SGL Series

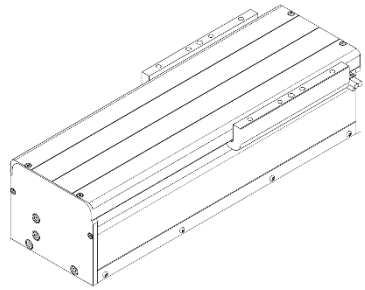
Single Guide Linear Motor Stage

- **Direct drive**
- **Ironless linear motor actuator**
- **High speed and high acceleration**
- **Fast response and quick settling time**
- **Smooth motion at low speed (low velocity)**
- **High Precision**

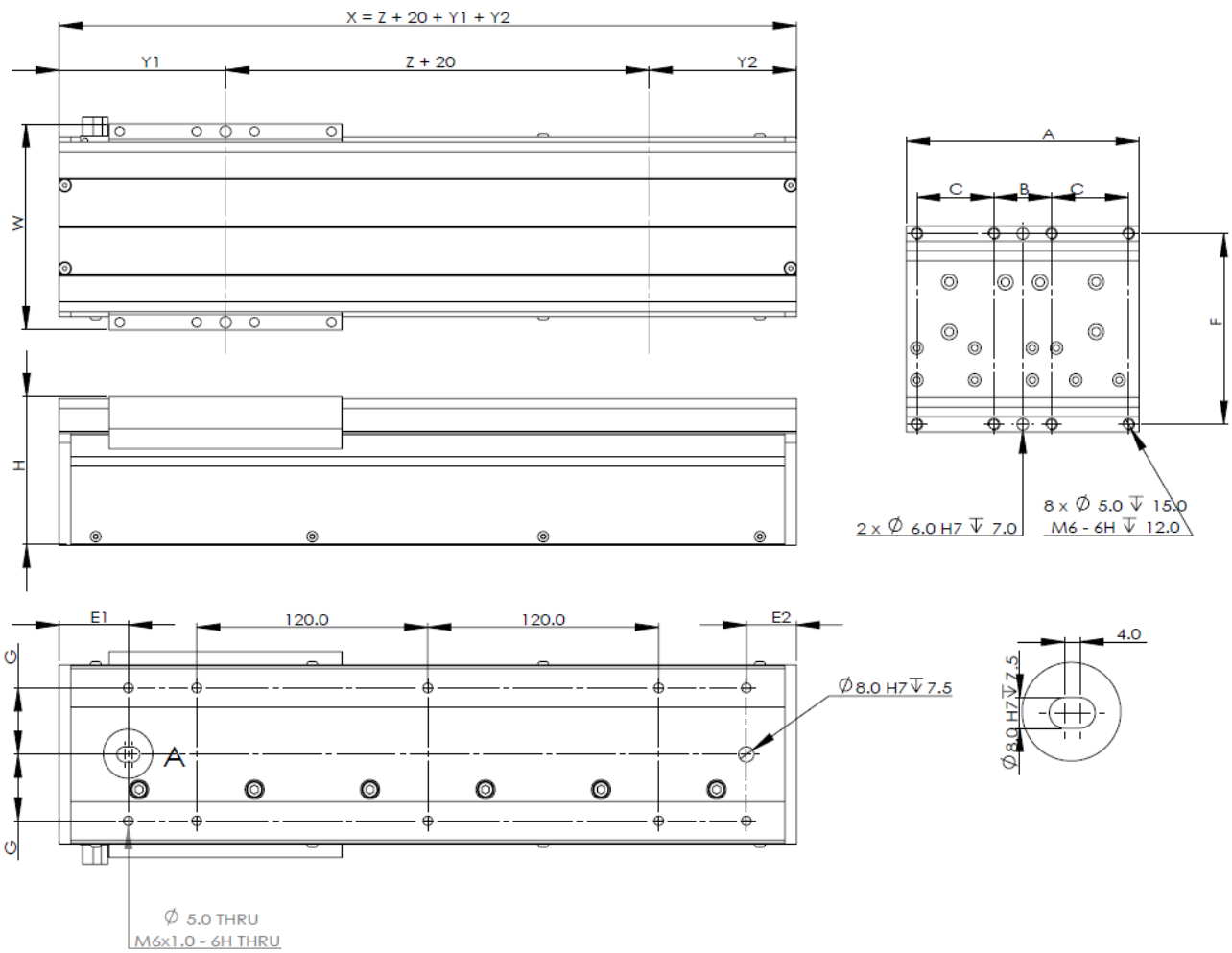
SGL Series

Features

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



SGL Series Dimensional Drawing



SGL Series Information

Model	Motor		Size													Moving Mass (Kg)	Module Mass (Kg)
			Stroke (Z) (mm)	Total Length (X) (mm)	Carriage Length (A) (mm)	Module Height (H) (mm)	Module Width (W) (mm)	Hard Stop Position (Y1) (mm)	Hard Stop Position (Y2) (mm)	Carriage Mounting Holes (B) (mm)	Carriage Mounting Holes (C) (mm)	Carriage Mounting Holes (F) (mm)	Base Mounting Holes (G) (mm)	Base Mounting Holes (E1) (mm)	Base Mounting Holes (E2) (mm)		
SGL80	AUM2	S2	200	383	121	77	107	86.5	76.5	30	40	99	34.5	36	26	0.84	5
			300	483													5.5
			400	583													7.1
			500	683													8.3
			600	783													9.2
			1000	1183													13.1
			1200	1383													14.4
		S3	200	383												0.86	5
			300	483													5.5
			400	583													7.1
			500	683													8.3
			600	783													9.2
			1000	1183													13.1
			1200	1383													14.5
		S4	200	383												0.96	5.1
			300	483													5.6
			400	583													7.2
			500	683													8.4
			600	783													9.3
			1000	1183													13.1
			1200	1383													14.5
SGL100	AUM3	S2	200	407	145	94	132	98.5	88.5	30	40	122	43	36	26	1.5	8.4
			300	507													10.1
			400	607													11.7
			500	707													13.7
			600	807													15.6
			1000	1207													22.3
			1200	1407													26.1
		S3	200	443	181			116.5	106.5	40	50					1.9	9.6
			300	543													10.8
			400	643													12.9
			500	743													14.9
			600	843													16.3
			1000	1243													23.5
			1200	1443													26.5
		S4	200	503	241			146.5	136.5	60	70					2.4	11.1
			300	603													12.5
			400	703													14.4
			500	803													16.4
			600	903													17.8
			1000	1303													24.9
			1200	1503													28.3
SGL120	AUM4	S2	200	411	145	118.5	132	100.5	90.5	30	40			38	28	1.7	11.3
			300	511													14.1
			400	611													16.1
			500	711													18.9
			600	811													21.7
			1000	1211													31.2
			1200	1411													368
		S3	200	447	181			118.5	108.5	40	50					2.3	13.2
			300	547													14.9
			400	647													17.9
			500	747													20.7
			600	847													22.7
			1000	1247													33
			1200	1447													37.8
		S4	200	507	241			148.5	138.5	60	70					2.7	15.1
			300	607													17
			400	707													19.8
			500	807													22.6
			600	907													24.6
			1000	1307													34.9
			1200	1507													39.7

Bearing Parameters

Specifications	Unit	Motors								
		AUM2			AUM3			AUM4		
		S2	S3	S4	S2	S3	S4	S2	S3	S4
Maximum bearing load	N	1360			1560					
Recommended roll moment	Nm	5.2			7.4					
Recommended pitch moment	Nm	103.8			135.4	191.6	285.2	135.4	191.6	285.2
Recommended yaw moment	Nm									

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)
[3]Straightness	µm	±3µm/25mm, NTE±10µm/300mm
[3]Flatness		±3µm/25mm, NTE±10µm/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

Part Numbering (Rapid Delivery Series)

	Motor (type)	Connection Type	Motor Size	Sensor Type	Hall Option	Cable Length (m)	Effective Stroke (mm)	Encoder Option (type)	Encoder Resolution (micron, µ)	Cover Option (type)	Rail (type)
SGL80	AUM2	P, S	S2, S3, S4	K	H9D	3.0	[1]100 – 1200	R22,R41,[4]R10,	0.1, 1.0, 5.0		
SGL100	AUM3										
SGL120	AUM4			J ,K							

1. For customized stroke length (up to 2.7m), please contact us.
2. For applications that have specific straightness and flatness requirements, precision class (P) is available, please contact us for more details.
3. All measurement taken when module is mounted on a 5micron flat granite table.
4. Available for 1um only.

Example : SGL80/100/120-AUM2-S-S2-K-H9D-3.0-300-R10-1.0-S-T