



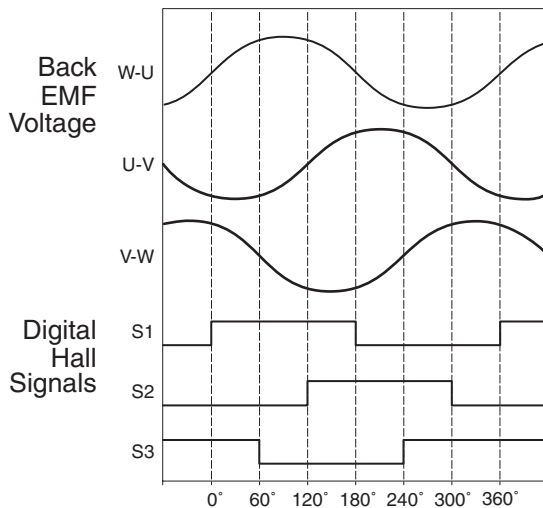
## Specifications LZ-050-T-XXX

Performance Parameters	Symbol	Units	LZ-050-T-120				LZ-050-T-240				LZ-050-T-360				LZ-050-T-480			
Continuous Force <sup>1,5,6,7</sup>	$F_{cTmax}$	N (lbf)	121 (27)				243 (55)				364 (82)				486 (109)			
Peak Force <sup>2</sup>	$F_p$	N (lbf)	607 (136)				1214 (273)				1821 (409)				2428 (546)			
Motor Constant <sup>1</sup>	$K_M$	$\frac{N}{\sqrt{-W}}$ ( $\frac{lbf}{\sqrt{-W}}$ )	12.6 (2.8)				17.9 (4.0)				21.9 (4.9)				25.3 (5.7)			
Thermal Resistance	$R_{th}$	°C/W	1.19				0.60				0.40				0.30			
Max Power Dissipation	$P_{cTmax}$	W	92				185				277				369			
Maximum Applied Bus Voltage <sup>8</sup>	$V_{DC}$	Volts	325				325				325				325			
Electrical Cycle Length	$E_c$	mm	60				60				60				60			
Electrical Time Constant	$\tau_e$	msec	1.9				1.9				1.9				1.9			
Maximum Coil Temperature	$T_{max}$	°C	130				130				130				130			
Winding Type			D	E	F	G	D	E	F	G	D	E	F	G	D	E	F	G
Force Constant <sup>1</sup>	$K_F$	$\frac{N/A_{pk}}{(lbf/A_{pk})}$	40.2 (9.0)	N/A	23.2 (5.2)	N/A	40.2 (9.0)	80.4 (18.1)	23.2 (5.2)	46.4 (10.4)	40.2 (9.0)	120.5 (27.1)	23.2 (5.2)	69.6 (15.6)	40.2 (9.0)	80.4 (18.1)	N/A	46.4 (10.4)
Back EMF Constant p-p <sup>3,4</sup>	$K_e$	$\frac{V_p/m/s}{(V_p/in/s)}$	47.4 (1.2)	N/A	27.4 (0.7)	N/A	47.4 (1.2)	94.9 (2.4)	27.4 (0.7)	54.8 (1.4)	47.4 (1.2)	142.3 (3.6)	27.4 (0.7)	82.2 (2.1)	47.4 (1.2)	94.9 (2.4)	N/A	54.8 (1.4)
Peak Current <sup>2,4</sup>	$I_p$	$A_{pk}$ ( $A_{rms}$ )	15.1 (10.7)	N/A	26.2 (18.5)	N/A	30.2 (21.4)	15.1 (10.7)	52.3 (37.0)	26.2 (18.5)	45.3 (32.0)	15.1 (10.7)	78.5 (55.5)	26.2 (18.5)	60.4 (42.7)	30.2 (21.4)	N/A	52.3 (37.0)
Continuous Current <sup>1,4,5,6</sup>	$I_{cTmax}$	$A_{pk}$ ( $A_{rms}$ )	3.0 (2.1)	N/A	5.2 (3.7)	N/A	6.0 (4.3)	3.0 (2.1)	10.5 (7.4)	5.2 (3.7)	9.1 (6.4)	3.0 (2.1)	15.7 (11.1)	5.2 (3.7)	12.1 (8.5)	6.0 (4.3)	N/A	10.5 (7.4)
Resistance p-p <sup>3</sup> @20°C	$R_{20}$	ohm	9.42	N/A	3.14	N/A	4.71	18.83	1.57	6.28	3.14	28.25	1.05	9.42	2.35	9.42	N/A	3.14
Inductance p-p <sup>3</sup>	$L$	mH	18	N/A	6	N/A	9	35.31	3	11.77	5.88	52.96	1.96	17.65	4.41	17.65	N/A	5.88
Mechanical Parameters																		
Magnetic Attraction	$F_a$	N (lbf)	0 (0)				0 (0)				0 (0)				0 (0)			
Coil Mass	$M_c$	kg (lb <sub>m</sub> )	0.91 (2.01)				1.71 (3.77)				2.50 (5.52)				3.30 (7.28)			
Magnetic Channel Mass	$M_n$	kg/m (lb/in)	15.77 (0.88)				15.77 (0.88)				15.77 (0.88)				15.77 (0.88)			

**Notes:** Motor performance specifications are with sinusoidal commutation.

- Continuous forces, motor constant and currents listed are with coils at maximum temperature 130°C, mounted to a heat sink that is equivalent to an aluminum slide 25.4mm (1.0") thick with the following areas: 120 coil 774cm<sup>2</sup> (120in<sup>2</sup>), 240 coil 1160cm<sup>2</sup> (180in<sup>2</sup>), 360 coil 1680cm<sup>2</sup> (260 in<sup>2</sup>), 480 coil 2060cm<sup>2</sup> (320 in<sup>2</sup>).
- Calculated at 4% duty cycle with a maximum on time of 1 second.
- All winding parameters listed are measured line-to-line (phase-to-phase).
- All currents and voltages are measured 0-peak of the sine wave unless noted rms.
- Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
- For stand still conditions multiply continuous force and continuous current by 0.9.
- Coil mountings on either of the two narrow sides reduces continuous force by 10%.
- Maximum cable length 10 meters. Please consult factory concerning applications requiring longer cables  
All specifications are ±10%. Phase-to-phase inductance is ±30%.

### Motor Phasing Diagram



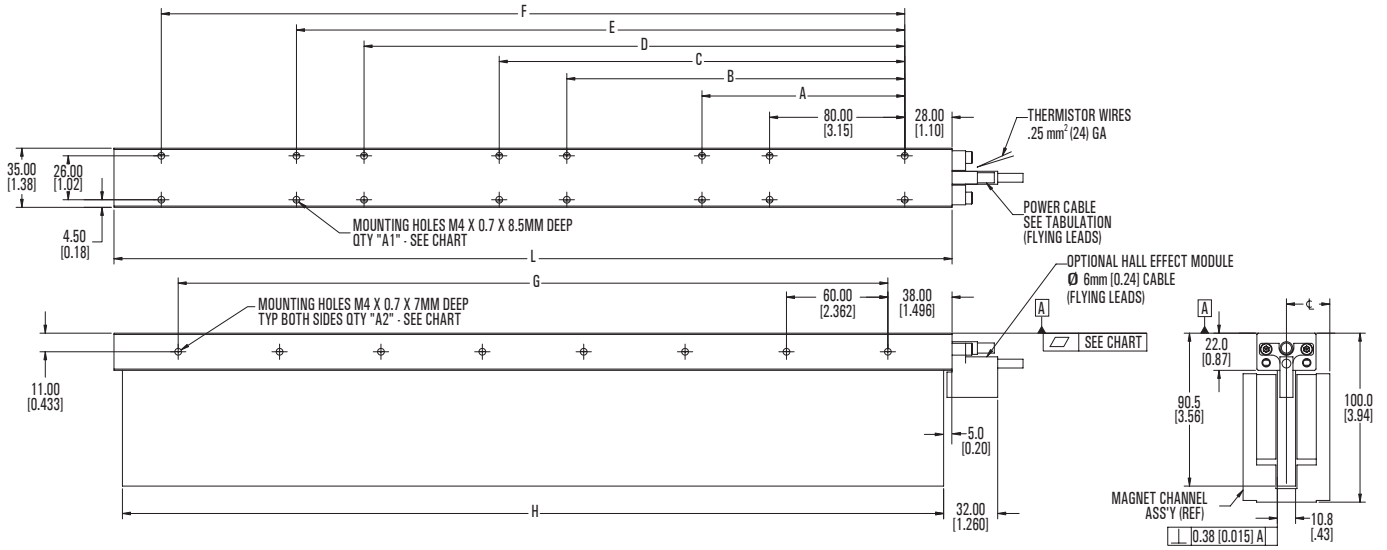
Note: Phasing direction is coil moving towards motor power cable

### Dimensions mm [in]

Size	Winding Code	Power Cable Dia.	Gauge
050-120	D F	φ6.1 (.24)	0.75mm <sup>2</sup> (18)
050-240	D E F G	φ6.1 (.24)	0.75mm <sup>2</sup> (18)
050-360	D E F G	φ6.1 (.24)	0.75mm <sup>2</sup> (18)
050-480	D E G	φ6.1 (.24)	0.75mm <sup>2</sup> (18)

# Coil Assembly LZ-050-T-XXX

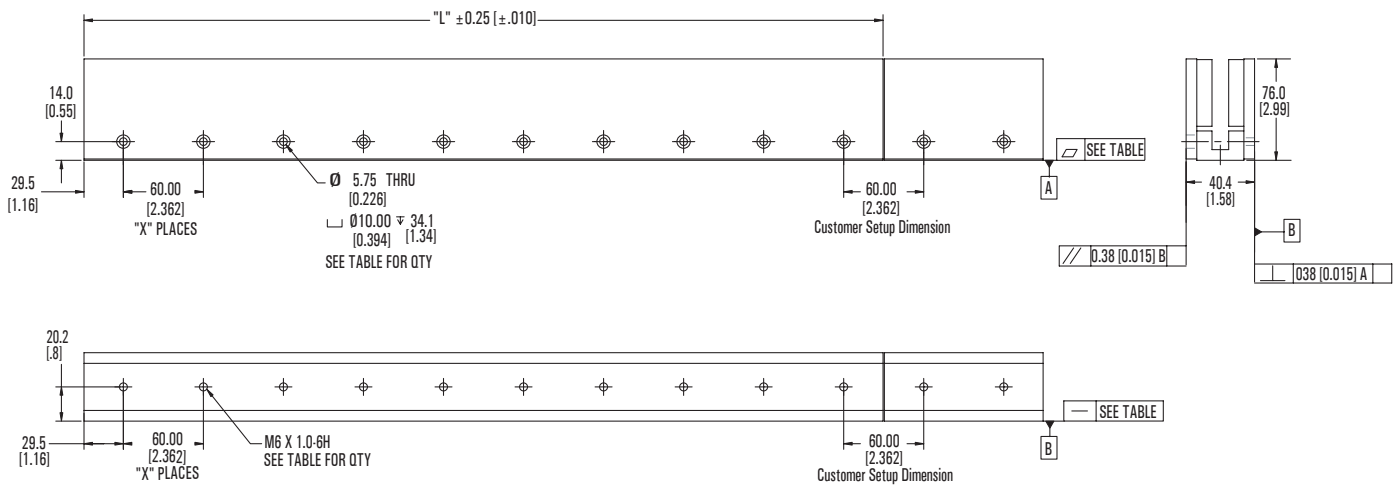
Dimensions mm [in]



Coil												
Size	L	A	B	C	D	E	F	G	H	A1 QTY	A2 QTY	Flatness A
050-120	136.00 (5.35)	---	---	---	---	---	---	60.00 (2.362)	126.0 (4.96)	4	3	0.25 (.010)
050-240	256.00 (10.08)	120.00 (4.724)	200.00 (7.874)	---	---	---	---	180.00 (7.087)	246.0 (9.69)	8	5	0.25 (.010)
050-360	376.00 (14.80)	120.00 (4.724)	200.00 (7.874)	240.00 (9.449)	320.00 (12.598)	---	---	300.00 (11.811)	366.0 (14.41)	12	7	0.38 (.015)
050-480	496.00 (19.53)	120.00 (4.724)	200.00 (7.874)	240.00 (9.449)	320.00 (12.598)	360.00 (14.173)	440.00 (17.323)	420.00 (16.535)	486.0 (19.13)	16	9	0.64 (.025)

Magnet Channel					
Size	L	X	Hole Qty	—	▨
-120	119.0 (4.69)	1	2	0.13 (.005)	0.13 (.005)
-180	179.0 (7.05)	2	3	0.13 (.005)	0.13 (.005)
-240	239.0 (9.41)	3	4	0.13 (.005)	0.13 (.005)
-480	479.0 (18.86)	7	8	0.26 (.010)	0.26 (.010)
-600	599.0 (23.58)	9	10	0.26 (.010)	0.26 (.010)

# Magnet Channel LZM-050-T-XXX



Tolerances

Metric	English
.x ± .25	[.xx] ± .01
.xx ± .13	[.xxx] ± .005