

The importance of foveal vision to a visual-cognitive task can be assessed by denying foveal vision using the gaze-contingent Moving Mask technique. Foveal vision was found to be necessary when searching for a target letter in alphanumeric displays (Bertera & Rayner, 2000). In contrast, foveal vision was not necessary to correctly locate and identify medium-sized target objects in natural scenes (Nuthmann, 2014). The present study combines design features from both paradigms such that observers searched for the letter “T” embedded in greyscale pictures of real-world scenes. To control for visual salience, the letter was algorithmically placed for each scene in a location for which there was a medium change in local contrast when inserting the letter. Four letter sizes, ranging from 0.25° to 1.5° in width, were crossed with the presence vs. absence of foveal vision. Search times increased as target size decreased. When searching the scene with artificially impaired foveal vision, search performance was largely unimpaired, in correspondence with Nuthmann (2014). Only when searching for the smallest letter, target verification time but not scanning time was elevated. Foveal vision was more important in a second experiment, which asked observers to decide whether the target was a T or L.