

LED BIRTHDAY CANDLES

Each candle consists of an LED mounted on the top of a small tube (Piece of plastic soda straw?). Inside the hollow prop cake is the battery, and probably a simple chase or flicker circuit.

LED's are end emitting light sources so they tend to need to be surrounded by a translucent material to read the light from the side. To my mind, birthday candles really want to be bright pinpoints of light. Fading and flickering are nice but do not seem to be necessary. Light some birthday candles in the safety of your own home and look at them.

I would investigate small light bulbs. Mini Mag light bulbs make excellent small point light sources. (Solder wire directly to the bulbs.) I would also look at mini Christmas light strings as a source for bulbs. Way cheaper and the bulbs will have wire already attached to sockets. Your soldering time may be substantially reduced and the sockets will allow you to swap out dead bulbs.

100 light strings, for example, are made up of groups of low voltage bulbs wired in series to bring the operating voltage up to 110v. Not having a string in front of me, I don't know actually how many bulbs there are in the group. Separate the bulbs and rewire them in series to get groups of which the operating voltage is 12 volts and wire them in parallel to a rechargeable 12 volt gel cell battery of an amp hour size large enough to run them for a few performances before recharging. There should be a "Battery Guy" in business in your town somewhere who can supply the correct batteries and chargers. (As part of the design, install a couple of charging studs somewhere on the exterior of the cake to which you can clamp the charger.)

For the "candle" part, I would use small sections of aluminum or brass tubing either painted or covered with colorful drinking straw material.

And be SURE to put a fuse (say, 1A) between those studs and the battery, and construct the piece to minimize the chance of anything conductive shorting them. With no fuse, this could cause an ugly accident.

While you're at it, be sure to put a fuse on the lamp circuit, too. :)

You can do a great job with a hollow prop cake and either grain of wheat lamps or LEDs. Use standard B-day candles and wrap 22 gauge wire around the tip to supply power to the lamp at the tip. Run all the wires to a battery pack in the hollow cake and wire in an accessible switch. To be real slick wire 1/2 to one switch and the other to a second switch and the actor can blow out half the candles and then the other half. I would not worry that much about flickering on birthday candles. They usually burn hot & bright.