

## Latest Most Useful Wide Angle task light

Found a super flux 120 degree viewing angle white LED that works well for a clip on the hat task light. One can put two sets of 6 LEDs (120,000 mcd) on a PC board (lots of holes, no copper) from radio shack. The other color was yellow or amber with a narrow viewing angle, to used for outdoors. Other colors can be used. 6 white narrow viewing angle of say 12 to 20 degrees could just as well have been used (in this case use a 22 ohm for both white sets of 6 LEDs). The idea is one set of 6 can be used for distance and the other for close up work. Both sets are mounted on the same clip-on swivel joint. A plastic or metal clip with 12 to 14 gauge single strand wire glued to it and the PC board would also work. One bends the wire to aim the light.

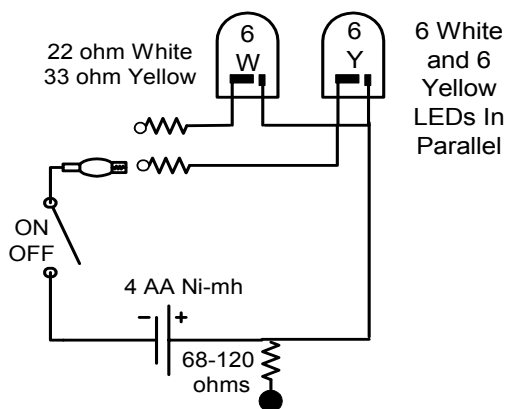
The resistance was adjusted to run at about .09 amps (15 ma/LED) or to last about 28 hrs for a 2300 ma-hr NiCd rechargeable AA cells. This light was found to give plenty of light for close up (arm's reach) task lighting. I used 5-min epoxy to hold the resistors to the case and the PC board to the cap clamp swivel. Resistors were used in preference to X-mass tree bulbs to be small, unbreakable and trouble free.

The batteries need to be checked occasionally while in use. Measure voltage of each cell before the next charging. If one finds a cell that goes to zero well before the others then replace it with one that stays charged. A bad cell can sometimes be zapped (provide a brief high charging current) into some kind of better existence.

Don't use new 1.6 volt disposable batteries (alkali) in this design. If this is done the over all current becomes about 130 ma for yellow and 133 ma for white. This means the white are running at 22 ma which is a bit high compared to 20 ma as a maximum for white LEDs. This could shorten the life of the LEDs.

My experience is that these units produce more useful light than the 1 and 3 watt white LEDs on the market today. The wattage used by this unit is .09 times 5.3 volts or .48 watts or about half a watt. The white LEDs were purchased from Topbright on "ebay.com" for \$.34/each for 100 units. They were "5mm 20000mcd Super Flux White Led" with 120 degree viewing angle. Search for "super flux white led" to find it.

### Clip on Super Flux LED Task Light



Hook Clip to -12 V DC turn on the switch and + Terminal to charge the 4 AA cells

