

**SATA**

# 高精度力控刀片電機

High-precision force-controlled  
Blade motor



## DP - 20 - Z25 - SL - L50 - N00

| 電機類型<br>Type        | 厚度<br>Thickness | 軸類<br>Axon                          | 驅動器<br>Driver                                                                                        | 電機延長線<br>Extension cable length                                            | 版本內容<br>Version                                                       |
|---------------------|-----------------|-------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 刀片電機<br>Blade Motor | 20mm            | Z:Z軸<br>Z axis<br>ZR:ZR軸<br>ZR axis | 無標記:不配驅動器<br>Unmarked: No driver<br>SL:高創低壓驅動器<br>SL: Servotrix low voltage Driver<br>CDHD2-0031DEC2 | 無標記:不配線<br>Unmarked: unwired<br>30:3米/m<br>50:5米/m<br>60:6米/m<br>120:12米/m | N00:基礎版本<br>N00: Basic Version<br>N01:客製版本<br>N01: Customized Version |

## 優勢一

## Advantage one

※ Z軸採用無鐵芯電機

※ Z-axis: adopts a coreless motor

① 無電磁吸引力、無齒槽力

① No electromagnetic attraction, no cogging force

② 高峰值推力和持續推力

② High peak thrust and continuous thrust

③ 拼接定子，電機不變可實現Z軸行程加長

③ Z-axis stroke extendable

## 優勢二

## Advantage two

※ R軸採用微型DD電機

※ R axis: DD motor

① 採用一體式長軸，無需轉接延長軸

① long shaft in one piece, no extension needed

② 空心軸，實現密封氣路

② Hollow shaft for air path

③ 徑向跳動&lt;3μm, 個別高精度可實現&lt;1μm

③ Radial runout &lt; 3 μm, High version &lt; 1 μm

## 保養和維護說明

## Maintenance and maintenance instructions

※ 排線更換：6個月或800萬次

※ Cable replacement: 6 months or 8 million times

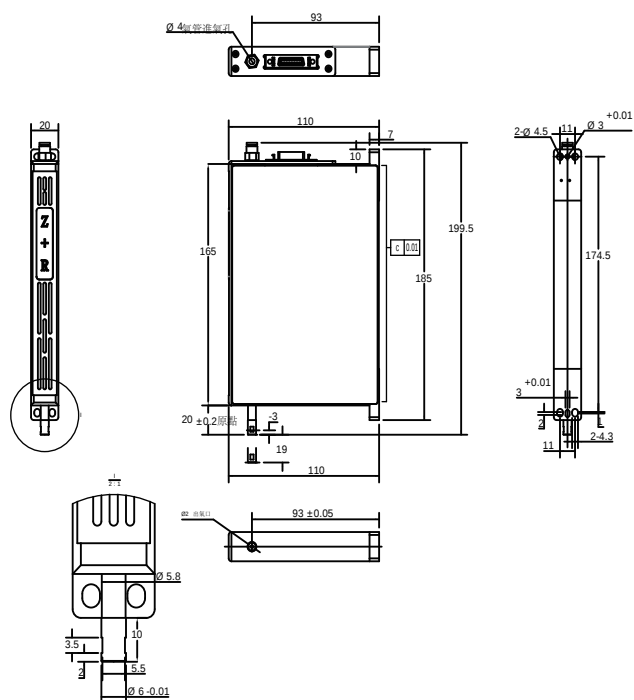
## DP20-Z



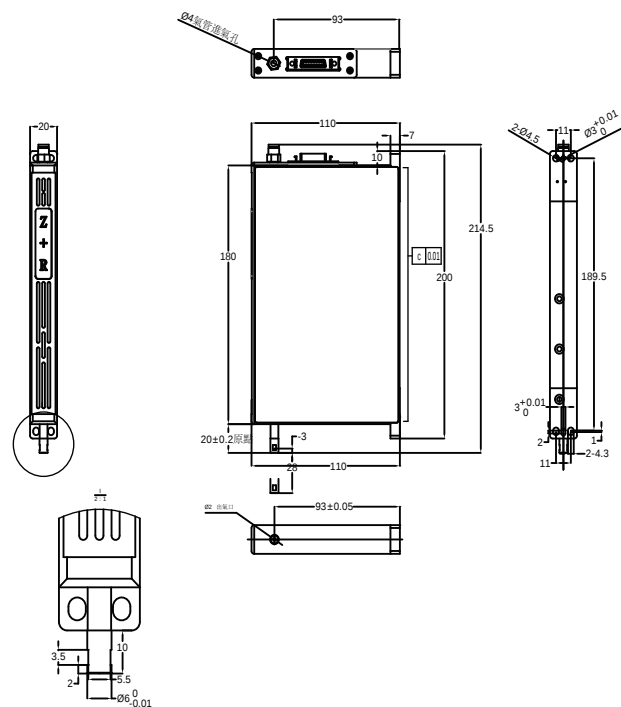
- 1、緊湊型Z拾取機構;  
1. Compact Z-pickup mechanism;
- 2、Z軸定位精度 $2\mu\text{m}$ 、重複定位精度 $\pm 0.5\mu\text{m}$ ;  
2.Z-axis positioning accuracy $2\mu\text{m}$ 、Repetitive positioning accuracy  $\pm 0.5\mu\text{m}$ ;
- 3、半導體芯片的(開環力控)拾取和貼裝、鍵盤按壓測試、觸控面板測試、  
3. Picking and mounting of semiconductor chips (open loop force control), keyboard  
開關檢測、液體配劑量/注入、微組裝(攝像頭模組等微小零件、壽命/疲  
press testing, touch panel testing, switch detection, liquid dosage/injection, micro  
勞性測試;  
assembly(camera modules and other small parts, life/fatigue testing);
- 4、可根據客戶需求定制。  
4. Customizable according to customer needs.

| 性能參數<br>Spec.                                         |                           | 單位<br>unit | DP20-Z25-N00                                   | DP20-Z35-N00 | DP20-Z45-N00 |
|-------------------------------------------------------|---------------------------|------------|------------------------------------------------|--------------|--------------|
| Z軸負載                                                  | Z-axis load               | g          | 200                                            |              |              |
| Z軸行程                                                  | Z-axis stroke             | mm         | 22                                             | 31           | 41           |
| Z軸持續推力                                                | Z-axis continuous thrust  | N          | 6.5N-Constant counterweight                    |              |              |
| Z軸峰值推力                                                | Z-axis peak thrust        | N          | 24N-Constant counterweight                     |              |              |
| 最大速度                                                  | Z-axis maximum speed      | m/s        | 1                                              |              |              |
| 最大加速度                                                 | R axis maximum speed      | G          | 2.5                                            |              |              |
| 重複精度                                                  | R-axis repeatability      | μm         | ±0.5                                           |              |              |
| 光學尺分辨率                                                | Z-axis segregation        | μm         | 0.1                                            |              |              |
| 壓力控制範圍                                                | Pressure ControlAccuracy  | g          | 20 ~ 400                                       |              |              |
| 壓力控制精度                                                | R axial runout            | 20~50g     | ±2                                             |              |              |
|                                                       |                           | 50~400g    | ±3                                             |              |              |
| 安裝面與R軸軸向、Z軸導軌平行度 Z-axis guide rail                    |                           | mm         | <0.02                                          |              |              |
| 機械參數配置 Mechanicalparameterconfiguration               |                           |            |                                                |              |              |
| 外形尺寸(WxHxL) External dimensions (W x H x L)           |                           | mm         | 20x110x165                                     | 20x110x180   | 20x110x200   |
| 總重量 Total weight                                      |                           | g          | ≈650                                           | ≈700         | ≈750         |
| Z軸電機類型 Z Axis MotorType                               |                           | /          | 無鐵芯電機 Ironless Motor                           |              |              |
| Z軸電機配重方式Z-axis motor balance                          |                           | /          | 恆力配重器 ConstantC ounterweight                   |              |              |
| 控制參數配置 Control spec                                   |                           |            |                                                |              |              |
| 工作電壓                                                  | Operatingvoltage          | V          | 48                                             |              |              |
| 持續電流                                                  | Z-axis continuous current | Arms       | 0.86                                           |              |              |
| 峰值電流                                                  | Z axis peak current       | Arms       | 3.44                                           |              |              |
| 工作環境溫度、濕度 Workingenvironment temperature and humidity |                           | /          | 0-40° C 、20-80RH (不結露) 0-40 °C Humidity20%-80% |              |              |

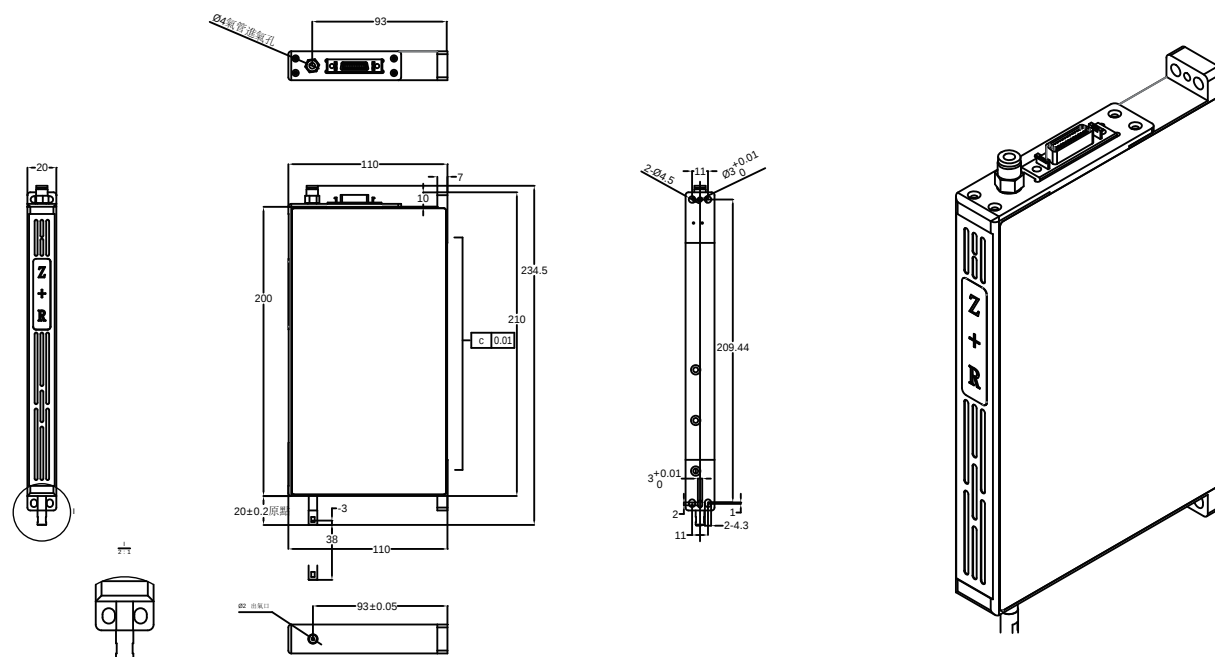
## DP20-Z25-N00



## DP20-Z35-N00



## DP20-Z45-N00



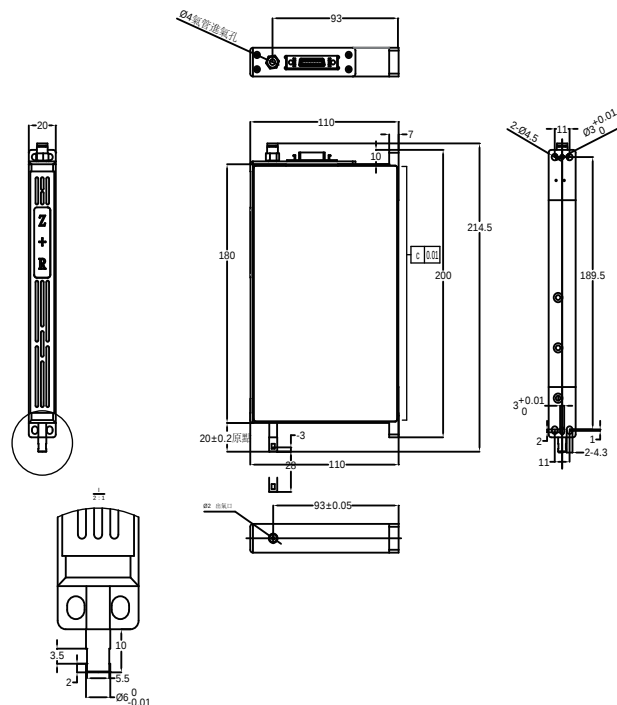
## DP20-ZR



- 1、緊湊型Z拾取機構;  
1. Compact Z-pickup mechanism;
- 2、Z軸定位精度 $2\mu\text{m}$ 、重複定位精度 $\pm 0.5\mu\text{m}$ ;  
2.Z-axis positioning accuracy $2\mu\text{m}$ 、Repetitive positioning accuracy  $\pm 0.5\mu\text{m}$ ;
- 3、半導體芯片的(開環力控)拾取和貼裝、鍵盤按壓測試、觸控面板測試、  
3. Picking and mounting of semiconductor chips (open loop force control), keyboard  
開關檢測、液體配劑量/注入、微組裝(攝像頭模組等微小零件、壽命/疲  
勞性測試;  
assembly(camera modules and other small parts, life/fatigue testing;
- 4、可根據客戶需求定制。  
4.Customizable according to customer needs.

| 性能參數<br>Spec.                             |                                              | 單位<br>unit | DP20-ZR25-N00                                                                                                                                                              | DP20-ZR35-N00 | DP20-ZR45-N00 |
|-------------------------------------------|----------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|
| Z軸負載                                      | Z-axis load                                  | g          | R軸+150 R-axis +150                                                                                                                                                         |               |               |
| Z軸行程                                      | Z-axis stroke                                | mm         | -3~18                                                                                                                                                                      | -3~28         | -3~38         |
| R軸負載                                      | R-axis load                                  | g          | 150                                                                                                                                                                        |               |               |
| R軸行程                                      | R-axis stroke                                | deg        | ±180°注:可根據需求加裝零件防止軸旋轉360 ° 或限制在軸在某個區間角度內旋轉<br>±180°Note:Parts can be added on request to prevent axis rotation by 360 ° to limit axis rotation to ascertain interval angle |               |               |
| Z軸持續推力                                    | Z-axis continuous thrust                     | N          | 6.5N-Constant counterweight                                                                                                                                                |               |               |
| Z軸峰值推力                                    | Z-axis peak thrust                           | N          | 24N-Constant counterweight                                                                                                                                                 |               |               |
| R軸持續轉矩                                    | R-axis continuous torque                     | N.M        | 0.009                                                                                                                                                                      |               |               |
| R軸峰值轉矩                                    | R-axis peak torque                           | gN.M       | 0.0027                                                                                                                                                                     |               |               |
| Z軸最大速度                                    | Z-axis maximum speed                         | m/s        | 1.5                                                                                                                                                                        |               |               |
| Z軸最大加速度                                   | R axis maximum speed                         | G          | 2.5                                                                                                                                                                        |               |               |
| R軸最大速度                                    | R-axis maximum acceleration                  | r/min      | 300                                                                                                                                                                        |               |               |
| R軸最大加速度                                   | Z-axis repeatability                         | rpm/s      | 1                                                                                                                                                                          |               |               |
| Z軸重複精度                                    | R-axis repeatability                         | µm         | ±0.5                                                                                                                                                                       |               |               |
| R軸重複精度                                    | Z-axis grating resolution                    | Arc sec    | ±36                                                                                                                                                                        |               |               |
| 光學尺分辨率                                    | Z-axis segregation                           | µm         | 0.1                                                                                                                                                                        |               |               |
| Z軸分辨率                                     | Pressure Control Range                       | bit        | 20                                                                                                                                                                         |               |               |
| 壓力控制範圍                                    | Pressure Control Accuracy                    | g          | 15~400                                                                                                                                                                     |               |               |
| 壓力控制精度                                    | R axial runout                               | 20~50g     | ±2                                                                                                                                                                         |               |               |
|                                           |                                              | 50~400g    | ±3                                                                                                                                                                         |               |               |
| R徑向跳動                                     | R Radial runout                              | mm         | <0.01                                                                                                                                                                      |               |               |
| R軸向跳動                                     | Parallelism between mounting surface and     | mm         | <0.003                                                                                                                                                                     |               |               |
| 安裝面與R軸軸向、Z軸導軌平行度                          | Z-axis guide rail                            | mm         | <0.02                                                                                                                                                                      |               |               |
| 機械參數配置 Mechanical parameter configuration |                                              |            |                                                                                                                                                                            |               |               |
| 外形尺寸(WxHxL)                               | External dimensions (W x H x L)              | mm         | 20x110x165                                                                                                                                                                 | 20x110x180    | 20x110x200    |
| 總重量                                       | Total weight                                 | g          | ≈730                                                                                                                                                                       | ≈780          | ≈850          |
| Z軸電機類型                                    | Z Axis Motor Type                            | /          | 無鐵芯電機 Ironless Motor                                                                                                                                                       |               |               |
| R軸電機類型/重量(單位g)                            | R-Axis Motor Type/Weight (in g)              | /          | 微型DD 電機/150 Micro DD Motor/150                                                                                                                                             |               |               |
| Z軸電機配重方式                                  | Z-axis motor balance                         | /          | 恆力配重器 Constant Counterweight                                                                                                                                               |               |               |
| 控制參數配置 Control spec                       |                                              |            |                                                                                                                                                                            |               |               |
| 工作電壓                                      | Operating voltage                            | V          | 48                                                                                                                                                                         |               |               |
| Z軸持續電流                                    | Z-axis continuous current                    | A rms      | 0.86                                                                                                                                                                       |               |               |
| Z軸峰值電流                                    | Z axis peak current                          | A rms      | 3.44                                                                                                                                                                       |               |               |
| R軸持續電流                                    | R-axis continuous current                    | A rms      | 0.7                                                                                                                                                                        |               |               |
| R軸峰值電流                                    | R axis peak current                          | A rms      | 2.1                                                                                                                                                                        |               |               |
| 工作環境溫度、濕度                                 | Working environment temperature and humidity | /          | 0-40 °C、20-80RH (不結露) 0-40 °C Humidity 20%-80%                                                                                                                             |               |               |

## DP20-ZR35-N00

[illegible]