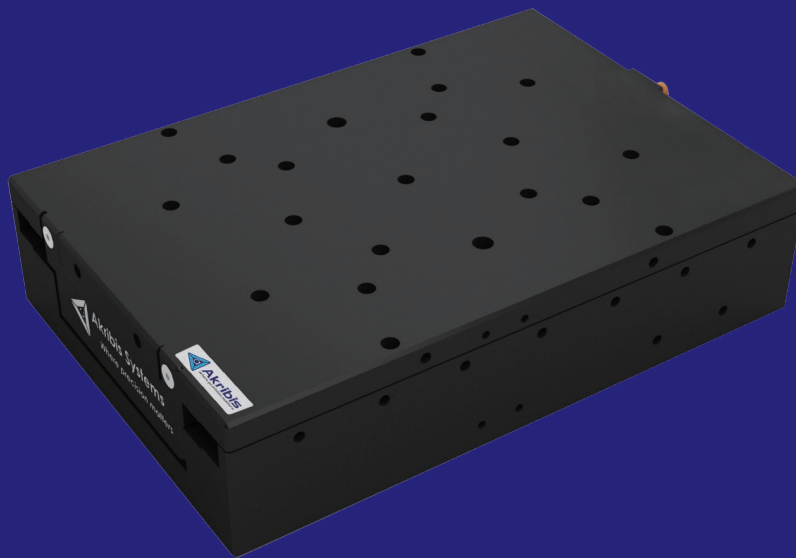




# XRL SERIES

- ▶ Suitable for smooth movement
- ▶ Fast response and short settling time
- ▶ Low friction
- ▶ High precision

EN-26.3.1

## Introduction

XRL series utilize linear motor positioning system, it consists of cross roller linear guide, linear motor, encoder feedback and aluminum cover to form a compact footprint and high performance module.

There are two standard products: XRL130 and XRL250. The built-in linear motor and encoders for the two standard products are selectable according to the actual technical requirements and customization is accepted.

Built in AUM iron less linear motor is cogging free with cross roller linear guide. Suitable for light load, low velocity, high precision positioning application.

Continuous Force  $F_{cn}$  = 26.4N~70.4N

Peak Force  $F_{pk}$  = 132.0N~352.0N

## Features

- ▶ Cross roller guide linear motor stage
- ▶ Built-in AUM ironless linear motor
- ▶ Repeatability up to  $\pm 0.1\mu\text{m}$
- ▶ Stroke from 35mm to 210mm
- ▶ Optional resolution of  $0.1\mu\text{m}$ , SINCOS
- ▶ Excellent straightness and flatness, high load capacity

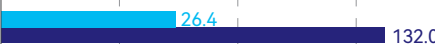
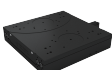
## Applications

Point to point sub-micron and nanometer level fast positioning, optical focus for Z axis.

Good velocity ripple of high or low velocity and harsh trajectory following.

Light load and requirement of compact size.

High precision positioning in semiconductor, solar PV, lithium battery, LCD display equipment. And industrial printer and laser manufacturing scenarios which require high velocity, high precision, harsh trajectory following and velocity ripples.

| Cross Roller Modules Series                                                                   | Linear Motor Series                                                                         |         | ■ Continuous Force (F <sub>cn</sub> ) ■ Peak Force (F <sub>pk</sub> ) Unit: N        |    |     |     |     |     | Stroke (mm)               | Repeatability (μm) | Page            |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------|----|-----|-----|-----|-----|---------------------------|--------------------|-----------------|
|                                                                                               |                                                                                             |         | 10                                                                                   | 50 | 100 | 200 | 300 | 400 |                           |                    |                 |
| <br>XRL130 | <br>AUM2 | AUM2-S3 |   |    |     |     |     |     | 35/60/<br>110/160         | up to<br>±0.1      | 081<br>~<br>082 |
| <br>XRL250 | <br>AUM2 | AUM2-S4 |  |    |     |     |     |     | 35/60/<br>110/160/<br>210 | up to<br>±0.15     | 084<br>~<br>086 |

Note:

① Longer stroke available upon request.

★ Products can be customized to meet specific working environments, please contact [cust-service@akribis-sys.com](mailto:cust-service@akribis-sys.com).

## XRL130-35

| Motor Specifications                        | Unit        | Value              |
|---------------------------------------------|-------------|--------------------|
| Motor                                       | -           | AUM2-S3            |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 26.4               |
| Peak Force                                  | N           | 132.0              |
| Force Constant ±10%                         | N/Arms      | 16.5               |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 13.5               |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 9.95               |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 2.94               |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6                |
| Peak Current                                | Arms        | 8.0                |
| Max. Bus Voltage                            | Vdc         | 330                |
| Magnetic Period                             | mm          | 30                 |
| Mechanical Specifications                   | Unit        | Value              |
| Precision Grade                             | -           | P N                |
| Effective Stroke                            | mm          | 35                 |
| Resolution                                  | μm          | SINCOS (4096X) 0.1 |
| Repeatability                               | μm          | ±0.1 ±0.3          |
| Horizontal Straightness                     | μm          | ±1.0 ±1.5          |
| Vertical Straightness                       | μm          | ±1.0 ±1.5          |
| Rated Payload <sup>④</sup>                  | kg          | 7.0                |
| No-load Moving Mass                         | kg          | 1.5                |
| No-load Total Mass                          | kg          | 2.8                |
| Max. Static Moment <sup>④</sup>             | Nm          | 5.0                |

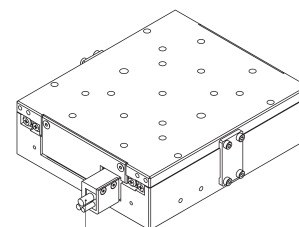
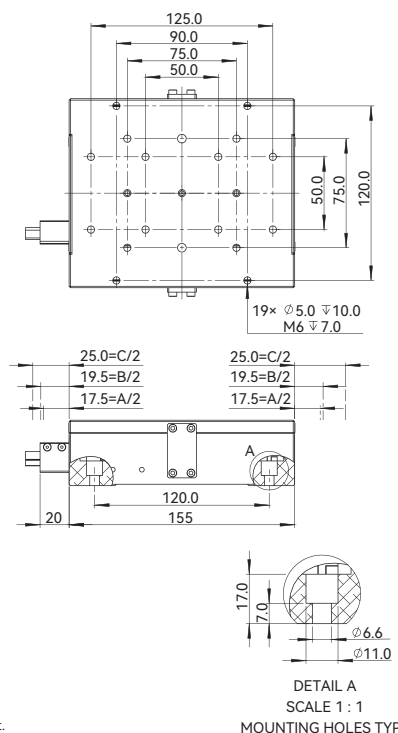
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

② Resistance is measured by DC current with standard 0.5m cable.

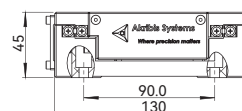
③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

④ This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements. The contents of datasheet are subject to change without prior notice.

### ■ Dimensional Drawing



Motor,hall,encoder cable out(Fixed)



#### Note:

- A=Effective stroke
- B=Limit stroke
- C=Hardstop stroke
- Home index near the center of stroke;
- To maintain accuracy,mounting surface must be flat within 5μm over stage entire footprint.

## XRL130-60

| Motor Specifications                        | Unit        | Value              |
|---------------------------------------------|-------------|--------------------|
| Motor                                       | -           | AUM2-S3            |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 26.4               |
| Peak Force                                  | N           | 132.0              |
| Force Constant ±10%                         | N/Arms      | 16.5               |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 13.5               |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 9.95               |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 2.94               |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6                |
| Peak Current                                | Arms        | 8.0                |
| Max. Bus Voltage                            | Vdc         | 330                |
| Magnetic Period                             | mm          | 30                 |
| Mechanical Specifications                   | Unit        | Value              |
| Precision Grade                             | -           | P N                |
| Effective Stroke                            | mm          | 60                 |
| Resolution                                  | μm          | SINCOS (4096X) 0.1 |
| Repeatability                               | μm          | ±0.1 ±0.3          |
| Horizontal Straightness                     | μm          | ±1.0 ±1.5          |
| Vertical Straightness                       | μm          | ±1.0 ±1.5          |
| Rated Payload <sup>④</sup>                  | kg          | 9.0                |
| No-load Moving Mass                         | kg          | 1.7                |
| No-load Total Mass                          | kg          | 3.2                |
| Max. Static Moment <sup>④</sup>             | Nm          | 6.0                |

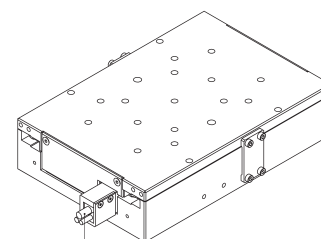
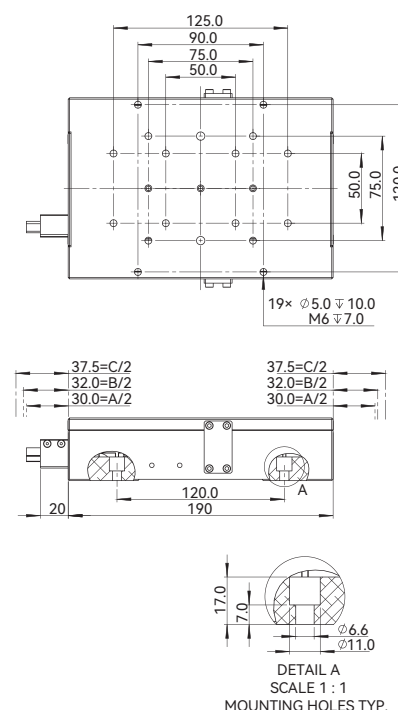
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

② Resistance is measured by DC current with standard 0.5m cable.

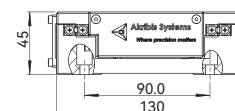
③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

④ This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements. The contents of datasheet are subject to change without prior notice.

### ■ Dimensional Drawing



Motor,hall,encoder cable out(Fixed)



#### Note:

- A=Effective stroke
- B=Limit stroke
- C=Hardstop stroke
- Home index near the center of stroke;
- To maintain accuracy,mounting surface must be flat within 5μm over stage entire footprint.

# XRL Series

## XRL130-110

| Motor Specifications                        | Unit        | Value              |
|---------------------------------------------|-------------|--------------------|
| Motor                                       | -           | AUM2-S3            |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 26.4               |
| Peak Force                                  | N           | 132.0              |
| Force Constant ±10%                         | N/Arms      | 16.5               |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 13.5               |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 9.95               |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 2.94               |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6                |
| Peak Current                                | Arms        | 8.0                |
| Max. Bus Voltage                            | Vdc         | 330                |
| Magnetic Period                             | mm          | 30                 |
| Mechanical Specifications                   | Unit        | Value              |
| Precision Grade                             | -           | P N                |
| Effective Stroke                            | mm          | 110                |
| Resolution                                  | μm          | SINCOS (4096X) 0.1 |
| Repeatability                               | μm          | ±0.1 ±0.3          |
| Horizontal Straightness                     | μm          | ±1.0 ±2.0          |
| Vertical Straightness                       | μm          | ±1.0 ±2.0          |
| Rated Payload <sup>④</sup>                  | kg          | 11.0               |
| No-load Moving Mass                         | kg          | 2.1                |
| No-load Total Mass                          | kg          | 3.9                |
| Max. Static Moment <sup>④</sup>             | Nm          | 7.0                |

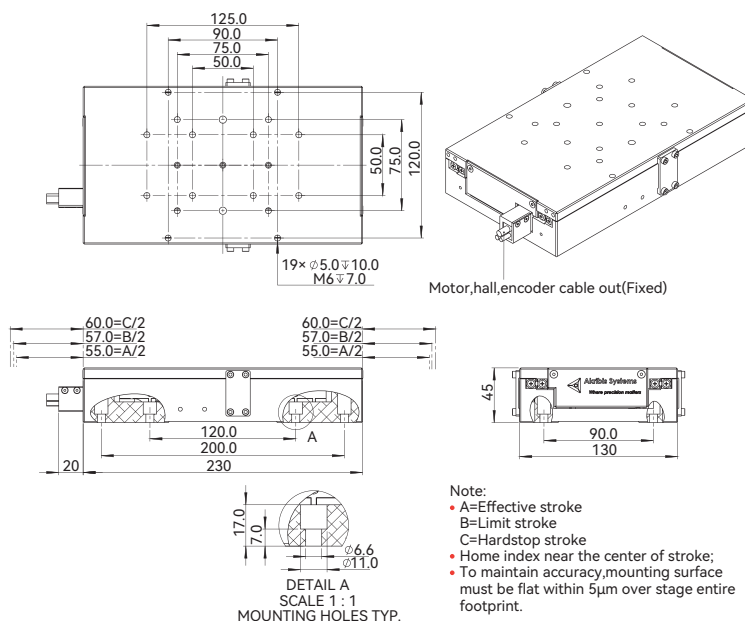
<sup>①</sup> Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.  
Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

<sup>②</sup> Resistance is measured by DC current with standard 0.5m cable.

<sup>③</sup> Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

<sup>④</sup> This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements.  
The contents of datasheet are subject to change without prior notice.

### Dimensional Drawing



Note:  
 • A=Effective stroke  
 • B=Limit stroke  
 • C=Hardstop stroke  
 • Home index near the center of stroke;  
 • To maintain accuracy, mounting surface must be flat within 5μm over stage entire footprint.

## XRL130-160

| Motor Specifications                        | Unit        | Value   |
|---------------------------------------------|-------------|---------|
| Motor                                       | -           | AUM2-S3 |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 26.4    |
| Peak Force                                  | N           | 132.0   |
| Force Constant ±10%                         | N/Arms      | 16.5    |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 13.5    |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 9.95    |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 2.94    |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6     |
| Peak Current                                | Arms        | 8.0     |
| Max. Bus Voltage                            | Vdc         | 330     |
| Magnetic Period                             | mm          | 30      |
| Mechanical Specifications                   | Unit        | Value   |
| Precision Grade                             | -           | N       |
| Effective Stroke                            | mm          | 160     |
| Resolution                                  | μm          | 0.1     |
| Repeatability                               | μm          | ±0.3    |
| Horizontal Straightness                     | μm          | ±2.0    |
| Vertical Straightness                       | μm          | ±2.0    |
| Rated Payload <sup>④</sup>                  | kg          | 13.0    |
| No-load Moving Mass                         | kg          | 2.3     |
| No-load Total Mass                          | kg          | 4.2     |
| Max. Static Moment <sup>④</sup>             | Nm          | 8.0     |

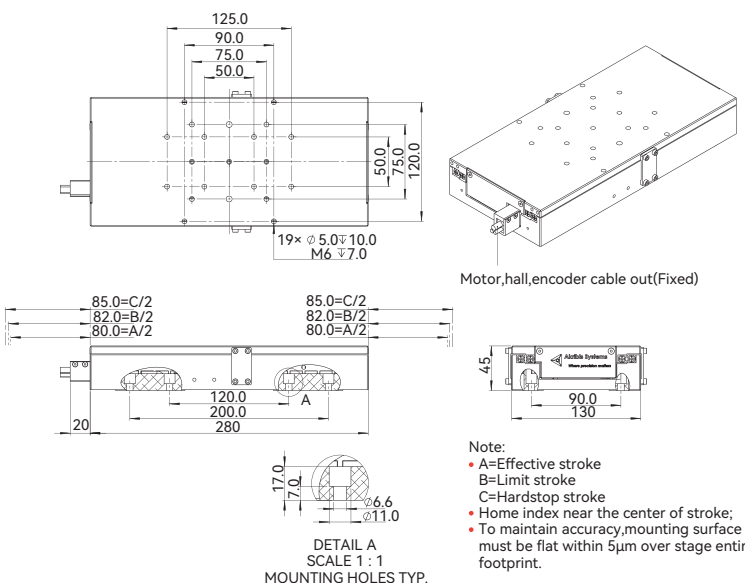
<sup>①</sup> Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.  
Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

<sup>②</sup> Resistance is measured by DC current with standard 0.5m cable.

<sup>③</sup> Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

<sup>④</sup> This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements.  
The contents of datasheet are subject to change without prior notice.

### Dimensional Drawing



Note:  
 • A=Effective stroke  
 • B=Limit stroke  
 • C=Hardstop stroke  
 • Home index near the center of stroke;  
 • To maintain accuracy, mounting surface must be flat within 5μm over stage entire footprint.

## Ordering Part Number (OPN)

**XRL130-T03-U04R2H1-D1**

Model:

XRL130

Precision Grade:

Unmarked: Normal

Cover Type:

T: Standard (Black Anodized)

Effective Stroke:

03: 35mm  
06: 60mm  
11: 110mm  
16: 160mm

Termination:

1: Motor: Flying Leads/Encoder: DSUB 15/Hall: DSUB 9  
2: Motor: DSUB 9W4/Encoder: DSUB 15/Hall: DSUB 9

Cable Length:

D: 1.0m

Scale Type:

1: Steel Tape, 11ppm/K

Encoder Type:

R2H: Quantic, TTL (0.1μm)

Motor Type:

U04: AUM2-S-S3-K (Peak Force: 132.0N)

**XRL130P-T03-U04R4A1-D1**

Model:

XRL130

Precision Grade:

P: Precision

Cover Type:

T: Standard (Black Anodized)

Effective Stroke:

03: 35mm  
06: 60mm  
11: 110mm

Termination:

1: Motor: Flying Leads/Encoder: DSUB 15/Hall: DSUB 9  
2: Motor: DSUB 9W4/Encoder: DSUB 15/Hall: DSUB 9

Cable Length:

D: 1.0m

Scale Type:

1: Steel Tape, 11ppm/K

Encoder Type:

R4A: TONIC, SINCOS (1Vpp)

Motor Type:

U04: AUM2-S-S3-K (Peak Force: 132.0N)

Note:

★ Products can be customized to meet specific working environments, please contact cust-service@akribis-sys.com.

## XRL250-35

| Motor Specifications                        | Unit        | Value              |
|---------------------------------------------|-------------|--------------------|
| Motor                                       | -           | AUM2-S4×2          |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 35.2×2             |
| Peak Force                                  | N           | 176.0×2            |
| Force Constant ±10%                         | N/Arms      | 22.0               |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 18.0               |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 6.59               |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 1.94               |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6×2              |
| Peak Current                                | Arms        | 8.0×2              |
| Max. Bus Voltage                            | Vdc         | 330                |
| Magnetic Period                             | mm          | 30                 |
| Mechanical Specifications                   | Unit        | Value              |
| Precision Grade                             | -           | P N                |
| Effective Stroke                            | mm          | 35                 |
| Resolution                                  | μm          | SINCOS (4096X) 0.1 |
| Repeatability                               | μm          | ±0.15 ±0.3         |
| Horizontal Straightness                     | μm          | ±1.0 ±1.5          |
| Vertical Straightness                       | μm          | ±1.0 ±1.5          |
| Rated Payload <sup>④</sup>                  | kg          | 20.0               |
| No-load Moving Mass                         | kg          | 3.9                |
| No-load Total Mass                          | kg          | 7.0                |
| Max. Static Moment <sup>④</sup>             | Nm          | 7.0                |

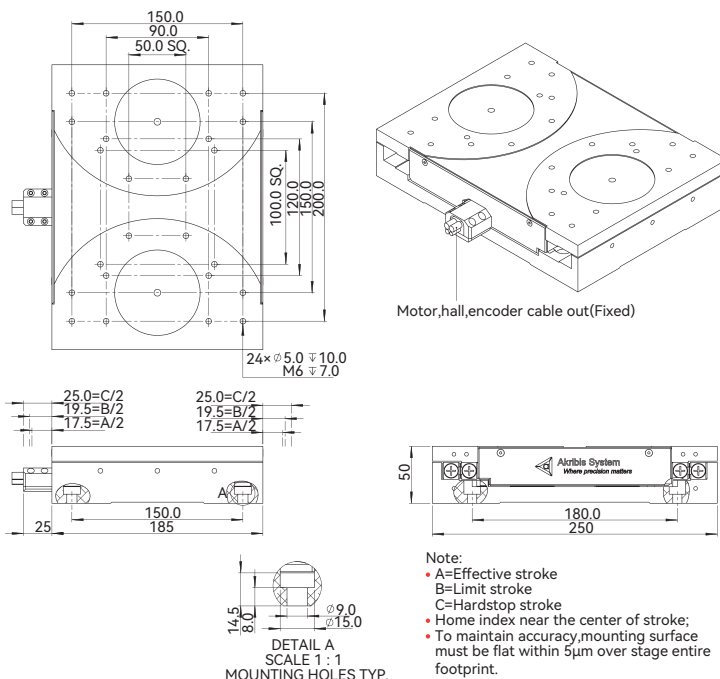
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.  
Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

② Resistance is measured by DC current with standard 0.5m cable.

③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

④ This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements.  
The contents of datasheet are subject to change without prior notice.

### Dimensional Drawing



## XRL250-60

| Motor Specifications                        | Unit        | Value              |
|---------------------------------------------|-------------|--------------------|
| Motor                                       | -           | AUM2-S4×2          |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 35.2×2             |
| Peak Force                                  | N           | 176.0×2            |
| Force Constant ±10%                         | N/Arms      | 22.0               |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 18.0               |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 6.59               |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 1.94               |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6×2              |
| Peak Current                                | Arms        | 8.0×2              |
| Max. Bus Voltage                            | Vdc         | 330                |
| Magnetic Period                             | mm          | 30                 |
| Mechanical Specifications                   | Unit        | Value              |
| Precision Grade                             | -           | P N                |
| Effective Stroke                            | mm          | 60                 |
| Resolution                                  | μm          | SINCOS (4096X) 0.1 |
| Repeatability                               | μm          | ±0.15 ±0.3         |
| Horizontal Straightness                     | μm          | ±1.0 ±1.5          |
| Vertical Straightness                       | μm          | ±1.0 ±1.5          |
| Rated Payload <sup>④</sup>                  | kg          | 25.0               |
| No-load Moving Mass                         | kg          | 4.6                |
| No-load Total Mass                          | kg          | 8.2                |
| Max. Static Moment <sup>④</sup>             | Nm          | 10.0               |

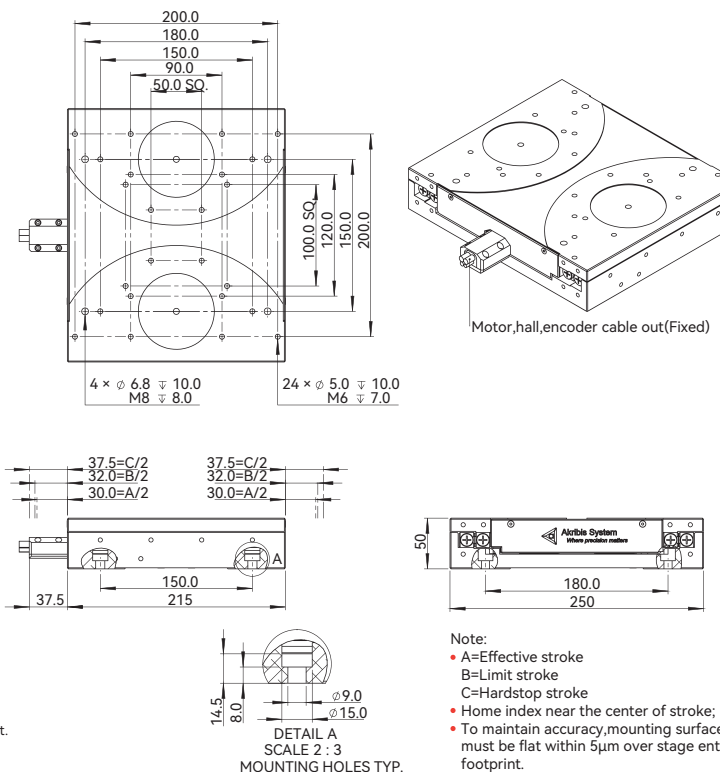
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.  
Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

② Resistance is measured by DC current with standard 0.5m cable.

③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

④ This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements.  
The contents of datasheet are subject to change without prior notice.

### Dimensional Drawing



## XRL250-110

| Motor Specifications                        | Unit        | Value              |
|---------------------------------------------|-------------|--------------------|
| Motor                                       | -           | AUM2-S4×2          |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 35.2×2             |
| Peak Force                                  | N           | 176.0×2            |
| Force Constant ±10%                         | N/Arms      | 22.0               |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 18.0               |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 6.59               |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 1.94               |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6×2              |
| Peak Current                                | Arms        | 8.0×2              |
| Max. Bus Voltage                            | Vdc         | 330                |
| Magnetic Period                             | mm          | 30                 |
| Mechanical Specifications                   | Unit        | Value              |
| Precision Grade                             | -           | P N                |
| Effective Stroke                            | mm          | 110                |
| Resolution                                  | μm          | SINCOS (4096X) 0.1 |
| Repeatability                               | μm          | ±0.15 ±0.3         |
| Horizontal Straightness                     | μm          | ±1.0 ±2.0          |
| Vertical Straightness                       | μm          | ±1.0 ±2.0          |
| Rated Payload <sup>④</sup>                  | kg          | 30.0               |
| No-load Moving Mass                         | kg          | 5.4                |
| No-load Total Mass                          | kg          | 9.7                |
| Max. Static Moment <sup>④</sup>             | Nm          | 15.0               |

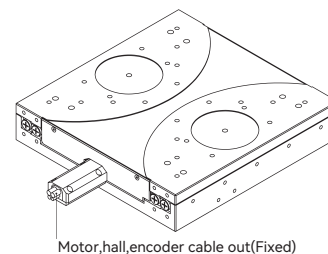
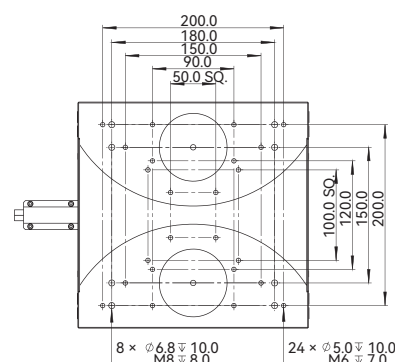
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.  
Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

② Resistance is measured by DC current with standard 0.5m cable.

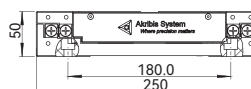
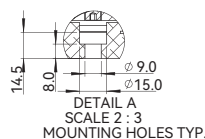
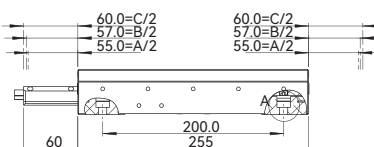
③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

④ This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements.  
The contents of datasheet are subject to change without prior notice.

## ■ Dimensional Drawing



Motor, hall, encoder cable out (Fixed)



Note:

- A=Effective stroke
- B=Limit stroke
- C=Hardstop stroke
- Home index near the center of stroke;
- To maintain accuracy, mounting surface must be flat within 5μm over stage entire footprint.

## XRL250-160

| Motor Specifications                        | Unit        | Value              |
|---------------------------------------------|-------------|--------------------|
| Motor                                       | -           | AUM2-S4×2          |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 35.2×2             |
| Peak Force                                  | N           | 176.0×2            |
| Force Constant ±10%                         | N/Arms      | 22.0               |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 18.0               |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 6.59               |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 1.94               |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6×2              |
| Peak Current                                | Arms        | 8.0×2              |
| Max. Bus Voltage                            | Vdc         | 330                |
| Magnetic Period                             | mm          | 30                 |
| Mechanical Specifications                   | Unit        | Value              |
| Precision Grade                             | -           | P N                |
| Effective Stroke                            | mm          | 160                |
| Resolution                                  | μm          | SINCOS (4096X) 0.1 |
| Repeatability                               | μm          | ±0.15 ±0.3         |
| Horizontal Straightness                     | μm          | ±1.5 ±2.0          |
| Vertical Straightness                       | μm          | ±1.5 ±2.0          |
| Rated Payload <sup>④</sup>                  | kg          | 40.0               |
| No-load Moving Mass                         | kg          | 6.6                |
| No-load Total Mass                          | kg          | 11.6               |
| Max. Static Moment <sup>④</sup>             | Nm          | 20.0               |

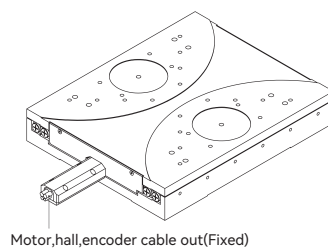
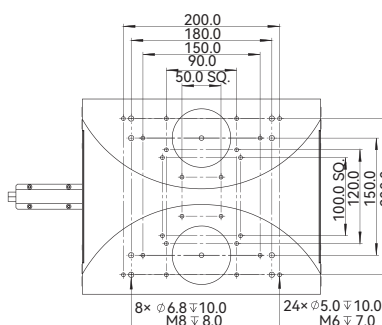
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.  
Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

② Resistance is measured by DC current with standard 0.5m cable.

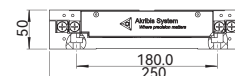
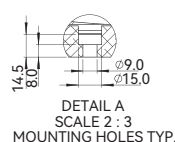
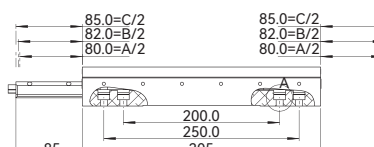
③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

④ This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements.  
The contents of datasheet are subject to change without prior notice.

## ■ Dimensional Drawing



Motor, hall, encoder cable out (Fixed)



Note:

- A=Effective stroke
- B=Limit stroke
- C=Hardstop stroke
- Home index near the center of stroke;
- To maintain accuracy, mounting surface must be flat within 5μm over stage entire footprint.



## XRL250-210

| Motor Specifications                        | Unit        | Value              |
|---------------------------------------------|-------------|--------------------|
| Motor                                       | -           | AUM2-S4×2          |
| Continuous Force (NC) @100°C <sup>①</sup>   | N           | 35.2×2             |
| Peak Force                                  | N           | 176.0×2            |
| Force Constant ±10%                         | N/Arms      | 22.0               |
| Back EMF Constant ±10%                      | Vpeak/(m/s) | 18.0               |
| Resistance (L-L) @25°C ±10% <sup>②</sup>    | Ω           | 6.59               |
| Inductance (L-L) ±40% <sup>③</sup>          | mH          | 1.94               |
| Continuous Current (NC) @100°C <sup>①</sup> | Arms        | 1.6×2              |
| Peak Current                                | Arms        | 8.0×2              |
| Max. Bus Voltage                            | Vdc         | 330                |
| Magnetic Period                             | mm          | 30                 |
| Mechanical Specifications                   | Unit        | Value              |
| Precision Grade                             | -           | P N                |
| Effective Stroke                            | mm          | 210                |
| Resolution                                  | μm          | SINCOS (4096X) 0.1 |
| Repeatability                               | μm          | ±0.15 ±0.3         |
| Horizontal Straightness                     | μm          | ±1.5 ±2.5          |
| Vertical Straightness                       | μm          | ±1.5 ±2.5          |
| Rated Payload <sup>④</sup>                  | kg          | 45.0               |
| No-load Moving Mass                         | kg          | 7.3                |
| No-load Total Mass                          | kg          | 13.3               |
| Max. Static Moment <sup>④</sup>             | Nm          | 24.0               |

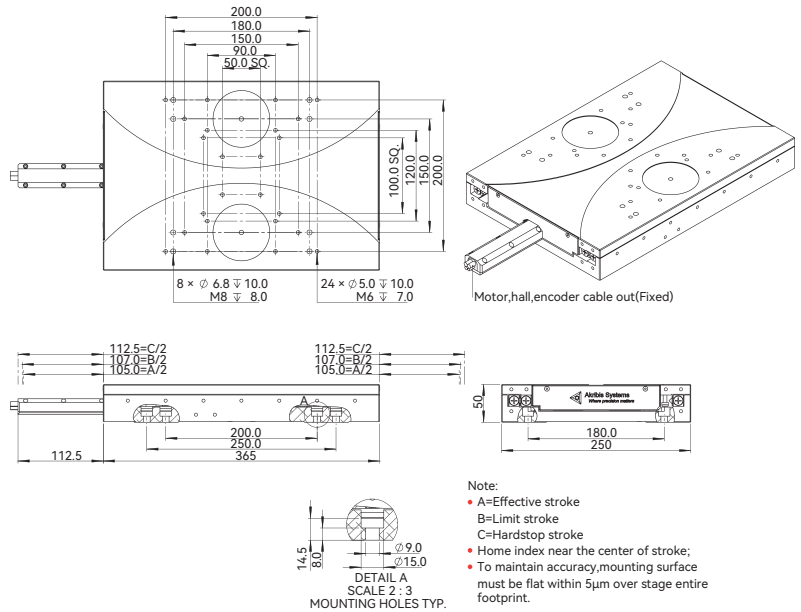
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.  
Abbreviations: NC=Natural Cooling, AC=Air Cooling, WC=Water Cooling.

② Resistance is measured by DC current with standard 0.5m cable.

③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different.  
The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.

④ This value is based on providing a higher control bandwidth, please contact cust-service@akribis-sys.com for higher load requirements.  
The contents of datasheet are subject to change without prior notice.

### ■ Dimensional Drawing





## Ordering Part Number (OPN)

**XRL250-T03-U06R2H1-D1**

Model:

XRL250

Precision Grade:

Unmarked: Normal

Cover Type:

T: Standard (Black Anodized)

Effective Stroke:

03: 35mm  
06: 60mm  
11: 110mm  
16: 160mm  
21: 210mm

Termination:

1: Motor: Flying Leads/Encoder: DSUB 15/Hall: DSUB 9  
2: Motor: DSUB 9W4/Encoder: DSUB 15/Hall: DSUB 9

Cable Length:

D: 1.0m

Scale Type:

1: Steel Tape, 11ppm/K

Encoder Type:

R2H: Quantic, TTL (0.1μm)

Motor Type:

U06: AUM2-S-S4-K (Peak Force: 176.0N)

**XRL250P-T03-U06R4A1-D1**

Model:

XRL250

Precision Grade:

P: Precision

Cover Type:

T: Standard (Black Anodized)

Effective Stroke:

03: 35mm  
06: 60mm  
11: 110mm  
16: 160mm  
21: 210mm

Termination:

1: Motor: Flying Leads/Encoder: DSUB 15/Hall: DSUB 9  
2: Motor: DSUB 9W4/Encoder: DSUB 15/Hall: DSUB 9

Cable Length:

D: 1.0m

Scale Type:

1: Steel Tape, 11ppm/K

Encoder Type:

R4A: TONIC, SINCOS (1Vpp)

Motor Type:

U06: AUM2-S-S4-K (Peak Force: 176.0N)

Note:

★ Products can be customized to meet specific working environments, please contact [cust-service@akribis-sys.com](mailto:cust-service@akribis-sys.com).