精密曝光

消散斑模组—低散斑光源

Laser Despeckle Module-Low-Speckle Laser Source



光源采用高频运动DOE器件针对6nm(1/e²)宽光谱光纤耦合的激光光束进行相位和角度多样性调制，调制后再耦合到光纤实现激光散斑抑制和输出。

模块化设计使用方便，系统效率高，散斑抑制效果明显，适用于以激光光源为照明的显示、检测和曝光系统。

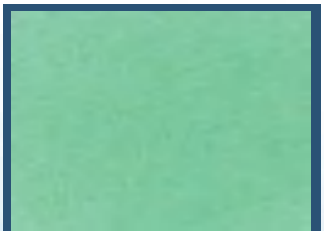
The system utilizes a high-frequency moving DOE to modulate phase and angular diversity of a 6nm (1/e²) fiber-coupled broadband laser, and then recoupling into fiber.

Featuring a modular design and high optical efficiency, it can be used in laser display,inspection and lithography applications.

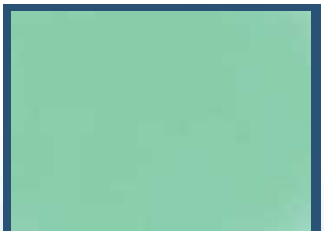
产品特点

- 散斑消除效果明显，光效率大于80%;
  The speckle reduction is obvious, and the optical efficiency is greater than 80%;
- 一体化设计，输入和输出均采用标准光纤接口，即插即用;
  Integrated design, input and output with standard fiber optic interface, plug and play;
- 可监控激光功率的变化。
  Optical power can be monitored and feedback.

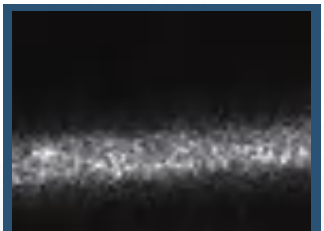
技术对比



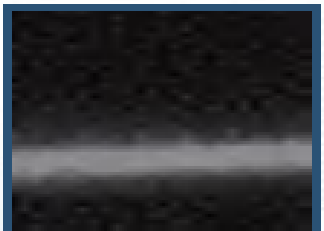
散斑消除器件未工作
The speckle reduction device is not working



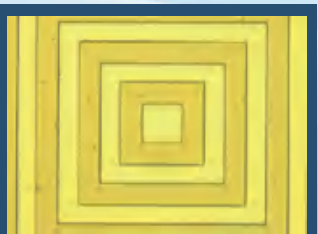
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散斑消除器件未工作
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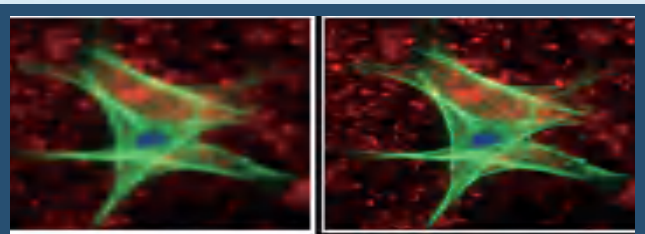
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The speckle reduction device is working



散斑消除器件未工作
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散斑消除器件工作
The speckle reduction device is working

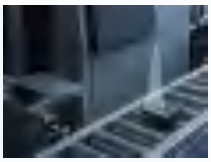


以激光光源为照明光源时，检测效果对比
Comparison of detection with laser-based illumination

应用场景

工业应用Industrial

工业补光
Industrial Illumination



光刻/激光直写
Lithography/
Laser Direct Imaging



3D结构光检测
3D Structured Light
Detection



消费电子Consumer Electronics

激光投影显示
Laser Projection Display



抬头显示
Heads-up Display



科研Scientific Research

流式细胞分析
Flow Cytometry



生物分析仪器
Bioanalytical Instruments



产品参数

产品 Product	消散斑激光模组 Laser Despeckle Module	低散斑激光光源 Low-speckle Laser Source
工作波长 Operating Wavelength	375nm/405nm/455nm/525nm/803nm (可定制)(Customizable)	402nm，波长带宽6nm@1/e² 402 nm, wavelength bandwidth of 6nm(@1/e²)
输出功率 Output Power		10w, 波动<1% 10w with fluctuation <1%
光纤 Fiber Parameter	SMA905(可定制)， Mar NA0.22，多模/单模，输出光纤直径大于输入直径 Multimode/Singlemode, the output fiber diameter is greater than the input fiber diameter	SMA905(可定制)，Max NA0.22 SMA905(customizable), Maximum NA0.22
外形尺寸 Dimensions	109mm*53mm*108mm	377.7mm*290mm*102mm
重量 Weight	0.625kg	5.8kg
散热 Cooling System		TEC+风冷 TEC+Air Cooling
驱动电压/功耗 Driving Voltage/Electrical Power	12V/2A电源输入接口 12V/2A Power input interface	24V
I/O		D-sub
报警信息 Alarm		过温&过压 Over-Temperature & Over-Voltage Protection
工作温度/湿度 Operating Temperature/Humidity		+10℃~+30℃, <70%RH
振动 Vibration	低(取决于机械安装件) Low(Depending on mechanical mounting)	
光效率 Optical Efficiency	大于80%@输入光纤直径375μm，输出光纤直径400 μm Greater than 80% @Input fiber diameter 375μm, Output fiber diameter 400 μm	
功率反馈 Power Feedback	DA值(DA Value)	
工作频率 Frequency	Max 100kHz	
电功耗 Power Consumption	<5W	
其他功能 Additional Features		功率反馈/自动调节风扇转速 Power feedback / Automatic fan speed regulation