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RM5D

5-axis Drilling System

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The RM5D multi-axis drilling system can realize micro-machining of hole-shaped primitives, such as elliptical conical hole, ideal through-hole, etc.

The system integrates 2D galvoscanner system of Neutron Series, dynamic focus unit of Proton Series, "α&β axises"galvoscanner system, focus lens galvo system controller. With the characteristics of high resolution, high linearity and low jitter, it can complete the rapid positioning of small light spots. The beam incident angle adjustment of the focus point is realized through the α & β axises galvoscanner system.

The system uses Post-scanning technology, the working volume is ø2mm*3mm(with F-Theta lens, f = 100mm).

RayDrilling is a specialized software for 5-axis drilling system. The software supports 3D visualization drilling tasks, with intuitive parameter adjustment and multiple filling methods.

五轴钻孔系统

RM5D五轴钻孔系统可实现孔状图元的微加工，例如椭圆锥孔、理想通孔等。系统集成Neutron二维扫描振镜系统，Proton动态聚焦单元，α、β多轴振镜系统，聚焦镜头及专用控制软件。以高分辨率、高线性度、低抖动等特点，完成小光斑的快速标记。通过α、β多轴振镜系统实现聚焦点的光束入射角调节。

系统使用后聚焦技术，能够实现ø2mm*3mm（F-Theta透镜，f=100mm）工作范围。RayDrilling为五轴钻孔系统配套的专用软件。软件支持3D可视化钻孔任务，具有直观的参数调节和多种填充方式。

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RM5D Specifications
五轴钻孔系统 规格参数

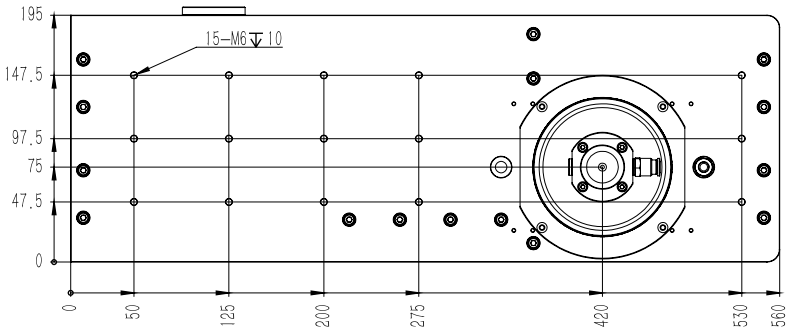
一般规格 /General specifications

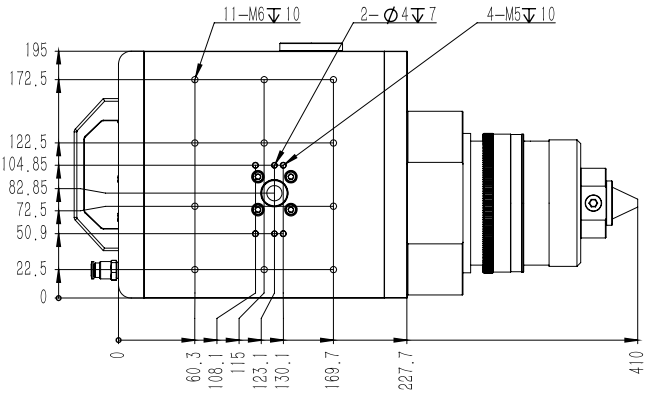
孔径 Aperture	3mm
波长 Wavelength	1030-1080nm
激光脉冲功率 Laser Pulse Energy(μJ)	≤300μJ
平均功率 Average Power	≤50W
电源电压（要求）Supply Voltage(Requirements)	
振镜 Galvo Scanner	±15 @ 150W
a & β振镜 a & β Axises GalvoScanner	±15 @ 150W
DFU点动调节模组 DFU Electric adjustment module power supply interface	12-48V 6A
尺寸（长，宽，高）Dimensions(L×W×H mm)	560×195×445
接口协议 Interface	XY2-100
水冷规格 Water cooling	2-4 l/min @2-3 bar
重量 Weight	approx. 28kg

其它配置 /Other configurations

场镜焦距 Objective Focal Length	100mm
光斑直径 Focal diameter	30μm
Z轴定位 Zpositioning	±1. 5mm
最大Z轴速度 Maximum mechanical Z velocity	100mm/s
加工尺寸 Field size	ø2mm
最大入射角 Maximum angle of incidence（AOI）	± 7°
进动频率 Precession frequency	160Hz
孔径精度 Hole diameter accuracy	≤1μm

上述资料如有更改，将不作另行通知 The above information is subject to change without notice 3/2024





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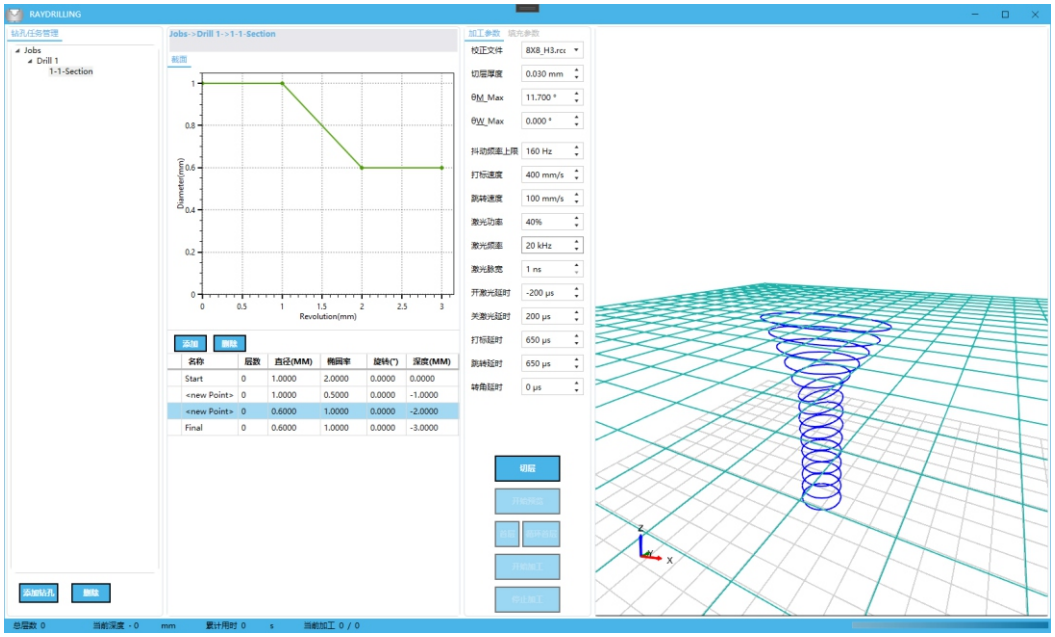
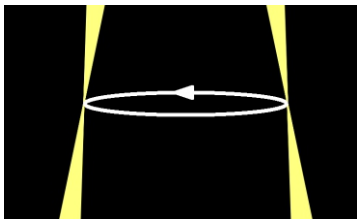
RM5D可以在五个轴向（x,y,z,α,β）对激光束进行偏转定位。
支持不同层的图元参数设置，包括直径、旋转、椭圆度等。支持一次运行多个圆形孔的微加工。

RM5D can deflect and position the laser beam in five axes (x, y, z, α, β).
Support the setting of primitive parameters for different layers, including diameter, rotation, ellipticity, etc.Support micro machining of multiple circular holes in a single run.

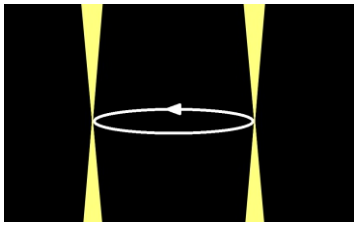


激光的入射角度与RayDrilling软件中设置的θw_Max参数有关，填充方式可选择，支持多钻孔任务顺序执行。
软件将自动计算多轴轨迹。

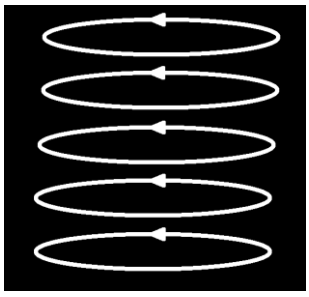
The incident angle of the laser is related to the θw_Max parameter set in the RayDrilling software.The filling method is selectable and supports the sequential execution of multiple drilling tasks.The software will automatically calculate multi-axis trajectories.



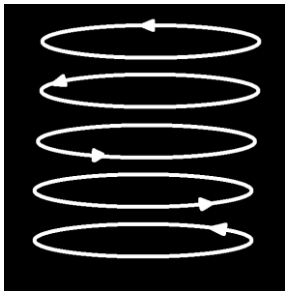
设置θw>0的激光入射角度



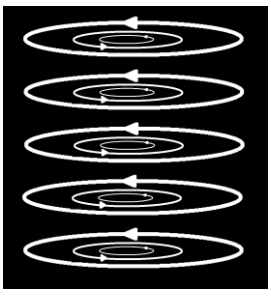
设置θw=0激光入射角度



默认的钻孔起点



添加末层旋转的钻孔起点



添加旋转填充的钻孔起点

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