



# 激光炫彩光刻设备

Laser-induced Structural Color Lithography machine

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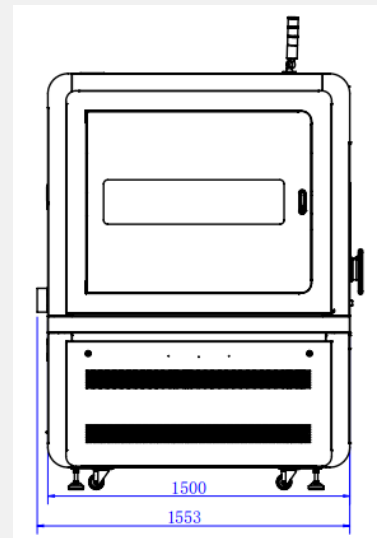
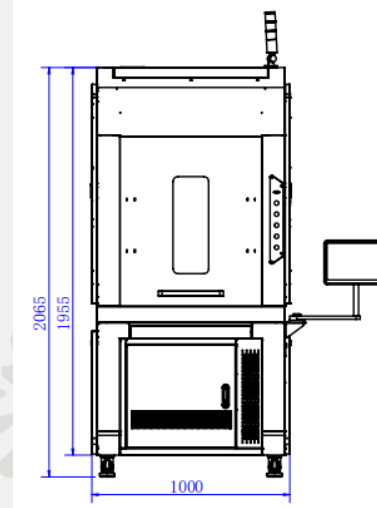


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## 一、设备外观 Equipment appearance





## 二、炫彩光刻市场发展现状及前景分析

### Analysis of the Current Situation and Prospects of the Colorful Photolithography Market

炫彩光刻技术的应用与我们的生活却息息相关，它可实现在镜面不锈钢，镜面模具上炫彩图案、微纳米结构等的制作。

相比传统光刻，其优势包括：高分辨率，可达微米甚至纳米级精度；多色/全彩能力，通过激光参数调控实现炫彩效果；非接触加工，适用于不锈钢、钛合金等多种材料；环保高效减少化学蚀刻工艺，降低污染。

主要应用领域：消费电子（手机后盖、智能穿戴设备装饰）；包装防伪（高端商品标签、货币防伪）；艺术品与奢侈品，珠宝，纪念币（个性化定制、品牌标识），日用品玩具等塑胶产品LOGO等居多领域。

The application of color-shifting lithography technology is closely related to our daily life. It enables the production of colorful patterns and micro-nano structures on mirror-like stainless steel and mirror-like molds.

Compared with traditional lithography, its advantages include: high resolution, reaching micrometer or even nanometer-level accuracy; multi-color / full-color capability, achieving colorful effects through laser parameter control; non-contact processing, suitable for various materials such as stainless steel, titanium alloy, etc.; environmentally friendly and efficient, reducing chemical etching processes and reducing pollution.

Main application fields: consumer electronics (mobile phone back covers, decorative elements for smart wearable devices); packaging anti-counterfeiting (high-end product labels, currency anti-counterfeiting); artworks and luxury goods, jewelry, commemorative coins (personalized customization, brand identification), and various plastic products such as logos of daily necessities and toys, etc.



### 三、炫彩光刻技术 Colorful photolithography technology

- 激光炫彩光刻技术 (Laser-induced Structural Color Lithography) 是一种利用特殊激光光学设计使得激光在金属镜面制造微纳米结构, 产生致密物理条纹, 利用光的干涉、衍射效应生成色彩的高精度加工技术。当这些条纹反射可见光时, 会产生光的色散, 呈现五颜六色的炫彩效果, 色彩随观察角度变化, 如彩虹般璀璨, 具有极强的视觉冲击力。其工艺应用和优势如下:
- Laser-induced Structural Color Lithography is a high-precision processing technology that utilizes a special laser optical design to create micro-nano structures on metal mirrors, generating dense physical stripes. These stripes then utilize the interference and diffraction effects of light to produce colors. When these stripes reflect visible light, they cause light dispersion, resulting in a colorful and dazzling effect that changes color with the viewing angle, like a rainbow, and has a strong visual impact. The application and advantages of this technology are as follows:

### 三、炫彩光刻技术 Colorful photolithography technology

特殊光路设计和自研的炫彩光刻系统，具有优异的光束质量；

- 1、聚焦光斑小，提供精细镭射效果，镭射效果炫彩美观且有一定的防伪性；
- 2、炫彩可视角度可360度设置功能；
- 3、强大的控制硬件和软件，炫彩角度可以360°编辑调整，可动态控制炫彩效果，炫彩在多角度下都可视；
- 4、可直接光刻在镜面不锈钢，模具钢、镍片、金属PVD等镜面材料；；
- 5、炫彩镭射效果可以从模具上转印到产品上，适用于珠宝、金属钞，纪念币等行业；
- 6、塑料材料：PC，亚克力，PET, ABS 等材料可通过注塑模具转印到产品上；

Special optical path design and self-developed vivid light etching system feature excellent beam quality;

1. The focused spot is small, providing fine laser effect. The laser effect is vivid, beautiful and has certain anti-counterfeiting properties;
2. The vivid viewing angle can be set at 360 degrees;
3. Powerful control hardware and software. The vivid angle can be edited and adjusted 360 degrees, and the vivid effect can be dynamically controlled. The vivid effect can be seen from multiple angles;
4. It can directly etch on mirror stainless steel, mold steel, nickel sheet, metal PVD and other mirror materials;
5. The vivid laser effect can be transferred from the mold to the product, suitable for jewelry, metal banknotes, commemorative coins and other industries;
6. Plastic materials: PC, acrylic, PET, ABS and other materials can be transferred to the product through injection molding molds;

## 四、技术参数 Technical parameters

<div> <div>产品</div> <div>Product</div> </div> <div> <div>类目</div> <div>Item</div> </div>	<div>激光炫彩光刻机</div> <div>Laser-induced Structural Color Lithography machine</div>
<div> <div>技术规格参数</div> <div>Technical specification parameter</div> </div>	
<div>机型结构</div> <div>Model structure</div>	<div>大理石台面 载物台尺寸：宽500mmX深400mm</div> <div>Marble table size stage: width 500mm X depth 400mm</div>
<div>最大承载重量</div> <div>Maximum load capacity</div>	<div>100kg</div>
<div>激光最大加工范围</div> <div>Maximum laser processing range</div>	<div>150X150MM</div>
<div>炫彩角度</div> <div>Colorful angles</div>	<div>0~360°任意角度可编辑；软件一次编辑角度，加工过程软件自动计算并完成炫彩角度雕刻；即:编辑好图案后，点击一次刻印炫彩生产即可完成所有设置角度的炫彩光刻。</div> <div>0~360° can be edited at any angle; The software edits the angle at one time, and the processing process software automatically calculates and completes the colorful angle engraving; That is, after editing the pattern, click on the engraving color production once to complete the color lithography of all the set angles.</div>

## 四、技术参数 Technical parameters

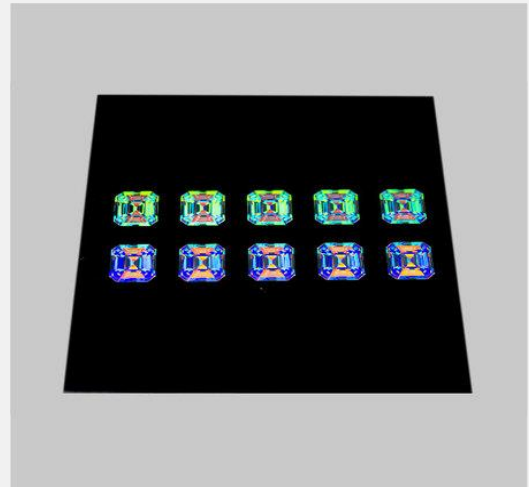
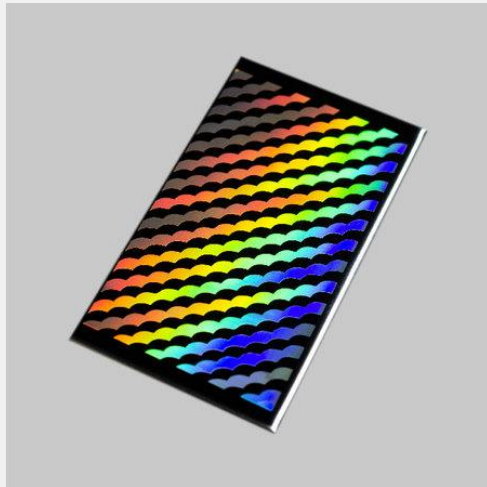
激光输出功率 (w) Laser output power (W)	0~20W连续可调 0~20W continuously adjustable
适应物料 Adaptation to the material	部分金属镜面(不锈钢, 部分金属模具, 镍表面等) Partially metallic mirror (stainless steel, partly metallic molds, nickel surfaces, etc.)
加工环境 Processing environment	恒温25°C±3°C Constant temperature 25°C±3°C
输入电源要求 Enter the power requirements	220V ± 10%, 20A/ 50HZ
整机功率约 The power of the whole machine is about	整机功率约小于2.5KW The power of the whole machine is less than 2.5KW
整机重量 The weight of the whole machine	约1100kg Approximately 1100kg
外观尺寸 (mm) 宽x深x高 Appearance size (mm)Width x depth x height	1200×1500×2000mm(标准机型尺寸, 非标机型尺寸待定) 1200×1500×2000mm (standard model size, non-standard model size to be determined)
冷却系统 Cooling system	水冷机 Water cooler
图案编辑 Pattern editing	炫彩参数本机电脑编辑; 基础图形其他电脑编辑; Colorful parameters are edited by local computer; Basic graphics, other computer editing;





## 五、光刻加工效果图

Laser processing effect





## 六、质量保障及售后服务      Quality assurance and after-sales service

- 1** 提供整机一年的免费保修服务（包括所有零配件及人工费用），终身维护；  
Quality assurance and after-sales service. Quality assurance and after-sales service
- 2** 接到报修电话后1小时内做出响应，省内24小时内上门处理；  
Response within 1 hour after receiving the repair call, door-to-door processing within 24 hours in the province;
- 3** 免费培训多名买方技术人员操作机器；  
Free training of several buyer technicians to operate the machine;
- 4** 终身免费升级控制软件  
Free lifetime upgrade of control software