

# Determination of Image Conversion Ratio for Transient Luminous Events (TLEs) Observation System

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*Abstract*— Transient Luminous Events (TLEs) is a type of lightning events occurs at the upper atmosphere or in the D region of the ionosphere during a thunderstorm. The occurring of TLEs is fast and difficult observed by human eyes. Therefore, a camera sensitive to low light condition is needed for observation of this phenomenon. In this paper, the camera is coupled with 50 mm f1.4 lens and Digital Video Recorder (DVR). A conversion of analog-to-digital between personal computer (PC) and the camera was applied to transfer the file by using DVR. This paper covers calculation of the conversion ratio between image dimension in PC monitor to a real dimension for horizontal and vertical axis. In the end of the paper, it is found that the calculated horizontal length is twice as smaller than the actual length and vertical length is 1.92 times smaller than actual length.

*Keywords*—Video recorder; conversion ratio; TLEs; Lightning