

138 Iron Core Linear Motor Double Parallel		Connection Specification			
General Motor Specifications	UNITS	Dash #	4	8	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		598	1196	1794
	Lbf		134	269	403
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		254	508	762
	Lbf		57	114	171
Max Operating Temperature	°C		125	125	125
Maximum Temp. Rise	°C		105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		1.04	2.08	3.12
Coil Resistance (6 lead @ Max. °C)	Ω		1.47	2.94	4.41
Inductance @ 1kHz	mH		1	2	3
Thermal Resistance (Bracket Top Mount)	°C/W		0.14	0.07	0.05
Continuous Power Top Mount (Max. °C)	W		737	1474	2211
Continuous Power, top mount to plate**(Max. °C)	W		367	734	1101
Motor Constant	lb _f /sqrt(W)		0.9	1.3	1.5
	N/sqrt(W)		3.9	5.6	6.8
Peak Power (Max. °C, 10% Duty)	W		7368	14737	22105
Electrical Time Constant (@ 25°C)	ms		0.9	0.9	0.9
Maximum Line to Line Voltage	Vrms		670	670	670
Coil Weight	Pounds		1.8	3.7	5.6
	Kilograms		0.8	1.7	2.5
Coil length (inside magnet track without HED)	inch		9.61	19.21	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		244	488	732
Delta Connected Specifications	UNITS	Dash #	4	8	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		5.7	11.5	17.2
	lb _f /A		1.3	2.6	3.9
Force Constant using 1mm[.04"] clearance gap	N/A		5.3	10.6	15.8
	lb _f /A		1.2	2.4	3.6
Phase Resistance (Δ @ 25°C)	Ω		0.7	1.4	2.1
Phase Resistance (Δ @ Max. °C)	Ω		1.0	2.0	2.9
Inductance @ 1kHz	mH		0.6	1.2	1.8
Continuous Force using 0.5mm[.02"] clearance gap	N		106.8	213.6	320.4
	lb _f		24.0	48.0	72.0
Continuous Force using 1.0mm[.04"] clearance gap	N		98.3	196.5	294.8
	lb _f		22.1	44.2	66.3
Continuous Current	A		18.6	18.6	18.6
Peak Force* using 0.5mm[.02"] clearance gap	N		498	996	1494
	lb _f		112	224	336
Peak Force* using 1.0mm[.04"] clearance gap	N		458	916	1374
	lb _f		103	206	309
Peak Current*	A		86.7	86.7	86.7
Continuous Force, aluminum plate heat sink** (see below)	N		111.1	222.2	333.4
	lbf		25.0	50.0	74.9
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		5.7	11.5	17.2
	V/in/s		0.1	0.3	0.4
WYE connected Specifications	UNITS	Dash #	4	8	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		9.9	19.9	29.8
	lb _f /A		2.2	4.5	6.7
	N/A		9.2	18.3	27.5
Force Constant using 1.0mm[.04"] clearance gap	lb _f /A		2.1	4.1	6.2
Phase Resistance (Ψ @ 25°C)	Ω		2.1	4.2	6.2
Phase Resistance (Ψ @ Max. °C)	Ω		2.9	5.9	8.8
Inductance @ 1kHz	mH		1.8	3.6	5.4
Continuous Force using 0.5mm[.02"] clearance gap	N		106.8	213.6	320.4
	lb _f		24.0	48.0	72.0
Continuous Force using 0.5mm[.02"] clearance gap	N		98.3	196.5	294.8
	lb _f		22.1	44.2	66.3
Continuous Current	A		10.74	10.74	10.74
Peak Force* using 0.5mm[.02"] clearance gap	N		498	996	1494
	lb _f		112	224	336
Peak Force* using 1.0mm[.04"] clearance gap	N		458	916	1374
	lb _f		103	206	309
Peak Current*	A		50.1	50.1	50.1
Continuous Force, aluminum plate heat sink** (see below)	N		111.1	222.2	333.4
	lbf		25.0	50.0	74.9
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		9.9	19.9	29.8
	V/inch/s		0.3	0.5	0.8

* Notes:

Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.
 On time of "Peak Power" (duration) less than 1 second at peak current listed.
 Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.
 Electrical cycle length is mm. Skewed Track Cogging force estimated at 45N.
 Resistance Specifications do not include the cable resistance.
 Cogging force due to magnet saliency is about 45N
 Custom cable required for peak current exceeding 50 ampere.
 Magnet track maximum environment temperature is 50 Deg. C.
 Cable adds 0.01Ω/m
 Shaded columns represent "Special models."
 ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25°C free air using 0.5mm (.02") clearance gap.
 Magnet track weight 2KG/m (1.35lb/ft)

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General Motor Specifications	UNITS	Dash #	4	8	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		598	1196	1794
	Lbf		134	269	403
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		254	508	762
	Lbf		57	114	171
Max Operating Temperature	°C		125	125	125
Maximum Temp. Rise	°C		105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		1.04	2.08	3.12
Coil Resistance (6 lead @ Max. °C)	Ω		1.47	2.94	4.41
Inductance @ 1kHz	mH		1	2	3
Thermal Resistance (Bracket Top Mount)	°C/W		0.14	0.07	0.05
Continuous Power Top Mount (Max. °C)	W		737	1474	2211
Continuous Power, top mount to plate**(Max. °C)	W		367	734	1101
Motor Constant	lb _f /sqrt(W)		0.9	1.3	1.5
	N/sqrt(W)		3.9	5.6	6.8
Peak Power (Max. °C, 10% Duty)	W		7368	14737	22105
Electrical Time Constant (@ 25°C)	ms		0.9	0.9	0.9
Maximum Line to Line Voltage	Vrms		670	670	670
Coil Weight	Pounds		1.8	3.7	5.6
	Kilograms		0.8	1.7	2.5
Coil length (inside magnet track without HED)	inch		9.61	19.21	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		244	488	732
Delta Connected Specifications	UNITS	Dash #	4	8	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		5.7	11.5	17.2
	lb _f /A		1.3	2.6	3.9
Force Constant using 1mm[.04"] clearance gap	N/A		5.3	10.6	15.8
	lb _f /A		1.2	2.4	3.6
Phase Resistance (Δ @ 25°C)	Ω		0.7	1.4	2.1
Phase Resistance (Δ @ Max. °C)	Ω		1.0	2.0	2.9
Inductance @ 1kHz	mH		0.6	1.2	1.8
Continuous Force using 0.5mm[.02"] clearance gap	N		106.8	213.6	320.4
	lb _f		24.0	48.0	72.0
Continuous Force using 1.0mm[.04"] clearance gap	N		98.3	196.5	294.8
	lb _f		22.1	44.2	66.3
Continuous Current	A		18.6	18.6	18.6
Peak Force* using 0.5mm[.02"] clearance gap	N		498	996	1494
	lb _f		112	224	336
Peak Force* using 1.0mm[.04"] clearance gap	N		458	916	1374
	lb _f		103	206	309
Peak Current*	A		86.7	86.7	86.7
Continuous Force, aluminum plate heat sink** (see below)	N		111.1	222.2	333.4
	lbf		25.0	50.0	74.9
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		5.7	11.5	17.2
	V/in/s		0.1	0.3	0.4
WYE connected Specifications	UNITS	Dash #	4	8	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		9.9	19.9	29.8
	lb _f /A		2.2	4.5	6.7
	N/A		9.2	18.3	27.5
Force Constant using 1.0mm[.04"] clearance gap	lb _f /A		2.1	4.1	6.2
Phase Resistance (Ψ @ 25°C)	Ω		2.1	4.2	6.2
Phase Resistance (Ψ @ Max. °C)	Ω		2.9	5.9	8.8
Inductance @ 1kHz	mH		1.8	3.6	5.4
Continuous Force using 0.5mm[.02"] clearance gap	N		106.8	213.6	320.4
	lb _f		24.0	48.0	72.0
Continuous Force using 0.5mm[.02"] clearance gap	N		98.3	196.5	294.8
	lb _f		22.1	44.2	66.3
Continuous Current	A		10.74	10.74	10.74
Peak Force* using 0.5mm[.02"] clearance gap	N		498	996	1494
	lb _f		112	224	336
Peak Force* using 1.0mm[.04"] clearance gap	N		458	916	1374
	lb _f		103	206	309
Peak Current*	A		50.1	50.1	50.1
Continuous Force, aluminum plate heat sink** (see below)	N		111.1	222.2	333.4
	lbf		25.0	50.0	74.9
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		9.9	19.9	29.8
	V/inch/s		0.3	0.5	0.8

* Notes:

Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.
 On time of "Peak Power" (duration) less than 1 second at peak current listed.
 Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.
 Electrical cycle length is mm. Skewed Track Cogging force estimated at 45N.
 Resistance Specifications do not include the cable resistance.
 Cogging force due to magnet saliency is about 45N
 Custom cable required for peak current exceeding 50 ampere.
 Magnet track maximum environment temperature is 50 Deg. C.
 Cable adds 0.01Ω/m
 Shaded columns represent "Special models."
 ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25°C free air using 0.5mm (.02") clearance gap.
 Magnet track weight 2KG/m (1.35lb/ft)



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I38 Iron Core Linear Motor Parallel Connection Specification

General Motor Specifications	UNITS	Dash #	2	4	8	10	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		299	598	1196	1495	1794
	Lbf		67	134	269	336	403
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		254	508	1016	1270	1524
	Lbf		57	114	228	286	343
Max Operating Temperature	°C		125	125	125	125	125
Maximum Temp. Rise	°C		105	105	105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		2	4	8	10	12
Coil Resistance (6 lead @ Max. °C)	Ω		3	6	12	15	18
Inductance @ 1kHz	mH		2	4	7	9	11
Thermal Resistance (Bracket Top Mount)	°C/W		0.29	0.14	0.07	0.06	0.05
Continuous Power Top Mount (Max. °C)	W		368	737	1474	1842	2211
Continuous Power, top mount to plate**(Max. °C)	W		230	367	585	685	782
Motor Constant	lb/sqrt(W)		0.6	0.9	1.3	1.4	1.5
	N/sqrt(W)		2.8	3.9	5.6	6.2	6.8
Peak Power (Max. °C, 10% Duty)	W		3684	7368	14737	18421	22105
Electrical Time Constant (@ 25°C)	ms		0.9	0.9	0.9	0.9	0.9
Maximum Line to Line Voltage	Vrms		670	670	670	670	670
Coil Weight	Pounds		0.9	1.8	3.7	4.7	5.6
	Kilograms		0.4	0.8	1.7	2.1	2.5
Coil length (inside magnet track without HED)	inch		4.81	9.61	19.21	24.01	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		122	244	488	610	732
Delta Connected Specifications	UNITS	Dash #	2	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		5.7	11.5	23.0	28.7	34.5
	lb/A		1.3	2.6	5.2	6.5	7.7
Force Constant using 1mm[.04"] clearance gap	N/A		5.3	10.6	21.1	26.4	31.7
	lb/A		1.2	2.4	4.8	5.9	7.1
Phase Resistance (Δ @ 25°C)	Ω		1.4	2.8	5.5	6.9	8.3
Phase Resistance (Δ @ Max. °C)	Ω		2.0	3.9	7.8	9.8	11.8
Inductance @ 1kHz	mH		1.2	2.4	4.8	6.0	7.2
Continuous Force using 0.5mm[.02"] clearance gap	N		53.4	106.8	213.6	267.0	320.4
	lb _f		12.0	24.0	48.0	60.0	72.0
Continuous Force using 1.0mm[.04"] clearance gap	N		49.1	98.3	196.5	245.7	294.8
	lb _f		11.0	22.1	44.2	55.2	66.3
Continuous Current	A		9.30	9.30	9.30	9.30	9.30
Peak Force* using 0.5mm[.02"] clearance gap	N		249	498	996	1245	1494
	lb _f		56	112	224	280	336
Peak Force* using 1.0mm[.04"] clearance gap	N		229	458	916	1145	1374
	lb _f		51	103	206	257	309
Peak Current*	A		43.3	43.3	43.3	43.3	43.3
Continuous Force, aluminum plate heat sink** (see below)	N		62.2	111.1	198.4	240.0	281.0
	lb _f		14.0	25.0	44.6	54.0	63.2
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		5.7	11.5	23.0	28.7	34.5
	V/in/s		0.1	0.3	0.6	0.7	0.9
WYE connected Specifications	UNITS	Dash #	2	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		9.9	19.9	39.8	49.7	59.7
	lb/A		2.2	4.5	8.9	11.2	13.4
Force Constant using 1.0mm[.04"] clearance gap	N/A		9.2	18.3	36.6	45.8	54.9
	lb/A		2.1	4.1	8.2	10.3	12.3
Phase Resistance (Ψ @ 25°C)	Ω		4.2	8.3	16.6	20.8	25.0
Phase Resistance (Ψ @ Max. °C)	Ω		5.9	11.8	23.5	29.4	35.3
Inductance @ 1kHz	mH		3.6	7.2	14.3	17.9	21.5
Continuous Force using 0.5mm[.02"] clearance gap	N		53.4	106.8	213.6	267.0	320.4
	lb _f		12.0	24.0	48.0	60.0	72.0
Continuous Force using 0.5mm[.02"] clearance gap	N		49.1	98.3	196.5	245.7	294.8
	lb _f		11.0	22.1	44.2	55.2	66.3
Continuous Current	A		5.37	5.37	5.37	5.37	5.37
Peak Force* using 0.5mm[.02"] clearance gap	N		249	498	996	1245	1494
	lb _f		56	112	224	280	336
Peak Force* using 1.0mm[.04"] clearance gap	N		229	458	916	1145	1374
	lb _f		51	103	206	257	309
Peak Current*	A		25.0	25.0	25.0	25.0	25.0
Continuous Force, aluminum plate heat sink** (see below)	N		62.2	111.1	198.4	240.0	281.0
	lb _f		14.0	25.0	44.6	54.0	63.2
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		9.9	19.9	39.8	49.7	59.7
	V/inch/s		0.3	0.5	1.0	1.3	1.5

* Notes:

Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.

On time of "Peak Power" (duration) less than 1 second for peak current listed.

Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.

Electrical cycle length is 30.5mm. Skewed Track Cogging force estimated at 45N.

Resistance Specifications do not include the cable resistance.

Cogging force due to magnet saliency is about 45N

Custom cable required for peak current exceeding 50 ampere.

Magnet track maximum environment temperature is 50 Deg. C.

Cable adds 0.01Ω/m

Shaded columns represent "Special" models.

** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25°C free air using 0.5mm (.02") clearance gap.

Magnet track weight 2KG/m (1.35lb/ft)



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170 Iron Core Linear Motor Parallel Connection Specification

General Motor Specifications	UNITS	Dash #	2	4	6	8	10	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		547	1095	1642	2189	2737	3284
	Lbf		123	246	369	492	615	738
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		465	931	1396	1861	2326	2792
	Lbf		105	209	314	418	523	628
Max Operating Temperature	°C		125	125	125	125	125	125
Maximum Temp. Rise	°C		105	105	105	105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		1.3	2.5	3.8	5.0	6.3	7.6
Coil Resistance (6 lead @ Max. °C)	Ω		1.8	3.6	5.3	7.1	8.9	10.7
Inductance @ 1kHz	mH		2	4	5	7	9	11
Thermal Resistance (Bracket Top Mount)	°C/W		0.23	0.10	0.07	0.05	0.04	0.03
Continuous Power Top Mount (Max. °C)	W		466	931	1506	1862	2328	2793
Continuous Power, top mount to plate**(Max. °C)	W		264	529	544	1057	1322	1586
Motor Constant	lb _r /sqrt(W)		1.1	1.6	1.9	2.2	2.5	2.7
	N/sqrt(W)		5.1	6.9	8.5	9.8	10.9	12.0
Peak Power (Max. °C, 10% Duty)	W		4656	9311	15056	18622	23278	27933
Electrical Time Constant (@ 25°C)	ms		1.4	1.4	1.4	1.4	1.4	1.4
Maximum Line to Line Voltage	V _{rms}		670	670	670	670	670	670
Coil Weight	Pounds		1.4	2.9	4.3	5.8	7.2	8.7
	Kilograms		0.6	1.3	2.0	2.6	3.3	4.0
Coil length (inside magnet track without HED)	inch		4.81	9.61	14.41	19.21	24.01	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		122	244	366	488	610	732
Delta Connected Specifications	UNITS	Dash #	2	4	6	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		6.8	13.7	20.5	27.4	34.2	41.0
	lb _r /A		1.5	3.1	4.6	6.1	7.7	9.2
Force Constant using 1mm[.04"] clearance gap	N/A		6.2	12.3	18.5	24.6	30.8	36.9
	lb _r /A		1.4	2.8	4.2	5.5	6.9	8.3
Phase Resistance (Δ @ 25°C)	Ω		0.8	1.7	2.5	3.4	4.2	5.0
Phase Resistance (Δ @ Max. °C)	Ω		1.2	2.4	3.6	4.7	5.9	7.1
Inductance @ 1kHz	mH		1.2	2.4	3.5	4.7	5.9	7.1
Continuous Force using 0.5mm[.02"] clearance gap	N		109.4	218.8	328.2	437.6	547.1	656.5
	lb _r		24.6	49.2	73.8	98.4	123.0	147.6
Continuous Force using 1.0mm[.04"] clearance gap	N		98.5	196.9	295.4	393.9	492.4	590.8
	lb _r		22.1	44.3	66.4	88.6	110.7	132.8
Continuous Current	A		16.00	16.00	16.00	16.00	16.00	16.00
Peak Force* using 0.5mm[.02"] clearance gap	N		201	402	603	804	1005	1206
	lb _r		45	90	136	181	226	271
Peak Force* using 1.0mm[.04"] clearance gap	N		181	362	543	724	905	1086
	lb _r		41	81	122	163	203	244
Peak Current*	A		29.4	29.4	29.4	29.4	29.4	29.4
Continuous Force, aluminum plate heat sink** (see below)	N		102.1	204.2	253.6	408.3	510.4	612.5
	lbf		22.9	45.9	57.0	91.8	114.7	137.7
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		6.8	13.7	20.5	27.4	34.2	41.0
	V/in/s		0.2	0.3	0.5	0.7	0.9	1.0
WYE connected Specifications	UNITS	Dash #	2	4	6	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		11.8	23.7	35.5	47.4	59.2	71.1
	lb _r /A		2.7	5.3	8.0	10.7	13.3	16.0
Force Constant using 1.0mm[.04"] clearance gap	N/A		10.7	21.3	32.0	42.6	53.3	64.0
	lb _r /A		2.4	4.8	7.2	9.6	12.0	14.4
Phase Resistance (Ψ @ 25°C)	Ω		2.5	5.0	7.6	10.1	12.6	15.1
Phase Resistance (Ψ @ Max. °C)	Ω		3.6	7.1	10.7	14.2	17.8	21.4
Inductance @ 1kHz	mH		3.5	7.1	10.6	14.1	17.7	21.2
Continuous Force using 0.5mm[.02"] clearance gap	N		109.4	218.8	328.2	437.6	547.1	656.5
	lb _r		24.6	49.2	73.8	98.4	123.0	147.6
Continuous Force using 0.5mm[.02"] clearance gap	N		98.5	196.9	295.4	393.9	492.4	590.8
	lb _r		22.1	44.3	66.4	88.6	110.7	132.8
Continuous Current	A		9.24	9.24	9.24	9.24	9.24	9.24
Peak Force* using 0.5mm[.02"] clearance gap	N		348	696	1045	1393	1741	2089
	lb _r		78	157	235	313	391	470
Peak Force* using 1.0mm[.04"] clearance gap	N		313	627	940	1254	1567	1880
	lb _r		70	141	211	282	352	423
Peak Current*	A		29.4	29.4	29.4	29.4	29.4	29.4
Continuous Force, aluminum plate heat sink** (see below)	N		102.1	204.2	253.6	408.3	510.4	612.5
	lbf		22.9	45.9	57.0	91.8	114.7	137.7
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		11.8	23.7	35.5	47.4	59.2	71.1
	V/inch/s		0.3	0.6	0.9	1.2	1.5	1.8

* Notes:
 Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.
 On time of "Peak Power" (duration) less than 1.0 seconds.
 Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.
 Electrical cycle length is 30.5mm.
 Resistance Specifications do not include the cable resistance.
 Cogging force due to magnet saliency is about 45N
 Custom cable required for peak current exceeding 50 ampere for any connection. Do not exceed 26 Ampere peak current (4-second maximum) for Parallel Connection
 Magnet track maximum environment temperature is 50 Deg. C.
 Cable adds TBDΩ/m
 Shaded column represents "Special" model
 ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25 Deg. C free air using 0.5mm (.02") clearance gap.
 Magnet Track weight is 3.9kg/m (2.6 pounds/foot).



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170 Iron Core Linear Motor Series Connection Specification

General Motor Specifications	UNITS	Dash #	1	2	3	4	8	10	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		274	547	821	1095	2189	2737	3284
	Lbf		61.5	123	185	246	492	615	738
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		233	465	698	931	1861	2326	2792
	Lbf		52.3	105	157	209	418	523	628
Max Operating Temperature	°C		125	125	125	125	125	125	125
Maximum Temp. Rise	°C		105	105	105	105	105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		2.5	5.0	7.6	10.1	20.1	25.2	30.2
Coil Resistance (6 lead @ Max. °C)	Ω		3.6	7.1	10.7	14.2	28.5	35.6	42.7
Inductance @ 1kHz	mH		3.5	7.1	10.6	14.1	28.3	35.3	42.4
Thermal Resistance (Bracket Top Mount)	°C/W		0.42	0.23	0.1395	0.1046	0.05	0.04	0.03
Continuous Power Top Mount (Max. °C)	W		251	466	753	1004	2007	2509	3011
Continuous Power, top mount to plate** (Max. °C)	W		172	264	355	423	655	760	864
Motor Constant	lb _f /sqrt(W)		0.8	1.1	1.3	1.6	2.2	2.5	2.7
	N/sqrt(W)		3.45	5.07	5.98	6.91	9.77	10.92	11.96
Peak Power (Max. °C, 10% Duty)	W		2509	4656	7528	10037	20075	25093	30112
Electrical Time Constant (@ 25°C)	ms		1.4	1.4	1.4	1.4	1.4	1.4	1.4
Maximum Line to Line Voltage	Vrms		670	670	670	670	670	670	670
Coil Weight	Pounds		0.70	1.40	2.10	2.90	5.80	7.20	8.70
	Kilograms		0.32	0.64	0.95	1.32	2.64	3.27	3.95
Coil length (inside magnet track without HED)	inch		2.41	4.81	7.21	9.61	19.21	24.01	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		61.2	122.2	183.1	244.1	487.9	609.9	731.8
Delta Connected Specifications	UNITS	Dash #	1	2	3	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		6.8	13.7	20.5	27.4	54.7	68.4	82.1
	lb _f /A		1.5	3.1	4.6	6.1	12.3	15.4	18.4
Force Constant using 1mm[.04"] clearance gap	N/A		6.2	12.3	18.5	24.6	49.2	61.5	73.9
	lb _f /A		1.4	2.8	4.2	5.5	11.1	13.8	16.6
Phase Resistance (Δ @ 25°C)	Ω		1.68	3.4	5.0	6.7	13.4	16.8	20.1
Phase Resistance (Δ @ Max. °C)	Ω		2.37	4.7	7.1	9.5	19.0	23.7	28.5
Inductance @ 1kHz	mH		2.4	4.7	7.1	9.4	18.8	23.5	28.2
Continuous Force using 0.5mm[.02"] clearance gap	N		54.7	109.4	164.1	218.8	437.6	547.1	656.5
	lb _f		12.3	24.6	36.9	49.2	98.4	123.0	147.6
Continuous Force using 1.0mm[.04"] clearance gap	N		49.2	98.5	147.7	196.9	393.9	492.4	590.8
	lb _f		11.1	22.1	33.2	44.3	88.6	110.7	132.8
Continuous Current	A		8.00	8.00	8.00	8.00	8.00	8.00	8.00
Peak Force* using 0.5mm[.02"] clearance gap	N		101	201	302	402	804	1005	1206
	lb _f		23	45	68	90	181	226	271
Peak Force* using 1.0mm[.04"] clearance gap	N		90	181	271	362	724	905	1086
	lb _f		20	41	61	81	163	203	244
Peak Current*	A		14.70	14.70	14.70	14.70	14.70	14.70	14.70
Continuous Force, aluminum plate heat sink** (see below)	N		58.3	102.1	144.9	182.6	321.3	387.1	451.9
	lb _f		13.1	22.9	32.6	41.1	72.2	87.0	101.6
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		6.8	13.7	20.5	27.4	54.7	68.4	82.1
	V/in/s		0.2	0.3	0.5	0.7	1.4	1.7	2.1
WYE connected Specifications	UNITS	Dash #	1	2	3	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		11.8	23.7	35.5	47.4	94.8	118.4	142.1
	lb _f /A		2.7	5.3	8.0	10.7	21.3	26.6	32.0
Force Constant using 1.0mm[.04"] clearance gap	N/A		10.7	21.3	32.0	42.6	85.3	106.6	127.9
	lb _f /A		2.4	4.8	7.2	9.6	19.2	24.0	28.8
Phase Resistance (Ψ @ 25°C)	Ω		5.03	10.07	15.10	20.14	40.28	50.35	60.42
Phase Resistance (Ψ @ Max. °C)	Ω		7.12	14.24	21.35	28.47	56.94	71.18	85.41
Inductance @ 1kHz	mH		7.1	14.1	21.2	28.3	56.5	70.7	84.8
Continuous Force using 0.5mm[.02"] clearance gap	N		54.7	109.4	164.1	218.8	437.6	547.1	656.5
	lb _f		12.3	24.6	36.9	49.2	98.4	123.0	147.6
Continuous Force using 1.0mm[.04"] clearance gap	N		49.2	98.5	147.7	196.9	393.9	492.4	590.8
	lb _f		11.1	22.1	33.2	44.3	88.6	110.7	132.8
Continuous Current	A		4.62	4.62	4.62	4.62	4.62	4.62	4.62
Peak Force* using 0.5mm[.02"] clearance gap	N		174	348	522	696	1393	1741	2089
	lb _f		39	78	117	157	313	391	470
Peak Force* using 1.0mm[.04"] clearance gap	N		157	313	470	627	1254	1567	1880
	lb _f		35	70	106	141	282	352	423
Peak Current*	A		14.70	14.70	14.70	14.70	14.70	14.70	14.70
Continuous Force, aluminum plate heat sink** (see below)	N		58.3	102.1	144.9	182.6	321.3	387.1	451.9
	lb _f		13.1	22.9	32.6	41.1	72.2	87.0	101.6
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		11.8	23.7	35.5	47.4	94.8	118.4	142.1
	V/inch/s		0.3	0.6	0.9	1.2	2.4	3.0	3.6

* Notes:
 Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.
 On time of "Peak Power" (duration) less than 1.0 seconds.
 Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.
 Electrical cycle length is 30.5mm.
 Resistance Specifications do not include the cable resistance. Watts with (0.5m wide and .25m longer than coil *15mm thick)
 Cogging force due to magnet saliency is about 45N
 Custom cable required for peak current exceeding 50 ampere for any connection. Do not exceed 13 Ampere peak current (4-second maximum) for Series Connection
 Magnet track maximum environment temperature is 50 Deg. C.
 Cable adds TBDΩ/m
 Shaded column represents "Special" model
 ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25 Deg. C free air using 0.5mm (.02") clearance gap.
 Magnet Track weight is 3.9kg/m (2.6 pounds/foot).



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1100 Iron Core Linear Motor Double Parallel Connection Specification						
General Motor Specifications	UNITS	Dash #	4	8	10	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		2318	4636	5795	6954
	Lbf		521	1042	1303	1563
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		985	1970	2463	2956
	Lbf		221	443	554	664
Max Operating Temperature	°C		125	125	125	125
Maximum Temp. Rise	°C		105	105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		0.35	0.70	0.56	1.06
Coil Resistance (6 lead @ Max. °C)	Ω		0.50	1.00	0.80	1.49
Inductance @ 1kHz	mH		2	4	3	6
Thermal Resistance (Bracket Top Mount)	°C/W		0.08	0.04	3.19	0.03
Continuous Power Top Mount (Max. °C)	W		1400	2800	3500	4200
Continuous Power, top mount to plate**(Max. °C)	W		480	961	1201	1441
Motor Constant	lb _f /sqrt(W)		2.9	4.1	4.6	5.0
	N/sqrt(W)		12.8	18.2	20.3	22.2
Peak Power (Max. °C, 10% Duty)	W		14000	28000	35000	42000
Electrical Time Constant (@ 25°C)	ms		5.7	5.7	5.7	5.7
Maximum Line to Line Voltage	Vrms		670	670	670	670
Coil Weight	Pounds		0.0	0.0	0.0	0.0
	Kilograms		0.0	0.0	0.0	0.0
Coil length (inside magnet track without HED)	inch		9.61	19.21	24.01	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		244	488	610	732
Delta Connected Specifications	UNITS	Dash #	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		7.9	15.8	15.8	23.7
	lb _f /A		1.8	3.5	3.5	5.3
Force Constant using 1mm[.04"] clearance gap	N/A		7.3	14.5	14.5	21.8
	lb _f /A		1.6	3.3	3.3	4.9
Phase Resistance (Δ @ 25°C)	Ω		0.2	0.5	0.4	0.7
Phase Resistance (Δ @ Max. °C)	Ω		0.3	0.7	0.5	1.0
Inductance @ 1kHz	mH		1.3	2.7	2.1	4.0
Continuous Force using 0.5mm[.02"] clearance gap	N		480.6	961.1	1201.4	1441.7
	lb _f		108.0	216.1	270.1	324.1
Continuous Force using 1.0mm[.04"] clearance gap	N		442.1	884.2	1105.3	1326.3
	lb _f		99.4	198.8	248.5	298.2
Continuous Current	A		61.0	61.0	76.2	61.0
Peak Force* using 0.5mm[.02"] clearance gap	N		662	1324	1656	1987
	lb _f		149	298	372	447
Peak Force* using 1.0mm[.04"] clearance gap	N		609	1218	1523	1828
	lb _f		137	274	342	411
Peak Current*	A		84.0	84.0	105.0	84.0
Continuous Force, aluminum plate heat sink** (see below)	N		300.0	600.0	750.0	900.0
	lbf		67.4	134.9	168.6	202.3
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		7.9	15.8	15.8	23.7
	V/in/s		0.2	0.4	0.4	0.6
WYE connected Specifications	UNITS	Dash #	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		13.7	27.3	27.3	41.0
	lb _f /A		3.1	6.1	6.1	9.2
Force Constant using 1.0mm[.04"] clearance gap	N/A		12.6	25.1	25.1	37.7
	lb _f /A		2.8	5.6	5.6	8.5
Phase Resistance (Ψ @ 25°C)	Ω		0.7	1.4	1.1	2.1
Phase Resistance (Ψ @ Max. °C)	Ω		1.0	2.0	1.6	3.0
Inductance @ 1kHz	mH		4.0	8.0	6.4	12.0
Continuous Force using 0.5mm[.02"] clearance gap	N		480.6	961.1	1201.4	1441.7
	lb _f		108.0	216.1	270.1	324.1
Continuous Force using 0.5mm[.02"] clearance gap	N		442.1	884.2	1105.3	1326.3
	lb _f		99.4	198.8	248.5	298.2
Continuous Current	A		35.19	35.19	43.99	35.19
Peak Force* using 0.5mm[.02"] clearance gap	N		1619	3239	2868	4858
	lb _f		364	728	645	1092
Peak Force* using 1.0mm[.04"] clearance gap	N		1490	2980	2638	4470
	lb _f		335	670	593	1005
Peak Current*	A		118.6	118.6	105.0	118.6
Continuous Force, aluminum plate heat sink** (see below)	N		300.0	600.0	750.0	900.0
	lbf		67.4	134.9	168.6	202.3
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		13.7	27.3	27.3	41.0
	V/inch/s		0.3	0.7	0.7	1.0
<p>* Notes:</p> <ul style="list-style-type: none"> Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface. On time of "Peak Power" (duration) less than 10 seconds. Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed. Electrical cycle length is mm. Skewed Track Cogging force estimated at 45N. Resistance Specifications do not include the cable resistance. Cogging force due to magnet saliency is about 45N Custom cable required for peak current exceeding 52 ampere. Magnet track maximum environment temperature is 50 Deg. C. Cable adds 0.055Ω/m Shaded Column represents "Special" models. ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25°C free air using 0.5mm (.02") clearance gap. Magnet Track weight is 3.9kg/m (2.6 pounds/foot). 						



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1100 Iron Core Linear Motor Series Connection Specification

General Motor Specifications		UNITS	Dash #	1	2	3	4	6	8	10	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N			580	1159	1739	2318	3477	4636	5795	6954
	Lbf			130.3	261	391	521	782	1042	1303	1563
Attractive Preload Force using 1.0mm[.04"] clearance gap	N			493	985	1478	1970	2956	3941	4926	5911
	Lbf			110.7	221	332	443	664	886	1107	1329
Max Operating Temperature	°C			125	125	125	125	125	125	125	125
Maximum Temp. Rise	°C			105	105	105	105	105	105	105	105
Coil Resistance (6 lead @ 25°C)	Ω			1.4	2.8	4.2	5.6	8.4	11.3	14.1	16.9
Coil Resistance (6 lead @ Max. °C)	Ω			2.0	4.0	6.0	8.0	11.9	15.9	19.9	23.9
Inductance @ 1kHz	mH			8.0	15.9	23.9	31.9	47.8	63.8	79.7	95.7
Thermal Resistance (Bracket Top Mount)	°C/W			0.300	0.150	0.100	0.075	0.050	0.038	0.030	0.025
Continuous Power Top Mount (Max. °C)	W			350	700	1050	1400	2100	2800	3500	4200
Continuous Power, top mount to plate**(Max. °C)	W			214	326	410	480	606	721	832	940
Motor Constant	lb _f /sqrt(W)			1.4	2.0	2.5	2.9	3.5	4.1	4.6	5.0
	N/sqrt(W)			6.42	9.08	11.12	12.84	15.73	18.16	20.31	22.25
Peak Power (Max. °C, 10% Duty)	W			3500	7000	10500	14000	21000	28000	35000	42000
Electrical Time Constant (@ 25°C)	ms			5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Maximum Line to Line Voltage	Vrms			670	670	670	670	670	670	670	670
Coil Weight	Pounds			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Kilograms			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coil length (inside magnet track without HED)	inch			2.41	4.81	7.21	9.61	14.41	19.21	24.01	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm			61.2	122.2	183.1	244.1	366.0	487.9	609.9	731.8
Delta Connected Specifications		UNITS	Dash #	1	2	3	4	6	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A			7.9	15.8	23.7	31.5	47.3	63.1	78.8	94.6
	lb _f /A			1.8	3.5	5.3	7.1	10.6	14.2	17.7	21.3
Force Constant using 1mm[.04"] clearance gap	N/A			7.3	14.5	21.8	29.0	43.5	58.0	72.5	87.0
	lb _f /A			1.6	3.3	4.9	6.5	9.8	13.0	16.3	19.6
Phase Resistance (Δ @ 25°C)	Ω			0.94	1.9	2.8	3.8	5.6	7.5	9.4	11.3
Phase Resistance (Δ @ Max. °C)	Ω			1.33	2.7	4.0	5.3	8.0	10.6	13.3	15.9
Inductance @ 1kHz	mH			5.3	10.6	15.9	21.2	31.9	42.5	53.1	63.7
Continuous Force using 0.5mm[.02"] clearance gap	N			120.1	240.3	360.4	480.6	720.8	961.1	1201.4	1441.7
	lb _f			27.0	54.0	81.0	108.0	162.1	216.1	270.1	324.1
Continuous Force using 1.0mm[.04"] clearance gap	N			110.5	221.1	331.6	442.1	663.2	884.2	1105.3	1326.3
	lb _f			24.8	49.7	74.5	99.4	149.1	198.8	248.5	298.2
Continuous Current	A			15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
Peak Force* using 0.5mm[.02"] clearance gap	N			166	331	497	662	993	1324	1656	1987
	lb _f			37	74	112	149	223	298	372	447
Peak Force* using 1.0mm[.04"] clearance gap	N			152	305	457	609	914	1218	1523	1828
	lb _f			34	68	103	137	205	274	342	411
Peak Current*	A			21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
Continuous Force, aluminum plate heat sink** (see below)	N			100.1	174.8	239.9	300.0	412.6	519.8	624.1	726.8
	lb _f			22.5	39.3	53.9	67.4	92.8	116.9	140.3	163.4
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s			7.9	15.8	23.7	31.5	47.3	63.1	78.8	94.6
	V/inch/s			0.2	0.4	0.6	0.8	1.2	1.6	2.0	2.4
WYE connected Specifications		UNITS	Dash #	1	2	3	4	6	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A			13.7	27.3	41.0	54.6	81.9	109.2	136.5	163.9
	lb _f /A			3.1	6.1	9.2	12.3	18.4	24.6	30.7	36.8
Force Constant using 1.0mm[.04"] clearance gap	N/A			12.6	25.1	37.7	50.2	75.4	100.5	125.6	150.7
	lb _f /A			2.8	5.6	8.5	11.3	16.9	22.6	28.2	33.9
Phase Resistance (Ψ @ 25°C)	Ω			2.82	5.63	8.45	11.27	16.90	22.53	28.16	33.80
Phase Resistance (Ψ @ Max. °C)	Ω			3.98	7.96	11.94	15.93	23.89	31.85	39.82	47.78
Inductance @ 1kHz	mH			15.9	31.9	47.8	63.8	95.7	127.6	159.5	191.4
Continuous Force using 0.5mm[.02"] clearance gap	N			120.1	240.3	360.4	480.6	720.8	961.1	1201.4	1441.7
	lb _f			27.0	54.0	81.0	108.0	162.1	216.1	270.1	324.1
Continuous Force using 0.5mm[.02"] clearance gap	N			110.5	221.1	331.6	442.1	663.2	884.2	1105.3	1326.3
	lb _f			24.8	49.7	74.5	99.4	149.1	198.8	248.5	298.2
Continuous Current	A			8.80	8.80	8.80	8.80	8.80	8.80	8.80	8.80
Peak Force* using 0.5mm[.02"] clearance gap	N			287	574	860	1147	1721	2294	2868	3441
	lb _f			64	129	193	258	387	516	645	774
Peak Force* using 1.0mm[.04"] clearance gap	N			264	528	791	1055	1583	2110	2638	3166
	lb _f			59	119	178	237	356	474	593	712
Peak Current*	A			21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
Continuous Force, aluminum plate heat sink** (see below)	N			100.1	174.8	239.9	300.0	412.6	519.8	624.1	726.8
	lb _f			22.5	39.3	53.9	67.4	92.8	116.9	140.3	163.4
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s			13.7	27.3	41.0	54.6	81.9	109.2	136.5	163.9
	V/inch/s			0.3	0.7	1.0	1.4	2.1	2.8	3.5	4.2

* Notes:
 Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.
 On time of "Peak Power" (duration) less than 10 seconds.
 Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.
 Electrical cycle length is 30.5mm
 Resistance Specifications do not include the cable resistance.
 Cogging force due to magnet saliency is about 70N
 Custom cable required for peak current exceeding 52 ampere.
 Magnet track maximum environment temperature is 50 Deg. C.
 Cable adds 0.0550/m
 Shaded Column represents "Special" models.
 ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 258C free air using 0.5mm (.02") clearance gap.
 Magnet Track weight TBD.
 Watts with (0.5m wide and .25m longer than coil *15mm thick)



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I100 Iron Core Linear Motor Parallel Connection Specification

General Motor Specifications	UNITS	Dash #	2	4	8	10	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		1159	2318	4636	5795	6954
	Lbf		261	521	1042	1303	1563
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		985	1970	3941	4926	5911
	Lbf		221	443	886	1107	1329
Max Operating Temperature	°C		125	125	125	125	125
Maximum Temp. Rise	°C		105	105	105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		1	1	3	4	4
Coil Resistance (6 lead @ Max. °C)	Ω		1	2	4	5	6
Inductance @ 1kHz	mH		4	8	16	20	24
Thermal Resistance (Bracket Top Mount)	°C/W		0.15	0.08	0.04	0.03	0.03
Continuous Power Top Mount (Max. °C)	W		700	1400	2800	3500	4200
Continuous Power, top mount to plate**(Max. °C)	W		326	480	721	832	940
Motor Constant	lb/sqrt(W)		2.0	2.9	4.1	4.6	5.0
	N/sqrt(W)		9.1	12.8	18.2	20.3	22.2
Peak Power (Max. °C, 10% Duty)	W		7000	14000	28000	35000	42000
Electrical Time Constant (@ 25°C)	ms		5.7	5.7	5.7	5.7	5.7
Maximum Line to Line Voltage	Vrms		670	670	670	670	670
Coil Weight	Pounds		0.0	0.0	0.0	0.0	0.0
	Kilograms		0.0	0.0	0.0	0.0	0.0
Coil length (inside magnet track without HED)	inch		4.81	9.61	19.21	24.01	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		122	244	488	610	732
Delta Connected Specifications	UNITS	Dash #	2	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		7.9	15.8	31.5	39.4	47.3
	lb/A		1.8	3.5	7.1	8.9	10.6
Force Constant using 1mm[.04"] clearance gap	N/A		7.3	14.5	29.0	36.3	43.5
	lb/A		1.6	3.3	6.5	8.2	9.8
Phase Resistance (Δ @ 25°C)	Ω		0.5	0.9	1.9	2.3	2.8
Phase Resistance (Δ @ Max. °C)	Ω		0.7	1.3	2.7	3.3	4.0
Inductance @ 1kHz	mH		2.7	5.3	10.6	13.3	15.9
Continuous Force using 0.5mm[.02"] clearance gap	N		240.3	480.6	961.1	1201.4	1441.7
	lb _f		54.0	108.0	216.1	270.1	324.1
Continuous Force using 1.0mm[.04"] clearance gap	N		221.1	442.1	884.2	1105.3	1326.3
	lb _f		49.7	99.4	198.8	248.5	298.2
Continuous Current	A		30.48	30.48	30.48	30.48	30.48
Peak Force* using 0.5mm[.02"] clearance gap	N		331	662	1324	1656	1987
	lb _f		74	149	298	372	447
Peak Force* using 1.0mm[.04"] clearance gap	N		305	609	1218	1523	1828
	lb _f		68	137	274	342	411
Peak Current*	A		42.0	42.0	42.0	42.0	42.0
Continuous Force, aluminum plate heat sink** (see below)	N		174.8	300.0	519.8	624.1	726.8
	lb _f		39.3	67.4	116.9	140.3	163.4
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		7.9	15.8	31.5	39.4	47.3
	V/in/s		0.2	0.4	0.8	1.0	1.2
WYE connected Specifications	UNITS	Dash #	2	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		13.7	27.3	54.6	68.3	81.9
	lb/A		3.1	6.1	12.3	15.3	18.4
	N/A		12.6	25.1	50.2	62.8	75.4
Force Constant using 1.0mm[.04"] clearance gap	lb/A		2.8	5.6	11.3	14.1	16.9
Phase Resistance (Ψ @ 25°C)	Ω		1.4	2.8	5.6	7.0	8.4
Phase Resistance (Ψ @ Max. °C)	Ω		2.0	4.0	8.0	10.0	11.9
Inductance @ 1kHz	mH		8.0	15.9	31.9	39.9	47.8
Continuous Force using 0.5mm[.02"] clearance gap	N		240.3	480.6	961.1	1201.4	1441.7
	lb _f		54.0	108.0	216.1	270.1	324.1
Continuous Force using 0.5mm[.02"] clearance gap	N		221.1	442.1	884.2	1105.3	1326.3
	lb _f		49.7	99.4	198.8	248.5	298.2
Continuous Current	A		17.60	17.60	17.60	17.60	17.60
Peak Force* using 0.5mm[.02"] clearance gap	N		574	1147	2294	2868	3441
	lb _f		129	258	516	645	774
Peak Force* using 1.0mm[.04"] clearance gap	N		528	1055	2110	2638	3166
	lb _f		119	237	474	593	712
Peak Current*	A		42.0	42.0	42.0	42.0	42.0
Continuous Force, aluminum plate heat sink** (see below)	N		174.8	300.0	519.8	624.1	726.8
	lb _f		39.3	67.4	116.9	140.3	163.4
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		13.7	27.3	54.6	68.3	81.9
	V/inch/s		0.3	0.7	1.4	1.7	2.1

* Notes:

Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.
 On time of "Peak Power" (duration) less than 10 seconds.
 Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.
 Electrical cycle length is 30.5mm. Skewed Track Cogging force estimated at 45N.
 Resistance Specifications do not include the cable resistance.
 Cogging force due to magnet saliency is about 45N
 Custom cable required for peak current exceeding 52 ampere.
 Magnet track maximum environment temperature is 50 Deg. C.
 Cable adds 0.055Ω/m
 Shaded Column represents "Special" models.
 ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25°C free air using 0.5mm (.02") clearance gap.
 Magnet Track weight is 3.9kg/m (2.6 pounds/foot).



Preliminary I38 Iron Core Linear Motor Series Connection Specifications

General Motor Specifications	UNITS	Dash #	1	2	4	8	10	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		149	299	598	1196	1495	1794
	Lbf		33.6	67	134	269	336	403
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		127	254	508	1016	1270	1524
	Lbf		28.6	57	114	228	286	343
Max Operating Temperature	°C		125	125	125	125	125	125
Maximum Temp. Rise	°C		105	105	105	105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		4.2	8.3	16.6	33.3	41.6	49.9
Coil Resistance (6 lead @ Max. °C)	Ω		5.9	11.8	23.5	47.1	58.8	70.6
Inductance @ 1kHz	mH		3.6	7.2	14.3	28.7	35.8	43.0
Thermal Resistance (Bracket Top Mount)	°C/W		0.57	0.29	0.14	0.07	0.06	0.05
Continuous Power Top Mount (Max. °C)	W		184	368	737	1474	1842	2211
Continuous Power, top mount to plate**(Max. °C)	W		138	230	367	585	685	782
Motor Constant	lb/sqrt(W)		0.4	0.6	0.9	1.3	1.4	1.5
	N/sqrt(W)		1.97	2.78	3.93	5.56	6.22	6.82
Peak Power (Max. °C, 10% Duty)	W		1842	3684	7368	14737	18421	22105
Electrical Time Constant (@ 25°C)	ms		0.9	0.9	0.9	0.9	0.9	0.9
Maximum Line to Line Voltage	Vrms		670	670	670	670	670	670
Coil Weight	Pounds		0.40	0.90	1.80	3.70	4.70	5.60
	Kilograms		0.18	0.41	0.82	1.68	2.14	2.55
Coil length (inside magnet track without HED)	inch		2.41	4.81	9.61	19.21	24.01	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		61.2	122.2	244.1	487.9	609.9	731.8
Delta Connected Specifications	UNITS	Dash #	1	2	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		5.7	11.5	23.0	45.9	57.4	68.9
	lb _f /A		1.3	2.6	5.2	10.3	12.9	15.5
Force Constant using 1mm[.04"] clearance gap	N/A		5.3	10.6	21.1	42.3	52.8	63.4
	lb _f /A		1.2	2.4	4.8	9.5	11.9	14.3
Phase Resistance (Δ @ 25°C)	Ω		2.77	5.5	11.1	22.2	27.7	33.3
Phase Resistance (Δ @ Max. °C)	Ω		3.92	7.8	15.7	31.4	39.2	47.1
Inductance @ 1kHz	mH		2.4	4.8	9.5	19.1	23.9	28.6
Continuous Force using 0.5mm[.02"] clearance gap	N		26.7	53.4	106.8	213.6	267.0	320.4
	lb _f		6.0	12.0	24.0	48.0	60.0	72.0
Continuous Force using 1.0mm[.04"] clearance gap	N		24.6	49.1	98.3	196.5	245.7	294.8
	lb _f		5.5	11.0	22.1	44.2	55.2	66.3
Continuous Current	A		4.65	4.65	4.65	4.65	4.65	4.65
Peak Force* using 0.5mm[.02"] clearance gap	N		124	249	498	996	1245	1494
	lb _f		28	56	112	224	280	336
Peak Force* using 1.0mm[.04"] clearance gap	N		115	229	458	916	1145	1374
	lb _f		26	51	103	206	257	309
Peak Current*	A		21.67	21.67	21.67	21.67	21.67	21.67
Continuous Force, aluminum plate heat sink** (see below)	N		34.1	62.2	111.1	198.4	240.0	281.0
	lbf		7.7	14.0	25.0	44.6	54.0	63.2
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		5.7	11.5	23.0	45.9	57.4	68.9
	V/inch/s		0.1	0.3	0.6	1.2	1.5	1.7
WYE connected Specifications	UNITS	Dash #	1	2	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		9.9	19.9	39.8	79.6	99.5	119.4
	lb _f /A		2.2	4.5	8.9	17.9	22.4	26.8
Force Constant using 1.0mm[.04"] clearance gap	N/A		9.2	18.3	36.6	73.2	91.5	109.8
	lb _f /A		2.1	4.1	8.2	16.5	20.6	24.7
Phase Resistance (Ψ @ 25°C)	Ω		8.32	16.64	33.29	66.57	83.22	99.86
Phase Resistance (Ψ @ Max. °C)	Ω		11.76	23.53	47.06	94.11	117.64	141.17
Inductance @ 1kHz	mH		7.2	14.3	28.7	57.3	71.7	86.0
Continuous Force using 0.5mm[.02"] clearance gap	N		26.7	53.4	106.8	213.6	267.0	320.4
	lb _f		6.0	12.0	24.0	48.0	60.0	72.0
Continuous Force using 0.5mm[.02"] clearance gap	N		24.6	49.1	98.3	196.5	245.7	294.8
	lb _f		5.5	11.0	22.1	44.2	55.2	66.3
Continuous Current	A		2.68	2.68	2.68	2.68	2.68	2.68
Peak Force* using 0.5mm[.02"] clearance gap	N		124	249	498	996	1245	1494
	lb _f		28	56	112	224	280	336
Peak Force* using 1.0mm[.04"] clearance gap	N		115	229	458	916	1145	1374
	lb _f		26	51	103	206	257	309
Peak Current*	A		12.51	12.51	12.51	12.51	12.51	12.51
Continuous Force, aluminum plate heat sink** (see below)	N		34.1	62.2	111.1	198.4	240.0	281.0
	lbf		7.7	14.0	25.0	44.6	54.0	63.2
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		9.9	19.9	39.8	79.6	99.5	119.4
	V/inch/s		0.3	0.5	1.0	2.0	2.5	3.0

* Notes:
 Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.
 On time of "Peak Power" (duration) less than 1 second at listed peak current.
 Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.
 Electrical cycle length is 30.5mm
 Resistance Specifications do not include the cable resistance.
 Cogging force due to magnet saliency is about 10N
 Custom cable required for peak current exceeding 50 ampere.
 Magnet track maximum environment temperature is 50 Deg. C.
 Cable adds 0.01Ω/m
 Shaded columns represent "special" models
 ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25°C free air using 0.5mm (.02") clearance gap.
 Magnet track weight 2KG/m (1.35lb/ft)



Preliminary I70 Iron Core Linear Motor (Double Parallel & Higher Order Parallel Connection Specification)

General Motor Specifications	UNITS	Dash #	4	8	10	12
Attractive Preload Force using 0.5mm[.02"] clearance gap	N		1095	2189	2737	3284
	Lbf		246	492	615	738
Attractive Preload Force using 1.0mm[.04"] clearance gap	N		931	1861	2326	2792
	Lbf		209	418	523	628
Max Operating Temperature	°C		125	125	125	125
Maximum Temp. Rise	°C		105	105	105	105
Coil Resistance (6 lead @ 25°C)	Ω		0.63	1.26	1.01	1.89
Coil Resistance (6 lead @ Max. °C)	Ω		0.89	1.78	1.42	2.67
Inductance @ 1kHz	mH		1	2	1	3
Thermal Resistance (Bracket Top Mount)	°C/W		0.10	0.05	0.04	0.03
Continuous Power Top Mount (Max. °C)	W		931	1862	2328	2793
Continuous Power, top mount to plate**(Max. °C)	W		931	1862	2328	2793
Motor Constant	lb/sqrt(W)		1.6	2.2	2.5	2.7
	N/sqrt(W)		6.9	9.8	10.9	12.0
Peak Power (Max. °C, 10% Duty)	W		9311	18622	23278	27933
Electrical Time Constant (@ 25°C)	ms		1.4	1.4	1.4	1.4
Maximum Line to Line Voltage	Vrms		670	670	670	670
Coil Weight	Pounds		2.9	5.8	7.2	8.7
	Kilograms		1.3	2.6	3.3	4.0
Coil length (inside magnet track without HED)	inch		9.61	19.21	24.01	28.81
HED increases coil length by 1.48 inch (37.6mm)	mm		244	488	610	732
Delta Connected Specifications	UNITS	Dash #	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		6.8	13.7	13.7	20.5
	lb/A		1.5	3.1	3.1	4.6
Force Constant using 1mm[.04"] clearance gap	N/A		6.2	12.3	12.6	18.5
	lb/A		1.4	2.8	2.8	4.2
Phase Resistance (Δ @ 25°C)	Ω		0.4	0.8	0.7	1.3
Phase Resistance (Δ @ Max. °C)	Ω		0.6	1.2	0.9	1.8
Inductance @ 1kHz	mH		0.6	1.2	0.9	1.8
Continuous Force using 0.5mm[.02"] clearance gap	N		218.8	437.6	437.6	656.5
	lb _f		49.2	98.4	98.4	147.6
Continuous Force using 1.0mm[.04"] clearance gap	N		196.9	393.9	402.6	590.8
	lb _f		44.3	88.6	90.5	132.8
Continuous Current	A		32.0	32.0	32.0	32.0
Peak Force* using 0.5mm[.02"] clearance gap	N		342	684	684	1026
	lb _f		77	154	154	231
Peak Force* using 1.0mm[.04"] clearance gap	N		308	615	629	923
	lb _f		69	138	141	208
Peak Current*	A		50.0	50.0	50.0	50.0
Continuous Force, aluminum plate heat sink** (see below)	N		270.9	541.9	677.3	812.8
	lbf		60.9	121.8	152.3	182.7
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		6.8	13.7	13.7	20.5
	V/inch/s		0.2	0.3	0.3	0.5
WYE connected Specifications	UNITS	Dash #	4	8	10	12
Force Constant using 0.5mm[.02"] clearance gap	N/A		11.8	23.7	23.7	35.5
	lb/A		2.7	5.3	5.3	8.0
	N/A		10.7	21.3	21.8	32.0
Force Constant using 1.0mm[.04"] clearance gap	lb/A		2.4	4.8	4.9	7.2
Phase Resistance (Ψ @ 25°C)	Ω		1.3	2.5	2.0	3.8
Phase Resistance (Ψ @ Max. °C)	Ω		1.8	3.6	2.8	5.3
Inductance @ 1kHz	mH		1.8	3.5	2.8	5.3
Continuous Force using 0.5mm[.02"] clearance gap	N		218.8	437.6	437.6	656.5
	lb _f		49.2	98.4	98.4	147.6
Continuous Force using 0.5mm[.02"] clearance gap	N		196.9	393.9	402.6	590.8
	lb _f		44.3	88.6	90.5	132.8
Continuous Current	A		18.48	18.48	18.48	18.48
Peak Force* using 0.5mm[.02"] clearance gap	N		592	1184	1184	1777
	lb _f		133	266	266	399
Peak Force* using 1.0mm[.04"] clearance gap	N		533	1066	1090	1599
	lb _f		120	240	245	359
Peak Current*	A		50.0	50.0	50.0	50.0
Continuous Force, aluminum plate heat sink** (see below)	N		270.9	541.9	677.3	812.8
	lbf		60.9	121.8	152.3	182.7
Back EMF Constant using 0.5mm[.02"] clearance gap	V/m/s		11.8	23.7	23.7	35.5
	V/inch/s		0.3	0.6	0.6	0.9

* Notes:
 Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.
 On time of "Peak Power" (duration) less than 1.0 seconds.
 Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.
 Electrical cycle length is mm. Skewed Track Cogging force estimated at 45N.
 Resistance Specifications do not include the cable resistance.
 Cogging force due to magnet saliency is about 45N
 Custom cable required for peak current exceeding 50 ampere for any connection. Do not exceed 44 Ampere peak current (4-second maximum) for Double Parallel Connection
 Magnet track maximum environment temperature is 50 Deg. C.
 Cable adds 0.055Ω/m
 Shaded column represents "Special" model
 ** Heat Sink is a 0.5 meter wide, 15mm thick aluminum plate, extending 0.25 meter beyond each end of the coil bracket, suspended in 25°C free air using 0.5mm (.02") clearance gap.
 Magnet Track weight is 3.9kg/m (2.6 pounds/foot).