Emergency lighting, visual notification & low-level exit demarcation

LinearStrobes are code compliant.

Introduction

The LinearStrobe™ Model L-200Si (12v/24v) - Fire and Life Safety, all in ONE™

For the first time in years, AHJ's now have a real choice in emergency lighting, visual notification and low-level exit demarcation; the LinearStrobe. So how does a completely new technology enter the fire and life safety industry without having the specifications of the old technology? Federal laws strictly prohibit the creation of barriers to entry to unduly restrict trade within a marketplace. These laws, including Fire and Life Safety Codes are "required to 'not' inhibit the advancement of safety through creating barriers or suppressing advancements that can reduce injury and loss of life." How can a new innovation's specifications be required to be the same as an older technologies specification? In other words, how can something new be "required" to be something old? It cannot, legally. Therefore, all codes must be written to allow for new innovations. Take for example, these citations:

> NFPA 72 & NFPA 101- "Nothing in this Code shall prevent the use of systems, methods, devices or appliances of equivalent or superior quality, strength, fire resistance, effectiveness, durability and safety over those prescribed by this code."
>
> ICC's IFC & IBC- "Nothing in this standard is intended to prevent the use of designs, products, or technologies as alternatives to those prescribed by this standard, provided they result in equivalent or greater accessibility and such equivalency is approved by the administrative authority adopting this standard."

It doesn't take long as a Code professional to recognize that the codes that we use in jurisdictions everywhere in the U.S. are expressly designed to vest the AHJ with the authority to adopt better ways of meeting the Code as they arise. The LinearStrobe, for a variety of reasons, is just that "better way".

Equivalency

How are new innovations protected from being prevented to entering the marketplace by competitors who want to maintain the same older technologies because they profit from them? Well, ADA and the U.S. Department of Justice take it pretty seriously; especially for the disabled. But it's really the AHJ and his public's trust in him that ushers in new and better ways of advancing safety. It is through the impartial AHJ's exclusive legal right to make determinations in the field using his expertise under the principles of Equivalent Facilitation or Equivalency that the jurisdiction's citizens rely on to advance safety. Wise AHJ's choose advanced technologies to make their jurisdictions safer places and our code platform gives them the tool (the principle of equivalency) to do it.

Under the principle of equivalency the new innovation being introduced must, first, be determined to "serve the purpose and intent of the code" and, secondly, must have the required documentation to verify that it has been tested to meet (or exceeds) the performance standards and the manufacturer's specifications. Older technologies' specifications are completely irrelevant when reviewing a new product or approach designed to serve the Code's purpose. These new systems, methods, devices, appliances, designs, products, or technologies must be of equivalent or superior quality, strength, fire resistance, effectiveness, durability and safety and/or provide equivalent or greater

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accessibility over those prescribed by the code used in the jurisdiction in order to be approved by the governing AHJ.

By virtue of being tested and listed to the very highest standards of performance in the industry, UL 1971, the LinearStrobe is already pre-qualified and readied for AHJ approval using equivalency for its use in any application where lower performance standards, such as UL 924 and UL 1994, etc. apply. Test reports, listing confirmations and other supporting studies and data are readily available for free for AHJ's considering the LinearStrobe for a variety of uses in emergency lighting, visual notification and low-level exit demarcation applications.

Purposes

The obvious purpose of the LinearStrobe™ is "to alert people to an emergency condition (like fire) "and" to help them to locate the exits and/or path of egress below stratified smoke layers." It simultaneously Alerts, Demarks "and" Directs; effectively meeting or exceeding the intended purpose of the Codes that require devices or appliances in the visible notification, exit & egress signage/path marking and emergency lighting classifications. The LinearStrobe clearly serves the intended purposes of the Codes that regulate these 3 primary and very different fire and life safety fronts:

> VISUAL NOTIFICATION**:** The purpose of visible notification appliances is to flash in synchronized fashion to "alert" the deaf and hearing impaired to the existence of a fire emergency condition.
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> EXIT & EGRESS SIGNAGE/MARKING: The purpose of low-level exits signs is to help people locate the path of egress below the stratified smoke layers.
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> EMERGENCY LIGHTING: The purpose of emergency lighting systems is to "minimize danger to life from the effects of fire, including smoke, heat, and toxic gases created during a fire" and "to allow for the prompt escape of occupants from buildings or, where desirable, into safe areas within buildings".

In all 3 of these very different emergency signaling platforms, the minimum requirements are established. The LinearStrobe™ clearly "Serves the Purpose" intended by the Codes and has the definite capability to take the place of older, and many times less effective technologies, which are traditionally utilized to satisfy these code requirements today.

As an example: Compare the LinearStrobe around an exit doorway (connected to a NAC driven by a FACP) with conventional visible notification appliances. The purpose of visual notification appliances as outlined above, Alert, synchronize and visually indicate that a fire emergency condition exists in the space to the hearing impaired. Both, the LinearStrobe and older strobe appliances can do this and both are marked to UL standards (UL 1971) to certify their capabilities. But, unlike the older technologies (like xenon-based wall or ceiling strobes) which are required by Code to be installed up high on the wall where they can quickly become obscured by thick black smoke, LinearStrobes provide their synchronized alerting in a multi-elevational way providing highly visible light at both, high "and" low levels. In addition to higher-elevational alerting, the LinearStrobe also delivers its unique format of appropriately intense highly visible light at "floor level" to serve the Code's purpose. This new system,

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method, device, appliance, design, product, or technology (The LinearStrobe) is both equivalent 'and' superior in quality, effectiveness, durability in smoke and is safer as a result. It also clearly provides greater accessibility to both the deaf 'and' other occupants that exceed those prescribed by the code. This configuration provides a much longer period of visibility for the hard of hearing occupant to directly identify, get to and move through the exit to safety under the stratified layers of smoke as the smoke builds and chokes out lights from conventional appliances.

Primary & Supervised

All UL 1971 Listed devices are primary devices because only UL 1971 devices are permitted to connect to the notification appliance circuit (i.e., the NAC). No Secondary/Auxiliary Devices are allowed to connect to the NAC, and secondary devices do not flash in sync with other primary visual notification appliances integrated in the same circuit. LinearStrobes are supervised just like all older UL 1971 visual notification appliances and can be field calibrated to marry their flash to sync with all other visual notification appliances in the line of sight and connected zone. In an effort to clarify, examples of Secondary/Auxiliary visual notification devices are devices such as flashing doorbells and flashing telephones, which do not serve the primary purpose of visual notification in Fire and Life Safety Codes.

NFPA 101- Life Safety Code© Compliant

The purpose of the life safety code is to "minimize danger to life from the effects of fire, including smoke, heat, and toxic gases created during a fire" and "to allow for the prompt escape of occupants from buildings or, where desirable, into safe areas within buildings". In this arena, LinearStrobes are, once again, superior to older technologies designed ages ago to serve this Code's intended purpose. Not only does it identify the path of egress in the event of smoke or fire like their dated counterparts, they also simultaneously provide flashing "alerting" low-level exit demarcation that is not easily obstructed like point-source flush-mount/low-level exit signs, and, even more importantly, LinearStrobes are visible from any angle of approach, unlike in-wall or flush-mount exit demarcation technology.

Additionally, where photoluminescent tapes and exit signage are utilized, LinearStrobes are an infinitely more reliable form of low-level exit demarcation technology; especially where occupancy sensors or chronic low-light conditions in spaces may hinder the charging effectiveness of the photoluminescent materials used.

ADA Compliant-

LinearStrobes not only level the playing field for individuals who are deaf or hearing impaired, but they can also enhance building accessibility for many high-risk groups including people with a variety of physical or cognitive disabilities and medical conditions by increasing the amount of time the occupant has during critical moments in a fire to identify the path of egress below thick black smoke and direct them to safety. LinearStrobes, are listed to the UL 1971- Standard for Signaling Devices for the Hearing Impaired and, obviously address the particular needs of the deaf. However, this technology also has tremendous importance for a variety of disabilities such as people with intellectual and other developmental disabilities, the partially sighted, those with low-vision (including some legally blind individuals), those with known mobility difficulties, and/or those whom would likely suffer difficulties in safe evacuation as a result of long-term physician prescribed medication which might reasonably impair his/her ability to safely mobilize or evacuate in a fire or emergency event.

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The technology is designed specifically with the Americans with Disabilities Act of 1990 and a myriad of other accessibility codes and laws in mind. The device's wide availability and designed ease-of-installation permits the quick deployment of the technology and it is a reasonably affordable and readily achievable solution to increase accessibility.

The LinearStrobe is taking a path similar to older strobes as it enters into service under ADA/Accessibility law. ADA's platform through the use of the principle of equivalency for the benefit of the disabled brought the strobe industry to life and created quite a stir when ADA was enacted. ADA, the supreme law of the land in the accessibility realm, technically, required that all strobes have light intensities of at least 75 candela. Consider that, had our industry not cleverly re-invented its approach to light intensity, room sizes and coverages on-the-fly, we might all be installing minimum 75cd strobes everywhere. But for the principle of "equivalency", not one 15cd, or 30cd strobe light would ever been compliantly installed to meet code requirements. But, obviously, millions of these devices were "approved" throughout our nation, simply because AHJ's understood the equivalency principle and "approved" them. This understanding of equivalency and AHJ's drive to flexibly embrace new ways of making the public safe is fundamental to the LinearStrobe's future.

People Focused Design™

LinearStrobes are meticulously designed based on People-Focused Design™ principles. An example of this approach in design is how it was applied to the appliance's light output intensity level. The light intensity of even a 15 candela strobe that is designed to create high-intensity indirect point-source ambient light from high on a wall or ceiling (in thick black smoke) with hopes to provide enough light for an occupant to be able to identify the exit at a distance, could easily create flash blindness to occupants at floor level (below the thick black smoke) with a direct view where they are crawling within inches of the light source. The LinearStrobe, on the other hand, is specifically designed to operate at a light intensity that is appropriate for its logical proximity to human eyes. It is thoughtfully designed, with the impact to those that it serves as a primary consideration. In this case, in an effort to create the least likely possibility of creating flash blindness to occupants as they crawl at floor level and within inches of the luminary when approaching it and passing it as they pass through the exit portal, a People Focused Design™ approach was required. Obviously, the high intensity of older strobes is the driving reason why Code actually requires them (conventional strobes) to be installed at 80" or above finished floor elevations. If the LinearStrobe had an intensity of, even 15 candela, it would, like an older strobe technology, have high probability of creating flash blindness to occupants when their eyes are within inches of the luminary. Similarly, low-level exit signs do not flash, therefore the intensity of the luminary required a People Focused Design approach as well. The LinearStrobe is designed to serve the intended purpose of the Code, but in a more effective way.

Summary

LinearStrobes are a first and only "break-though" innovation that are Compliant with both, Fire and Life Safety Codes. This extremely versatile Fire and Life Safety technology serves many purposes in the Codes and is an obvious best choice for the informed AHJ for specific applications and locations. Its pedigree of listings, certifications and unmatched versatility sets it apart from any other device or appliance in the marketplace today. LinearStrobes provide AHJ's with a new choice in code compliant egress path marking, visual notification and low level exit demarcation. We believe they will chose wisely.

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