



National Fire
Equipment Ltd.



Model L-100 Series LinearStrobe™ (S-EMVNA™) Single-Station Egress-Marking Visible Notification Appliance™

- Intertek (ETL) Listed to UL 217 & CAN/ ULC s531
- U.S. Department of Homeland Security- SAFETY Act
"Designated" as a "Qualified Anti-Terrorism Technology" (QATT)

The L-100 Single-Station Series of LinearStrobe™ products are an unmatched powerful new tool to alert, demark and direct occupants during a fire or smoke event. This new technology is an alarm-sound driven directional demarcation visual notifier that can be installed in virtually any interior location to provide occupants "and" rescue personnel, alike, a clear multi-elevation light source for fire & smoke emergency egress. The Single-Station LinearStrobe™ is a Listed, Modular, Wireless, Sound-Activated and Battery-Powered egress-marking visible notification appliance that delivers:

*"Multi-elevational visibility from any angle of approach and is... "Always below the smoke layer."™
So inconspicuous that you don't even know it's there..... Until you need it"™*



About the Single-Station LinearStrobe™: Model L-100 Single-Station LinearStrobes (S-LinearStrobes): are a UL 217 conforming accessories to Single and Multiple Station Smoke Alarms. The "Single-Station LinearStrobe™ is designed to "visually" alert individuals to the existence of a fire emergency and "visually" assist them in recognizing that alarmed audible smoke detector alarms in the space have been activated and broadcasting their emergency signals. When installed around an exit doorway, the S-LinearStrobe also demarks the exit location at all elevations of the doorway and areas immediately adjacent to it. It is a powerful

new tool to direct occupants to safety when smoke alarms in the space are activated.



Intertek

While just as effective for sighted and partially-sighted occupants of a structure when fire and smoke strike, the S-LinearStrobe has a powerfully distinctive

and critical utility to those whom cannot hear commonplace smoke detector's alarms when their aurally broadcasted alarm sounds are sounding. The common smoke detector/alarm is generally completely ineffective for the deaf and hard of hearing person. This affordable and easy-to-install technology can be particularly beneficial and useful to the deaf and hard of hearing in private residential settings where visible notification appliances

are not required by codes and ordinances and, resultantly, are virtually non-existent in the United States today.

These devices are self-contained, sound-activated, 9VDC battery-powered and are activated when nearby single-station smoke alarms (and often, other audible fire alarms) are activated. The device is also designed to be triggered/activated by many firefighter's P.A.S.S. devices which may be operating within the listening radius of the S-LinearStrobe. This model of the LinearStrobe™ is not interconnected with other notification appliances and does not synchronize its light emissions with other visual notification appliances in a space or a building; like their Integrated LinearStrobe cousins; which are designed for public accommodation, commercial and other ADA controlled settings.

Generally, this version of the LinearStrobe technology's on-board microprocessor, running our proprietary software, samples the ambient background audio in its space or area approximately every few seconds; "listening" for the tonal patterns and frequency values of the audible signal generated by code compliant smoke alarms (and certain other alarms). When these patterns and frequencies are identified, the S-LinearStrobe device's two standard-length 12' long linear luminaries are automatically triggered to flash in a 2Hz flash pattern; highlighting the universally recognized shape of the doorway, an emergency egress window or alternative pre-planned path of egress where installed.

Nearly 20 next generations of the S-LinearStrobe are already covered in LightSaver's intellectual properties worldwide, some of which are in development design stages and/or are prototyped and in testing today. There is an entire line of products underway to change the way we alert, demark and direct evacuating occupants out of a structure when fire or other emergencies strike.



Model L-100 Housing Specifications	LightSaver Light-Strands™ Specifications
Length: 7-7/8" inches (20.0 cm)	Strand Length: 12' l.f. (3.66 m)
Height: 1-5/8" inches (41.2 mm)	Strand Diameter: 3/64" O.D. (0.0472" / 1.2 mm)
Depth: 0.875" inches (22 mm)	or: 3.25/64" O.D. (0.0500" / 1.3 mm)
Color: "Navajo-White" matte finish	Strand Jacket: "clear"; Clean-PVC, PVDF, or LDPE
Composition: Molded Fire-Retardant ABS (UL-94)	Connector: Std. RJ/4P4C Handset Plug (150v/1000v AC)
Weight: Completed (incl. battery): 4.0 oz. (113.4 g)	Strand Weight: 0.45 oz (12.76 g)

Tested, Marked & Listed

- Listed to *UL 217 (US)- Single and Multiple Station Smoke Alarms*
- Listed to *CAN/ULC-S531 Canadian Standard for Smoke Alarm*
- "Designated" Technology under the U.S. Department of Homeland Security- Safety Act S&T Directorate
- Dept. of Homeland Security/SAFETY Act- Qualified Anti-Terrorism Technology (QATT) (through March 31, 2020)

Model L-100 Series of Single-Station LinearStrobes™ are sold as complete ready-to-install kits which include:

- One (1) L-100 LightSaver L-100 Appliance Driver™,
- Two (2) 12' long trim-to-fit LightSaver Light-Strands™ w/slip-on end-caps,
- One (1) roll (40') of LightSaver Easy-Mount Tape Adhesive™ (or special order LightSaver Super-Clear Silicone Adhesive™ & applicator tip),
- One (1) fresh standard 9v alkaline battery, and
- One (1) L-100 User's Manual, Directions & Instructions



Features & Facts

- ✓ "Designated" Technology under the Dept. of Homeland Security- Safety Act
- ✓ Dept. of Homeland Security- Qualified Anti-Terrorism Technology (QATT)
- ✓ Meets All Required Specifications for use,
- ✓ Operates with most code-compliant smoke alarms
- ✓ Activated by most Firefighter P.A.S.S. device alarm tones
- ✓ Uses Standard Replaceable 9V Alkaline Battery,
- ✓ Dependable solid state design works 24-7-365,
- ✓ Up to 6+ Hours Continuous Runtime when alarmed,
- ✓ Up to 1 Year Battery Life,
- ✓ Automatic "Flash-Chirp" - Low Battery Alert,
- ✓ "No Tools Required"; Simple, Quick & Easy Installation,
- ✓ Seamlessly outlines "entire" doorway, high and low elevations including flanking floor areas near floor level,
- ✓ Easy-to-Reach Test-Button & Battery-well location for regularly testing the device or changing battery,
- ✓ Replacement LightSaver LightStrands™ also available,
- ✓ Slim & Subtle Unobtrusive Design, Shape & Navajo White (housing) and Clear LightStrand™ color blends with any décor,
- ✓ Proudly Made and Assembled in the United States.

Other Details

- Luminary Type: Uses (2) 12' length plug-in ready, trim-to-fit LightStrand™ luminaries with slip-on end-caps included.
 - Replacement Luminaries: 12' LightSaver Replacement LightStrands™ are available through authorized reps, distributors and dealers throughout the U.S. Varied colored LightStrands are available through special order.
 - Mounting Format: LightStrands™ mount with LightSaver Easy-Mount Tape™ (included) or alternative specially formulated Super-Clear Silicone Adhesive™. Clear protective conduit or other mounting means may be available for your application through special order.
 - Every device is individually tested before shipment to insure proper operation.
 - Available in "Waterproof" version (special-order/pricing).
 - Constructed of durable Fire-Resistant, RoHS & Non-Phthalate compliant materials.
 - Manufactured and Assembled under strict Certified ISO 9001 and Intertek (ETL) Listing Quality Standards.
 - Code Compliant: Meets or exceeds applicable code requirements for low-voltage battery operated sale and use in the US and Canada.
 - An American born technology arising from a real-life smoke/fire emergency experience and....Invented, Developed & Made in the USA.
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*"Multi-elevational, Visible from any angle of approach....and,
Always below the smoke layer..."™*



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Model L-200Si Series LinearStrobe™ (I-EMVNA™)

Models L-224Si, L-230Si and L-236Si

Integrated Egress-Marking Visible Notification Appliance™

- Intertek (ETL) Listed to UL 1971
- Department of Homeland Security- SAFETY Act
"Designated- Qualified Anti-Terrorism Technology" (QATT)



The L-200Si Integrated Series of LinearStrobe™ visible notification appliance devices provide an unmatched efficacy in UL 1971 synchronized 1Hz alerting "and" fire alarm and emergency system driven multi-elevational egress point and egress path directional demarcation to occupants "and" rescue/responder personnel. Finally...a listed visible notification appliance with:

"Multi-elevational visibility from any angle of approach and..."

"Always below the smoke layer."™

About the System-Integrated LinearStrobe™: As an Egress-Marking Visible Notification Appliance™ (EMVNA™) for the deaf, the "Integrated" I-EMVNA™ LinearStrobe™ Model L-200Si Series shall be approved for fire protective service. The LinearStrobe™ shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's operating voltage range in approved fire systems.

The technology is an affordable NAC-connected supervised ADA and Fire Code compliant Intertek (ETL) "Listed" notification appliance marked and listed to "UL 1971- Signaling Devices for the Hearing Impaired." The L-200Si is a current-limited 12 or 24 volts input driven low-power consuming device. It hard-wire integrates into building-wide 24VDC fire alarm systems or into a 12/24 VDC security alarm, emergency lighting and access control panels/systems. The Model L-200Si I-EMVNA draws approximately 62.5mA (milliamps) peak draw of power for its operation. Its local system-synchronized flashing signals are remotely initiated, either automatically from detectors in the system or manually from pull-stations spread throughout a facility when initiated by the system's fire panel and are configured exactly to the system like other NAC-supervised visual notification

appliances. I-EMVNA's are installed/recessed in a UL-rated single gang outlet box and can be field-calibrated to different sync patterns to marry with other 1Hz flashing notification appliances in the connected zone or line of sight. The I-EMVNA's light intensity is location-appropriate and was established using LTI's "People Focused Design Standards" to provide a safe "Location-Appropriate Intensity" for multi-elevational alert, demarcation and directional light emission intensities for its intended applications. The I-EMVNA can also be configured to activate through a security system's control panel or other system's (emergency lighting or access control) driver panels. Replacement LightStrand™ luminaries are also separately available in trim-to-fit lengths of 24', 30' and 36' to accommodate most doorways, double-doors, doors with transoms overhead or side-light features and can be butted together and synched for virtually any length imaginable. The I-EMVNA can be deployed nearly anywhere indoors as a low-level egress path or path-point integrated visual alert in a myriad of applications. This visible notification appliance meets or exceeds the required UL 1971- Signaling Device for the Hearing Impaired Standards and is tested to this standard. As a result, it may be recognized by the Authority Having Jurisdiction (AHJ's) as a primary notification appliance; just like every other compliant listed emergency strobe device in use and approved today.

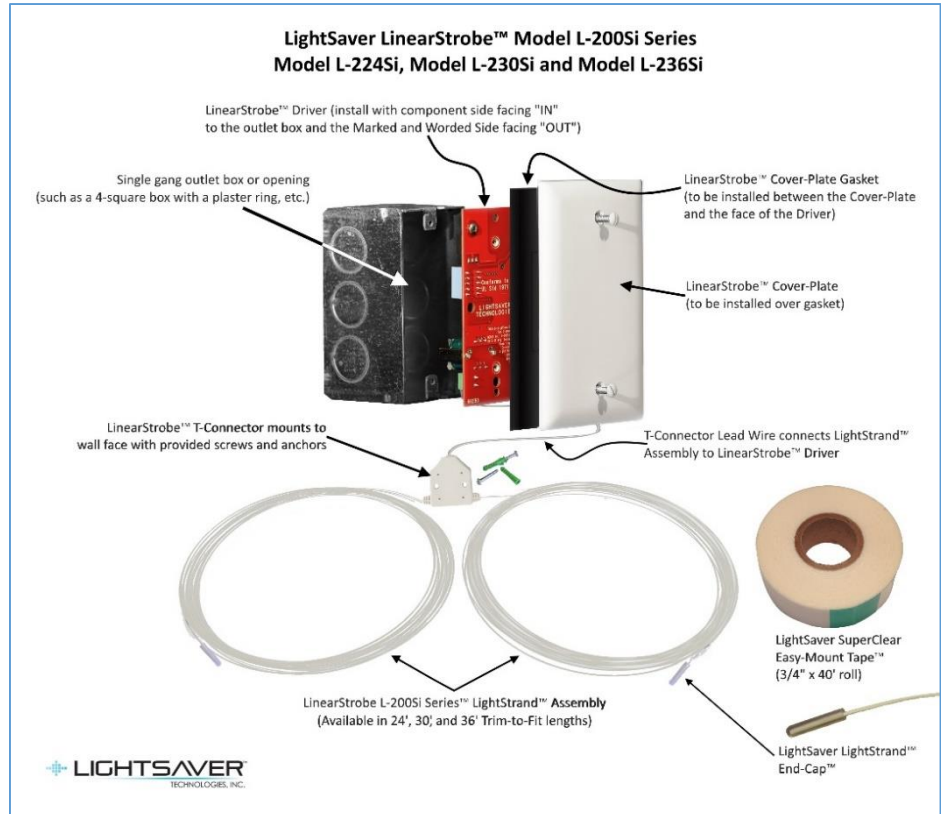
Features & Facts

- U.S. Department of Homeland Security- SAFETY Act S&T Directorate "Designated Technology."
- Designated as a "Qualified Anti-Terrorism Technology" (QATT) through March 31, 2020.
- Listed to UL 1971- Signaling Appliances for the Hearing Impaired / ADA Compliant.
- Current-limited 12v/24v device designed for integration into nearly any 12V or 24V alerting fire-alarm, security, emergency lighting or access control system.
- Field-selectable UL 1971 specifications for 1Hz synchronization settings are compatible with a wide range of non-SLC Fire Alarm Systems (such as Gentex, Potter, Amseco, System-Sensor, Simplex (non-addressable), etc.)
- Compatible with a wide range of Security, Emergency Lighting and Access Control systems.
- Deployable for a myriad of applications and uses for visible emergency notification needs.
- Primary device that is a supervised non-addressable NAC device that integrates into the notification appliance circuit pathway just like other (non-SLC) notification appliances currently used in the industry everywhere today.
- Low-power draw (>63mA current draw),
- Field calibrated (dip-switch set) to synchronize with other appliances in the connected zone and line of sight as required in UL1971, NFPA and other Codes & requirements.
- An American born technology arising from a real-life emergency experience that is "Made in the USA"...



Details & Specifications

- **Type:** Model L-200Si Series of System-Integrated LinearStrobes™; a NAC-supervised/non-addressable device sold as complete ready to install kit. (Note: Models L-224Si, L-230Si and 236Si indicate the differences in luminary length (i.e. 24', 30', 36'). These Models are identical excepting the length of the interchangeable linear luminary (i.e. LightStrand™) provided in the product kit)
- **Luminary Type:** Uses (1) kit-included ready to install trim-to-fit LightStrand™ luminary sold in 24', 30' or 36' interchangeable lengths.
- **Replacement Luminaries:** 24', 30' and 36' LightSaver Replacement LightStrands™ are available through authorized distributors and dealers throughout the U.S.
- **Power Source:** Current-limited 12VDC or 24VDC designed for 2-wire integration with a hardwired Fire (NAC) System, Emergency Lighting, Security (including combo) or Access Control Systems.
- **Current Draw:** >65mA max peak current-draw (62.5mA)
- **Mounting:** Installed in Approved UL-conforming single-gang backbox (single gang opening), and LightStrand™ is adhered with specified LightSaver Easy-Mount Tape™ (Std.) or alternative specially formulated Super-Clear Silicone Adhesive™. Clear LightStrand™ protective conduit available / special order.
- **Manufactured and Assembled in the USA** under strict Certified ISO 9001 and Intertek (ETL) Listing Quality Standards: the highest standards of production quality in manufacturing and assembly.
- **Code Compliant**, and meets or exceeds applicable visible notification appliance standards & requirements of ADA, NFPA, ICC Codes and many other fire and building codes.



LinearStrobe EMVNA™ SPECIFICATIONS

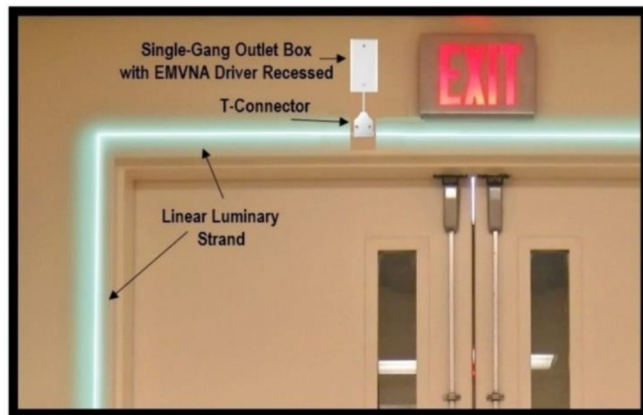
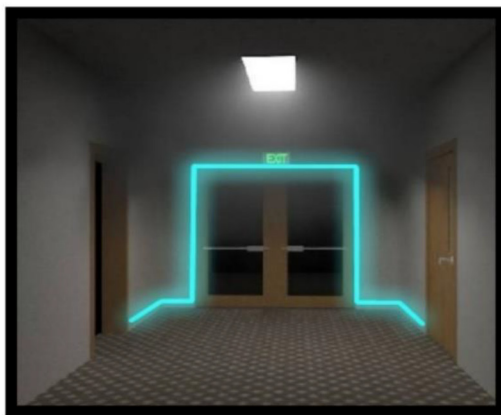
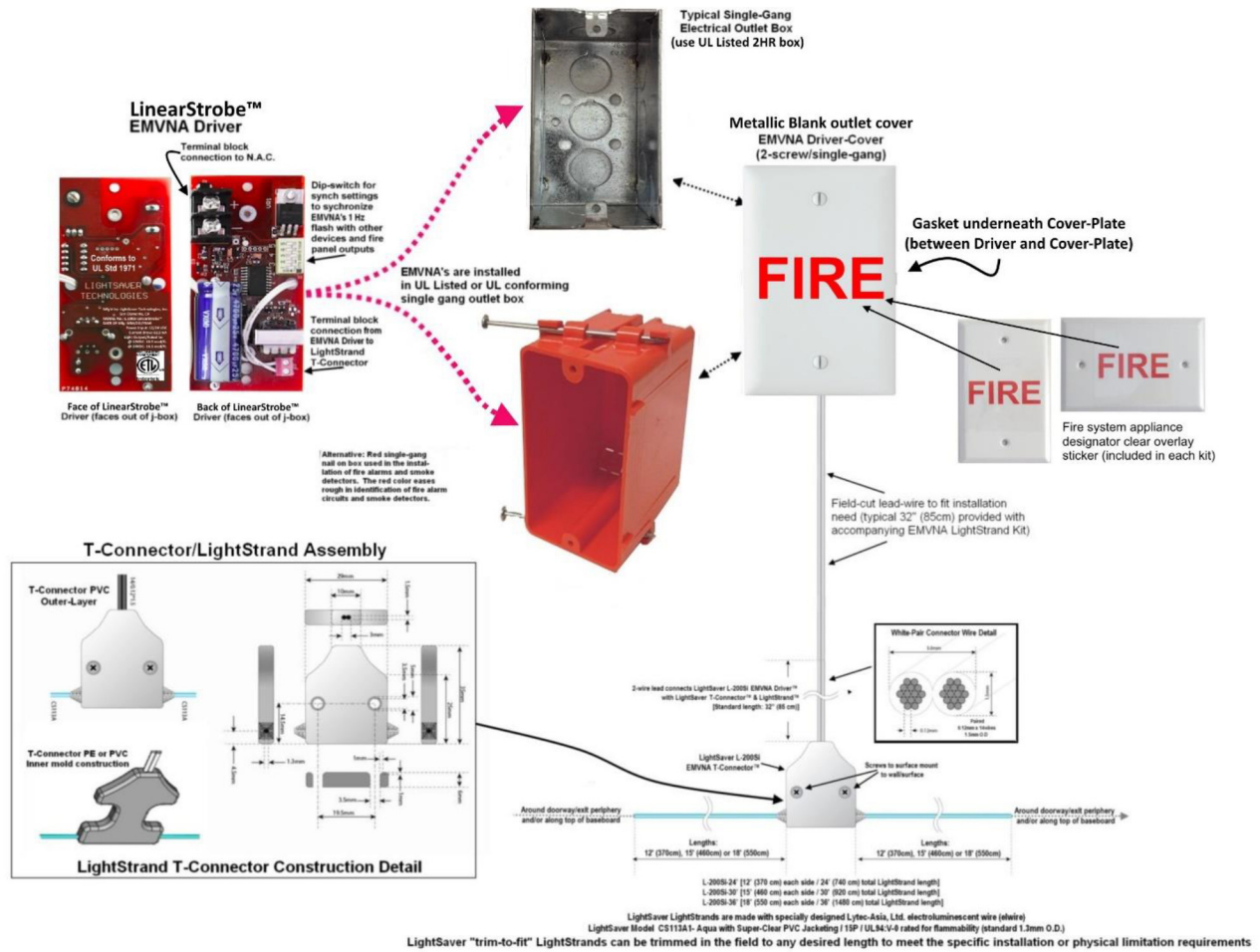
Operating Temperature	32°F to 120°F (0°C to 49°C)
Humidity Range:	Driver: 10 to 93% Non-condensing, LightStrand Assembly: should not be stored or installed in chronically or regularly wet or high-humidity areas.
Flash Rate:	Switch selection for two (2) separate code-compliant flash settings (1 Hz patterns)
Brightness:	Switch selection for one of 2 brightness levels
Nominal Voltage:	Regulated 12VDC/FWR or regulated 24DC/FWR
Operating Voltage Range (includes fire alarm panels with built in synchronization)	8V to 17.5V (12V nominal) or 16V to 33V (24V nominal)
Current Draw:	62.5 mA
Input terminal wire gauge:	12 to 18 AWG
Mounting Box (outlet boxes/back-boxes):	<i>Note: When using nonmetallic outlet and switch boxes in fire-resistant rated assemblies, outlet boxes must be specifically investigated for use in such assemblies and are required to be marked appropriately (UL 2HR). Always use UL conforming back-boxes. When installing an integrated LinearStrobe EMVNA, always use metallic outlet box or a fire-rated UL Listed or Classified 2HR non-metallic single gang outlet/switch box (not provided). Always confirm that the outlet box being used for installation is acceptable to the jurisdiction's AHJ and the facilities' or building's particular specification for same and test it with the device prior to outlet box installation to insure that the appliance can be properly mounted in the field.</i>
LinearStrobe EMVNA™ Cover-plate	UL Listed/ UL compliant single gang blank cover plate or single gang blank "strap-mount" wall plate and mounting screws and clear "FIRE" overlay label (Parts provided with device kit).

LinearStrobe EMVNA™ Driver Dimensions:	1-13/16" Wide X 3-11/16" Long X +/- 7/8" Deep
LinearStrobe EMVNA™ T-Connector & LightStrand™ Kit:	LightStrand Kit Includes: One (1) fully assembled & tested LightSaver L-200Si LightStrand & over-molded T-connector and assembly complete with T-connector mounting screws and screw-anchors with one (1) LightStrand™ in a length of 24', 30', or 36'. LightStrands™ are "trim-to-fit" and may be terminated at any length desired by the installer for the location's particular needs. LightSaver LightStrands™ are neatly coiled and ready for installation. LightStrand kits come complete with (2) "clear" PVC wire diameter matching wire-end-caps™, at least one (1) silica gel desiccants packet to prevent moisture build-up and all kitted in a clear heavy-duty polyethylene re-closeable zip-lock style baggie. <i>Note: Reference User's Manual for LightStrand™ care & handling.</i>
LinearStrobe EMVNA™ Adhesive / Wall Mounting Format:	Each LinearStrobe EMVNA™ Kit includes one (1) roll of 3/4" wide x 40' length LightSaver Easy-Mount Super-Clear Tape™ to mount the LightStrands to the wall or other surface where being installed. Alternative applications can require alternative forms of adhering the LightStrands to its substrate(s). LightSaver's special formula of Super-Clear Silicone Adhesive™ (special order) is available for many of these Industrial /Heavy Commercial settings and substrates and may be ordered separately and may be an easier LightStrand™ installation alternative for your facility.
System Compatibility / Passive Device:	The L-200Si LinearStrobe EMVNA™ device is designed and tested to be compatible with and passively flash in a 1Hz synchronized pattern. The device has dip-switch adjustable settings for several modes and patterns for differing configurations. Please reference the product's User's Manual to determine your field settings for your application.
Adjustable 1 Hz Flash Output Patterns:	The L-200Si LinearStrobe EMVNA™ device can be field-calibrated (dip-switch adjustable) to two (2) different 1 Hz flash patterns; (i) one setting for "single-flash" and one setting for "double-flash" suitable for a variety of applications.
Minimum Light Output (1Hz Frequency)	Not Less than 0.050 lux.

LinearStrobe™ Benefits to Occupants "and" Rescue Responders; A comparison with other visible notification and exit-related appliances

	Conventional Emergency Strobes	Exit Signs	Low-Level Exit Signs	Exit Marking Visual Notification Appliance
Light Form Primary Utility and Type of Light	• • Alerts Occupants to Emergency Stroboscopically • • Provides <i>Indirect Lighting</i> • •	• • Demarks Exit Location using <i>Direct Lighting</i> • • Does not "alert" occupants to existence of emergency condition • •	• • Demarks Exit Location using <i>Direct Lighting</i> • • Does not "alert" occupants to existence of emergency condition • •	• • Alerts Occupants to Emergency Stroboscopically • • Demarks Exit Location Stroboscopically • • Directs Occupants to Exit Stroboscopically • • Provides <i>Direct & Indirect Lighting</i> • •
Device Location & Visibility relative to smoke filling its area or space	• • Typically mounted 80" to 96" A.F.F. (by code requirement) • • Situated where occlusive smoke accumulates first and quickly • •	• • Typically directly above the doorway • • Situated where occlusive smoke accumulates first and quickly • •	• • Typically installed 12"-18" AFF • • Situated where they are frequently kicked, carts, baggage and equipment run into them and where low-level debris, boxes, suitcases, carts and other commonly found items and/or other evacuating occupants can completely block their view from others downstream visually • •	• • Typical installation is around the "entire periphery" of a doorway "and" along the doorway's flanking side along the top of the baseboard or trim • • Light message is delivered both, up high "and" at low-level • • Luminary is protected by recess of surrounding door trim or frame hardware relief • •
Comparison of Attributes	• • High-intensity light • • Flash-blindness risk • • Alerts Stroboscopically • • Indirect Lighting • • Small single Point of Light • • Located high on the wall or ceiling at 80" - 96" over F.F.E. where occlusive smoke accumulates first and quickly • • When interacting with smoke, can cause glare • •	Generally low in intensity • • Non-Stroboscopic Direct Lighting • • Typically 9"x12" Single Point of Light • • Located high on wall above doorway where occlusive smoke accumulates first and quickly • • Viewer's Angle of Approach has dramatic impact on effectiveness • • Requires ability to read to comprehend (children & visually impaired) • •	Low in intensity light • • Non-Stroboscopic Direct Lighting • • Viewer's Angle of Approach has dramatic impact on effectiveness • • Small in size • • Single Point of Light; difficult for partially sighted, low-vision and legally blind individuals to see • • Located where other evacuating occupants, baggage, carts and other obstructions can easily block them from view • • Requires ability to read to comprehend (children & visually impaired) • •	• • Medium intensity • • Low "flash-blindness" risk • • Alerts Stroboscopically • • Light emission is viewable from any angle of approach • • Long linear luminary capabilities provide continuous length of 24' - 36' (lineal feet) of light of "multiple points of light" • • Light form shaped in the <i>universally recognized shape of the exit doorway</i> • • <i>Light color easiest for human eye to detect in contrasted settings</i> • •

LightSaver LinearStrobe Model L-200Si Series Egress Marking Visible Notification Appliance ("EMVNA") Driver & Driver Housing / T-Connector / LightStrand Graphic Overview and Specifications



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