

计量测试

远拍摄距离数码望远镜分辨率测试及自动判读方法研究

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摘要 数码望远镜实现了数码相机与望远镜的有机组合, 因此可用评价数码相机成像质量的指标——分辨率来评价数码望远镜的成像质量。但国际标准的数码相机分辨率检测如果不加改进, 很难直接应用于数码望远镜的分辨率检测中。为此, 提出了采用平行光管来测试数码望远镜分辨率的新方法, 并在理论推导可行的基础上对单个数码望远镜进行了重复实验, 最后采用自行编制的软件自动判读分辨率, 测得数码望远镜的水平分辨率均值为814LW/PH, 标准差为24LW/PH。结果表明, 实验重复性好、可靠性较高, 且采用软件自动判读分辨率比人工目视判读更客观、准确。

关键词 [分辨率](#) [成像质量](#) [数码望远镜](#) [自动判读分辨率](#)

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Resolution measurement and automatic reading for digital binoculars with long shooting distance

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Abstract As digital binocular is the combination of digital camera and binocular, the resolution for estimating the imaging quality of digital cameras can also be used to estimate the imaging quality of digital binoculars. However, there are many problems if the international standard of resolution measurement for digital cameras is directly used on digital binoculars. A new method to measure the resolution of digital binocular by a collimator is proposed. Repetitive experiments on a certain set of digital binoculars were carried out based on the theoretical feasibility analysis. Some results were obtained by the auto reading software developed by the authors. The average value of horizontal resolution is 814LW/PH, and the standard deviation is 24LW/PH. It shows that the measurement has good reproducibility and high reliability. It is more objective and precise than traditional manual method.

Key words [resolution](#) [imaging quality](#) [digital binocular](#) [auto reading resolution](#)

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