

# Low Frequency Notification Appliances Sounders, Sounder Strobes and Sounder Bases



## What is included with the new L-Series Low Frequency offering?

The latest line of Low Frequency provides lower current draw plus provides versatility for non-ADA applications. The offering includes:

- Wall and ceiling options- New round and compact models!
- Full Candela range- Lower candela settings are great for non-ADA rooms!
- T3, T4, continuous, and coded tones- Now with high and low volume settings!
- Red and white models
- UL, FM and CSFM approved

## Are there compact options for replacing Mini-Horns?

Yes, System Sensor now has 2x4 compact sounder models that are great for retrofits. The compact models have the full feature set but in a smaller more attractive footprint.

## Will the L-Series Low Frequency parts be compatible with the SWIFT AV base?

Yes, the standard size models fit the SWIFT AV base. The latest SWIFT firmware and SWIFT tools will automatically recognize the L-Series Low Frequency products so that battery life can be accurately predicted.

## Will legacy low frequency sounder bases still be available?

Yes, we will continue to offer the low frequency sounder base that works in combination with a system detector.

## Can you meet the low frequency requirements with voice evacuation systems?

Yes, L-Series speakers are another option to meeting the code. Per UL to show conformance to the low frequency requirements as required per Section 18.4.5.3, the low frequency sound file with the system, the fire alarm panel, amplifier and speaker(s), needs to be tested and listed for low-frequency application.

## Do the System Sensor low frequency devices synchronize with legacy low frequency products, plus the normal horns and horn/strobes?

The new line of low frequency sounder, sounder strobes and sounder bases are fully compatible with our system sensor synchronization protocol.

## How long will the SpectrAlert Advance Low Frequency models still be available?

They will be available until December 1, 2019, availability after that date is only while supplies last.

## Low Frequency History

### What is the low frequency sounder requirement?

The 2010 edition of NFPA 72 added a new requirement in Section 18.4.5: Sleeping Area Requirements that says where audible appliances are provided to produce signals for sleeping areas, they shall produce a low frequency alarm signal that complies with the following:

1. The alarm signal shall be a square wave or provide equivalent awakening ability.
2. The wave shall have a fundamental frequency of 520 Hz  $\pm$  10 percent.

In addition, the 2012 edition of NFPA 720 has incorporated low frequency, 520Hz, requirements into Section 6.4.4.3: Sleeping Area Requirements.

## When was the initial compliance date for low frequency sounder installations for NFPA 72?

January 1, 2014. The NFPA 72 2010 technical committee allowed manufacturers' and national recognized test labs', such as UL, FM and Intertek, time to develop products and test standards to comply to this new requirement.

## When was the compliance date for low frequency sounder installation for NFPA 720?

January 1, 2015

## Why was this new requirement added to the standard?

In 2006, the Fire Protection Research Foundation (FPRF) funded two research studies to focus on the effectiveness of the 3Khz tone on two high-risk groups

- Waking Effectiveness of alarms for adults who are hard of hearing, NFPA Dorothy Bruck, Ian Thomas June 2007
- Waking Effectiveness of alarms for the alcohol impaired, NFPA Dorothy Bruck, Ian Thomas June 2007

The aim of the studies was to optimize the performance requirements to meet the needs of these high risk groups. The study tested six signals and found that a square wave low frequency signal with a fundamental frequency of 520 Hz is the most effective signal for awakening people, especially those with mild-to-severe hearing loss.

## Is this requirement the same in the 2013 edition of NFPA 72?

The Chapter 18 Committee revised the wording to clearly state the low frequency requirement is to awaken people only.

## Does this requirement also apply to Section 29.3.8.1 for Household fire alarms?

Yes, only where required by governing laws, codes or standards for people with hearing loss or where provided voluntarily for those with hearing loss, Section 29.3.8.1 requires low frequency sounders. In addition, a similar requirements is impacting Section 29.3.8.1 for household carbon monoxide detection systems.

## Do the International Building Code or International Fire Code include this new low frequency requirement?

The 2012 IBC and 2012 IFC both reference NFPA 72 2010 and NFPA 720 in their reference standards section, Chapter 35 and 80, respectively.

## Where does the standard apply?

The requirement applies to new sleeping spaces. Some specific applications include:

- Hotels / Motels
- Retirement / Assisted living facilities (with no trained staff on hand)
- College / University dormitories
- Apartments / Condominiums

The 2012 IBC and 2012 IFC both require low frequency sounders for R1 (Hotels and Motels) and R2 (College and University) applications by referencing NFPA 72.

## Are low frequency sounders also required in the hallways of the sleeping areas?

The intent of the code is for the low frequency sounders to only be installed in designated sleeping areas to awaken people.

## Is there a requirement that the tones be the same between the sleeping room and the hallway?

The only requirement is that the tones synchronize within the notification zone.

## Are the low frequency sounders required for only handicapped rooms in hotels?

If you need to comply with the requirements of Section 18.4.5 of NFPA 72 or Section 6.4.4.3 of NFPA 720, then the intent of the code is to require them in every sleeping room. If you are required to comply with the requirements of Section 29.3.8.1 of NFPA 72 or Section 29.3.8.1 of NFPA 720, then the low frequency sounders may be required for someone with mild to severe hearing loss.

## How does this apply to retrofit applications?

The requirements in NFPA 72 and chapter 907.2 of the IFC do not apply retroactively to existing systems. There are situations when an AHJ may require an existing system needs to be brought up to current criteria even though the system still meets the minimum requirements of the version of the code that was in effect at the time of the original installation. Several examples are

- Changes made to an existing system such as replacing a portion or all components of a system
- An AHJ may determine that an existing system may present a hazard to life or property

It's essential to consult with the local AHJ before bidding on an existing project.

## Will I have to use a different dB meter to test these low frequency devices?

The dB requirements and method to measure the dB output is the same as with other traditional notification appliances such as a horn or horn/strobe.

*Please follow manufacturer instructions and your local building/code regulations for the use and installation of any audible visible notification devices.*



[systemsensor.com/lowfrequency](http://systemsensor.com/lowfrequency)