WILLIAMS & ASSOCIATES, INC.
12323 EAST CORNELL AVE.
AURORA, CO. 80014
PH: (303)696-1900
FAX: (303)696-0940
BRYAN WILLIAMS

ARCHITECT:

SEARER, ROBBINS & STEPHENS, INC.
1730 EAST NORTHERN AVE.
PHOENIX, AZ. 85020
PH:(602)277-1187
FAX:(602)277-9979
D. ROBBINS

GENERAL NOTES

1. FIRE ALARM SYSTEMS CANNOT BE COMBINED WITH BURGLAR ALARM SYSTEMS.
2. THE INSTALLER IS REQUIRED TO COORDINATE WITH THE MECHANICAL CONTRACTOR TO DETERMINE INSTALLATION OF SMOKE DETECTORS OR SENSORS (I.E., NOT CLOSER THAN 3 FEET FROM ANY SUPPLY/RETURN, DIFFUSER AND THAT ADDITIONAL DETECTION MAY BE REQUIRED DUE TO THE RELOCATION OR SPACING ADJUSTMENT OF DETECTORS, AS A RESULT).
3. FIRE ALARM DEVICES MUST BE PLACED IN PROTECTED AREAS WITH AMBIENT TEMPERATURE RANGING FROM 32 DEGREES TO 120 DEGREES F.
4. DO NOT PLACE SMOKE DETECTORS WITHIN 3 FEET OF AIR SUPPLY REGISTERS AND DIFFUSERS.
5. FIRE ALARM SYSTEM SHALL BE MONITORED BY A CLASS 1 CENTRAL STATION.
6. FIRE ALARM CONTROL PANEL WILL BE PLACED IN THE LOCATION SPECIFIED WITHIN THE PLAN SUBMITTAL UNLESS APPROVED BY THE LIFE SAFETY FIELD INSPECTOR.
7. CITY OF AURORA BUILDING CODES DIVISION DOES NOT GRANT APPROVAL FOR ANY VIOLATIONS OF ADOPTED FIRE CODE. CODE VIOLATIONS UNCOVERED DURING FIELD INSPECTIONS MUST BE CORRECTED.
8. PER THE 2009 IFC AND THE 2005 NEC THE INSTALLER MUST REQUEST A ROUGH WIRING INSPECTION ON THE FIRE ALARM SYSTEM PRIOR TO REQUESTING A FIRE ALARM FINAL INSPECTION.
9. THE CONTRACTOR SHALL CONDUCT A "PRE-TEST" OF THE PROJECT AREA PRIOR TO SCHEDULING AN ACCEPTANCE TEST WITH THE BUILDING CODES DIVISION.
10. REMOTE ALARM INDICATORS SHALL BE PROVIDED FOR ANY FIRE ALARM DETECTOR LOCATED IN A CONCEALED LOCATION WITH A NORMALLY LOCKED DOOR.
11. AT THE TIME OF FINAL FIRE ALARM INSPECTION, THE SYSTEM MUST BE SUPERVISED/MONITORED BY A CLASS 1 CENTRAL MONITORING AGENCY.
12. THE INSTALLING CONTRACTOR (OR DESIGNEE) MUST PROVIDE ALL NECESSARY TESTING EQUIPMENT AND PERFORM ALL TESTING REQUIRED BY THE LIFE SAFETY FIELD INSPECTOR.
13. IN-DUCT SMOKE DETECTORS INSTALLED IN CONCEALED LOCATIONS OR, WHERE THE DETECTORS ALARM INDICATOR IS NOT READILY VISIBLE TO RESPONDING PERSONNEL SHALL BE PROVIDED WITH A REMOTE INDICATOR, REMOTE TEST STATION AND PLACARDING.
14. ALL NEW OR EXISTING FIRE ALARM SYSTEMS MUST BE CONNECTED TO ANY EXTERIOR HORN AND STROBE DEVICE. IF THE BUILDING IS FIRE SPRINKLED, A GENERAL ALARM ACTIVATION AT THE FIRE ALARM CONTROL PANEL WILL ACTIVATE THE EXTERIOR HORN AND STROBE. SILENCING THE PANEL MUST ALLOW THE VISUAL DEVICE TO CONTINUE UNTIL THE PANEL IS RESET.
15. FIRE ALARM SYSTEMS SHALL INCLUDE BOTH AUDIBLE AND VISUAL ALARMS. VISUAL ALARMS WILL BE REQUIRED IN ALL ACCESSIBLE, PUBLIC AND COMMON-USE AREAS PER THE 2015 IFC AND THE 2003 ANSI A117.1 STANDARD.
16. PROVIDE A PRIMARY AND SECONDARY POWER SUPPLY FOR THE FIRE ALARM SYSTEM PER THE 2015 IFC, SECTION 907.5 AND THE 2013 NFPA 72.

COA Adopted Codes for this project:
ICC-2015 - NEC-2017
NFPA 13-2013 - NFPA 72-2013
COA Amendments 22 & 66

Provide a full size set of legible approved construction documents
PRINTED IN COLOR
for review by the Field Inspector.

In accordance with current direction provided by the Aurora Fire Department, replacement of Fire Alarm Control Panel maintains the Fire Alarm System as an existing system.

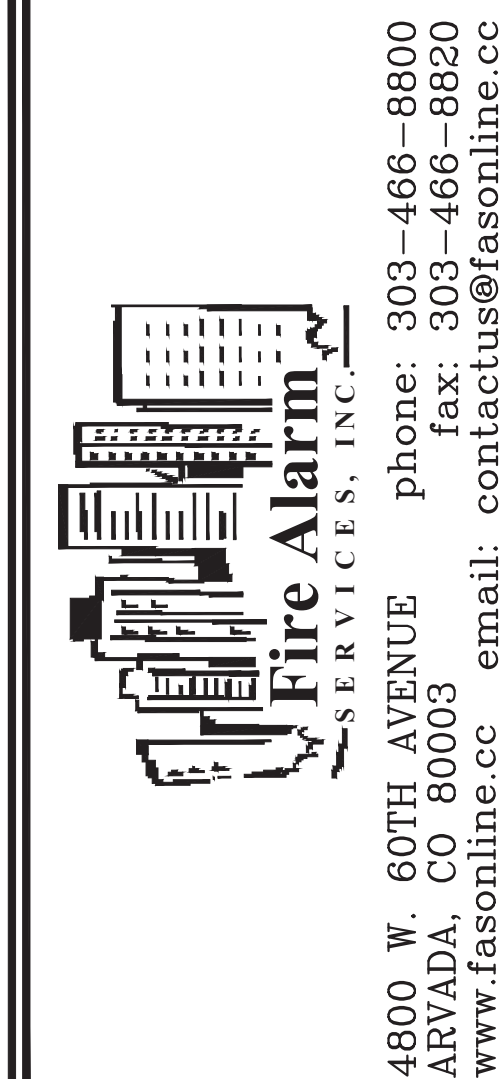


City of Aurora Building Division
Project: Davita Dialysis Center
Address: 1411 S Potomac St-Unit 100
Occupancy Group: IBC B
Construction Type: UBC Type II-1HR-SPK
RSN: 1327357
Permit: 2018-1539481-LT
City of Aurora Building Division
Reviewed for Code Compliance
By: TCavines
Date: October 26, 2018
2015 INTERNATIONAL CODES & 2017 NEC

Roy Breeland
NICET Fire Alarm Systems
Level III
Certification #111006

Date: 10/09/2018

RABU



| DRAWN BY: | NO. | DATE | REVISIONS |
|------------|-----|------|-----------|
| CAB | | | |
| DATE: | | | |
| 10/05/2018 | | | |
| APPR. BY: | | | |
| DATE: | | | |

| PROJECT TITLE | BUILDING NAME & ADDRESS | PROJECT NUMBER |
|--|---|----------------|
| FIRE ALARM SYSTEM UPGRADE DAVITA AURORA DIALYSIS CENTER | 1411 SOUTH POTOMAC ST. AURORA, CO. 80012 | 1814232 |

| FIRE ALARM & DETECTION SYSTEM DRAWING TITLE: | COVER PAGE | SCALE: AS SHOWN |
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| | | |

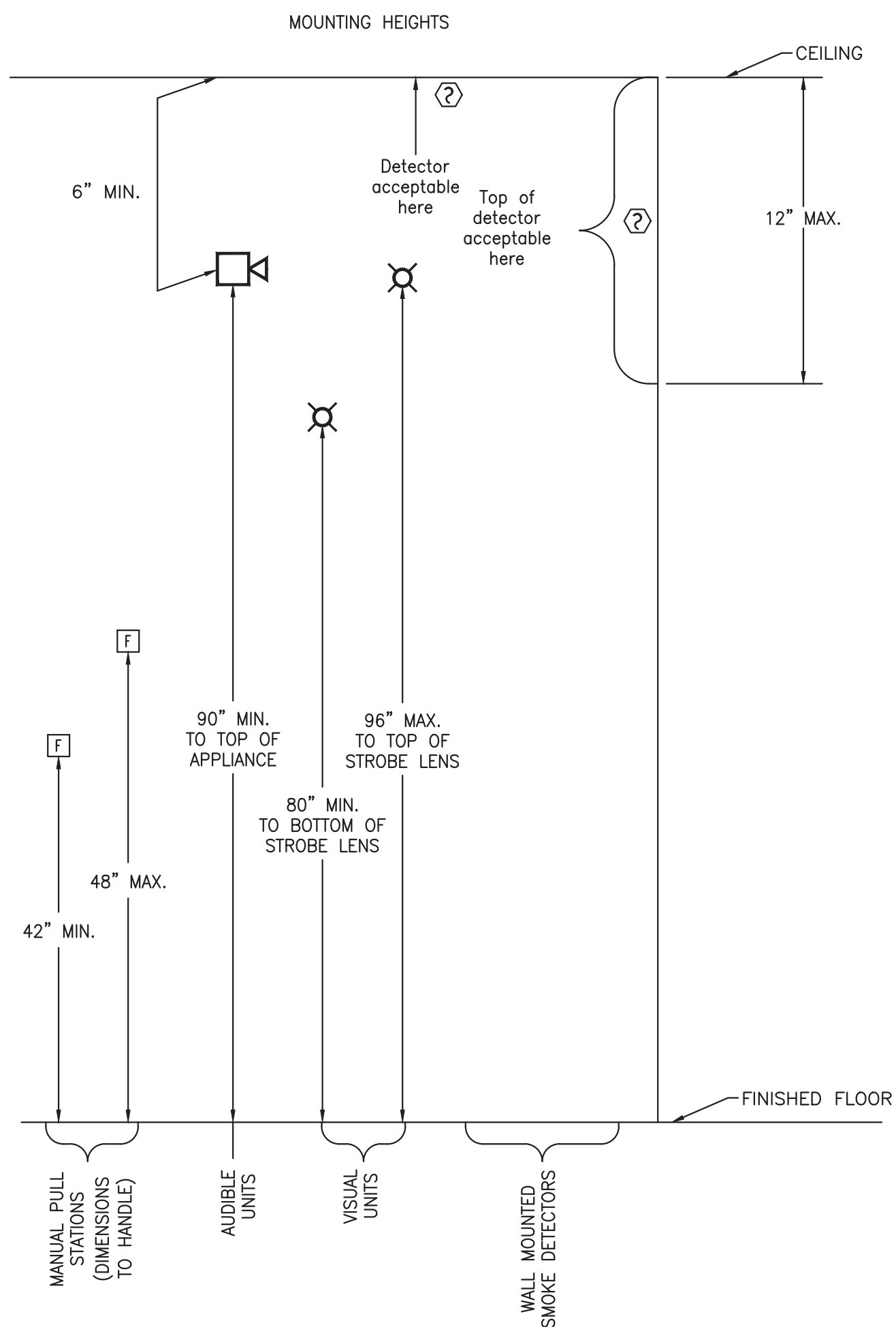
PROJECT SHEET
TITLE

FA-00



Fire Alarm Services, Inc.
4800 W. 60th Avenue
Arvada, CO 80003

(303)466-8800 (Phone)
(303)466-8820 (Fax)
contactus@fasonline.cc (E-Mail)
www.fasonline.cc



GENERAL NOTES:

1. THE CEILING IS A TYPICAL 9' A.F.F. DROPPED CEILING WITH NO SLOPES.

FIRE ALARM SYMBOLS LEGEND

| EXISTING | DESCRIPTION | PROPOSED |
|----------|--|----------|
| | STROBE - Wall Mount or CM = Ceiling Mount | |
| | SMOKE DETECTOR - x = photo, ion | |
| | HORN STROBE - Wall Mount or CM = Ceiling Mount | |
| | HORN = Wall Mount or CM = Ceiling Mount | |
| | REMOTE LED | |
| | END OF LINE RESISTOR | |
| | BOOSTER PANEL | |
| | PULL STATION | |
| | FIREMAN'S PHONE JACK | |
| | HEAT DETECTOR - x = 135, 200, ROR | |
| | FLOW SWITCH | |
| | TAMPER SWITCH | |
| | DUCT DETECTOR - x = photo, ion | |
| | MONITOR MODULE | |

NOTIFICATION APPLIANCE CIRCUIT NUMBER

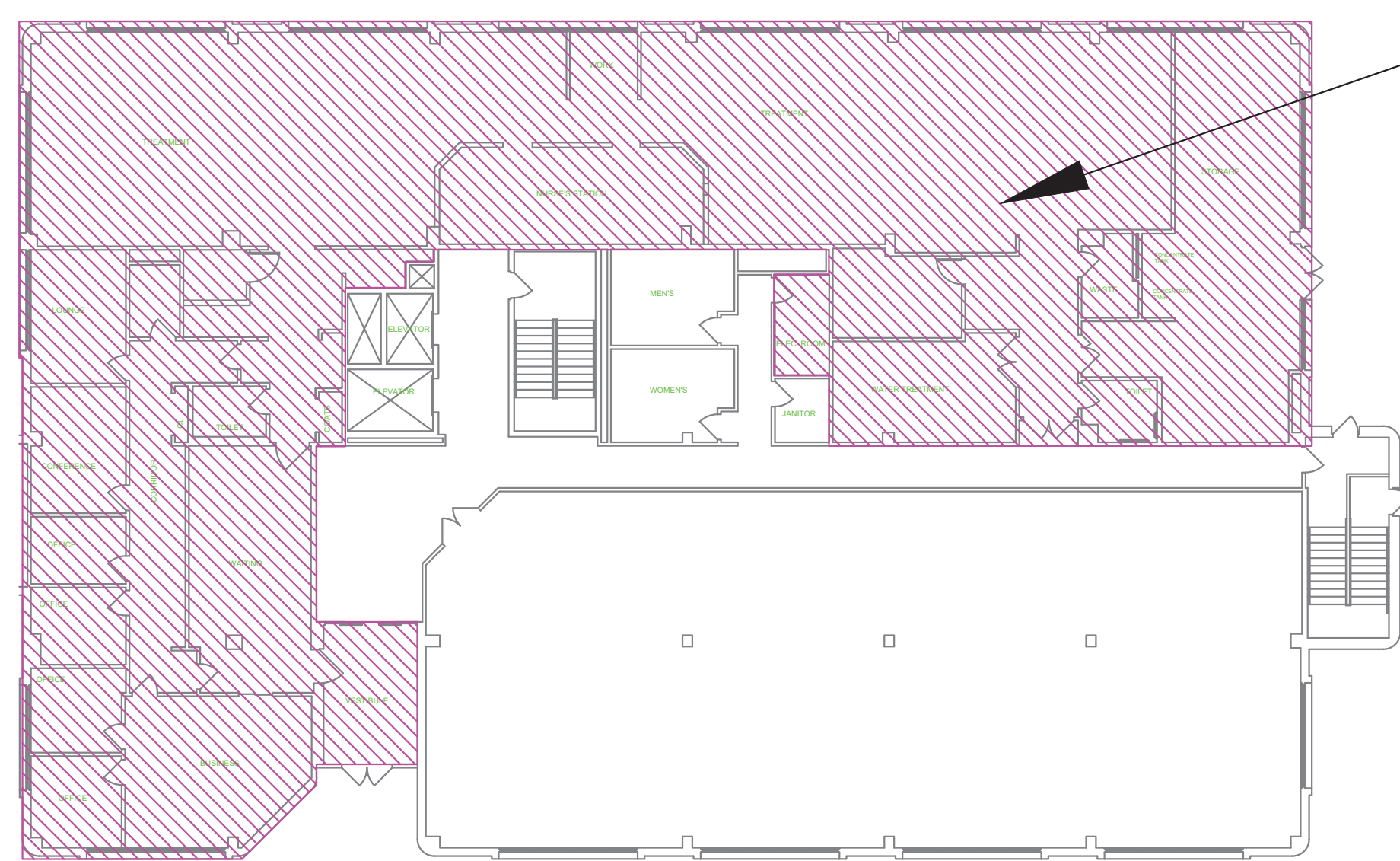
NOTIFICATION APPLIANCE PANEL NUMBER

DEVICE NUMBER

NAC1-2-3

POWER EXPANDER NUMBERING

RL = RELOCATED DEVICES
RR = REMOVE AND REINSTALL
RPL = REMOVE AND REPLACE
ETR = EXISTING TO REMAIN
J = J-BOX

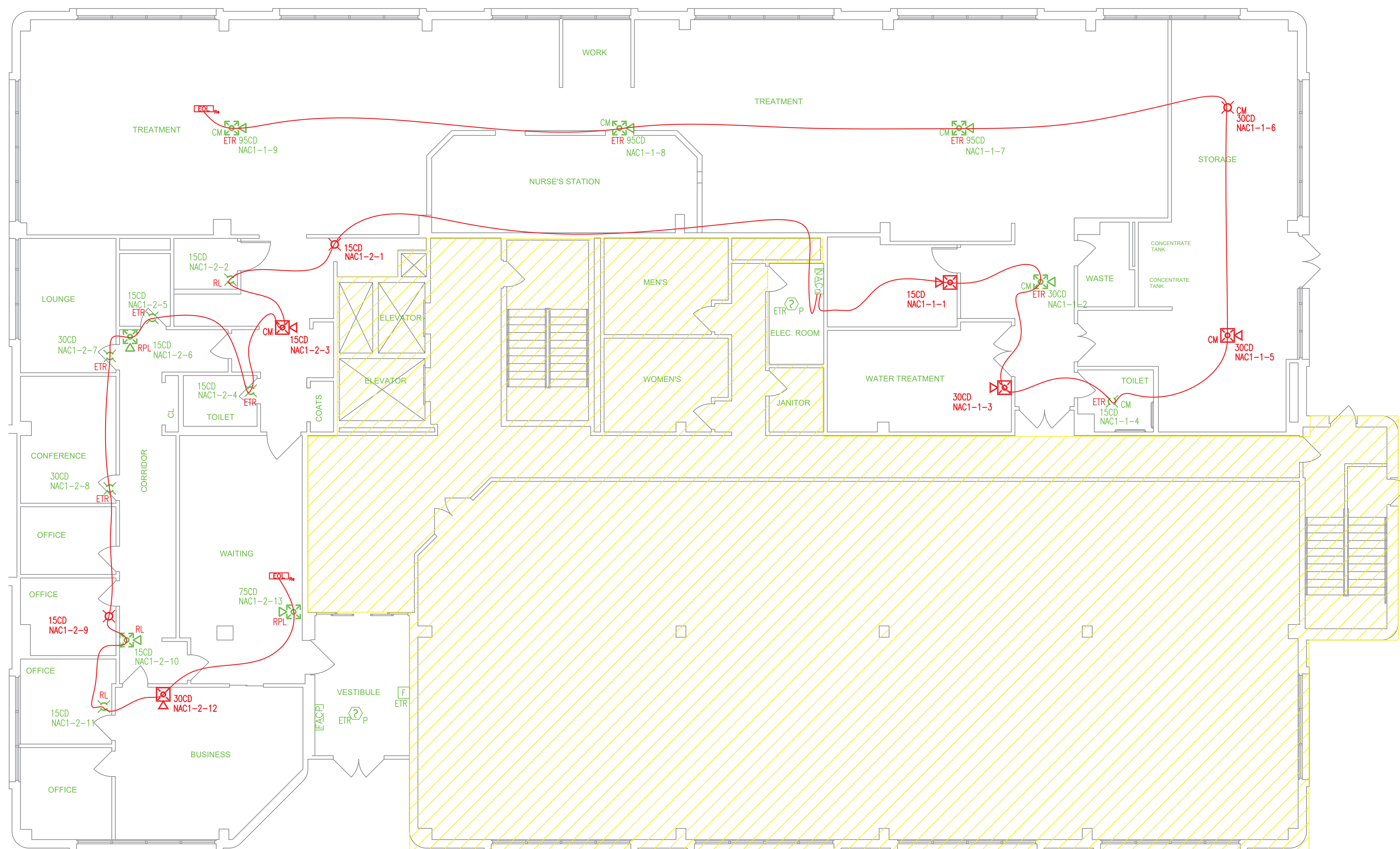


KEY MAP
SCALE: NOT TO SCALE

Audible/Visual occupant notification device spacing shall be field verified for compliance in Public Use/Common Use Areas. Exam rooms and shared offices are examples of Public Use/Common Use Areas. 2015 IFC 907.5

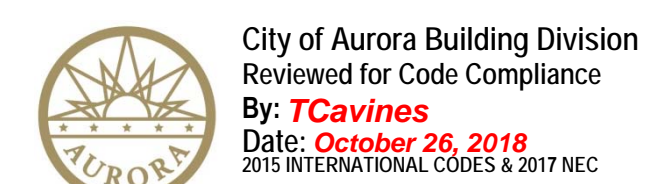
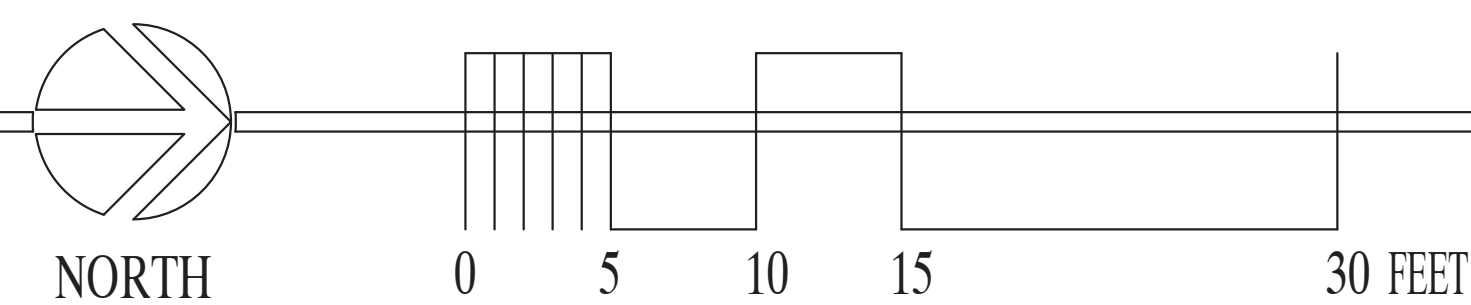
SCOPE OF WORK

| FIRE ALARM WIRE COLOR CODE CHART | | | | |
|----------------------------------|---|----------------------------------|---------------|-------------|
| Code | Description | Wire Type | Color (+) | Color (-) |
| AC | 120VAC Power Wiring | 3#12 AWG Solid (w/ Green Ground) | Black (hot) | White (neu) |
| A | Annunciator Wiring | #18 AWG Twisted/Shielded Pair | Red | Black |
| D | Door Holder Wiring | 2#14 AWG Solid | Red | Black |
| L | SLC Wiring (Signaling Line Circuit) | 2#18 AWG Solid | Red | Black |
| P | 24VDC Power Wiring | 2#18 AWG Solid | Red | Black |
| R | Remote Light/Test Wiring | 2#18 AWG Solid | Red | Black |
| S | Notification Appliance (Horns) Wiring | 2 or 4#14 AWG Solid | Red | Black |
| S | Notification Appliance (Speaker) Wiring | 2#16 AWG Twisted/Shielded Pair | Red | Black |
| T | Telephone Circuit Wiring | 2#16 AWG Twisted/Shielded Pair | Red | Black |
| V | Notification Appliance (Strobe) Wiring | 2 or 4#14 AWG Solid | Red | Black |
| X | Auxiliary Circuit (Relay) Wiring | 2#14 AWG Solid | Red | Black |
| Z | IDC Wiring (Initiating Device Circuit) | 2#18 AWG Solid | Red | Black |
| WIRE TYPE CLASS & STYLE | | SLC - CLASS B | NAC - CLASS B | |

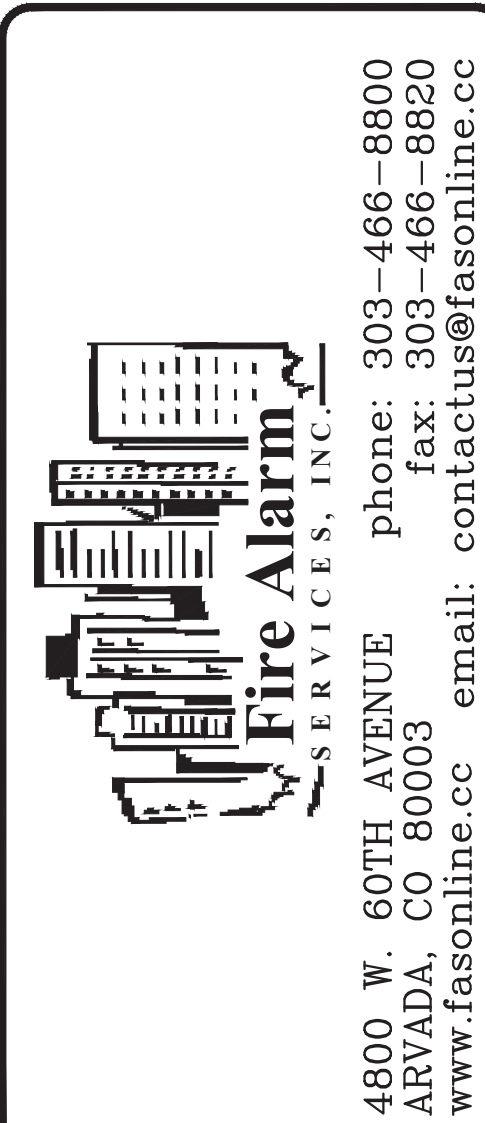


SUITE #100 FIRE ALARM PLAN

SCALE: 1/8" = 1'-0"



Ray Breeland
NICET Fire Alarm Systems
Level III
Certification #111006
Date: 10/09/2018



| REVISIONS | | DRAWN BY: | | DATE: | |
|-----------|------|-----------|------------|-----------|-------|
| NO. | DATE | CAB | DATE | APPR. BY: | DATE: |
| | | | 10/05/2018 | | |

| FIRE ALARM SYSTEM UPGRADE DAVITA AURORA DIALYSIS CENTER | | BUILDING NAME & ADDRESS | | PROJECT NUMBER | |
|--|--|---|--|-------------------|--|
| | | 1411 SOUTH POTOMAC ST. AURORA, CO. 80012 | | 1814232 | |

| FIRE ALARM & DETECTION SYSTEM DRAWING TITLE: | | FIRE ALARM PLAN | | SCALE: AS SHOWN | |
|---|--|-----------------|--|-----------------|--|
| | | | | | |

| PROJECT SHEET TITLE | |
|---------------------------|--|
| FA-01 | |

INCREMENTAL VOLTAGE DROP CALCULATIONS FOR AUDIBLE/ VISUAL CIRCUITS
MINIMUM UL RATED VOLTAGE: 16 VOLTS
Current shown in calculations is RMS current at 16 volts.

Resistance: 12 Gauge 2.01
14 Gauge 3.19
16 Gauge 5.08

| | | | | | | | |
|---------------------------------|-------------------|-------------------------|--------------------------|-----------------|-------------------|--------------|-----------------------|
| Circuit Number: NAC1-1 | | | | | | | |
| Location: Floor 1 Booster Panel | | | | | | | |
| Input Voltage = | | | | | | | 20.4 |
| Notification Circuit | Current (in Amps) | Wire Distance (in Feet) | Total Distance (in Feet) | Wire Size (AWG) | Resistance (Ohms) | Voltage Drop | From Baseline Voltage |
| Horn Strobe 15CD | 0.1290 | 30 | 30 | 14 | 0.1914 | 0.3929 | 20.0071 |
| CM Horn Strobe 30CD | 0.1900 | 20 | 50 | 14 | 0.1276 | 0.2455 | 19.7616 |
| Horn Strobe 30CD | 0.1670 | 26 | 76 | 14 | 0.1659 | 0.2876 | 19.4739 |
| CM Strobe 15CD | 0.1090 | 23 | 99 | 14 | 0.1467 | 0.2299 | 19.2440 |
| CM Horn Strobe 30CD | 0.1900 | 31 | 130 | 14 | 0.1978 | 0.2884 | 18.9556 |
| CM Strobe 30CD | 0.1510 | 36 | 166 | 14 | 0.2297 | 0.2912 | 18.6644 |
| CM Horn Strobe 95CD | 0.3720 | 44 | 210 | 14 | 0.2807 | 0.3136 | 18.3508 |
| CM Horn Strobe 95CD | 0.3720 | 50 | 260 | 14 | 0.3190 | 0.2377 | 18.1132 |
| CM Horn Strobe 95CD | 0.3720 | 55 | 315 | 14 | 0.3509 | 0.1309 | 17.9823 |
| End of Line Resistor | 0.0010 | 0 | 315 | 14 | 0.0000 | 0.0000 | 17.9823 |
| Total: | 2.0530 | 315 | | | 2.0097 | 2.4177 | 17.9823 |
| Total Devices: | 9 | | | | | | |

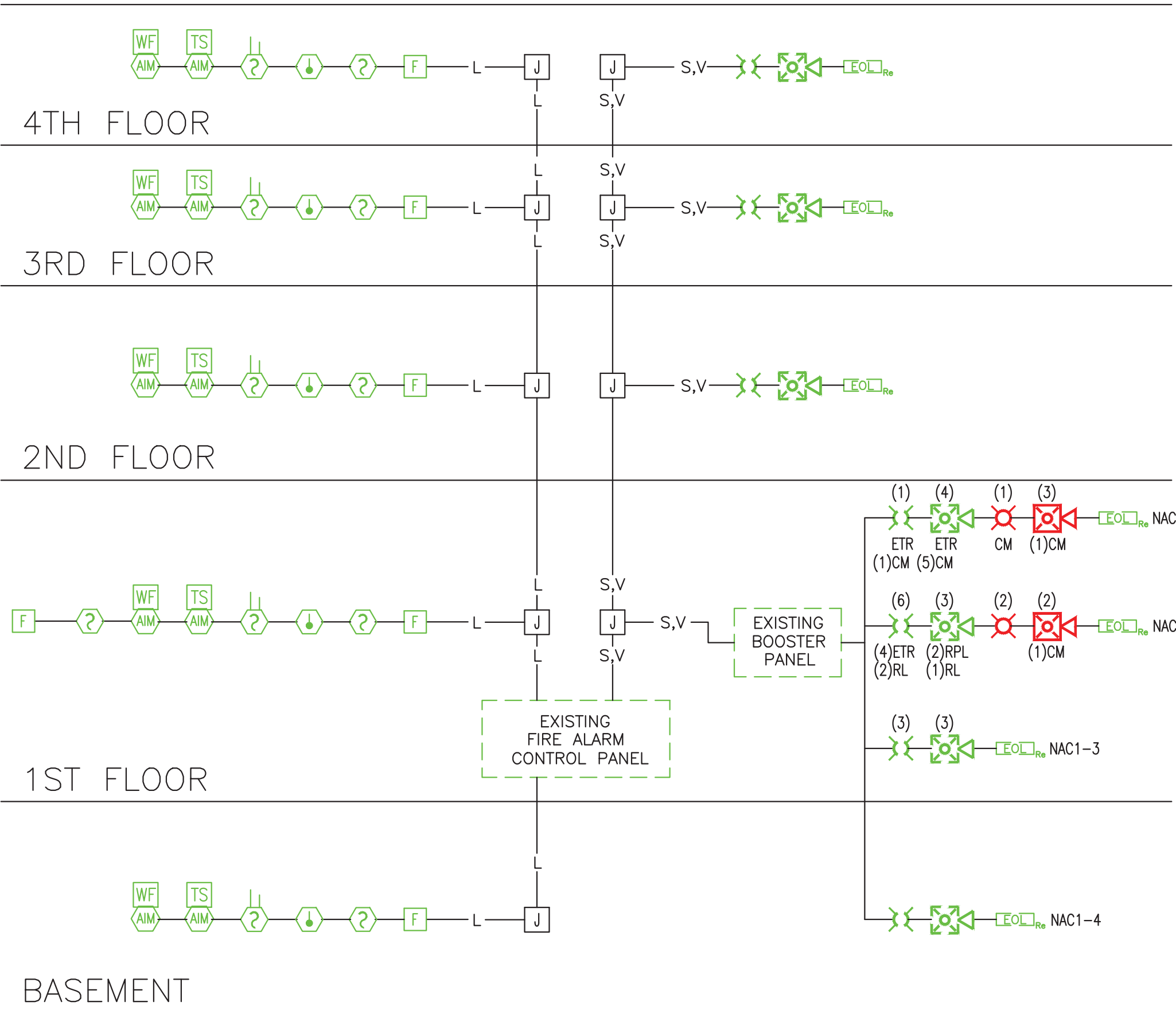
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|---------------------------------|-------------------|-------------------------|--------------------------|-----------------|-------------------|--------------|-----------------------|
| Circuit Number: NAC1-2 | | | | | | | |
| Location: Floor 1 Booster Panel | | | | | | | |
| Notification Circuit | Current (in Amps) | Wire Distance (in Feet) | Total Distance (in Feet) | Wire Size (AWG) | Resistance (Ohms) | Voltage Drop | From Baseline Voltage |
| Strobe 15CD | 0.1030 | 80 | 80 | 14 | 0.5104 | 0.8952 | 19.5048 |
| Strobe 15CD | 0.1030 | 26 | 106 | 14 | 0.1659 | 0.2739 | 19.2309 |
| CM Horn Strobe 15CD | 0.1470 | 21 | 127 | 14 | 0.1340 | 0.2074 | 19.0235 |
| Strobe 15CD | 0.1030 | 21 | 148 | 14 | 0.1340 | 0.1877 | 18.8358 |
| Strobe 15CD | 0.1030 | 30 | 178 | 14 | 0.1914 | 0.2484 | 18.5873 |
| Horn Strobe 15CD | 0.1290 | 13 | 191 | 14 | 0.0829 | 0.0991 | 18.4882 |
| Strobe 30CD | 0.1410 | 16 | 207 | 14 | 0.1021 | 0.1088 | 18.3794 |
| Strobe 30CD | 0.1410 | 25 | 232 | 14 | 0.1595 | 0.1475 | 18.2319 |
| Strobe 15CD | 0.1030 | 25 | 257 | 14 | 0.1595 | 0.1250 | 18.1068 |
| Horn Strobe 15CD | 0.1290 | 13 | 270 | 14 | 0.0829 | 0.0565 | 18.0503 |
| Strobe 15CD | 0.1030 | 20 | 290 | 14 | 0.1276 | 0.0704 | 17.9799 |
| Horn Strobe 30CD | 0.1670 | 20 | 310 | 14 | 0.1276 | 0.0573 | 17.9226 |
| Horn Strobe 75CD | 0.2810 | 35 | 345 | 14 | 0.2233 | 0.0630 | 17.8596 |
| End of Line Resistor | 0.0010 | 0 | 345 | 14 | 0.0000 | 0.0000 | 17.8596 |
| Total: | 1.7540 | 345 | | | 2.2011 | 2.5404 | 17.8596 |
| Total Devices: | 13 | | | | | | |

1411 S. POTOMAC BUILDING SEQUENCE OF OPERATIONS

| SYSTEM OUTPUTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|--------------|---|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|------------|---|--|--|--|--|--|--|--|--|
| FACP Annunciation | | | | Notification | | | | | | | | | | Safety | | | | | | Monitoring | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | | | | | | | | |
| Actuate Common Alarm Signal Indicator | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate Audible Alarm Signal | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate Common Supervisory Signal Indicator | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate Audible Supervisory Signal | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate Common Trouble Signal Indicator | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate Audible Common Trouble Signal | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Display Change of Status | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate Basement Evacuation Signals (Horn/Strobes) | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate 1st Floor Evacuation Signals (Horn/Strobes) | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate 2nd Floor Evacuation Signals (Horn/Strobes) | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate 3rd Floor Evacuation Signals (Horn/Strobes) | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate 4th Floor Evacuation Signals (Horn/Strobes) | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuate Exterior Horn/Strobe | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Silence Audible Signal (Horns) | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Release Magnetically Held Smoke Doors | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Recall Elevator(s) to 1st Floor - Primary Recall | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Recall Elevator(s) to 2nd Floor - Alternate Recall | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shut Down Air Handling Units | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmit Fire Alarm Signal to Supervising Station | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmit Trouble Signal to Supervising Station | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmit Supervisory Signal to Supervising Station | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmit Waterflow Signal to Supervising Station | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |

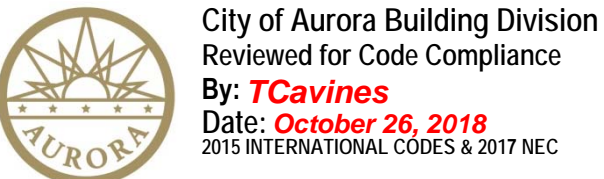
New and existing fire sprinkler systems shall activate exterior horn/strobe upon both general alarm and flow switch activation. When fire alarm panel is silenced, the interior and exterior strobes will continue until fire alarm panel is reset.

Update Sequence of Operation



ONE-LINE RISER DIAGRAM

Ray Breeland
NICET Fire Alarm Systems
Level III
Certification #111006
Date: 10/09/2018



Fire Alarm Services, Inc.
4800 W. 60TH AVENUE
ARVADA, CO 80003
www.fasonline.co
phone: 303-466-8800
fax: 303-466-8820
email: contactus@fasonline.co

| REVISIONS | | | |
|------------|-----|------|--|
| DRAWN BY: | NO. | DATE | |
| CAB | | | |
| DATE: | | | |
| 10/05/2018 | | | |
| APPR BY: | | | |
| DATE: | | | |

| | | | |
|--|---|----------------|--|
| FIRE ALARM SYSTEM UPGRADE DAVITA AURORA DIALYSIS CENTER | | | |
| PROJECT TITLE | BUILDING NAME & ADDRESS | PROJECT NUMBER | |
| | 1411 SOUTH POTOMAC ST. AURORA, CO. 80012 | 1814232 | |

| | | | |
|-------------------------------|--|---------------|-----------------|
| FIRE ALARM & DETECTION SYSTEM | | NOTES & CALCS | SCALE: AS SHOWN |
| DRAWING TITLE: | | | |

| | |
|---------------------|-------|
| PROJECT SHEET TITLE | FA-02 |
|---------------------|-------|



Fire Alarm Services, Inc.
4800 West 60th Avenue
Arvada, CO 80003

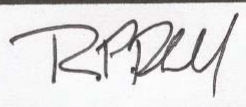
Phone (303) 466-8800
Fax (303) 466-8820
contactus@fasonline.cc

Fire Alarm System Addition at:

DAVITA
AURORA DIALYSIS CENTER UPGRADE
1411 SOUTH POTOMAC ST. SUITE #100
AURORA, CO 80012

Scope of Work:

1. Replace Two (2) Existing Strobes With Horn/Strobes for Proper Audibility.
2. Relocate One (1) Existing Horn/Strobe to Accommodate New Wall Layout.
3. Relocate Two (2) Existing Strobes to Accommodate New Wall Layout.
4. Provide and Install Five (5) New Horn/Strobes for Code Compliance.
5. Provide and Install Three (3) New Strobes for Code Compliance.

| |
|---|
| Ray Breeland NICET Fire Alarm Systems Level III Certification #111006 |
| Date: |
|  |

Overview

Genesis ceiling horn-strobes are small, compact, and attractive audible-visible emergency signaling devices. Protruding no more than 1.6" (41 mm) from the ceiling, Genesis horn-strobes 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 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 "cross" pattern.

Depending on the model, Genesis horn-strobes feature 15 to 95, or 95 to 177 candela output (see ordering information), which is selectable with a conveniently-located switch on the front of the device. The candela output setting is clearly visible even after final installation, yet it remains locked in place to prevent unauthorized movement after installation.

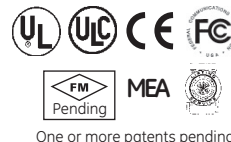
Genesis horn-strobes feature textured housings in architecturally neutral white or eye-catching fire alarm red. An ingenious iconographic symbol indicates the purpose of the device. This universal symbol is code-compliant and is easily recognized by all building occupants regardless of what language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

Standard Features

- **Field configurable – no need to remove the device!**
 - 15/30/75/95 cd and 95/115/150/177 cd models available
 - Switch settings remain visible even after the unit is installed
 - Low/high dB settings
- **Unique low-profile design**
 - 30 per cent slimmer profile than comparable signals
 - No visible mounting screws
 - Available with white or red housings
- **Easy to install**
 - Fits all standard 4" square electrical boxes with plenty of room behind the signal for extra wire – no extension ring or trim plate needed
 - Pre-assembled with captive hardware – no loose pieces
 - #18 to #12 AWG terminals – ideal for long runs or existing wiring
- **Unparalleled performance**
 - Exclusive FullLight strobe technology produces the industry's most even light distribution
 - Single high-efficiency microprocessor controls both horn and strobe
 - Low current draw minimizes system overhead
 - Independent horn control provided over a single pair of wires
 - Highly regulated in-rush current allows the maximum number of strobes on a circuit
 - 100 dB peak – multiple frequency tone improves wall penetration

Field Configurable Ceiling Horn-Strobes

Genesis Series



Application

Genesis strobes are UL 1971-listed for use indoors as ceiling-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

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 specified levels, where occupants use hearing protection, and in areas of public accommodation. Consult with your Authority Having Jurisdiction for details.

All Genesis strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a synchronization source. Synchronization is important in order to avoid epileptic sensitivity.

NOTE: The flash intensity of some visible signals 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 rated at at least 110 cd.

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, further safeguards such as backup power supplies may be required.

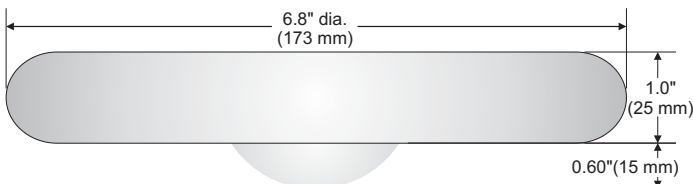
Horns

Genesis horn output reaches as high as 99 dB (peak) and features a unique multiple frequency tone that results in excellent wall penetration and an unmistakable warning of danger. All models 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.

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.

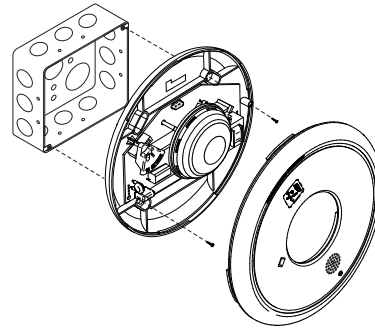
Doubling the distance from the signal to the ear will theoretically result in a 6 dB reduction of the received sound pressure level. The actual effect depends on the acoustic properties of materials in the space. A 3 dBA difference represents a barely noticeable change in volume.

Dimensions



Installation and Mounting

All models are intended for indoor wall or ceiling applications only. Horn-strobes mount to any flush North-American 4" square electrical box.



Genesis ceiling horn-strobes simply unlatch and twist to open. This gains access to mounting screws and the selectable candela switch. 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.

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

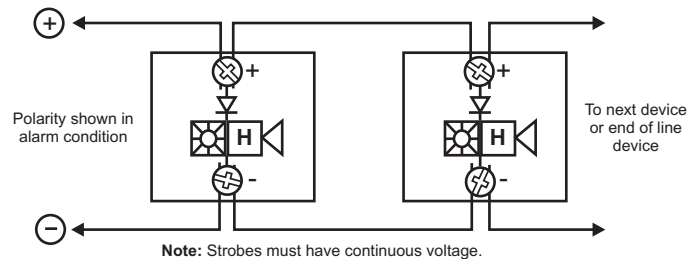
Field Configuration

Depending on the model, Genesis horn-strobes may be set for 15 to 95, or 95 to 177 candela output (see ordering information). The output setting is changed by simply opening the device and sliding the switch to the desired setting. The horn-strobe does not have to be removed to change the output setting. The setting remains visible through a small window on the front of the device after the cover is closed.

The horn-strobe comes 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 mm² to 2.5 mm²) wiring. Horn/strobes are interconnected with a single pair of wires as shown below.



Current Draw

GC-HDVM Temporal Horn-strobe: High dB Setting

| UL Rating | 15 cd RMS | 30 cd RMS | 75 cd RMS | 95 cd RMS |
|-----------|-----------|-----------|-----------|-----------|
| 16 Vdc | 147 | 190 | 316 | 372 |
| 16 Vfwr | 189 | 253 | 417 | 451 |

GC-HDVM Temporal Horn-strobe: High dB Setting

| Typical Current | 15 cd | | 30 cd | | 75 cd | | 95 cd | |
|-----------------|-------|------|-------|------|-------|------|-------|------|
| | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 16 Vdc | 111 | 95 | 152 | 143 | 281 | 276 | 333 | 328 |
| 20 Vdc | 91 | 80 | 124 | 117 | 219 | 214 | 257 | 251 |
| 24 Vdc | 80 | 71 | 108 | 101 | 185 | 180 | 212 | 207 |
| 33 Vdc | 69 | 62 | 89 | 84 | 144 | 140 | 160 | 156 |
| 16 Vfwr | 153 | 81 | 218 | 123 | 388 | 240 | 420 | 268 |
| 20 Vfwr | 141 | 70 | 190 | 100 | 325 | 188 | 378 | 219 |
| 24 Vfwr | 135 | 64 | 176 | 90 | 280 | 154 | 310 | 180 |
| 33 Vfwr | 139 | 61 | 167 | 80 | 241 | 122 | 254 | 133 |

GC-HDVM Temporal Horn-strobe: Low dB Setting

| Typical Current | 15 cd | | 30 cd | | 75 cd | | 95 cd | |
|-----------------|-------|------|-------|------|-------|------|-------|------|
| | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 16 Vdc | 108 | 91 | 149 | 139 | 275 | 269 | 327 | 322 |
| 20 Vdc | 87 | 75 | 120 | 113 | 214 | 209 | 250 | 245 |
| 24 Vdc | 76 | 66 | 103 | 97 | 180 | 175 | 205 | 201 |
| 33 Vdc | 64 | 57 | 85 | 80 | 138 | 135 | 153 | 150 |
| 16 Vfwr | 141 | 76 | 204 | 118 | 384 | 239 | 418 | 265 |
| 20 Vfwr | 127 | 65 | 176 | 95 | 312 | 181 | 371 | 214 |
| 24 Vfwr | 118 | 60 | 162 | 82 | 262 | 149 | 301 | 171 |
| 33 Vfwr | 127 | 56 | 155 | 73 | 229 | 118 | 249 | 129 |

GC-HDVMH High cd Temporal Horn-strobe: High dB Setting

| 95 cd RMS | 115 cd RMS | 150 cd RMS | 177 cd RMS |
|-----------|------------|------------|------------|
| 341 | 399 | 506 | 570 |
| 487 | 578 | 670 | 711 |

GC-HDVMH High cd Temporal Horn-strobe: High dB Setting

| 95 cd | | 115 cd | | 150 cd | | 177 cd | |
|-------|------|--------|------|--------|------|--------|------|
| RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 324 | 322 | 377 | 374 | 477 | 474 | 554 | 551 |
| 258 | 256 | 299 | 296 | 369 | 366 | 417 | 414 |
| 220 | 217 | 252 | 249 | 304 | 301 | 341 | 338 |
| 172 | 169 | 188 | 185 | 223 | 220 | 244 | 241 |
| 463 | 265 | 535 | 312 | 665 | 400 | 718 | 442 |
| 392 | 211 | 439 | 240 | 517 | 287 | 587 | 334 |
| 346 | 179 | 382 | 212 | 458 | 246 | 498 | 271 |
| 296 | 142 | 323 | 152 | 358 | 178 | 387 | 194 |

GC-HDVMH High cd Temporal Horn-strobe: Low dB Setting

| 95 cd | | 115 cd | | 150 cd | | 177 cd | |
|-------|------|--------|------|--------|------|--------|------|
| RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 317 | 315 | 378 | 376 | 480 | 477 | 544 | 542 |
| 252 | 250 | 292 | 290 | 364 | 362 | 414 | 411 |
| 212 | 211 | 245 | 243 | 297 | 295 | 334 | 332 |
| 159 | 157 | 181 | 179 | 215 | 213 | 234 | 232 |
| 461 | 265 | 521 | 305 | 656 | 396 | 705 | 432 |
| 381 | 208 | 437 | 242 | 508 | 285 | 576 | 326 |
| 335 | 172 | 370 | 195 | 440 | 235 | 485 | 264 |
| 285 | 134 | 308 | 149 | 349 | 169 | 373 | 186 |

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.

dBA output

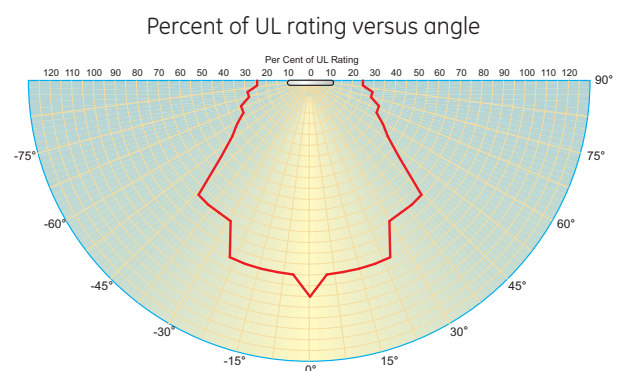
| High dB Setting | UL464 | | Average | Peak |
|-----------------|----------|--------|------------------|------------------|
| | Temporal | Steady | Temporal/ Steady | Temporal/ Steady |
| 16 Vdc | 79.8 | 83.2 | 90.6 | 93.6 |
| 24 Vdc | 83.3 | 85.4 | 93.6 | 96.6 |
| 33 Vdc | 85 | 87.8 | 95.7 | 98.7 |

| Low dB Setting | UL464 | | Average | Peak |
|----------------|----------|--------|------------------|------------------|
| | Temporal | Steady | Temporal/ Steady | Temporal/ Steady |
| 16 Vdc | 75 | 79.3 | 86.3 | 88.7 |
| 24 Vdc | 78 | 83 | 88.8 | 92.4 |
| 33 Vdc | 80.9 | 85.9 | 91.8 | 95.1 |

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.

Light output - (effective cd)



GE Security

U.S.
T 888-378-2329
F 866-503-3996

Canada
T 519 376 2430
F 519 376 7258

Asia
T 852 2907 8108
F 852 2142 5063

Australia
T 61 3 9259 4700
F 61 3 9259 4799

Europe
T 32 2 725 11 20
F 32 2 721 86 13

Latin America
T 305 593 4301
F 305 593 4300

www.gesecurity.com/est

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Specifications

| | |
|---------------------------|--|
| Housing | Textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating. Red and white models available. |
| Lens | Optical grade polycarbonate (clear) |
| Mounting | North-American 4" square box, 2 1/8" (54 mm) deep (indoor wall or ceiling applications only). |
| Wire connections | Screw terminals: single input for both horn and strobe. #18 to #12 AWG (0.75 mm ² to 2.5 mm ²) wire size |
| Operating environment | Indoor: 32-120°F (0-49°C) ambient temperature. 93% relative humidity |
| Agency listings/approvals | Meets or exceeds ULC-S541, year 2004 UL requirements for standards UL1638 and UL1971, and complies with UL1480. All horn-strobes comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule. CSFM, MEA. FM pending. |
| Operating voltage | GC-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) |
| Strobe output rating | UL 1971, UL 1638, ULC S526: selectable 15/30/75/95 cd (GC-HDVM) and 95/115/150/177 cd (GC-HDVMH) |
| Strobe flash rate | GC-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 |
| Synchronization Sources | G1M-RM, SIGA-CC1S, SIGA-MCC1S, BPS6A, BPS10A |
| Horn pulse rate | GC-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) |
| Temporal audible pattern | ½ sec ON, ½ sec OFF, ½ sec ON, ½ sec OFF, ½ sec ON, 1½ sec OFF, then repeat cycle |

Ordering Information

| Catalog Number | Housing Color | Marking | Description | Ship Wt. lbs (kg) |
|----------------|---------------|---------|---|-------------------|
| GC-HDVM | White | None | Genesis Ceiling/Wall Horn-Strobe with selectable 15, 30, 75, or 95 cd output | 0.82 (1.8) |
| GCF-HDVM | White | "FIRE" | | |
| GCFR-HDVM | Red | "FIRE" | Genesis Ceiling/Wall Horn-Strobe with selectable 95, 115, 150, or 177 cd output | |
| GC-HDVMH | White | None | | |
| GCF-HDVMH | White | "FIRE" | | |

Accessories

| | | |
|------------|---|-------------|
| G1M-RM | Genesis Signal Master – Remote Mount (1-gang) | 0.2 (0.1) |
| 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) |



White Field Configurable Ceiling Horn-Strobes may be ordered with or without optional 'FIRE' marking. Red Horn-Strobes come with 'FIRE' marking.



imagination at work

Overview

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 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.

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. Models are also available that offer fixed 15/75 cd output. The candela output setting remains clearly visible even after final installation, yet it stays locked in place to prevent unauthorized tampering.

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.

Field Configurable Horns and Strobes

Genesis Series



Standard Features

- **Unique low-profile design**
 - The most compact UL-1971/ULC-S526 listed strobe available
 - Ultra-slim – protrudes less than one inch
 - 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
- **Fixed 15/75 cd model available**
- **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 sound penetration
 - Industry’s first temporal strobe output



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

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 specified levels, where occupants use hearing protection, and in areas of public accommodation. Consult with your Authority Having Jurisdiction for details.

All Genesis strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a synchronization source. Synchronization is important in order to avoid epileptic sensitivity.

NOTE: The flash intensity of some visible signals 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 rated at at least 110 cd.

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, further safeguards such as backup power supplies may be required.

Horns

Genesis horn output reaches as high as 99 dB and features a unique multiple frequency tone that results in excellent sound 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. Horn-only models may be ceiling-mounted or wall-mounted.

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.

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.

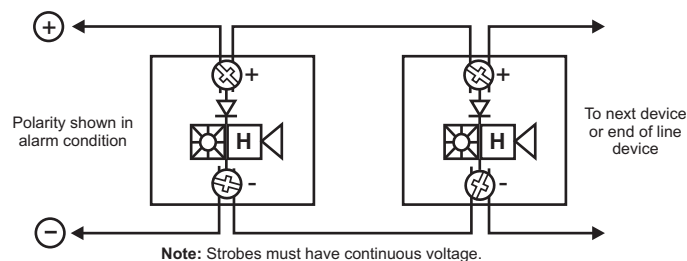
Genesis strobes and horn-strobes are shipped from the factory ready for use as **UL 1971 compliant** signals for public mode operation. These signals may be configured for **temporal flash** by cutting a jumper on the circuit board. This battery-saving feature is intended for private mode signaling only.

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 mm² to 2.5 mm²) wiring. Horns, strobes, and combination horn-strobes are interconnected with a single pair of wires as shown below.



Current Draw

Strobes, Horn-Strobes

Multi-cd Wall Strobes (G1-VM)

| UL Rating | 15 cd* | 30 cd* | 15/75 cd** | 75 cd* | 110 cd* |
|-----------|--------|--------|------------|--------|---------|
| | RMS | RMS | RMS | RMS | RMS |
| 16 Vdc | 103 | 141 | 152 | 255 | 311 |
| 16 Vfwr | 125 | 179 | 224 | 346 | 392 |

*G1-VM multi-cd; **G1F-V1575 fixed 15/75 cd

| Typical Current | 15 cd | | 30 cd | | 15/75 | | 75 cd | | 110 cd | |
|-----------------|-------|------|-------|------|-------|------|-------|------|--------|------|
| | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 16 Vdc | 85 | 79 | 127 | 124 | 150 | 140 | 245 | 243 | 285 | 283 |
| 20 Vdc | 71 | 66 | 98 | 96 | 123 | 114 | 188 | 186 | 240 | 238 |
| 24 Vdc | 59 | 55 | 82 | 80 | 104 | 97 | 152 | 150 | 191 | 190 |
| 33 Vdc | 46 | 44 | 64 | 63 | 84 | 77 | 112 | 111 | 137 | 136 |
| 16 Vfwr | 119 | 64 | 169 | 97 | 223 | 126 | 332 | 203 | 376 | 240 |
| 20 Vfwr | 103 | 51 | 143 | 76 | 189 | 100 | 253 | 150 | 331 | 198 |
| 24 Vfwr | 94 | 44 | 129 | 65 | 169 | 85 | 218 | 121 | 262 | 152 |
| 33 Vfwr | 87 | 37 | 112 | 52 | 148 | 68 | 179 | 89 | 205 | 106 |

Wall Temporal Horn-strobes – High dB Setting

| UL Rating | 15 cd* | 30 cd* | 15/75 cd** | 75 cd* | 110 cd* |
|-----------|--------|--------|------------|--------|---------|
| | RMS | RMS | RMS | RMS | RMS |
| 16 Vdc | 129 | 167 | 172 | 281 | 337 |
| 16 Vfwr | 176 | 230 | 269 | 397 | 443 |

*G1-HDVM multi-cd

**G1F-HDV1575 fixed 15/75 cd

| Typical Current | 15 cd | | 30 cd | | 15/75 | | 75 cd | | 110 cd | |
|-----------------|-------|------|-------|------|-------|------|-------|------|--------|------|
| | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 16 Vdc | 102 | 89 | 135 | 129 | 160 | 152 | 246 | 242 | 309 | 305 |
| 20 Vdc | 88 | 77 | 109 | 104 | 137 | 129 | 193 | 190 | 248 | 243 |
| 24 Vdc | 81 | 71 | 94 | 90 | 122 | 114 | 161 | 158 | 203 | 200 |
| 33 Vdc | 74 | 64 | 72 | 74 | 106 | 98 | 124 | 121 | 154 | 151 |
| 16 Vfwr | 144 | 77 | 182 | 106 | 247 | 143 | 352 | 212 | 393 | 249 |
| 20 Vfwr | 141 | 68 | 162 | 87 | 220 | 120 | 274 | 158 | 362 | 210 |
| 24 Vfwr | 136 | 65 | 152 | 76 | 203 | 106 | 235 | 133 | 282 | 165 |
| 33 Vfwr | 125 | 54 | 144 | 65 | 196 | 94 | 201 | 101 | 232 | 123 |

Wall Temporal Horn-strobes – Low dB Setting

| UL Rating | 15 cd* | 30 cd* | 15/75 cd** | 75 cd* | 110 cd* |
|-----------|--------|--------|------------|--------|---------|
| | RMS | RMS | RMS | RMS | RMS |
| 16 Vdc | 122 | 160 | 146 | 274 | 330 |
| 16 Vfwr | 162 | 216 | 231 | 383 | 429 |

*G1-HDVM multi-cd

**G1F-HDV1575 fixed 15/75 cd

| Typical Current | 15 cd | | 30 cd | | 15/75 | | 75 cd | | 110 cd | |
|-----------------|-------|------|-------|------|-------|------|-------|------|--------|------|
| | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 16 Vdc | 96 | 84 | 130 | 124 | 158 | 149 | 243 | 240 | 302 | 297 |
| 20 Vdc | 79 | 70 | 104 | 99 | 133 | 124 | 189 | 186 | 241 | 237 |
| 24 Vdc | 68 | 61 | 88 | 84 | 119 | 110 | 156 | 154 | 197 | 193 |
| 33 Vdc | 56 | 52 | 71 | 68 | 100 | 93 | 118 | 116 | 146 | 143 |
| 16 Vfwr | 128 | 69 | 180 | 104 | 241 | 139 | 344 | 204 | 389 | 244 |
| 20 Vfwr | 118 | 60 | 157 | 84 | 213 | 115 | 266 | 156 | 343 | 200 |
| 24 Vfwr | 113 | 54 | 144 | 74 | 195 | 101 | 230 | 128 | 279 | 161 |
| 33 Vfwr | 112 | 48 | 137 | 64 | 182 | 87 | 197 | 99 | 226 | 117 |

Horns

Wall or Ceiling Mounted Temporal Horns (G1-HD)

| UL Rating | High dB (RMS) | Low dB (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 | 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 or Ceiling Mounted Horns (G1-P)

| UL Designation | Voltage Range | Max. Current, RMS |
|------------------|---------------|-------------------|
| Regulated 24 Vdc | 16 - 33 Vdc | 13 mA |
| 24 fwr | 16 - 33 Vfwr | 11 mA |

| Typical Current | RMS | Mean |
|-----------------|-----|------|
| 24 Vdc | 10 | 10 |
| 24 Vdc | 11 | 11 |
| 31 Vdc | 12 | 12 |
| 20 Vfwr | 9 | 8 |
| 24 Vfwr | 10 | 9 |

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.

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 |

| 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)

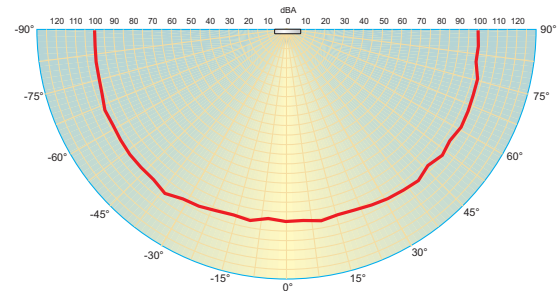
| | UL464 | Average | Peak |
|---------|-------------|---------|--------|
| 16 Vdc | 77 dBA, min | 85 dBA | 91 dBA |
| 16 Vfwr | 77 dBA, min | 85 dBA | 91 dBA |

Notes

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

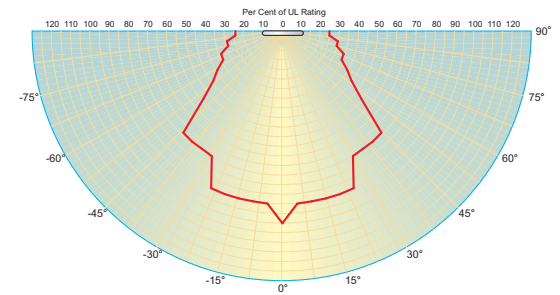
Average Sound Output (dBA)

(High dB setting, anechoic, 24V, measured at 10ft)



Light output - (effective cd)

Percent of UL rating versus angle



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 only) | Strobes and horn-strobes are for wall-mount installation only. Horn-only models may be ceiling- or wall-mounted. Flush mount: 2½ inch (64 mm) deep one-gang box Surface mount: 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 mm² to 2.5 mm²) 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 Vfwr |
| Strobe output rating | UL 1971, UL 1638, ULC S526: selectable 15 cd, 30 cd, 75 cd, or 110 cd output UL 1971: 15 cd (fixed 15/75 cd models) UL 1638, ULC S526: 75 cd (fixed 15/75 cd models) |
| 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 |
| Synchronization Sources | G1M-RM, SIGA-CC1S, SIGA-MCC1S, BPS6A, BPS10A |
| 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 |

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) | |
| G1F-HDV1575 | G1RF-HDV1575 | 15/75 cd temporal horn-strobe, hi/lo dB-24V – with “FIRE” marking (see note 1) | |
| G1F-V1575 | G1RF-V1575 | 15/75 cd strobe – with “FIRE” marking (see note 1) | |

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

| | | |
|-------------------------|---|-------------|
| 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) |

Note 1: These 15/75 cd models provide fixed output and are not multi-candela devices. The 15 cd output component complies with UL1971, while the 75 cd output component complies with UL 1638.



Genesis Horn-Strobes may be ordered in red or white, with or without ‘FIRE’ marking. Order matching trim plates separately.

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U.S.
T 888-378-2329
F 866-503-3996

Canada
T 519 376 2430
F 519 376 7258

Asia
T 852 2907 8108
F 852 2142 5063

Australia
T 61 3 9259 4700
F 61 3 9259 4799

Europe
T 32 2 725 11 20
F 32 2 721 86 13

Latin America
T 305 593 4301
F 305 593 4300

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imagination at work

Overview

Genesis ceiling strobes are small, compact, and attractive visible emergency signaling devices. Protruding no more than 1.6" (41 mm) from the ceiling, Genesis strobes 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 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 "cross" pattern, significantly exceeding UL-1971 and ULC-S526 light distribution requirements.

Depending on the model, Genesis ceiling strobes feature 15 to 95, or 95 to 177 candela output (see ordering information), which is selectable with a conveniently-located switch. The candela output setting remains clearly visible even after final installation, yet it is locked in place to prevent unauthorized movement after installation.

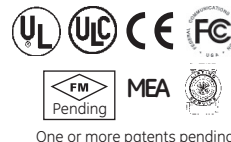
Genesis strobes feature textured housings in architecturally neutral white or eye-catching fire alarm red. An ingenious iconographic symbol indicates the purpose of the device. This universal symbol is code-compliant and is easily recognized by all building occupants regardless of what language they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

Standard Features

- **Field configurable – no need to remove the device!**
 - 15/30/75/95 cd and 95/115/150/177 cd models available
 - Switch settings remain visible even after the unit is installed
- **Unique low-profile design**
 - 30 per cent slimmer profile than comparable signals
 - Attractive appearance
 - No visible mounting screws
 - Available with white or red housings
- **Easy to install**
 - Fits all standard 4" square electrical boxes with plenty of room behind the signal for extra wire – no extension ring or trim plate needed
 - #18 to #12 AWG terminals – ideal for long runs or existing wiring
- **Unparalleled performance**
 - Exclusive FullLight strobe technology produces the industry's most even light distribution
 - Precision timing electronics meet tough synchronizing standards for strobes
 - Low current draw minimizes system overhead
 - Highly regulated in-rush current allows the maximum number of strobes on a circuit
- **Approved for public and private mode applications**
 - UL 1971-listed as signaling devices for the hearing impaired
 - UL 1638-listed as protective visual signaling appliances
 - UL/ULC listed for ceiling or wall use

Field Configurable Ceiling Strobes

Genesis Series



Application

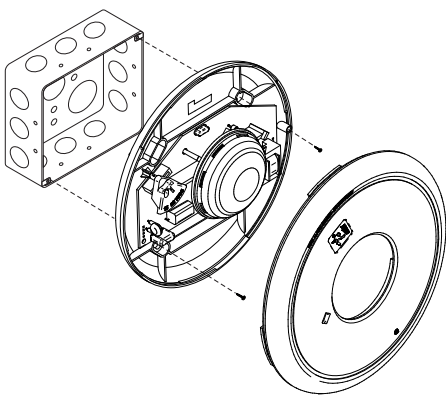
Genesis strobes are UL 1971-listed for use indoors as wall- or ceiling-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed specified levels, where occupants use hearing protection, and in areas of public accommodation. Consult with your Authority Having Jurisdiction for details.

All Genesis strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a synchronization source. Synchronization is important in order to avoid epileptic sensitivity.

Installation

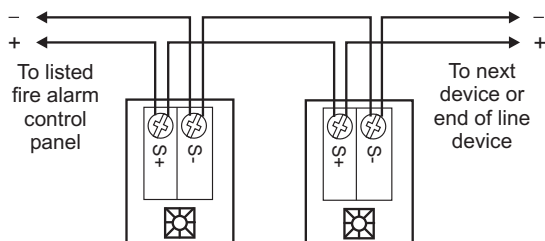
All models are intended for indoor applications only. Strobes mount to any flush North-American 4" square electrical box, 2¹/₈" (54 mm) deep.

Genesis ceiling strobes simply unlatch and twist to open. This gains access to mounting screws and the selectable candela switch. 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.

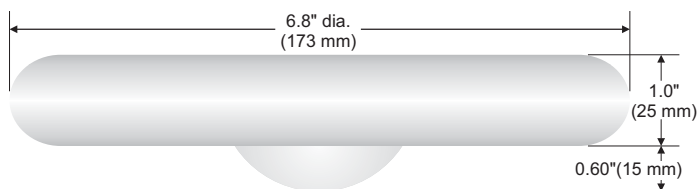


Wiring

Field wiring terminals accommodate #18 to #12 AWG (0.75 mm² to 2.5 mm²) wiring. Strobes are interconnected with a single pair of wires as shown below.

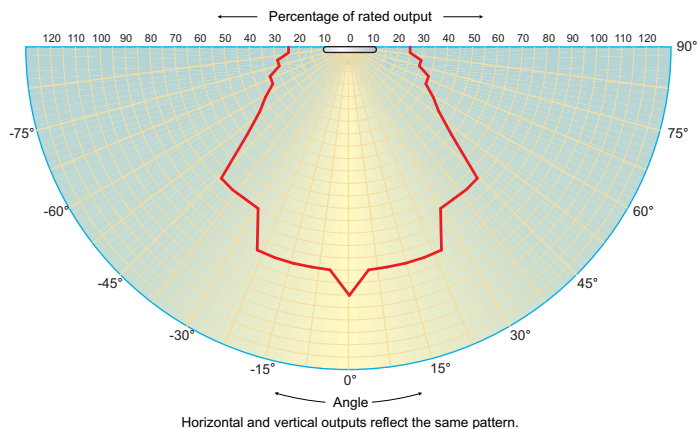


Dimensions



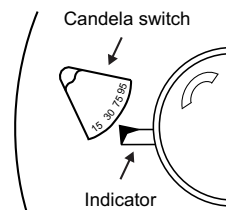
Light output (effective cd)

Percent of UL rating versus angle



Field Configuration

Depending on the model, Genesis ceiling strobes may be set for 15 to 95, or 95 to 177 candela output (see ordering information). The output setting is changed by simply opening the device and sliding the switch to the desired setting. The strobe does not have to be removed to change the output setting. The setting remains visible through a small window on the front of the device after the cover is closed.



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.

Current Draw

| UL Rating | 15 cd RMS | 30 cd RMS | 75 cd RMS | 95 cd RMS |
|-----------|--------------|--------------|--------------|--------------|
| 16 Vdc | 109 | 151 | 281 | 318 |
| 16 Vfwr | 131 | 194 | 379 | 437 |

| 95 cd RMS | 115 cd RMS | 150 cd RMS | 177 cd RMS |
|--------------|---------------|---------------|---------------|
| 330 | 392 | 502 | 565 |
| 432 | 518 | 643 | 693 |

| Typical Current | 15 cd | | 30 cd | | 75 cd | | 95 cd | |
|-----------------|-------|------|-------|------|-------|------|-------|------|
| | RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 16 Vdc | 94 | 87 | 140 | 135 | 273 | 268 | 325 | 323 |
| 20 Vdc | 74 | 68 | 108 | 105 | 205 | 203 | 244 | 242 |
| 24 Vdc | 63 | 59 | 90 | 88 | 168 | 166 | 194 | 192 |
| 33 Vdc | 48 | 46 | 70 | 68 | 124 | 123 | 139 | 138 |
| 16 Vfwr | 126 | 67 | 187 | 108 | 368 | 231 | 403 | 260 |
| 20 Vfwr | 108 | 54 | 156 | 84 | 281 | 168 | 333 | 199 |
| 24 Vfwr | 97 | 47 | 139 | 71 | 240 | 135 | 270 | 156 |
| 33 Vfwr | 89 | 39 | 119 | 56 | 197 | 100 | 214 | 111 |

| 95 cd | | 115 cd | | 150 cd | | 177 cd | |
|-------|------|--------|------|--------|------|--------|------|
| RMS | Mean | RMS | Mean | RMS | Mean | RMS | Mean |
| 333 | 330 | 392 | 390 | 499 | 496 | 551 | 545 |
| 259 | 257 | 303 | 301 | 378 | 375 | 429 | 426 |
| 212 | 210 | 245 | 243 | 306 | 304 | 342 | 340 |
| 155 | 153 | 180 | 174 | 211 | 209 | 236 | 234 |
| 484 | 283 | 570 | 339 | 673 | 411 | 724 | 446 |
| 380 | 212 | 438 | 248 | 537 | 312 | 604 | 352 |
| 318 | 172 | 361 | 198 | 434 | 243 | 484 | 273 |
| 245 | 123 | 269 | 137 | 308 | 160 | 338 | 176 |

Notes and Comments

1. Current values are shown in mA.
2. UL nameplate rating is higher than 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

| | |
|---------------------------|---|
| Housing | Textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating. Red and white models available. |
| Lens | Optical grade polycarbonate (clear). |
| Mounting | Flush mount to North American 4-inch square electrical box, 2-1/8 (54 mm) inches deep. No extension ring required. Suitable for indoor wall or ceiling applications. |
| Wire Connections | Screw terminals: #18 to #12 AWG (0.75 mm ² to 2.5 mm ²) wire size. |
| Operating Voltage | Regulated 16 to 33 Vdc, 16 to 33 Vfwr. |
| Operating environment | Indoor: 32-120° F (0-49° C) ambient temperature; 0-93% relative humidity. |
| Agency listings/approvals | Meets or exceeds year 2004 UL requirements for standards UL1638 and UL1971 and Canadian requirements for standards CAN/ULC S526-02 and CAN/ULC S524-01. All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule. CSFM, MEA. FM pending. |
| Strobe output rating | UL 1971, UL 1638, ULC S526: selectable 15/30/75/95 cd (GC-VM) and 95/115/150/177 cd (GC-VMH) |
| Strobe operating voltage | GC-VM series strobes: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR. |
| Strobe flash rate | GC-VM series 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 Genesis audible signals on same circuit. |
| Synchronization | Meets or exceeds UL 1971 requirements. Maximum allowed resistance between any two devices is 20 Ohms. Refer to specifications for the synchronization control module, this strobe, and the control panel to determine allowed wire resistance. |
| Synchronization Sources | G1M-RM, SIGA-CC1S, SIGA-MCC1S, BPS6A, BPS10A |

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U.S.
T 888-378-2329
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Ordering Information

| Catalog Number | Housing Color | Marking | Description | Ship Wt. lbs (kg) |
|----------------|---------------|---------|---|-------------------|
| GC-VM | White | None | Genesis Ceiling/Wall Strobe (selectable 15, 30, 75, or 95 cd output) | 1.8 (0.82) |
| GCF-VM | White | "FIRE" | | |
| GCFR-VM | Red | "FIRE" | Genesis Ceiling/Wall Strobe (selectable 95, 115, 150, or 177 cd output) | 1.8 (0.82) |
| GC-VMH | White | None | | |
| GCF-VMH | White | "FIRE" | | |

Accessories

| | | |
|------------|---|-------------|
| G1M-RM | Genesis Signal Master – Remote Mount (1-gang) | 0.2 (0.1) |
| 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) |



White Field Configurable Ceiling Strobes may be ordered with or without optional 'FIRE' marking. Red Strobes come with 'FIRE' marking.