

UNIVERSITI TEKNOLOGI MARA

**MINIMUM THRESHOLD OF NEAR VISUAL
ACUITY OF DIFFERENT CORRELATED
COLOUR TEMPERATURE IN PRESBYOPIA**

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Project submitted in partial fulfilment of the requirements for the

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AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of University Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

In the event that my dissertation be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

Introduction: The correlated colour temperature (CCT) of light is important factor that can affect near visual acuity (VA) in presbyopia. Within the normal near VA, it is possible that under different level of CCT of light, the minimum threshold acuity that can be achieved in presbyopia could be different compared to other ages. **Objective:** To determine the minimum threshold of near VA that can be achieved by presbyopia under different level of CCT using 2856 K, 4100 K and 6500 K of light and whether there is any difference of minimum threshold of near VA between three levels of CCT light. **Materials and methods:** This study involved subject aged between 35-65 years old (3 male, 11 female) with mean refractive error of -0.75DS and mean addition power of +2.04 DS. The subject was asked to read the letter acuity using Early Treatment Diabetic Retinopathy Screening (ETDRS) chart under three different levels of CCT light which are 2856 K, 4100 K and 6500 K. All the testing was done in the light booth (GTI LITE MODEL CMB 3064). For each CCT light, it required at least one day gap. **Results:** The mean of minimum threshold of near VA in 6500 K have highest mean value compared to 2856 K and 4100 K. The result from repeated measure ANOVA showed there was no statistically significant difference between the means of minimum threshold of near visual acuity that can be achieved by presbyopia and different level of CCT of light ($p > 0.05$) **Conclusion:** The highest CCT light 6500 K give better mean minimum of threshold near VA (logMAR) compared to 4100 K and 2856 K based on the mean result of minimum threshold of near VA (logMAR).

Keywords: Threshold, Near Visual Acuity, Correlated Colour Temperature, Presbyopia