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光学计量与测试

高吸收型滤光片透过率均匀性测试系统

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摘要：

组建了高吸收型滤光片的透过率均匀性测试系统，硬件系统由光学系统、光电转换系统和信号采集控制系统3部分组成。设计了基于LabVIEW 8.0的软件系统，测试软件采用模块化方法编制。计算机控制二维电控转台移动待测滤光片，以标准衰减片的透过率为基准，系统全自动实时扫描测量样片多点透过率均匀性分布，并对样片中心点透过率作了详细误差分析。透过率动态测试范围0.001%～1%，测量相对误差小于0.1%。

关键词： 高吸收型滤光片 透过率均匀性 虚拟仪器

System for testing transmissivity uniformity of high-absorption filter

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Abstract:

system used for testing transmissivity uniformity of high-absorption filters was developed. Its hardware consists of three major parts, including optical system, photoelectric conversion system and signal acquisition system. Its modularized software was designed based on LabVIEW 8.0. The real-time transmissivity measurement of multi-point distribution based on transmissivity of standard attenuators was computed through moving testing filters controlled by two-dimensional turntable, and the transmissivity error of central point was analyzed. The dynamic range of the system is from 0.001% to 1%, and the relative error is less than 0.1%.

Keywords: high-absorption filters transmissivity uniformity virtual instruments

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