



FAQ's- 30mm 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, and 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 Stacklight. 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 25 mA from the sound circuit.

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

A: Go to Mallory's website: www.mspindy.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@mspindy.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 24 Vac/dc Stacklights work with 50 Hz and 60 Hz systems?

A: Yes.

Q: What is the operating voltage rating of the Stacklight?

A: The Stacklight will either be rated 9 to 16 Vdc or 20 to 28 Vac/dc. Check the label on the Stacklight or the data sheet on the website (www.mspindy.com) for the proper voltage rating.

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 60 mA of current. The sound is rated to draw less than 40 mA of current.

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

A: For the 9 to 16 Vdc Stacklights, connect the brown and black wires to the negative terminal of the power supply and the red, yellow, green, and orange wires to the positive terminal of the power supply. For 24 Vac/dc Stacklights, you can connect the same as above, or since it is non-polar, the brown & black wires can go on either side of the power supply, and the other wires on the other side.

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

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

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: The red and yellow LED stacks are rated 60 mA max each. The green LED stack is 25 mA max. The sound is 40 mA max. To get the maximum current draw, add up the individual current draws. For example, for a 3 stack model with sound, max current = 60 mA (red) + 60 mA (yellow) + 25 mA (green) + 40 mA (sound) = 185 mA maximum.

Q: Why do I have extra wires?

A: The same wire cable assembly is used no matter which model is manufactured. If you ordered a model with all three stacks and the sound option, then all wires will be used. If you order something else, then some of the wires do not need to be used. Consult the wiring diagram for your model number, and only those wires on the wiring diagram need to be connected to your equipment. The other wires are not connected to anything, so they can be ignored or cut off.

Q: What are the details of the cable assembly used?

A: The gray jacket contains wire that is 24 AWG consisting of 6 strands (PB-Free Tinned) with PVC insulation rated for 300V, 105 C, and approved to UL 21894

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. Set the power supply for the correct rated voltage of the Stacklight (refer to the data sheet or use the voltage listed on the label). Connect the black wire to negative side of the external power supply and the orange wire to the positive side of the power supply. If the unit still does not make a sound, then contact Mallory Sonalert (info@mispindy.com) or 317-612-1000 (ph).

If you verify that the sound is working with the external power supply, then you have a wiring or control issue within the equipment.

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 stack 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. 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: Can I mount your 30mm Stacklights directly on top of the control box?

A: Yes.

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

A: For the direct mount 30mm Stacklight (no pole), you can mount it in any direction. For the 30mm Stacklights with a pole, it is recommended to mount it vertically.

Q: My gasket is missing/damaged. How can I get another one?

A: The gasket replacement part number is: 22MMGASKET. If no distributors have this in stock, contact Mallory for help: info@mspindy.com or 317-612-1000 (ph).

Q: How do I get another knurled nut?

A: The knurled nut replacement part number is: 22MMNUT. If no distributors have this in stock, contact Mallory for help: info@mspindy.com or 317-612-1000 (ph).

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 or colored lenses. The opaque lens essentially provides a less distracting and more pleasing visual experience.

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

A: Yes. Contact Mallory- technical@mispindy.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 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 stacks when lit up.

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

A: One answer is that you cannot tell until you apply power to the individual stacks. You can refer to the spec. sheet for that particular Stacklight model which shows the sequence 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 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 30mm Stacklights at a 1 Meter distance.

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

A: Yes. Contact Mallory- technical@mspindy.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 three different sound level ratings. The standard Loud rating is 80 to 90 dB @ 1 Meter. The Medium sound level rating is 70 to 80 dB @ 1 Meter which would sound half as loud as the louder rating. The Soft sound level rating is 60 to 70 dB @ 1 Meter. 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.

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, the black (negative) and orange (positive) wires need to be connected to power

Q: If I get a continuous tone Stacklight., can I just turn it on and off as I wish to make it pulse?

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 also offers several pulsing tone models if you don't want to bother with this.

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

A: As long as the Stacklight is mounted vertically, the sound will be the same in any direction (i.e. omnidirectional). However, if you elect to mount the Stacklight horizontally, the sound will be a little louder when facing the sound hole on top of the alarm.

Environmental Issues

Q: Can your Stacklight be used outdoors.

A: Mallory's 30mm Stacklights are rated NEMA 4X, but they are not intended to be used outdoors. First, the LED lights are not day-light viewable. Second, the Stacklights with sound will have a sound hole on top (to let the sound out). While no water can get inside of the Stacklight through this hole and damage the electronics, if the sound hole fills up with water, the Stacklight warning sound will be muffled.

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

A: Mallory has UL and cUL approvals to ANSI/UL 508.

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: UL94-HB

Q: What is the shelf life of your Stacklight?

A: For the Stacklight models with sound, Mallory does use one electrolytic aluminum capacitor. 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: Parts similar to this were tested to 1240 Vac by shorting the wires together and applying the voltage between the wires and the casing.

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 and cUL file numbers for your Stacklights?

A: NKCR2.E478987 (UL) & NKCR8.E478987 (CUL)

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.

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.