

LML70 SERIES LINEAR MODULE

- ▶ Compact design
- ▶ Self-lubricating linear guide
- ▶ Direct drive technology
- ▶ High precision optical encoder
- ▶ Stackable configuration

EN-24.3 1

Introduction

LML70 series uses linear motor direct drive system. Compact module with dual linear guides, linear motor, encoder feedback, and aluminum housing. It is a high-precision positioning motion.

Continuous Force $F_{cn} = 17.1N$

Peak Force $F_{pk} = 51.3N$

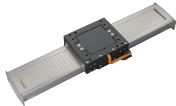
Features

- ▶ Direct-drive, compact design
- ▶ Self-lubricating linear guide
- ▶ Stroke from 200/300mm
- ▶ Repeatability up to $\pm 1\mu m$
- ▶ Resolution of $0.05\mu m$

Applications

The LML70 module is suitable for applications such as sub-micron positioning, optical alignment, and point-to-point high-speed positioning of automation equipment in various industries.

Typical applications include: Imaging systems that perform scanning operations, high-precision placement, semiconductor metrology, and wafer fabrication applications.

Miniature Modules	■ Continuous Force (F_{cn}) ■ Peak Force (F_{pk})						Unit: N	Repeatability (μm)	Page
	10.0	20.0	30.0	40.0	50.0	60.0			
 <p>LML70</p>					17.1		51.3	± 0.5	03

Note:

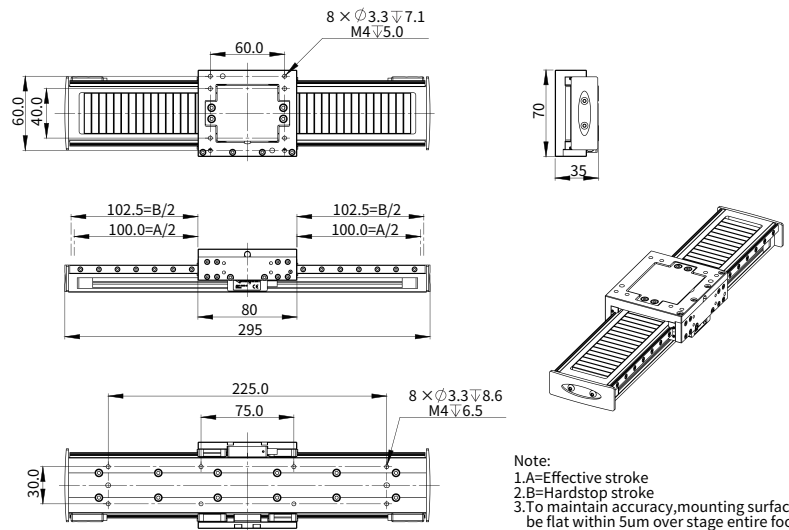
★ Products can be customized to meet specific working environments, please contact cust-service@akribis-sys.com.

LML70 Series

LML70-200

Motor Specifications	Unit	Value
Motor	-	CLA0010-025
Continuous Force(NC)@100°C ¹	N	17.1
Peak Force	N	51.3
Force Constant±10%	N/Arms	8.6
Back EMF Constant ±10%	Vpeak/(m/s)	7.0
Resistance (L-L) @25°C ±10% ²	Ω	5.2
Inductance (L-L) ±30% ³	mH	1.8
Continuous Current (NC) @100°C ¹	Arms	2.0
Peak Current	Arms	6.0
Max. Bus Voltage	Vdc	48.0
Mechanical Specifications	Unit	Value
Stroke	mm	200
Resolution	μm	0.05
Repeatability	μm	±1.0
Horizontal Straightness	μm	±3.0
Vertical Straightness	μm	±3.5
Rated Payload ⁴	kg	3.0
No-load Moving Mass	kg	0.3
No-load Total Mass	kg	1.5
Max. Allowable Roll Moment	Nm	3.0
Max. Allowable Pitch Moment	Nm	4.0
Max. Allowable Yaw Moment	Nm	4.0

Dimensional Drawing



¹ Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling.

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

³ Inductance is measured by current frequency of 1kHz.

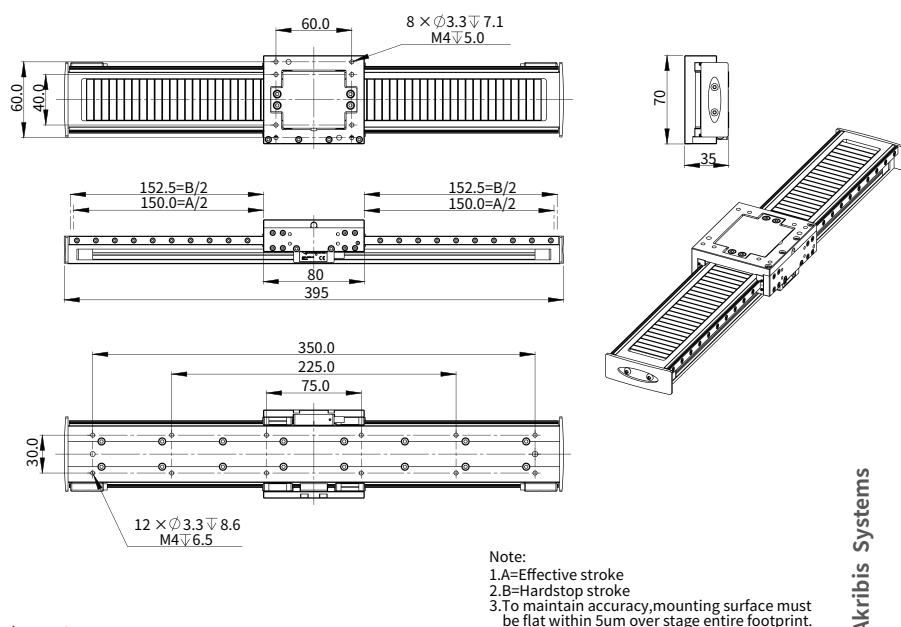
⁴ Load capacity of module without cantilever.

The contents of datasheet are subject to change without prior notice.

LML70-300

Motor Specifications	Unit	Value
Motor	-	CLA0010-025
Continuous Force(NC)@100°C ¹	N	17.1
Peak Force	N	51.3
Force Constant±10%	N/Arms	8.6
Back EMF Constant ±10%	Vpeak/(m/s)	7.0
Resistance (L-L) @25°C ±10% ²	Ω	5.2
Inductance (L-L) ±30% ³	mH	1.8
Continuous Current (NC) @100°C ¹	Arms	2.0
Peak Current	Arms	6.0
Max. Bus Voltage	Vdc	48.0
Mechanical Specifications	Unit	Value
Stroke	mm	300
Resolution	μm	0.05
Repeatability	μm	±1.0
Horizontal Straightness	μm	±3.0
Vertical Straightness	μm	±3.5
Rated Payload ⁴	kg	3.0
No-load Moving Mass	kg	0.3
No-load Total Mass	kg	1.9
Max. Allowable Roll Moment	Nm	3.0
Max. Allowable Pitch Moment	Nm	4.0
Max. Allowable Yaw Moment	Nm	4.0

Dimensional Drawing



¹ Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling.

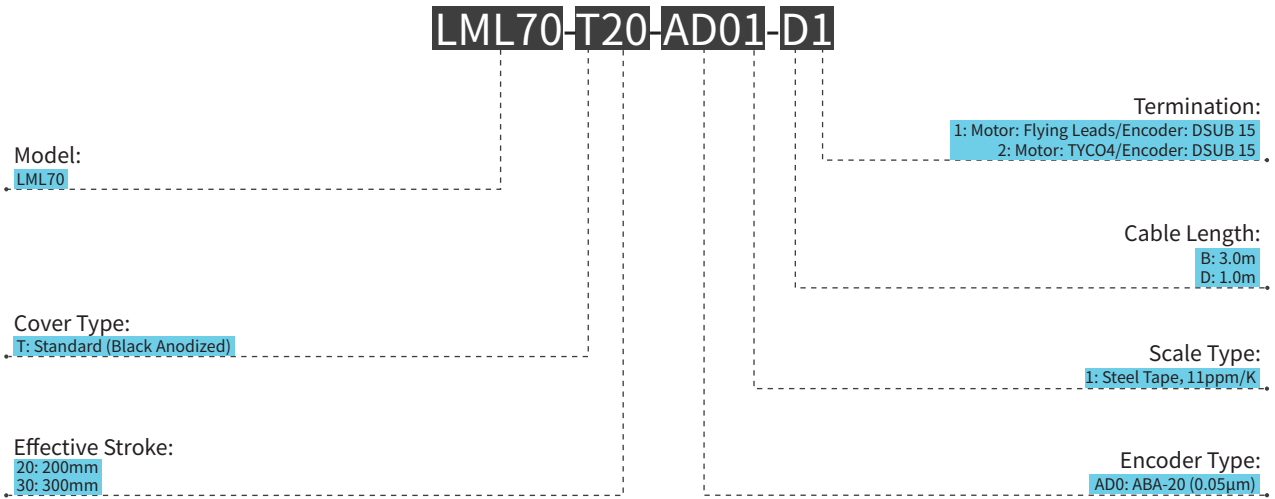
² Resistance is measured by DC current with 0.5m cable.

³ Inductance is measured by current frequency of 1kHz.

⁴ Load capacity of module without cantilever.

The contents of datasheet are subject to change without prior notice.

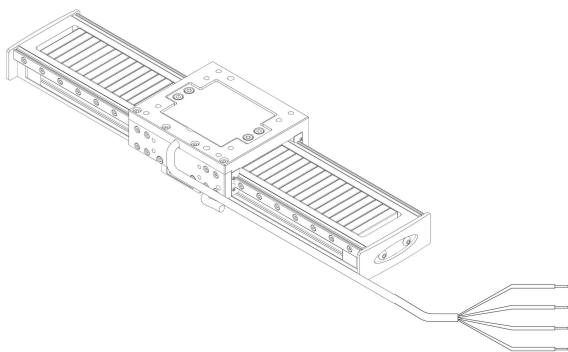
Ordering Part Number (OPN)



Note:

★ Default mounting orientation for this module is horizontal. For other mounting orientations, please contact cust-service@akribis-sys.com.

Motor Cable Connection Diagram



PIN	DESCRIPTION	COLOR
1	M1	Black
2	M2	Grey
3	M3	Blue
4	PE	Yellow