MALLORY

MALLORY SONALERT PRODUCTS, INC.

FAQ's- Stacklights

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General FAQ's

Q: What is a Stacklight?

A: Stacklights, also called tower lights or signal towers, consist of different color light modules stacked on top of each other. They may also include sound. Stacklights can either be mounted on a pole (Pole Mount), or they can be mounted directly on the equipment (Direct Mount).

Q: What technology is used to produce the light?

A: Mallory uses brilliant solid state LED's (Light Emitting Diodes).

Q: What technology is used to produce the sound?

A: Piezoelectric transducer technology is used in Mallory's Stacklights. For more information on the technology used, see the Article, "Audible Alarm Basics" and see Technical Application Guide, "Piezoelectric Alarm Operation". Using a piezoelectric transducer allows a loud clear sound along with a very low current draw of less than 40 mA from the sound circuit.

Q: Why is the Mallory Stacklight triangle shaped when pretty much everyone else uses a round shape?

A: Mallory looked at the competition and saw the opportunity to think outside-the-box and offer a shape that is unique, updated, and pleasing to look at. In addition to being 360 degree viewable when mounted up on top of a machine, Mallory's Stacklight can also be mounted against a flat surface such as the side of a machine or a wall and still be 180 degree viewable and provide a pleasing flush mount against that flat surface.

Q: My instruction sheet is missing. Where can I get another one?

A: Go to Mallory's website: www.mallory-sonalert.com and type in your part number in the product search box at the top of the website. When the product page appears, look in the bottom section for the link "Product Application Guide". The instruction sheet is included in this document. If you have problems finding this document, contact Mallory- info@mallory-sonalert.com or 317-612-1000.

Q: How do I clean the Stacklight?

A: Use only a slightly damp cloth. Other cleaning agents could affect the waterproof integrity or mar the surface finish potentially affecting its visual characteristics.

Electrical Application Issues

Q: Do the Stacklights work with 50 Hz and 60 Hz systems?

A: Yes.

Q: Can I use transistors or FET's instead of switches to turn on and off the LED's and sound?

A: Yes as long as the transistors or FET's are rated to handle the rated current draws. Each LED stack is rated to draw less than 30 mA of current. The sound is rated to draw less than 40 mA of current.

Q: How do I connect the positive and negative terminals of my 24 Vdc power supply?

A: The Stacklights are non-polar, so it does not matter which way the power supply's positive and negative terminals are connected in Mallory's wiring diagram.

Q: How do I make a specific LED color stack turn on?

A: Connect the brown wire (which is the LED power wire) to one side of your power supply and connect the appropriately colored wire to the other side of the power supply. For example, if you want the green LED stack to turn on, connect the brown wire to one side of the power supply and the green wire to the other side of the power supply.

Q: Can multiple LED stacks turn on at the same time?

A: Yes, you can turn on any combination of LED stacks including all of them at the same time.

Q: What is the current draw when I turn on multiple LED stacks (and sound)?

A: Each LED stack is rated for 30 mA max. So, if you have 5 LED stacks and all of them turn on, the total current will be 5 stacks x 30 mA = 150 mA max. Don't forget that if you have the sound option and the sound is also turned on, this adds another 40 mA (max). So, a Stacklight with 5 LED stacks and sound with everything turned on will have a current draw of 190 mA max.

Q: Why do I seem to be missing some of the wires shown on the wiring diagram?

A: The wiring diagram shows all wires that need to be connected if you purchased the model with 5 stacks and sound. For Stacklight models with less than 5 stacks and/or do not come with sound, not all of the wires shown in the wiring diagram will be present.

Q: Why is the sound not working?

A: First, verify the sound can work by using an external power supply that has the current level set for at least 40 mA. Connect the black wire to one side of the external power supply and the gray wire to the other side of the power supply. Also, for now, make sure that the green with yellow stripe wire is not connected to either the orange wire or the purple wire. If the unit still does not make a sound, then contact Mallory Sonalert (info@mallory-sonalert.com) or 317-612-1000 (ph).

If the unit does make a continuous sound with the external power supply, then while the unit is still sounding, connect the green with yellow stripe wire only to the orange wire, then only the purple wire, then to both the orange wire and purple wire at the same time. This should activate the three additional sounds. Warning- do not connect the green wire with yellow stripe to the power supply because it is a sound control wire and can only be connected to the orange wire, purple wire, or both the orange and purple wires.

If you verify that all of the sounds are working with the external power supply, then you have a wiring or control issue within the equipment. Note that in order for any sound to be generated, both the black wire and gray wires must be connected to the power supply (this will generate a continuous tone). To generate the medium pulse tone, the double pulse tone, or the continuous/short pulse tone, the black and gray wires must be connected to the power supply AND the green wire with yellow stripe must be connected to one or both of the orange and purple wires. The Sound Control Diagram on the instruction sheet that comes with the Stacklight (and also on the website listed in the Stacklight application guide) details how to generate the four different sounds.

Q: Are your Stacklights affected by EMC/EMI or do they emit EMC/EMI?

A: Mallory has no test information to back up this claim, but the circuitry and technology used to generate the lights (LED's) and sound (piezo) is all solid state and should neither be affected by EMC/EMI nor emit EMC/EMI.

Q: Is there a flashing light option?

A: No. When a particular stack is energized, it emits a continuous light. If you want the light to flash, the controller (or external circuitry) will need to do this by turning the light on and off.

Mechanical Application Issues

Q: How do I mount my Stacklight?

A: The mounting instructions are included in the instruction sheets that come with the Stacklight. The mounting diagram is also shown on the part specification sheet which can be downloaded from the Mallory website. If you do not have the instruction sheets, look in the General FAQ section at the top of this document for directions on how to get a copy.

Q: My Stacklight came with a long pole, but I want to direct mount it. What do I do?

A: Your Stacklight was purchased with the pole mount option, but you can convert it into a direct mount by purchasing the small pipe and nut used our direct mount parts. The part numbers are:

Small Pipe- P/N: J-DIRECTMOUNTPIPE

Nut- P/N: J-NUT

Q: My Stacklight came with a small piece of pipe and a nut, but I want a long pipe.

A: Your Stacklight was purchased with the direct mount option, but you can convert it into a pole mount by purchasing the pole and mounting bracket and the gasket (to ensure waterproof ratings). The standard pole is stainless steel, but you can also purchase a black electroplated pipe. The part numbers are:

Stainless Steel Pole- P/N: J-POLE-S

Black Electroplated Pole- P/N: J-POLE-E

Mounting Bracket- P/N: J-MOUNTINGBRACKET

Gasket- P/N: J-GASKET

Q: Your Stacklights with poles look to all have stainless steel poles. Can I order one with a black electroplated pole?

A: Yes. In the part number, the 2nd to last letter indicates the mounting type. Instead of the letter "S" which stands for stainless steel pole, use the letter "E" for Black Electroplated Pole. For example, P/N JT028-R-CSL will come with a Stainless Steel Pole. P/N JT028-R-CEL comes with a Black Electroplated Pole.

Q: My mounting surface is not very flat or has a low spot. Is this an issue for a pole mount part?

A: In order to ensure waterproof ratings, you may need to use silicone adhesive to ensure a watertight fit between the Stacklight and the mounting surface.

Q: Can I mount the Stacklight horizontally or upside down?

A: Mallory does not recommend this and does not know how a horizontal or upside down Stacklight will hold up over time. If you do mount the Stacklight other than vertical and this mounting results in a failure, it will void the warranty.

Light Issues

Q: Why do you use opaque lenses rather than clear lenses?

A: Mallory uses opaque lenses to provide an even dispersion of the light and eliminate the distracting bright spots that can be seen with Stacklights that use clear lenses. The opaque lens essentially provides a less distracting and more pleasing visual experience.

Q: I don't see the color combination that I want on your website or in anyone's stock. Can I get a special color combination?

A: Yes. Contact Mallory- technical@mallory-sonalert.com (email) or 317-612-1000 to discuss your needs.

Q: Some of the different color lights seem slightly brighter than others. Is that normal?

A: Yes. The different color LED's chips offer different light outputs, so Mallory does our best to adjust them so that all the colors are approximately the same, but there can be still be small differences between the color brightness of the various stacks. However, if one of the stack colors is difficult to see because it is too dim from 10 feet away under normal inside lighting, there may be a problem and Mallory should be contacted.

Q: The lights seem too dim in outside lighting. Is this normal?

A: Mallory's Stacklights are only rated for indoor usage, so the light levels may be too dim to see very well under bright outside lighting. Under normal indoor lighting, there should be no problem seeing the individual Stacklights when lit up.

Q: The Stacklight lenses are opaque, so how can I tell what the colors are?

A: The correct answer is that you cannot tell until you apply power to the individual Stacklights. That being said, a vast majority of Stacklights use the following colors combinations: 1 Stack- Red; 2 Stacks- Red/Green; 3 Stacks- Red/Yellow/Green; 4 Stacks- Red/Yellow/Green/Blue; 5 Stacks- Red/Yellow/Green/Blue/Clear. You can also refer to the spec. sheet for that Stacklight which shows the orders of the colors.

Q: How bright are your lights?

A: Mallory has tested our lights under a variety of indoor lighting conditions to verify that they are easily viewable. Mallory does not specify a mcd or lux value because such ratings are not needed and can be misleading. For example, many manufacturers of Stacklights specify light values that are either the LED chip ratings (not what the Stacklight actually produces) or their light values reflect the fact that they use clear lenses which exhibit exceptionally bright spots when lit up. If you are absolutely determined to put down a mcd or lux value on our Stacklights, contact Mallory and we will work with you.

Q: Why does your yellow stack color look more amber colored?

A: The LED chips that are readily available and affordable which produce the yellow color tend to produce light more on the amber side of the light spectrum. Among the Stacklight industry, it is common to use the terms “yellow” and “amber” interchangeably.

Q: Is there a flashing light option?

A: No. When a particular stack is energized, it emits a continuous light. If you want the light to flash, the controller (or external circuitry) will be needed to do this.

Sound Issues

Q: How is sound level measured?

A: Sound level is measured in decibels (abbreviated dB). The dB scale is an arbitrary scale that reflects the loudness of the sound that is being measured. It ranges from 0 dB (threshold of hearing) to 130 dB (threshold of pain). For a better understanding of the decibel sound level scale, see Technical Application Guide, "Decibel Sound Level Scale". Mallory specifies the Stacklight sound level at a distance of 1 meter (3 ft).

Q: What does distance have to do with sound level?

A: Sound level falls off over distance. We intuitively know this because we have to talk louder (or even shout) when people are farther away. The rule of thumb is that every time the distance doubles, the sound level drops off by 6 dB. For example, if an audible alarm measures 85 dB at 1 meter, by the time it reaches 2 meters, it will only be 79 dB. By the time it reaches 4 meters, it will only be 73 dB, and so on.

Q: When is a sound level twice as loud as another?

A: Every time the sound level increases by 10 dB, it will sound twice as loud to the human ear. For example, an alarm specified as 75 dB at 1 meter will sound half as loud as one specified as 85 dB at 1 meter.

Q: How sensitive is the human ear to sound level changes?

A: Most people can only distinguish a sound level change only when it increases or decreases by 3 decibels. For example if a person was listening to an audible alarm that changed from 83 to 85 dB, that person would most likely say that the alarm did not get louder. If the sound level changed from 82 dB to 85 dB, the person would say that the sound level is slightly louder. If the sound level changed from 79 to 85 dB, the person would say that the sound level is significantly louder. If the sound level changed from 75 to 85 dB, the person would say that the sound level is twice as loud as before.

Q: What does dBa (A-Weighting) mean?

A: dB is the abbreviation for decibels which is how the sound level of audible alarms is measured. The “a” in dBa means that the sound level was measured on an A-Weighting scale. The A-Weighting scale was developed to compensate for the fact that the human ear is not a perfect microphone. By applying the A-Weighting scale to sound level measurements, you put the different frequencies (pitches) that the audible alarms produce on an even basis (i.e. comparing apples to apples). Mallory always uses A-Weighting for their sound level measurements, but not all audible alarm manufacturers are this diligent.

Q: The Mallory Stacklight comes with four different sounds, but can I use all four of them or do I have to pick one at the time of installation and stick with that one sound?

A: Mallory designed our Stacklight so that any one of the four sounds can be used at any time. Refer to the instruction guide on how to connect to and activate the individual sounds.

Q: I have a different sound in mind for the Stacklight. Can Mallory make a Stacklight with a different sound?

A: Yes- actually, Mallory could provide up to 4 different sounds than what is currently provided. Contact Mallory- technical@mallory-sonalert.com (email) or 317-612-1000 to discuss your needs.

Q: Can I control the sound level of the Stacklight alarm?

A: No. The sound level is set at the factory. Mallory offers two different sound level ratings. The standard Loud rating is 80 to 85 dB @ 1 meter. We also offer an optional Medium sound level rating of 70 to 75 dB @ 1 meter which would sound half as loud as the louder rating. If the sound level of the Stacklight is too loud, the only option at this time is to return it for a model with a lower sound level. Even though it may not be ideal, as a last resort, you can use black tape to cover the sound holes at the bottom of the Stacklight.

Q: Why does Mallory's Stacklight have a different sound than your competitors?

A: Mallory's Stacklight sound has a more desirable sound frequency of 2,000 Hz (2 kHz) which is at least 1000 Hz lower than all other competitors. In addition, Mallory offers two new sounds not offered by the competition including a double pulse tone and a continuous tone for 5 seconds followed by a short pulse tone.

Q: Is a sound issued automatically when a light turns on?

A: No. The sound and lights are controlled independently. If you want the Stacklight to make a sound, that particular sound has to be activated.

Q: One of the sound options is a continuous tone. Can I just use that tone and turn it on and off as I wish?

A: Yes. If you have the capability and time, you can just use the continuous tone and control the on-off timing as you wish. Mallory provided the other 3 sounds as a convenience to save the time that is needed to develop and test other sounds.

Q: To hear the sound clearly, do I need to orient the Stacklight in any particular direction?

A: No. The Stacklight sound is omnidirectional and has the same sound level in any direction.

Environmental Issues

Q: Can your Stacklight be used outdoors.

A: While the Stacklight models are IP-66 & NEMA 4X rated, they are not designed to be used outdoors. The UL testing was for indoor use only and the lights are not designed to be daylight viewable.

Q: What type of approval or certification do you have for the Stacklight series?

A: cUL is Pending as well as NEMA 4X; IP-66

Q: What is the difference between "UL Listed" and "UL Recognized"

A: UL Listed means that a piece of equipment has met the requirements spelled out by UL for that type of equipment. UL Recognized means that the individual component has met the requirements spelled out by UL for that type of component. The main difference is that equipment is UL Listed while components are UL Recognized. Since Mallory Stacklights are components, they are only required to be UL Recognized in order to be used in UL Listed equipment.

Q: Is your Stacklight CE Marked?

A: The Stacklights sold by Mallory are individual components that must be incorporated into final equipment in order to be useful. Since their safety and use depends to a very large extent on how they are incorporated, they are not covered by the various European Directives, and need not be CE marked. In fact, per the Low Voltage Directive, components must **not** be CE Marked.

Q: What is the Flammability Rating of your Stacklight?

A: UL-HB

Q: What is the shelf life of your Stacklight?

A: Mallory does use one electrolytic aluminum capacitor in the Stacklight power supply. The recommended shelf life for these capacitors is 5 to 10 years depending on how they are used. Our application of this capacitor is not especially sensitive to the shelf life issues of these components, and the capacitor is potted in epoxy, so we would expect that it would last 8-10 years or longer in our alarms just sitting on the shelf (no voltage applied during that time).

Q: What is the dielectric rating of the Stacklight?

A: Pending

Q: What is the Mean Time Between Failure (MTBF) for Mallory Stacklights?

A: Mallory does not have MTBF data for our Stacklight series. We did utilize the same design principles that we use with our industrial audible alarms, so we would expect a similar MTBF which is typically greater than 1 million hours for our industrial audible alarms.

Q: Are These Products Subject to ITAR?

A: No. Mallory Sonalert's audible and visual products are used in a variety of consumer, industrial, military, and aerospace applications. However, these products do not meet the criteria of a defense article on the U.S. Munitions List nor do they have the equivalent performance or capabilities of a defense article on the U.S. Munitions List. Therefore, Mallory Sonalert products are not subject to ITAR regulations or restrictions.

Q: What is the ECCN Number for your Stacklights?

A: Mallory's Stacklights do not require an ECCN Number. However, if you need to assign an ECCN Number, use EAR99 (which means that our product is not regulated).

Q: What is the HTS (Harmonized Tariff Schedule) for your Stacklights?

A: HTS: 8531.80.0040.

Q: What is the UL file number for your Stacklights?

A: Pending

Q: What are the typical failure modes for your Stacklights?

A: The Stacklights are built using solid state circuitry and high performance LED's, and if the alarm option is chosen, piezoelectric transducer technology is used. Failures are rare and the most common failure mode is a circuit failure caused by over-voltage by the user. There is one specific issue that must be watched when wiring up and activating the Stacklight. For Stacklights with sound, the green with yellow stripe wire must not be connected to any power line. It is a separate control wire that can only be connected to either or both of the orange and purple wires. Connecting the green with yellow stripe wire to power can cause the unit to fail and void the warranty.

Q: What environmental tests do your Stacklights meet?

A: At the top of the Mallory website, choose "Products", then choose one of the Stacklight series in the resulting table. At the top of the series webpage is a link to the environmental tests for the Stacklight series. If you have trouble finding this document, contact Mallory.

Q: What is the Moisture Sensitivity Level (MSL) of your Stacklights??

A: MSL 1 (Unlimited)

Warranty

The seller warrants the goods to be supplied hereunder will conform to the pertinent specifications, drawings and approved samples, if furnished, and that such goods will be of good materials and workmanship and free of defects if properly installed and used as sold by Seller. If within one-year period from the date of shipment to Purchaser such goods, not having been subject to misuse, alteration, modification, neglect. Improper installation or unauthorized repairs not exposed to an abnormal environment, are shown not to be in conformity or are shown to be defective in workmanship or materials, Seller's sole and exclusive obligation under this warranty is to repair or replace such goods, provided return is made prepaid to Seller or its designated representative with the following tagged information: (i) date of shipment of such goods to Purchaser; (ii) date such goods are determined to be non-conforming or defective; and (iii) specifying the apparent non-conformity or defect. No claim will be allowed under this warranty unless Purchaser notifies Seller of such claim within 30 days after Purchaser learns of facts giving rise to such claim. Purchaser's failure to test, inspect and make claim within such one-year period shall be conclusive evidence that the goods shipped were satisfactory in all respects. The liability of Seller under the forgoing warranty shall not exceed the price charged by Seller for the goods which give rise to the Purchaser's claim. THE AFORESAID WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE), EXCEPT OF TITLE. SELLER ASSUMES NO LIABILITY FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR OTHER DAMAGES OF ANY TYPE (INCLUDING, BUT NOT LIMITED TO, DAMAGES RELATED TO LOST SALES AND PROFITS, EXCESSIVE OR INCREASED COSTS AND EXPENSES, FIELD RECALL AND RETROFIT, COSTS AND EXPENSES , DOWNTIME COSTS AND CLAIMS OF CUSTOMERS OR PURCHASER FOR SUCH DAMAGES) RESULTING FROM NON-CONFORMING OR DEFECTIVE CONDITION OF ANY GOODS SOLD BY SELLER TO PURCHASER HEREUNDER, AND PURCHASER ASSUMES ALL LIABILITY FOR ALL CONSEQUENCES ARISING OUT OF ITS USE OR SALES OF SUCH GOODS. THE AFORESAID REMEDY OF PURCHASER IS EXCLUSIVE AND THIS LIMITATION OF LIABILITY PROVISION SHALL APPLY TO ANY AND ALL CLAIMS OR SUITS BASED UPON NEGLIGENCE, BREACH OF CONTRACT, BREACH OF WARRANTY, STRICT LIABILITY, OR ANY OTHER LEGAL THEORY UPON WHICH LIABILITY MAY BE ASSERTED AGAINST SELLER BY PURCHASER OF OTHERS.