

# DGL Series

## Double Guide Linear Motor Stage

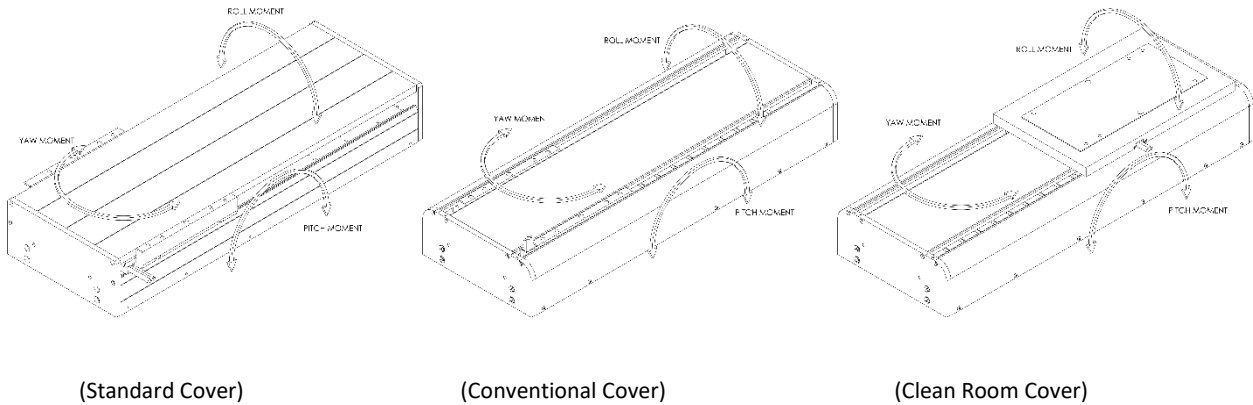


- Linear motor positioning system
- Excellent force/size ratio
- Precise homing
- Modular design

## DGL Series

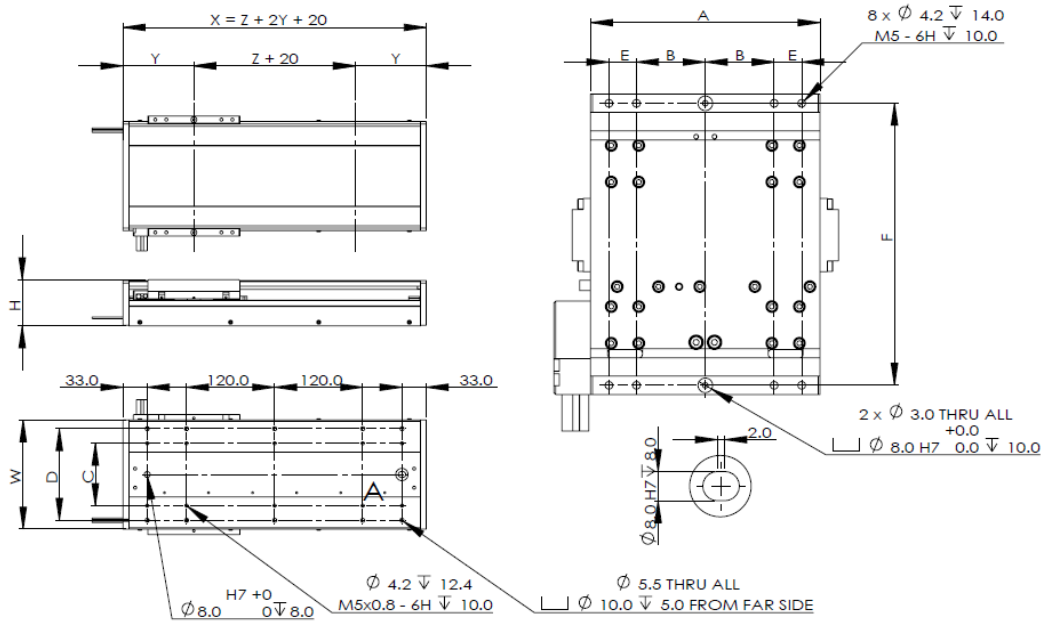
### Features

- Direct drive, zero cogging, zero backlash ironless linear motor
- Linear encoder options of 1µm, 0.5µm, 0.2µm and 0.1µm
- Dual size 12 (miniature), size 15 & size 20 linear guidance rails
- High accelerations (up to 10) and speeds (up to 5m/s)
- Smooth motion at low speeds (low velocity ripple)



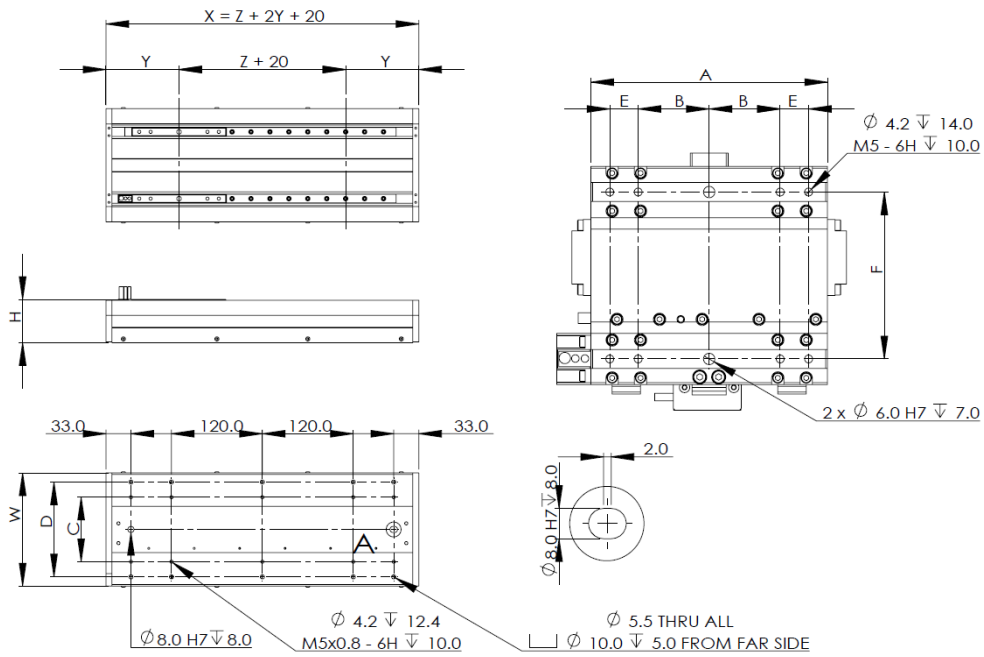
### DGL Type 1: Standard Cover

#### Dimensional Drawing



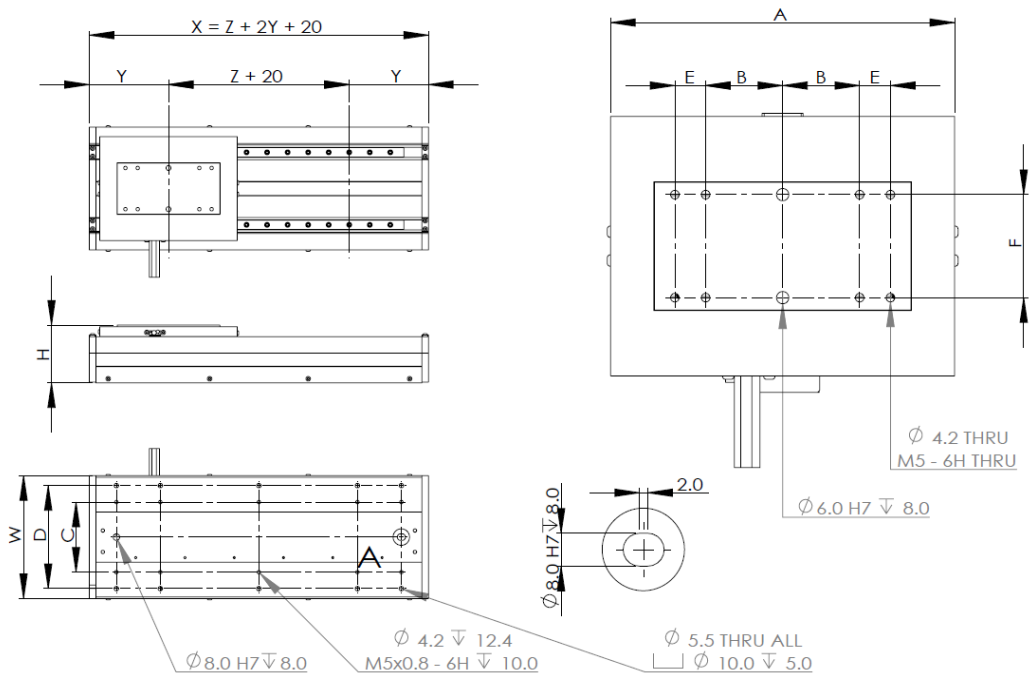
### DGL Type 2: Conventional Cover

#### Dimensional Drawing



### DGL Type 3: Clean Room Cover

#### Dimensional Drawing



## DGL Series Information

MODEL	MOTOR		Cover Type	SIZE											Moving Mass (Kg)	Encoder Resolution Option			
				Carriage Length (A) (mm)	Carriage Mounting Hole (B) (mm)	Base Mounting Hole (C) (mm)	Base Mounting Hole (D) (mm)	Carriage Mounting Hole (E) (mm)	Carriage Mounting Hole (F) (mm)	Module Height (H) (mm)	Module Width (W) (mm)	Module Length (X) (mm)	Hard Stopper Position (Y) (mm)	Effective Stroke (Z) (mm)					
DGL150	AUM2	S2	S	125	37.5	85	125	15	154	63	149	96.5	96.5	96.5	96.5	0.93	DGL150 series AT201=0.1µm AT202=0.2µm AT205=0.5µm AT410=1.0µm AT4sincos=1vpp		
			C						88	57						0.78			
			CR						50	70						1.46			
		S3	S	125					154	63						0.95			
			C						88	57						0.8			
			CR						50	70						1.48			
		S4	S	125					154	63						0.97			
			C						88	57						0.82			
			CR						50	70						1.5			
	ACM1		S30		S	180	47	154	76	125	1.72								
					C			88	70		1.57								
					CR			50	83		2.25								
	L30	S	240	77	154	76	155	2.55											
		C			88	70		2.4											
		CR			50	83		3.08											
	DGL180	AUM3	S2	S	180	47	120	160	26	191	88.7	184	126	126	126	126		2	DGL180/200/250 series R2201=0.1µm R4102=0.2µm R2205=0.5µm RH100=1.0µm R41sincos=1vpp R41sincos=1vpp
				C						115	78							1.25	
				CR						75	94							2.15	
S3			S	240	77					191	88.7						156	2.6	
			C							115	78							1.62	
			CR							75	94							2.92	
S4			S	240	77					191	88.7						156	2.86	
			C							115	78							1.87	
			CR							75	94							3.18	
		ACM1	S50			S	180	47	191	88.7	150	2.45							
						C			115	78		1.7							
						CR			75	94		2.6							
L50		S	240	77	191	88.7	180	3.67											
		C			115	78		2.68											
		CR			75	94		3.99											
DGL200		AUM4	S2	S	180	47	136	175	26	213	91.7	206	130	130	130	130	2.19	DGL200 series R2201=0.1µm R4102=0.2µm R2205=0.5µm RH100=1.0µm R41sincos=1vpp R41sincos=1vpp	
				C						137	83.5						1.46		
				CR						99	99.5						2.82		
	S3		S	240	77					213	91.7						160		2.64
			C							137	83.5								1.89
			CR							99	99.5								3.97
	S4		S	240	77					213	91.7						160		2.94
			C							137	83.5								1.98
			CR							99	99.5								4.37
		ACM1	S80			S	180	47	213	91.7	150	3.21							
						C			137	83.5		2.48							
						CR			99	99.5		3.84							
	L80	S	240	77	213	91.7	180	4.41											
		C			137	83.5		3.45											
		CR			99	99.5		5.84											
	ACM2	S1	S	370	142	77	180	180	3.91										
									S2	245	6.05								
		S1							S1	240	77	5.01							
S2									370	142	6.95								
S2		S1							240	77	5.62								
		S2							370	142	7.25								
DGL250	AUM5	S	370	142	77	166	232	257	120.2	250	250	180	180	180	180	7.97			
									S3							245	7.25		
									S4							245	7.97		
	ACM1	S100	S	180	47	77	166	232	257	100	250	250	156	156	156	156	4.74		
										L100							186	7.09	
										S1							185	10.54	
	ACM4	S1	S	240	77	77	166	232	257	120.2	250	250	185	185	185	185	10.54		
										S1							185	10.54	
										S2							370	142	18.39

## Performance Parameter

Acceleration	G	10
Velocity(1µm resolution)	m/s	5 (40µm scale pitch and 20MHz counter frequency)
Velocity(0.5µm resolution)		2.5 (20µm scale pitch and 20MHz counter frequency)
Velocity(0.1µm resolution)		1.3 (20µm scale pitch and 20MHz counter frequency)
Velocity(Analogue)		8 (40µm scale pitch and 200kHz input frequency) 4 (20µm scale pitch and 200kHz input frequency)
<sup>1</sup> Straightness	µm	±3µm/25mm, NTE±8µm/300mm
<sup>1</sup> Flatness		±3µm/25mm, NTE±8µm/300mm
Repeatability(1µm resolution)		±3µm (40µm scale pitch)
Repeatability(0.5µm resolution)		±1.5µm (20µm scale pitch)
Repeatability(0.1µm resolution)		±1µm (20µm scale pitch)
Repeatability(Analogue)		±5 counts

1. All measurement taken when module is mounted on a 5micron flat granite table.

## Bearing Parameters

Module			Specifications						
			Maximum bearing load	Recommended row moment	Recommended pitch moment	Recommended yaw moment			
			N	Nm	Nm	Nm			
DGL150	AUM2	S2	2480	109	108	108			
		S3							
		S4							
DGL180	ACM1	S30	173	236	355	236			
		L30							
DGL180	AUM3	S2	213	236	355	236			
		S3							
		S4							
	ACM1	S50					236	355	236
		L50							
		S50							
DGL200	AUM4	S2	3944	256	355	236			
		S3							
		S4							
	ACM1	S80					236	355	236
		L80							
		S80							
	ACM2	S1					355	355	355
		S2							
		S2							
	ACM3	S1					355	473	355
		S2							
		S2							
DGL250	AUM5	S2	345	236	355	236			
		S3							
		S4							
	ACM1	S100					236	355	236
		L100							
	ACM4	S1					842	1123	842
		S2							
		S2							

## Part Numbering (Rapid Delivery Series)

Model	Coil Type	<sup>1</sup> Sensor Type	<sup>1</sup> Hall Option	<sup>2</sup> Cable Length (m)	<sup>2</sup> Effective Stroke (mm)	Encoder Option (type)	<sup>3</sup> Cover Option (type)	<sup>4</sup> Rail (type)
DGL 150,180,200,250	Refer to information table	J, K	H9D, NH	3.0	200 – 1200	ATxxx Rxxxx	S, C, CR, B,N	T, B, I

- Sensor Type. J=Thermostat (standard), K=Thermocouple. Hall Option. H9D=DSUB 9 pins (standard), NH=Without hall sensor.
- For customized cable length and stroke length, please contact us (the longest length now is 8000mm).
- Cover Option. S=standard cover, C= conventional cover, B= bellow cover, CR= cleanroom cover, N= no cover.
- Rail. T= THK linear guide, B= Bosch linear guide, I = IKO linear guide. For applications that have specific straightness and flatness requirements, precision class (H\P) is available.

**Example: DGL180-AUM3-S2-J-H9D-3.0-300-R10-S-T**