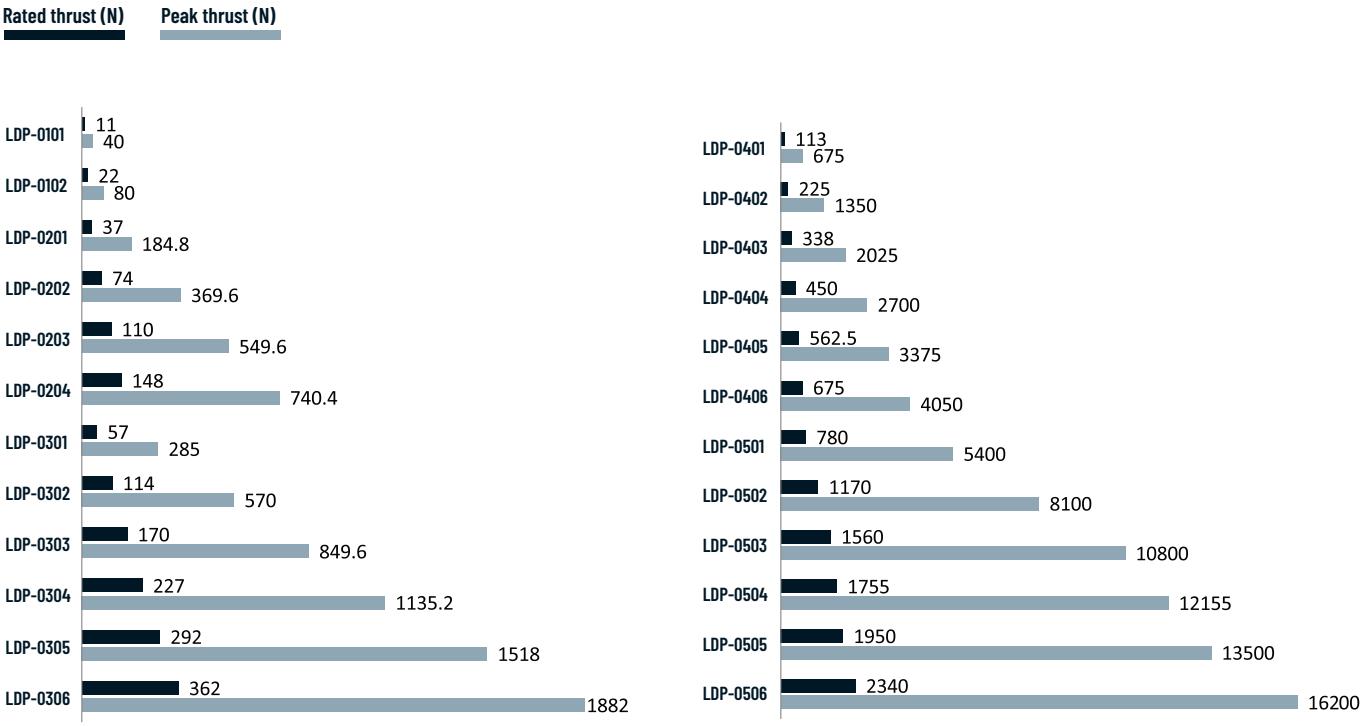
LD SERIES

CORELESS LINEAR MOTOR

Features of coreless U-type linear motor:

1. No iron core
2. No inlay design
3. Density ratio of low mass and high thrust
4. Suitable for ultra-high acceleration and high speed
5. Low heat effect

THRUST MAP OF WATER-COOLED FLAT PANEL LINEAR MOTOR SERIES



NAMING RULE:

LSP-0101W

PRODUCT CATEGORY
L: Linear Motor

MOTOR DESIGN
S: Single side plate (iron core)
D: Double side plate (coreless)
M: Mavilor design

COMPONENT CODE
P: Primary (rotor)
S: Secondary (stator)

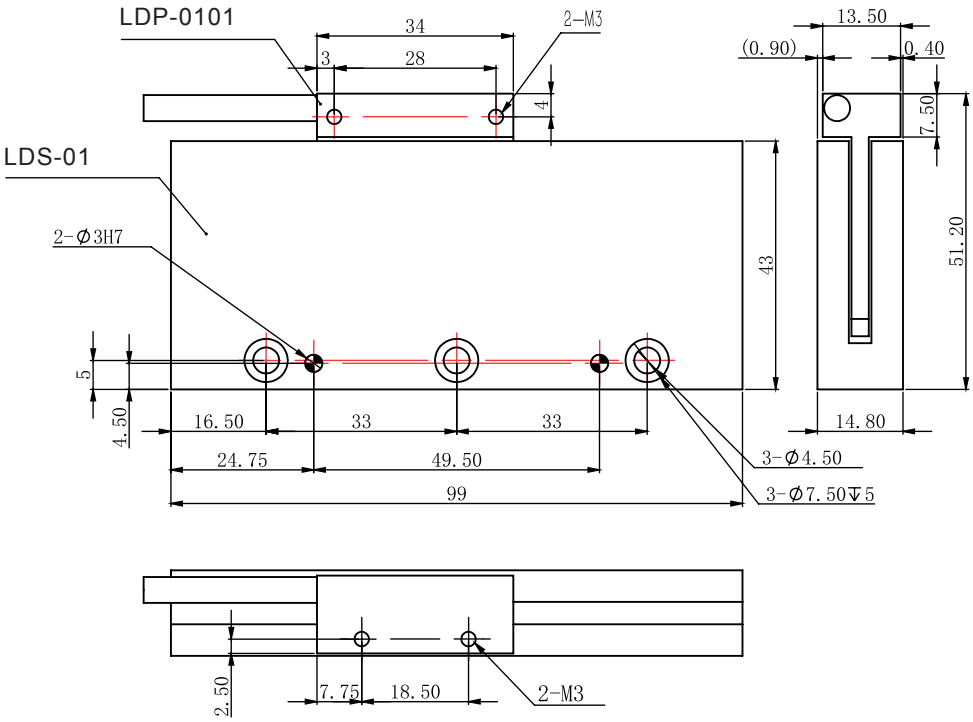
COOLING METHOD
W: Water
O: Oil
Omitted: No specific cooling

LENGTH CODE
01 | 02 | 03 | ...

WIDTH CODE
01 | 02 | 03 | ...

LD-0101

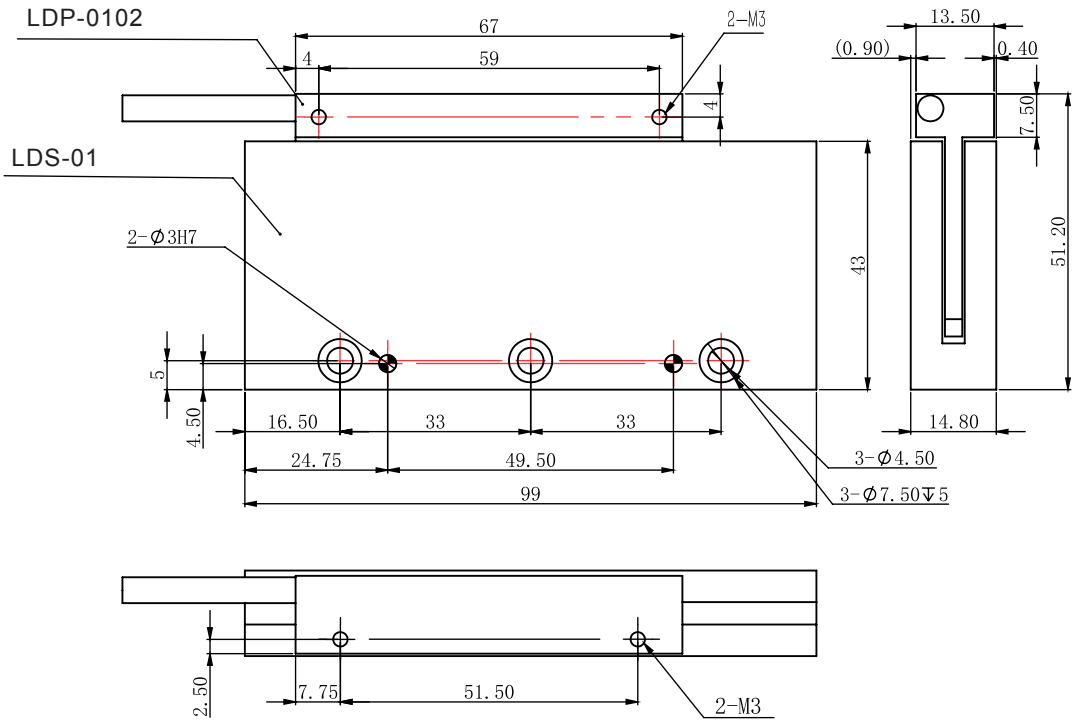
CORELESS LINEAR MOTOR



LD-0101		
parameter	**Unit**	**LDP-0101**
Sustained thrust	N	11
Peak thrust	N	40
Motor constant	N/vW	6.4
Continuous power	W	12.1
Polar pair distance	mm	16.5
Continuous current	Arms	1.1
peak current	Arms	4
force constant	N/Arms	10
Back EMF constant	Vs/m	5.7
25℃ Resistance @25℃	Ohms	7.3
inductance	mH	0.8
Electrical time constant	ms	0.11
Maximum coil temperature	℃	120
Primary quality	kg	0.03
Primary length	mm	34
Secondary mass (per meter)	kg	3.3
Magnetic attraction	kN	0
Secondary model		LMUS-01
Secondary optional length	mm	66、99、132、264

LD-0102

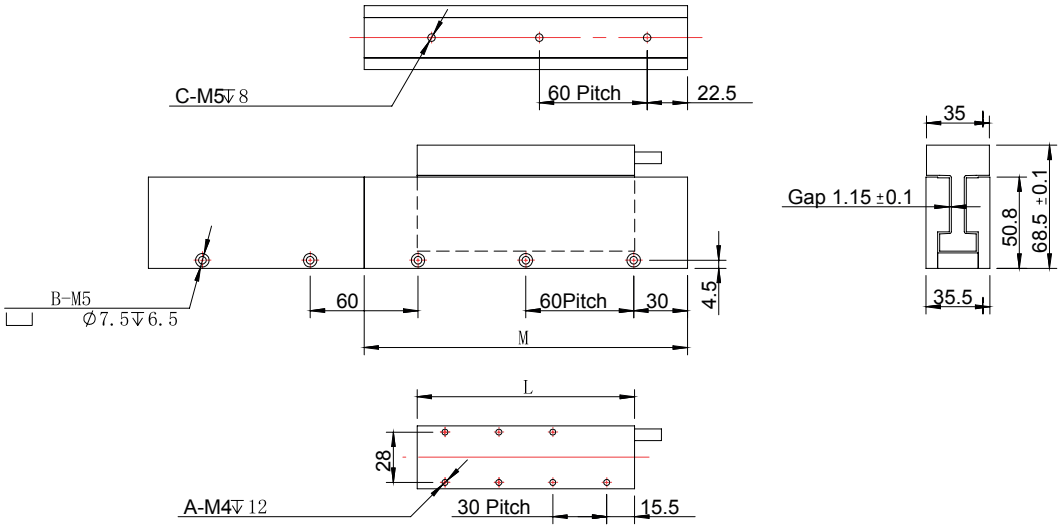
CORELESS LINEAR MOTOR



LD-0102		
parameter	**Unit**	**LDP-0102**
Sustained thrust	N	22
Peak thrust	N	80
Motor constant	N/vW	4.6
Continuous power	W	23.2
Polar pair distance	mm	16.5
Continuous current	Arms	1.9
peak current	Arms	7
force constant	N/Arms	11.5
Back EMF constant	Vs/m	6.6
@25℃ Resistance @25℃	Ohms	3.7
inductance	mH	0.4
Electrical time constant	ms	0.11
Maximum coil temperature	℃	120
Primary quality	kg	0.06
Primary length	mm	67
Secondary mass (per meter)	kg	3.3
Magnetic attraction	kN	0
Secondary model		LMUS-01
Secondary optional length	mm	66、99、132、264

LD-02

CORELESS LINEAR MOTOR



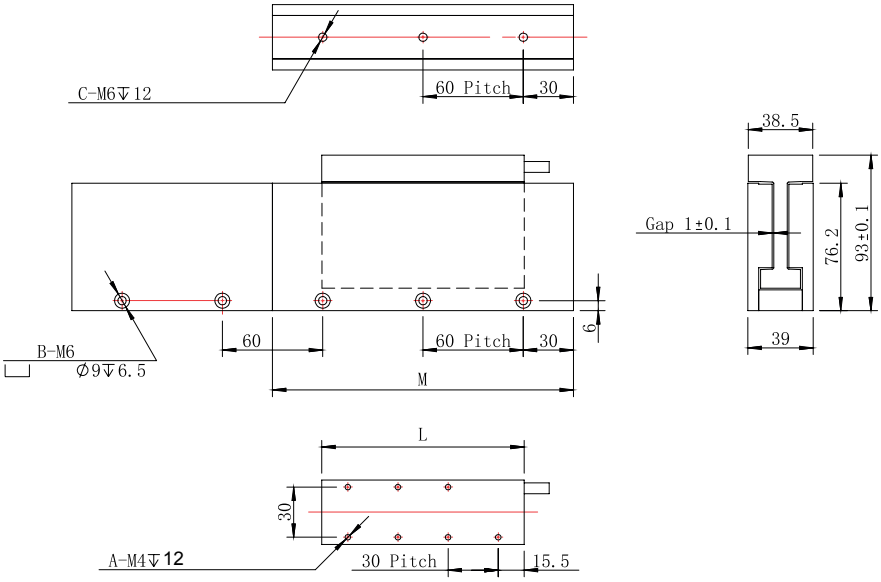
LD-02	(LMP-02)	
	L	A
LDP-0201	61	3
LDP-0202	121	7
LDP-0203	181	11
LDP-0204	241	15

LD-02	(LDS-02)		
	M	B	C
LDS-0201	120	2	2
LDS-0202	180	3	3
LDS-0203	240	4	4
LDS-0204	300	5	5

LD-02					
parameter	Unit	LDP-0201	LDP-0202	LDP-0203	LDP-0204
Sustained thrust	N	37	74	110	148
Peak thrust	N	184.8	369.6	549.6	740.4
Motor constant	N/vW	8.2	11.6	14.1	16.1
Continuous power	W	20.4	40.9	61.3	84.9
Polar pair distance	mm	60	60	60	60
Continuous current	Arms	2.4	2.4	2.4	2.4
peak current	Arms	12	12	12	12
force constant	N/Arms	15.4	30.8	45.8	61.7
Back EMF constant	Vs/m	8.9	17.8	26.4	35.6
@25℃ Resistance @25℃	Ohms	2.5	5	7.5	10
inductance	mH	1.7	3.4	5.1	6.8
Electrical time constant	ms	0.7	0.7	0.7	0.7
Maximum coil temperature	℃	120	120	120	120
Primary quality	kg	0.24	0.48	0.72	0.96
Primary length	mm	61	121	184	241
Secondary mass (per meter)	kg	9			
Magnetic attraction	kN	0			
Secondary model		LDS-02			
Secondary optional length	mm	120、180、240、300			

LD-03

CORELESS LINEAR MOTOR



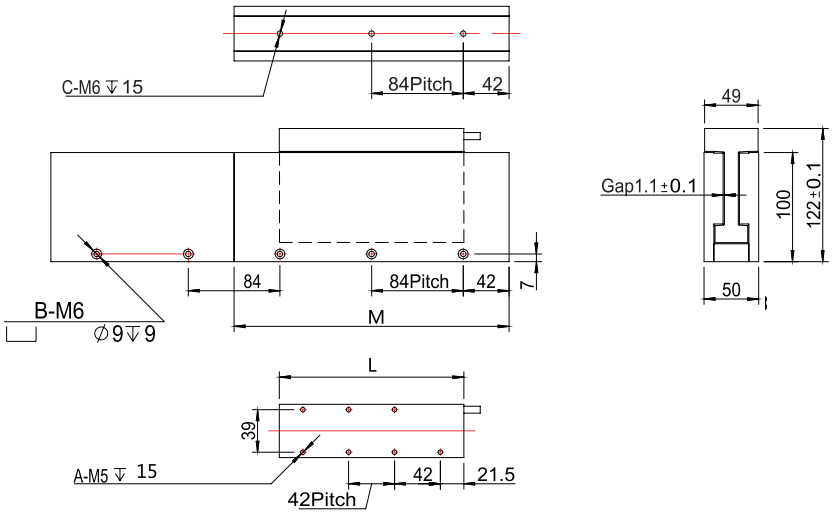
LD-03	(LMP-03)	
	L	A
LDP-0301	61	3
LDP-0302	121	7
LDP-0303	181	11
LDP-0304	241	15

LD-03	(LDS-03)		
	M	B	C
LDS-0301	120	2	2
LDS-0302	180	3	3
LDS-0303	240	4	4
LDS-0304	300	5	5

LD-03					
parameter	Unit	LDP-0301	LDP-0302	LDP-0303	LDP-0304
Sustained thrust	N	57	114	170	227
Peak thrust	N	285	570	849.6	1135.2
Motor constant	N/vW	10.3	14.6	17.7	21.4
Continuous power	W	30.7	61.3	92	122.7
Polar pair distance	mm	60	60	60	60
Continuous current	Arms	2.4	2.4	2.4	2.4
peak current	Arms	12	12	12	12
force constant	N/Arms	23.75	47.5	70.8	94.6
Back EMF constant	Vs/m	13.7	27.4	40.9	54.6
@25℃ Resistance @25℃	Ohms	3.9	7.8	11.7	15.6
inductance	mH	3.4	6.8	10.2	13.6
Electrical time constant	ms	0.9	0.9	0.9	0.9
Maximum coil temperature	℃	120	120	120	120
Primary quality	kg	0.3	0.6	0.9	1.2
Primary length	mm	61	121	181	241
Secondary mass (per meter)	kg	15			
Magnetic attraction	kN	0			
Secondary model		LDS-03			
Secondary optional length	mm	120、180、240、300			

LD-04

CORELESS LINEAR MOTOR



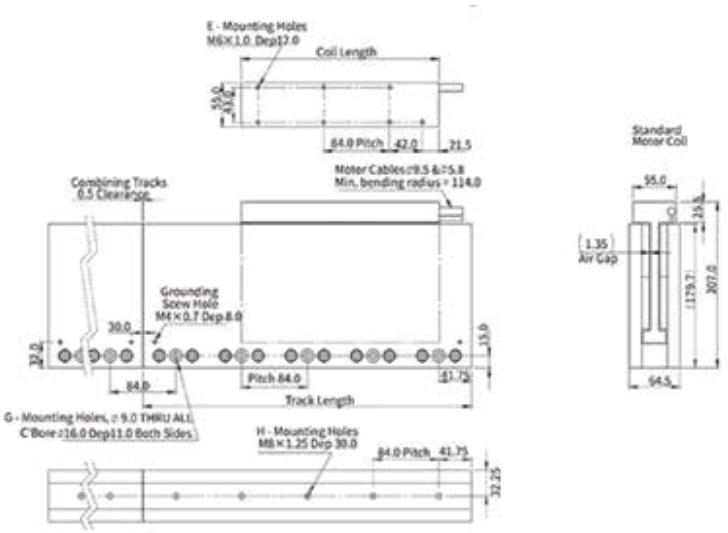
LD-04	(LMP-04)	
	L	A
LDP-0401	85	3
LDP-0402	169	7
LDP-0403	253	11
LDP-0404	337	15
LDP-0405	421	19
LDP-0406	505	23

LD-04	(LDS-04)		
	M	B	C
LDS-0401	168	2	2
LDS-0402	252	3	3
LDS-0403	336	4	4
LDS-0404	420	5	5

LD-04							
parameter	Unit	LDP-0401	LDP-0402	LDP-0403	LDP-0404	LDP-0405	LDP-0406
Sustained thrust	N	113	225	338	450	562.5	675
Peak thrust	N	675	1350	2025	2700	3375	4050
Motor constant	N/vW	17.5	24.6	30.2	34.8	38.9	42.6
Continuous power	W	41.8	83.6	125.4	167.2	209	250.8
Polar pair distance	mm	84	84	84	84	84	84
Continuous current	Arms	2.5	2.5	2.5	2.5	2.5	2.5
peak current	Arms	15	15	15	15	15	15
force constant	N/Arms	45	90	135	180	225	270
Back EMF constant	Vs/m	26.0	52.0	78.0	104.0	130.0	156.0
@25℃ Resistance @25℃	Ohms	4.9	9.8	14.7	19.6	24.5	29.4
inductance	mH	9.8	19.6	29.4	39.2	49	58.8
Electrical time constant	ms	2	2	2	2	2	2
Maximum coil temperature	℃	120	120	120	120	120	120
Primary quality	kg	0.9	1.7	2.5	3.3	4.1	4.9
Primary length	mm	85	169	253	337	421	505
Secondary mass (per meter)	kg	25					
Magnetic attraction	kN	0					
Secondary model		LDS-04					
Secondary optional length	mm	168、252、336、420					

LD-05

CORELESS LINEAR MOTOR

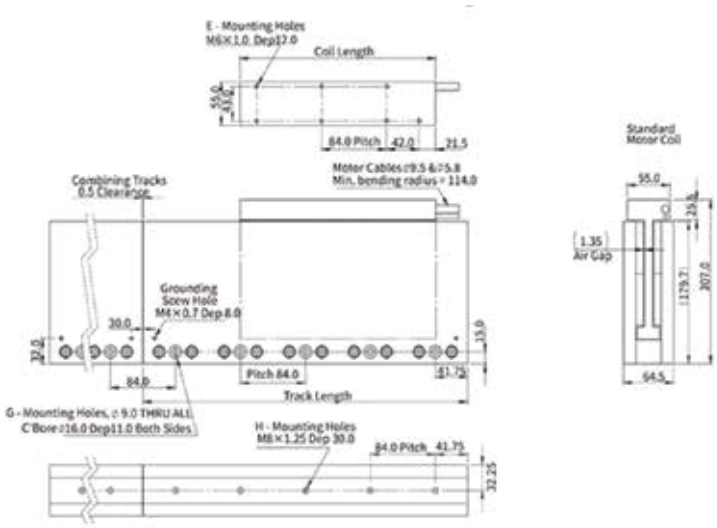


Primary model	L	A
LDP-0501	337	9
LDP-0502	505	13
LDP-0503	673	17
LDP-0504	757	19
LDP-0505	841	21
LDP-0506	1009	25

Primary model	LDP-0501	LDP-0502	LDP-0503	LDP-0504	LDP-0505	LDP-0506
Continuous thrust	780	1170	1560	1755	1950	2340
Peak thrust	5400	8100	10800	12155	13500	16200
Motor constant	50	61.2	71.9	75	79.1	86.6
Peak Continuous Loss Power	314	470	606	706	784	941
Continuous Current	10.4	15.6	10.4	15.6	13	15.6
Peak Current	72	108	72	108	90	108
thrust Constant	75	75	150	112.5	150	150
Back EMF constant	61.2	61.2	122.5	91.9	122.5	122.5
Line resistance 20 °C (Ω)	1.5	1	2.9	1.5	2.4	2
Line inductance (mH)	2.65	1.77	5.3	2.65	4.24	3.53
Peaktemperature	130	130	130	130	130	130
Pole width (N-N)	84	84	84	84	84	84
Mass of primary	4.5	6.75	9	10.13	11.25	13.5
Standard cable length (M)	1	1	1	1	1	1

LD-05W

CORELESS LINEAR MOTOR



Primary model	L	A
LDP-0501	337	9
LDP-0502	505	13
LDP-0503	673	17
LDP-0504	757	19
LDP-0505	841	21
LDP-0506	1009	25

Primary model	LDP-0501	LDP-0502	LDP-0503	LDP-0504	LDP-0505	LDP-0506
Continuous thrust	780	1170	1560	1755	1950	2340
Peak thrust	5400	8100	10800	12155	13500	16200
Motor constant	50	61.2	71.9	75	79.1	86.6
Peak Continuous Loss Power	314	470	606	706	784	941
Continuous Current	10.4	15.6	10.4	15.6	13	15.6
Peak Current	72	108	72	108	90	108
thrust Constant	75	75	150	112.5	150	150
Back EMF constant	61.2	61.2	122.5	91.9	122.5	122.5
Line resistance 20 °C (Ω)	1.5	1	2.9	1.5	2.4	2
Line inductance (mH)	2.65	1.77	5.3	2.65	4.24	3.53
Peaktemperature	130	130	130	130	130	130
Pole width (N-N)	84	84	84	84	84	84
Mass of primary	4.5	6.75	9	10.13	11.25	13.5
Standard cable length (M)	1	1	1	1	1	1