

# EXTRAGALVO MOTOR

## 光栅振镜电机



光栅系列 EXTRA SERIES



## THE MOST COMPREHENSIVE SERIES OF GALVO MOTORS IN THE INDUSTRY 行业最全振镜电机系列

思特光学拥有行业最全的振镜电机系列，其中包含STGalvo和UltraGalvo两个光电振镜电机系列和Extragalvo光栅振镜电机系列。这三个系列的振镜电机都是由基于动磁电机技术和高分辨率和高精度位置传感器组成，主要作为驱动镜片反射激光光束，应用于各种工业激光加工和光束扫描应用中。

Scanner Optics has the most comprehensive series of galvo motors in the industry, including the STGalvo, UltraGalvo and Extragalvo. These three series of galvo motors are composed of dynamic magnetic based technology, high-resolution and high-precision sensors, which mainly used for driving lens to reflect laser beams in various laser processing and beam scanning applications.

经过多年的技术沉淀，思特光学的振镜电机经过多次的迭代优化，不仅动态性能优越，响应速度快；而且定位精度高，长时间漂移小，满足了工业客户对振镜的电机性能的苛刻要求。基于高性能振镜电机技术，根据不同的应用场景，思特光学开发了多个系列的振镜方头产品，满足不同领域的客户的应用需求。

After years of efforts, galvo motors from Scanner Optics have completed multiple updates and iterative optimization, which not only excellent dynamic performance and fast response speed but also high positioning precision and low drift. Based on high-performance galvo motor technology, Scanner Optics has developed multiple series of scan heads to meet the different industry applications.

## 产品特点

### FEATURES



自研光栅编码器, 结构紧凑  
位置分辨率高达23bit

Self-developed encoder.  
Compact structure.  
The position resolution is up to 23 bits.



光栅编码器重复定位精度高、  
长时间漂移小

The encoder has  
high repeatability accuracy.  
Low drift for long-term operation.



特殊优化的电机结构  
机械精度高, 转矩常数大

Special optimized motor structure  
with high mechanical accuracy  
and large torque constant.



动态性能优越、响应速度快  
长时间工作性能稳定

Excellent dynamic performance.  
Fast response speed.  
Long-term stable performance.



配置丰富  
适配10-50mm孔径的镜片负载

Rich configurations, suitable  
for the lens with 10-50mm aperture.

技术参数

TECHNICAL PARAMETERS



| 光栅振镜电机 ExtraGalvo Motor |                                        | S   | M   | L     |
|-------------------------|----------------------------------------|-----|-----|-------|
| 入口光斑                    | Input Beam Aperture (mm)               | 10  | 14  | 20-30 |
| 转动惯量                    | Moment Of Inertia (g·cm <sup>2</sup> ) | 0.6 | 1.5 | 7.2   |
| 力常数                     | Force Constant (N·mm/A)                | 7.5 | 15  | 24    |
| 线圈电阻                    | Coil Resistance (Ω)                    | 2.7 | 2.6 | 1.58  |
| 线圈电感                    | Coil Inductance (μH)                   | 155 | 275 | 385   |
| 最大连续电流                  | Max. Continuous Current (A)            | 2.5 | 3.5 | 5     |
| 峰值电流                    | Peak Current (A)                       | 10  | 10  | 10    |
| 上升时间                    | Rise Time (ms)                         | 0.2 | 0.3 | 0.7   |
| 重量                      | Weight (g)                             | 220 | 300 | 400   |

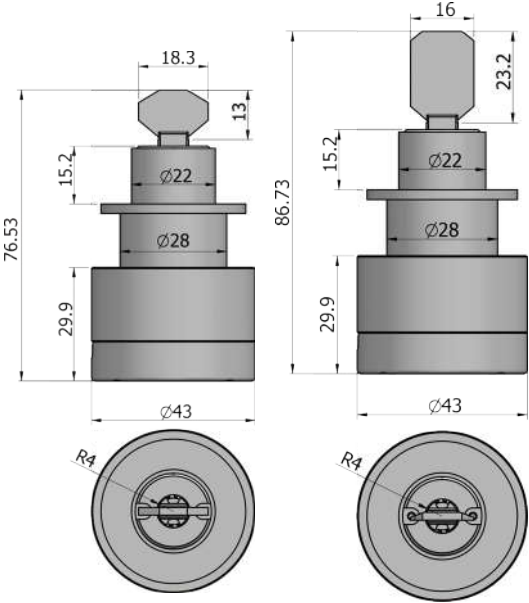
| 传感器参数 Sensor Parameter |                         |
|------------------------|-------------------------|
| 最大偏转角度 <sup>①</sup>    | Max. Scanning Angle (°) |
| 非线性度                   | Nonlinearity (%)        |
| 重复精度                   | Repeatability (μrad)    |
| 零位漂移                   | Offset Drift (μrad/K)   |
| 增益漂移                   | Gain Drift (ppm/K)      |
| 位置解析度                  | Position Resolution     |

① 以上角度均为机械角度 All angles above are mechanical angles

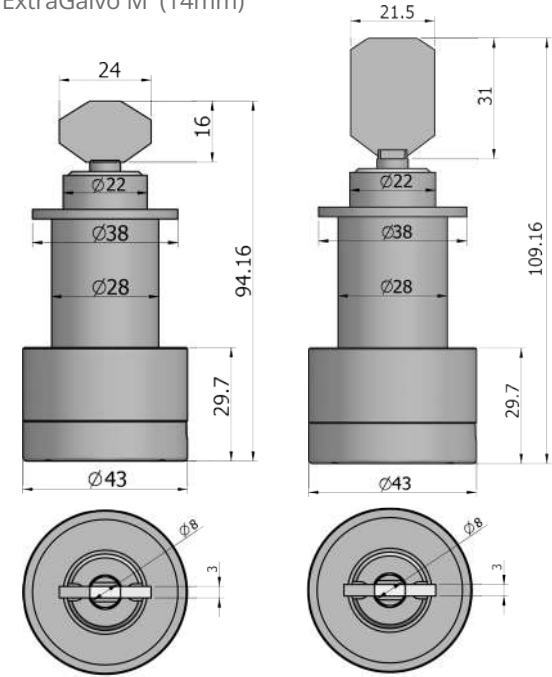
② 经过换算, 18bit@25°对应为1.7urad, 23bit@360°对应为0.75urad  
After calculation, 18 bit @25°corresponds to 1.7 urad, and 23bit @corresponds to 0.75urad

外形尺寸图  
TECHNICAL DRAWING

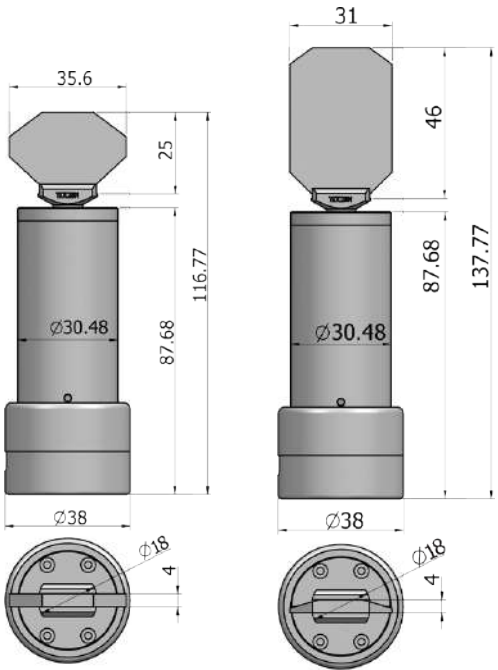
ExtraGalvo S (10mm)



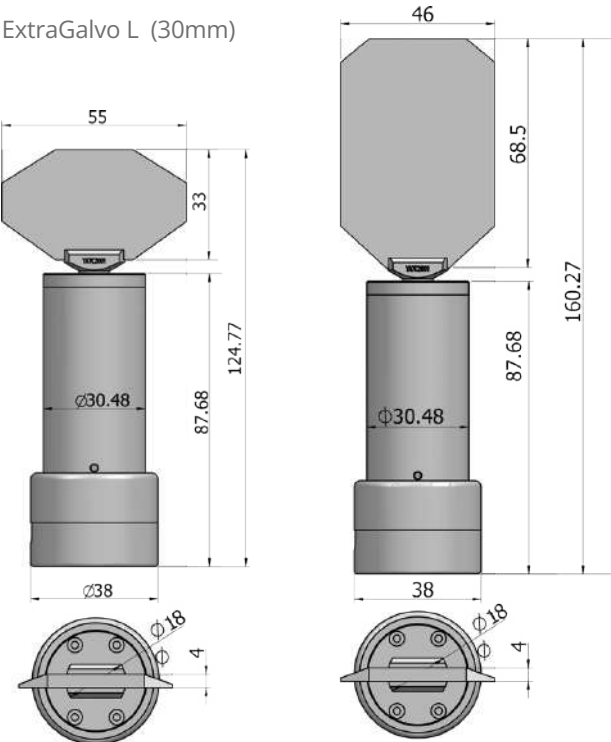
ExtraGalvo M (14mm)



ExtraGalvo L (20mm)



ExtraGalvo L (30mm)



## 适配镜片

### ADAPTIVE LENS

|                     | <7mm | 7mm | 8.5mm | 10mm | 14mm | 20mm | 30mm | 40mm | 50mm | 80mm |
|---------------------|------|-----|-------|------|------|------|------|------|------|------|
| ST200               | √    |     |       |      |      |      |      |      |      |      |
| ST210               |      | √   |       |      |      |      |      |      |      |      |
| ST220               |      |     | √     |      |      |      |      |      |      |      |
| ST231               |      |     |       | √    |      |      |      |      |      |      |
| ST230               |      |     |       |      | √    |      |      |      |      |      |
| ST240               |      |     |       |      |      | √    | √    |      |      |      |
| ST250               |      |     |       |      |      |      |      | √    | √    |      |
| ST260               |      |     |       |      |      |      |      |      | √    | √    |
| UltraGalvo S        |      |     |       | √    |      |      |      |      |      |      |
| UltraGalvo M        |      |     |       |      | √    |      |      |      |      |      |
| UltraGalvo L        |      |     |       |      |      | √    | √    |      |      |      |
| <b>ExtraGalvo S</b> |      |     |       | √    |      |      |      |      |      |      |
| <b>ExtraGalvo M</b> |      |     |       |      | √    |      |      |      |      |      |
| <b>ExtraGalvo L</b> |      |     |       |      |      | √    | √    |      |      |      |

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