ABSTRACT

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BABY INCUBATOR AND CIRCLE PHOTOTHERAPY UNIT BASED ON MICROCONTROLLER AT89s51 (CIRCLE PHOTOTHERAPY).

xiv + 54 Pages + 28 Draws + 14 Tables + 4 Files

Baby incubator is treatment place and temperature adjustment for baby who birth premature with giving warm temperature approtiate to temperature which was get during neonatal. Phototherapy is elektromedical unit which is use for baby's therapy with icterus, by giving irradiation from lamp energy in the skin at certain time.

The operator of phototherapy must to view the condition of baby by change the baby's position at certain time, so that the baby's skin not burned. Almost baby incubator was being modificated, but there were no one of them that can using to three process, there are for baby incubator, phototherapy, and for both of them at the same time. Because of them created baby incubator and circle phototherapy unit based on microcontroller AT89s51 that can using for three process.

Basic principle of circle phototherapy is giving the irradiation in the skin of baby by using double surface from blue light lamp and circled 90º with purpose to flatten phototherapy process distributed automatically, and giving good therapy, efisien and effectively for baby and the operator of phototherapy.

Base of measuring setting timer with % error 0.13 – 1 %. For measuring the total average of power lighting irradiation blue light lamp have according with SAD standart, but there were decrease after through acrylic ± 37 lux, and difference ± 25 – 40 lux in every angle of irradiation on top source and under source.

After making process, study of literature, planning, trying, testing, and encoding of circle phototherapy, were get that the unit is easy for operator to operation, the baby feel safe and more confortable, system work of the unit have walked better but unit design feel less perfect so that less support of therapy process, conditions for resulting optimally therapy energy have also been fullfiled but feel less be maximal because from result of measurement the power lighting irradiation blue light lamp get difference and degradation. From this result can concluded that the circle phototherapy unit feel still less effective its use.

Bibliography : 9 (1996 – 2004)