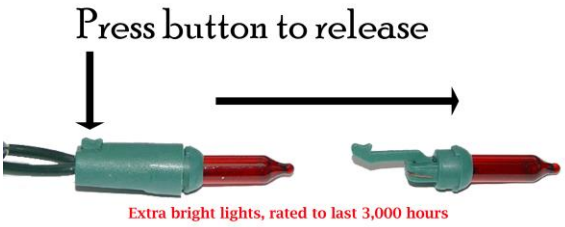
How to maintain your NeumanTree Brilliant Lighting System and make your lights last longer

The golden rule in maintaining your lighting system is to simply replace any light bulb that has burned out as soon as you notice it. It is important to understand that light sets do not simply "go bad" unless damaged. Rather, it is only light bulbs that "go bad" over time and that burnt out light bulbs need to be replaced. Also, it is very rare that you will ever have to change or even inspect the fuses in a light set!

With proper care and bulb replacement maintenance; your NeumanTree Brilliant Lighting System has been designed to last well beyond its initial 4 year limited warranty period. Listed below are the ways to easily maintain your lights and enjoy your tree for many years to come!

- **As soon as you notice a burnt out light bulb, replace it!** Doing this properly maintains the voltage among all of the lights in the set. Your light sets are designed to stay lit even if a bulb naturally burns out. However, once one light burns out the remaining lights in the set begin to work harder by taking up the extra energy of the burned out bulb. Consequently, running a set that contains a burned out bulb (or bulbs) will cause the overall life span of the set to diminish and eventually fail. **Please note: A light set will not function if any bulbs are missing, broken, or improperly inserted.**

Pictured below is an illustration on how to properly remove a light bulb from a Brilliant Light Set



- **Always inspect your tree for burned out bulbs at the beginning and end of each season of use. These are the most convenient times to do so, and this will insure that your lights work properly from season to season!**

- Do not put your tree away hot! Allow the lights to settle and cool for 30 minutes before taking down your tree for storage. This will protect the light filaments and prevent breakage.

- Protect your lights from power surges! We always recommend using a high quality surge protector for your tree. A power surge will cause damage to your light sets and is not covered under warranty.

HELPFUL HINTS!

- If you notice that some of your lights are beginning to burn brighter than usual, this is a sign that there are burned out bulbs that need to be replaced!

- Please note that many spare lights have been included with your tree. They may be found in small plastic bags attached to each light set where it plugs into the extension cord at the trunk. We recommend leaving them attached so that they will not get lost and remain easily available for replacement.

- Finally, **do yourself a favor**! We highly recommend the purchase of a **LightKeeper Pro** light tester to help maintain the lights on your tree! This amazing light tester will troubleshoot any light set issue in minutes. To find out information, as well as, where to purchase the LightKeeper please visit their web site at **www.lightkeeperpro.com**

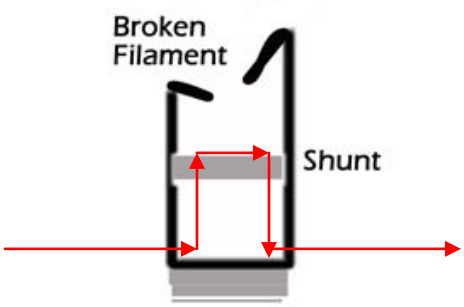
An Easy Way to Troubleshoot Lights

What Causes a Light Set to Fail?

A light set can fail for any of these reasons:

- Internal bulb or shunt failure
- Loose, broken, or missing bulb
- Bad connection between the bulb and bulb socket
- Broken wire or plug
- Poor connection at the power source
- Not replacing burnt out bulbs prior to storing
- Blown fuse **(very rare)**

-But the most common cause by far is internal bulb failure. Modern light sets are designed to work even if one or more individual lights fail as illustrated below.



Path of electrical flow

-In this drawing, the filament in the bulb has burned out, interrupting the flow of electricity required for the light bulb to operate

Miniature light sets are designed with a feature that allows current to bypass the burnt out filament. It's called a shunt – an aluminum wire wrapped around the two metal posts supporting the filament. If the filament is burned out, current will normally burn through an oxide coating, completing the circuit and illuminating the rest of the light set. **Light sets must be plugged in and have current present within the set for the shunt system to initially work**.

If the oxide fails to burn off, the shunt fails, the circuit cannot be completed, and the remaining lights go out. **Please note, failed or stuck shunts can be repaired with the use of a LightKeeper Pro light tester** (see page 3). The best way to prevent shunt failure from season to season is to replace burnt out bulbs prior to taking down and storing your tree. This will prevent shunts from becoming disconnected through the set up and take down processes, when electricity is not present within the sets.

Just as a water pipe needs a clear path to have water flow it; a light set also requires a clear path to have electricity flow it. The shunt acts as a back up system to keep a light set's electrical circuit completed. The first thing you should do when lights are out is to inspect the light set to see if all the bulbs are present, are unbroken, are in tight, and plugged into an outlet that's working.

If this doesn't solve the problem, it may be due to a loose contact between one of the light bulbs and its husk (the plastic receptacle into which the light bulb fits). Next, you will need to check your light set for a loose bulb or contact.

The quickest way to check for a loose contact is to:

1. Run your hand over the needles of the sections where the lights are out.

2. Start at the base of the branch near the tree trunk, and brush your hand out toward the tip. By doing this you will be gently jostling the bulbs, and usually the bulb with a loose contact will cause the lights to flicker on.

3. If this is the case, locate the bulb that's creating the flicker and replace it with one of the spares provided. (You can find these in clear plastic packages attached to the base cords of each light set)

4. Start with one branch, and go from branch to branch (working left to right) using this method. Proceeding left to right is a good way to keep track of what you have checked, so you don't become frustrated looking randomly for bulbs. I**n some cases this method can help the electricity present with in an unlighted set to get a stuck shunt to properly connect and illuminate the set.**

If this technique of brushing and replacing doesn't solve the problem, it's probably due to one or more failed shunts. Resolving this problem can best be accomplished either by obtaining a **LightKeeper Pro** or by contacting NeumanTree through our web site **www.neumantree.com** for help.

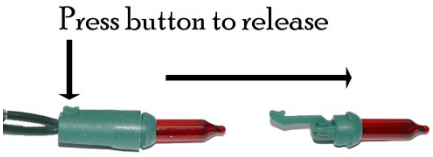
The LightKeeper Pro is an inexpensive investment that will repair shunts and locate problems. This tool (and replacement bulbs) will enable you to keep your tree lit for as long as you choose to maintain it.

You can check out the Light Keeper Pro and find a retailer near you at:
www.lightkeeperpro.com

- As a reminder, many spare lights have been included with your tree. They may be found in small plastic bags attached to each light set where it plugs into the extension cord at the trunk. We recommend leaving them attached so that they will not get lost and remain easily available for replacement.

- If you have utilized all of replacement bulbs provided with your tree, NeumanTree, Inc. is delighted to provide replacement bulbs for a period of 10 years from your original date of purchase. Please visit our customer service page at www.neumantree.com to download our replacement bulb order form, or to contact us via e-mail to find the nearest NeumanTree dealer.

NeumanTree Replacement Bulb Order Form

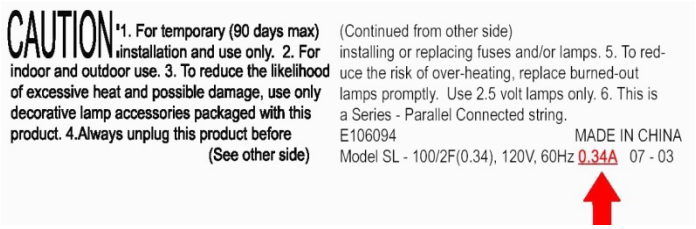


Please note that only bulbs resembling the illustration above are available.

NeumanTree would be delighted to send you replacement bulbs for a period of 10 years from your original date of purchase.

If your tree is still under the 4 year light warranty and you have your proof of purchase, 100 light bulbs are available at no charge. Simply fill out the form below and mail it with a copy of your store receipt.

If your tree is more than 4 years old, the cost for shipping and handling is $15.00 for every 100 replacement bulbs delivered to your door. If you would like to order replacements and your tree does not have green warning labels (attached to each light cord next to the trunk), please review the white tag below to determine the correct milliamp. Please note that utilizing the incorrect brightness of bulbs will corrupt your light sets.


CAUTION "1. For temporary (90 days max) installation and use only. 2. For indoor and outdoor use. 3. To reduce the likelihood of excessive heat and possible damage, use only decorative lamp accessories packaged with this product. 4.Always unplug this product before (See other side)

(Continued from other side) installing or replacing fuses and/or lamps. 5. To reduce the risk of over-heating, replace burned-out lamps promptly. Use 2.5 volt lamps only. 6. This is a Series - Parallel Connected string.
E106094 MADE IN CHINA
Model SL - 100/2F(0.34), 120V, 60Hz 0.34A 07 - 03

My caution labels are green (check here) _____

If your caution labels are white please note the number from your tag that we have highlighted in red _____A

The number of clear light bulbs: 00 x $15.00 for each 100 = $_____

(For example, if you fill in 3 you will receive 300 clear light bulbs and need to mail a check for $45.00)

The number of multi-color bulbs: 00 x $15.00 for each 100 = $_____

The number of frosted multi-color bulbs: 00 x $15.00 for each 100 = $_____

Name: _____ Telephone No.: _____

Address (No PO boxes please):_____

City, State and Zip Code: _____

Please send a check made payable to NeumanTree, Inc. along with a copy of this completed order form to the address listed below. Please note that NeumanTree, Inc. does not accept credit cards.

For more detailed information on how to get the brightness of your bulbs simply go back to the website and click on ***How to determine bulb brightness*** from the customer service page.

Finally, we strive to get your replacement bulbs sent out the same day we receive this form and your check. In addition we highly recommend the purchase of a LightKeeper Pro to help maintain the lights on your tree.

A link for information regarding this amazing light repair tool can also be found on our customer service page.

NeumanTree, Inc. – One East Superior Street #510 – Chicago, Illinois 60611 – Toll Free 866/865-8733