

VRG-II SERIES

- ▶ A versatile gantry stage motor force in line with the bridge's COG
- ▶ Use ironless AUM motor
- ▶ Low velocity ripple

EN-26.3.1

VRG-II

Motor Specifications	Unit	L	U
Motor Model	-	AUM5-S4×2	AUM5-S2
Continuous Force (NC) @100°C ^①	N	393×2	197
Peak Force	N	2830×2	1415
Force Constant ±10%	N/Arms	157.2	78.6
Back EMF Constant ±10%	Vpeak/(m/s)	128.4	64.2
Resistance (L-L) @25°C ±10% ^②	Ω	16.52	8.28
Inductance (L-L) ±40% ^③	mH	26.00	13.00
Continuous Current (NC) @100°C ^①	Arms	2.5	2.5
Peak Current	Arms	18.0	18.0
Max. Bus Voltage	Vdc	330	330
Magnetic Period	mm	84	84
Mechanical Specifications	Unit	L	U
Effective Stroke	mm	400	400
Rated Payload	kg	20	
No-load Moving Mass	kg	40	4
Max Acceleration	m/s ²	20	20
Max Velocity	m/s	2	2
Encoder Resolution	μm	0.05/0.5/SINCOS	0.05/0.5/SINCOS
Minimal Step Size	μm	0.5	0.5
Repeatability	μm	±1.5	±1.0
Accuracy	μm	±10.0	±10.0
Straightness	μm	±10.0	±10.0
Flatness	μm	±10.0	±10.0
Yaw	arcsec	±10.0	±10.0
Pitch	arcsec	±10.0	±10.0
Orthogonality	arcsec	10.0	
No-load Stage Weight	kg	570	

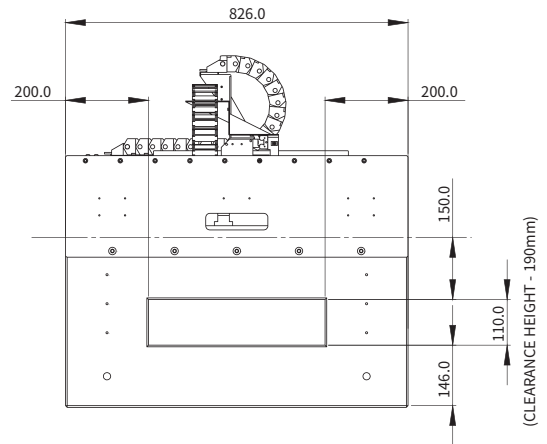
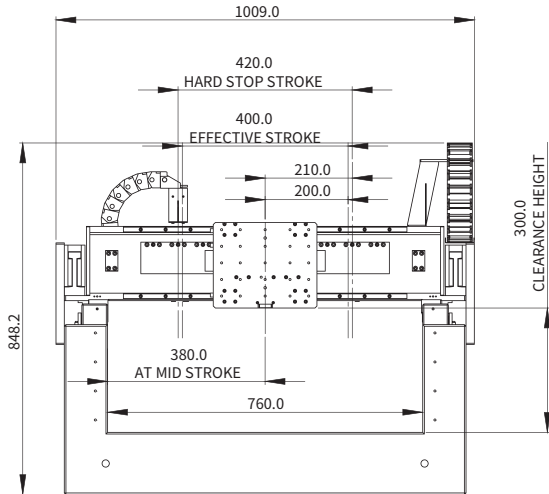
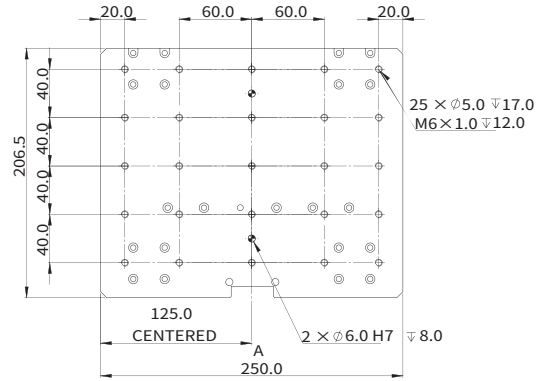
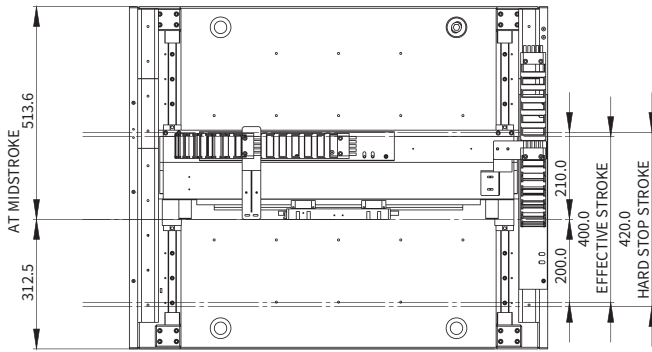
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

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

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%.

- The table above presents the highest capability of this stage layout.
 - Contact us for more options and details.
 - Products can be customized to meet specific working environment, please contact cust-service@akribis-sys.com.
- The contents of datasheet are subject to change without prior notice.

Dimensional Drawing



Ordering Part Number (OPN)

VRG2-H0202-U46U17AD01-A2

Model:

VRG2

Gantry Config:¹

H: H-Gantry
T: T-Gantry

Lower Axis Stroke:²

02: 200mm
03: 300mm
04: 400mm
05: 500mm
06: 600mm
07: 700mm
08: 800mm

Upper Axis Stroke:²

02: 200mm
03: 300mm
04: 400mm
05: 500mm
06: 600mm
07: 700mm
08: 800mm

Lower Axis Motor:

U46: AUM4-S-S3-J (Peak Force: 936.0N)
U47: AUM4-S-S3-K (Peak Force: 936.0N)
U48: AUM4-P-S3-J (Peak Force: 936.0N)
U49: AUM4-P-S3-K (Peak Force: 936.0N)
U50: AUM4-S-S4-J (Peak Force: 1248.0N)
U51: AUM4-S-S4-K (Peak Force: 1248.0N)
U52: AUM4-P-S4-J (Peak Force: 1248.0N)
U53: AUM4-P-S4-K (Peak Force: 1248.0N)
U76: AUM5-S-S3-J (Peak Force: 2122.0N)
U77: AUM5-S-S3-K (Peak Force: 2122.0N)
U78: AUM5-P-S3-J (Peak Force: 2122.0N)
U79: AUM5-P-S3-K (Peak Force: 2122.0N)
U80: AUM5-S-S4-J (Peak Force: 2830.0N)
U81: AUM5-S-S4-K (Peak Force: 2830.0N)
U82: AUM5-P-S4-J (Peak Force: 2830.0N)
U83: AUM5-P-S4-K (Peak Force: 2830.0N)

Termination:

2: Motor: DSUB 9W4/
Encoder: DSUB 15/Hall: DSUB 9
3: Motor: M23/
Encoder&Hall: M23

Cable Length:

A: 0.5m
B: 3.0m

Scale Type:

1: Steel Tape, 11ppm/K

Encoder Type:

AD0: ABA-20, BiSS C (50nm)
A71: ABA-50, Mitsubishi 2-Wires (50nm)
A73: ABA-50, EnDat 2.2 (50nm)
ABA: ABI-51X, SINCOS (1Vpp)
ABF: ABI-51X, TTL (0.5µm)
ABH: ABI-51X, TTL (0.1µm)
R2F: Quantic, TTL (0.5µm)
R2H: Quantic, TTL (0.1µm)

Upper Axis Motor:

U17: AUM3-S-S2-J (Peak Force: 289.0N)
U18: AUM3-S-S2-K (Peak Force: 289.0N)
U19: AUM3-P-S2-J (Peak Force: 289.0N)
U20: AUM3-P-S2-K (Peak Force: 289.0N)
U21: AUM3-S-S3-J (Peak Force: 433.0N)
U22: AUM3-S-S3-K (Peak Force: 433.0N)
U23: AUM3-P-S3-J (Peak Force: 433.0N)
U24: AUM3-P-S3-K (Peak Force: 433.0N)
U25: AUM3-S-S4-J (Peak Force: 578.0N)
U26: AUM3-S-S4-K (Peak Force: 578.0N)
U27: AUM3-P-S4-J (Peak Force: 578.0N)
U28: AUM3-P-S4-K (Peak Force: 578.0N)
U46: AUM4-S-S3-J (Peak Force: 936.0N)
U47: AUM4-S-S3-K (Peak Force: 936.0N)
U48: AUM4-P-S3-J (Peak Force: 936.0N)
U49: AUM4-P-S3-K (Peak Force: 936.0N)
U50: AUM4-S-S4-J (Peak Force: 1248.0N)
U51: AUM4-S-S4-K (Peak Force: 1248.0N)
U52: AUM4-P-S4-J (Peak Force: 1248.0N)
U53: AUM4-P-S4-K (Peak Force: 1248.0N)
U72: AUM5-S-S2-J (Peak Force: 1415.0N)
U73: AUM5-S-S2-K (Peak Force: 1415.0N)
U74: AUM5-P-S2-J (Peak Force: 1415.0N)
U75: AUM5-P-S2-K (Peak Force: 1415.0N)

Note:

¹ All Gantries are Black Anodized. H= Dual motor dual encoder, T= Single motor single encoder.

² Standard stroke in intervals of 100mm only, for more options, customization is required.

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