

On Extended Depth of Field to Improve the Quality of Automated Thermographic Measurements in Unknown Environments

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Abstract

Focusing is essential for the quality of thermal imaging. But due to physical constraints only a small distance area around the focal distance, called the depth of field (DOF), appears acceptably sharp in a single thermogram. For scenes containing multiple objects at different distances from the camera or one along the optical axis outstretched object it is hard to have all parts of the image sharp within one measurement. This is impossible if the distance between the closest and the furthest region is larger than the depth of field. This work describes a solution to get an all-in-focus measurement by taking a measurement series with changed focal settings and combining the sharp parts using digital image processing. Different possibilities for this process are discussed and examples are given.

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