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微光夜视器件与成像

照度对测量三代微光像增强器MTF的影响分析

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摘要：

通过探讨像增强器MTF测试仪用光源的出射光照度对测量结果的影响，对透过测量狭缝的光强分布进行了分析。调节狭缝面的入射光照度，对不同照度作用下的调制传递函数进行了对比测量，经与微光像增强器的饱和输出亮度比较，得出：三代微光像增强器的MTF测试值随入射光照度分布呈抛物线分布，其最大值与微光像增强器的自动亮度控制特性有关。适当选择入射光照度，可确保被测像增强器既有足够的输出信噪比，而不进入饱和区域。

关键词： 像增强器 调制传递函数 入射光照度 自动亮度控制

Illumination effect on MTF of 3rd generation low-light-level image intensifier

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Abstract:

By discussing the effect of light source illumination on measuring modulated transfer function (MTF) of image intensifier, the light intensity through slit used in MTF testing system was analyzed. By adjusting the illumination on slit's surface, measuring MTF in different illuminations and comparing it to the maximum output brigtness, it is concluded that the relationship between incident light illumination and MTF of the 3rd low-light-level image intensifier agrees with parabola distribution, there is a maximum value of MTF which restricted by the automatic brightness control (ABC) of image intensifier. The suitable incident light illumination can be specified by this method, which ensures enough signal to noise ratio in tested image intensifier and does not cause image intensifer to saturate.

Keywords: image intensifier modulated transfer function incident light illuminance ABC

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