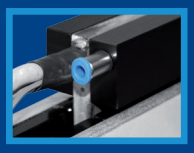


Linear **Motors**

LMG DATA SHEETS

MOTION TECHNOLOGY

Standard

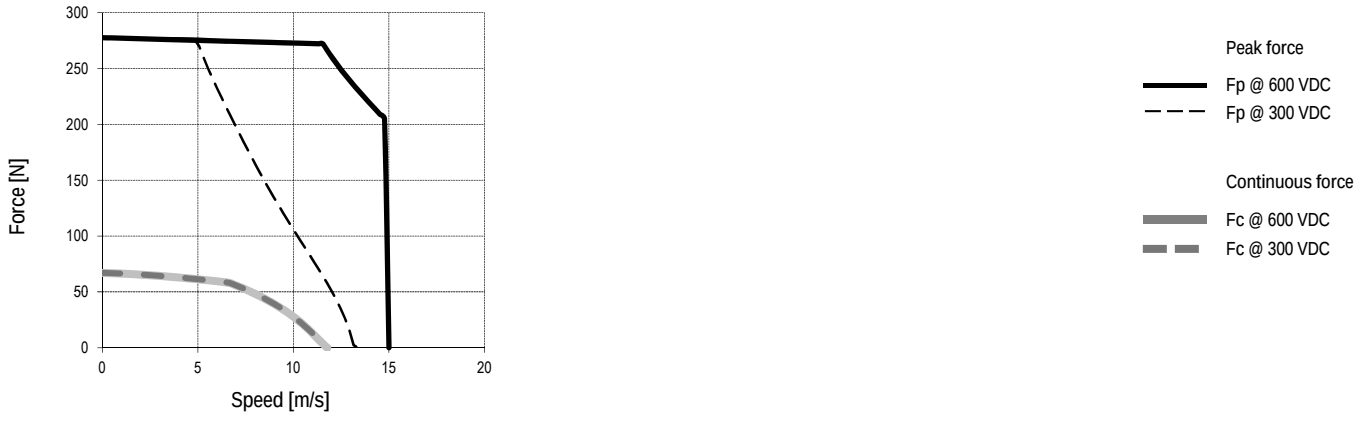
IRONCORE LINEAR MOTOR — LMG05-030

		Winding codes	3QA	
PERFORMANCE		UNIT	FREE AIR CONVECTION	
Fp	Peak force	N	279	
Fc	Continuous force	N	66.4	
Fs	Stall force	N	50.7	
Kt	Force constant	N/Arms	26.9	
Ku	Back EMF constant (*)	Vrms/(m/s)	16.3	
Km	Motor constant	N/√W	12.0	
R20	Electrical resistance at 20°C (*)	Ohm	3.35	
L1	Electrical inductance (*)	mH	14.9	
Ip	Peak current	Arms	17.2	
Ic	Continuous current	Arms	2.55	
Is	Stall current	Arms	1.93	
Pc	Max. continuous power dissipation	W	46.5	

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	
τth	Thermal time constant	s	683	
Rth	Thermal resistance	K/W	2.36	
2τp	Magnetic period	mm	32	
Mw	Magnetic way mass	kg/m	3.61	
Mm	Motor mass (magnetic way excluded)	kg	0.577	
Fa	Attraction force	N	580	
Fd	Max. detent force (average to peak)	N	6.7	
vs	Stall speed	mm/s	0.47	
Gm	Mechanical gap	mm	0.90	

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.03 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QA



Standard

IRONCORE LINEAR MOTOR LMG05-050

		Winding codes	3QA	
PERFORMANCE		UNIT	FREE AIR CONVECTION	
Fp	Peak force	N	484	
Fc	Continuous force	N	104	
Fs	Stall force	N	78.7	
Kt	Force constant	N/Arms	44.9	
Ku	Back EMF constant (*)	Vrms/(m/s)	27.2	
Km	Motor constant	N/√W	16.9	
R20	Electrical resistance at 20°C (*)	Ohm	4.69	
L1	Electrical inductance (*)	mH	27.4	
Ip	Peak current	Arms	17.2	
Ic	Continuous current	Arms	2.38	
Is	Stall current	Arms	1.81	
Pc	Max. continuous power dissipation	W	57.3	

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	
τth	Thermal time constant	s	823	
Rth	Thermal resistance	K/W	1.92	
2τp	Magnetic period	mm	32	
Mw	Magnetic way mass	kg/m	6.34	
Mm	Motor mass (magnetic way excluded)	kg	0.874	
Fa	Attraction force	N	980	
Fd	Max. detent force (average to peak)	N	11	
vs	Stall speed	mm/s	0.39	
Gm	Mechanical gap	mm	0.90	

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.03 m² and minimal stroke is 3 times the motor length.
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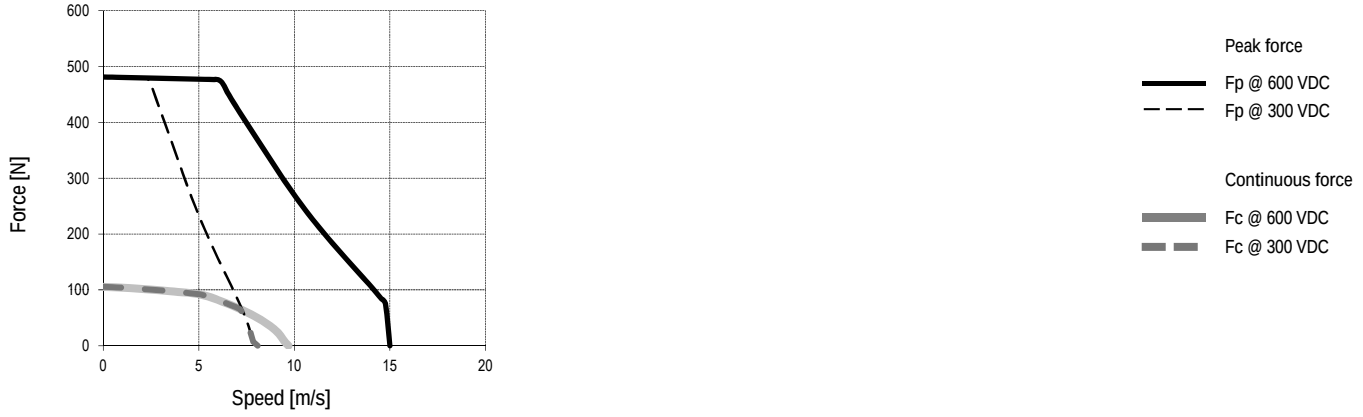
Force = f(speed) for 3QA



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Standard

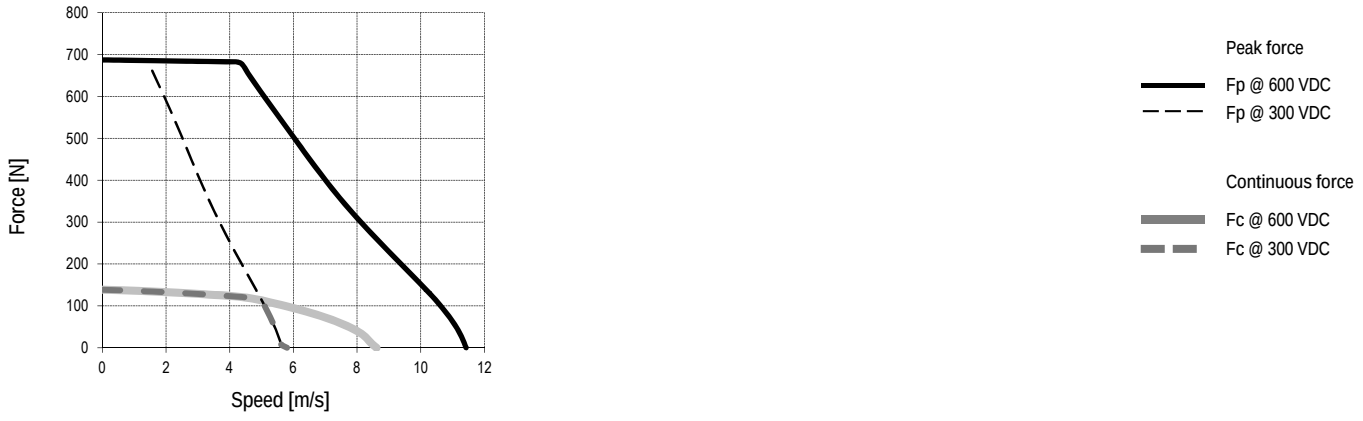
IRONCORE LINEAR MOTOR LMG05-070

PERFORMANCE		Winding codes	3QA	
		UNIT	FREE AIR CONVECTION	
Fp	Peak force	N	690	
Fc	Continuous force	N	137	
Fs	Stall force	N	103	
Kt	Force constant	N/Arms	62.7	
Ku	Back EMF constant (*)	Vrms/(m/s)	38.0	
Km	Motor constant	N/√W	20.8	
R20	Electrical resistance at 20°C (*)	Ohm	6.05	
L1	Electrical inductance (*)	mH	35.9	
Ip	Peak current	Arms	17.2	
Ic	Continuous current	Arms	2.25	
Is	Stall current	Arms	1.70	
Pc	Max. continuous power dissipation	W	65.7	

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	
τth	Thermal time constant	s	954	
Rth	Thermal resistance	K/W	1.67	
2τp	Magnetic period	mm	32	
Mw	Magnetic way mass	kg/m	8.12	
Mm	Motor mass (magnetic way excluded)	kg	1.16	
Fa	Attraction force	N	1300	
Fd	Max. detent force (average to peak)	N	16	
vs	Stall speed	mm/s	0.34	
Gm	Mechanical gap	mm	0.90	

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.03 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QA



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Standard

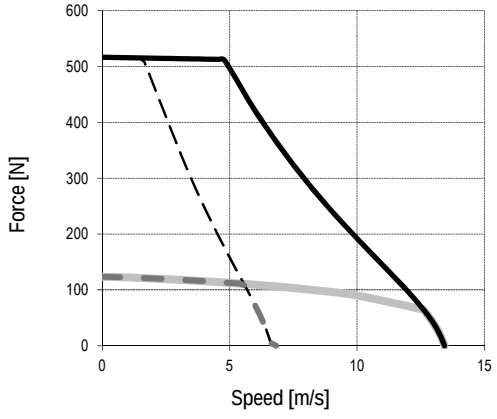
IRONCORE LINEAR MOTOR LMG10-030

		Winding codes	3QA	3QB
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	519	519
Fc	Continuous force	N	122	122
Fs	Stall force	N	92.7	92.7
Kt	Force constant	N/Arms	53.3	26.6
Ku	Back EMF constant (*)	Vrms/(m/s)	32.3	16.2
Km	Motor constant	N/√W	16.8	16.8
R20	Electrical resistance at 20°C (*)	Ohm	6.70	1.68
L1	Electrical inductance (*)	mH	36.4	9.10
Ip	Peak current	Arms	15.5	31.1
Ic	Continuous current	Arms	2.35	4.70
Is	Stall current	Arms	1.78	3.56
Pc	Max. continuous power dissipation	W	79.6	79.6

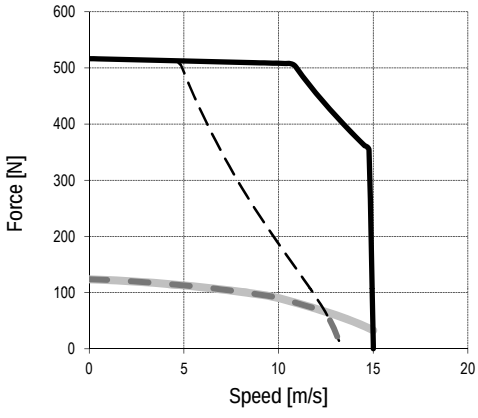
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	760	760
Rth	Thermal resistance	K/W	1.38	1.38
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	3.61	3.61
Mm	Motor mass (magnetic way excluded)	kg	1.11	1.11
Fa	Attraction force	N	1000	1000
Fd	Max. detent force (average to peak)	N	7.2	7.2
vs	Stall speed	mm/s	0.42	0.42
Gm	Mechanical gap	mm	0.90	0.90

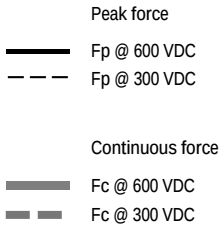
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.05 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QA



Force = f(speed) for 3QB





Standard

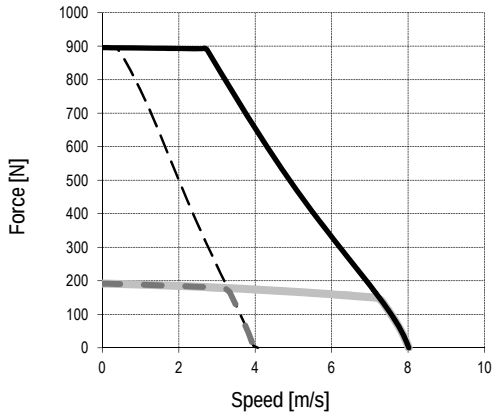
IRONCORE LINEAR MOTOR LMG10-050

		Winding codes	3QA	3QB
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	900	900
Fc	Continuous force	N	189	189
Fs	Stall force	N	142	142
Kt	Force constant	N/Arms	89.3	44.6
Ku	Back EMF constant (*)	Vrms/(m/s)	54.1	27.0
Km	Motor constant	N/√W	23.8	23.8
R20	Electrical resistance at 20°C (*)	Ohm	9.40	2.35
L1	Electrical inductance (*)	mH	54.4	13.6
Ip	Peak current	Arms	15.5	31.1
Ic	Continuous current	Arms	2.19	4.37
Is	Stall current	Arms	1.66	3.31
Pc	Max. continuous power dissipation	W	96.5	96.5

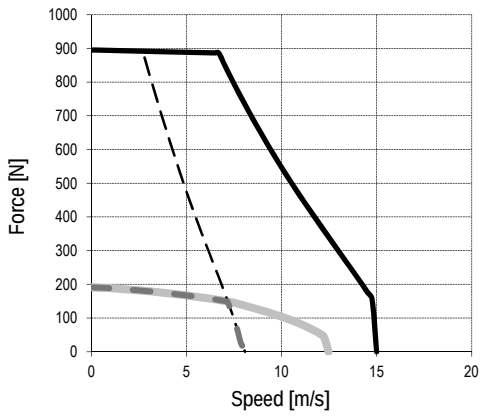
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	928	928
Rth	Thermal resistance	K/W	1.14	1.14
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	6.34	6.34
Mm	Motor mass (magnetic way excluded)	kg	1.67	1.67
Fa	Attraction force	N	1800	1800
Fd	Max. detent force (average to peak)	N	12	12
vs	Stall speed	mm/s	0.34	0.34
Gm	Mechanical gap	mm	0.90	0.90

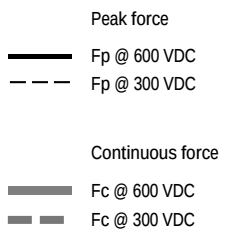
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.06 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QA



Force = f(speed) for 3QB





Standard

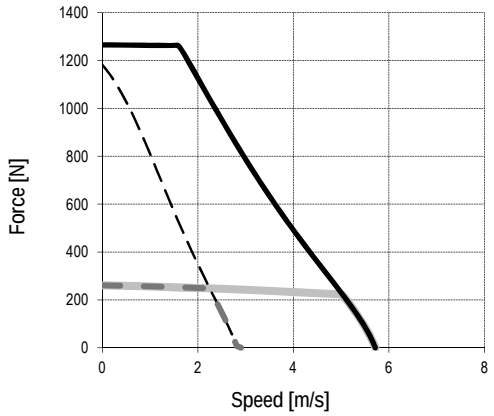
IRONCORE LINEAR MOTOR LMG10-070

		Winding codes	3QA	3QB
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1270	1270
Fc	Continuous force	N	258	257
Fs	Stall force	N	194	194
Kt	Force constant	N/Arms	125	62.6
Ku	Back EMF constant (*)	Vrms/(m/s)	75.7	37.8
Km	Motor constant	N/√W	29.5	29.4
R20	Electrical resistance at 20°C (*)	Ohm	12.1	3.02
L1	Electrical inductance (*)	mH	79.8	20.0
Ip	Peak current	Arms	15.5	31.1
Ic	Continuous current	Arms	2.13	4.26
Is	Stall current	Arms	1.61	3.22
Pc	Max. continuous power dissipation	W	118	118

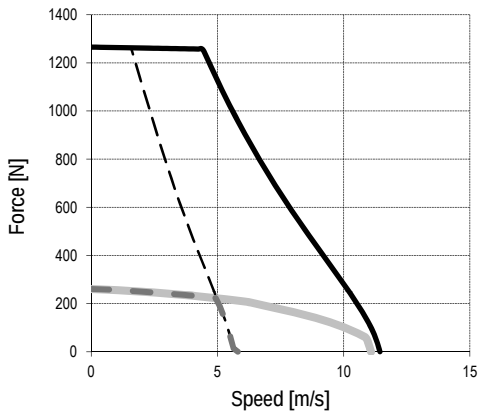
SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1000	1000
Rth	Thermal resistance	K/W	0.937	0.937
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	8.12	8.12
Mm	Motor mass (magnetic way excluded)	kg	2.22	2.22
Fa	Attraction force	N	2500	2500
Fd	Max. detent force (average to peak)	N	17	17
vs	Stall speed	mm/s	0.32	0.32
Gm	Mechanical gap	mm	0.90	0.90

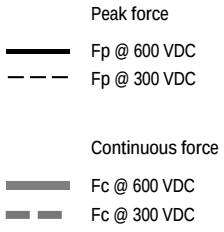
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.06 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QA



Force = f(speed) for 3QB





Standard

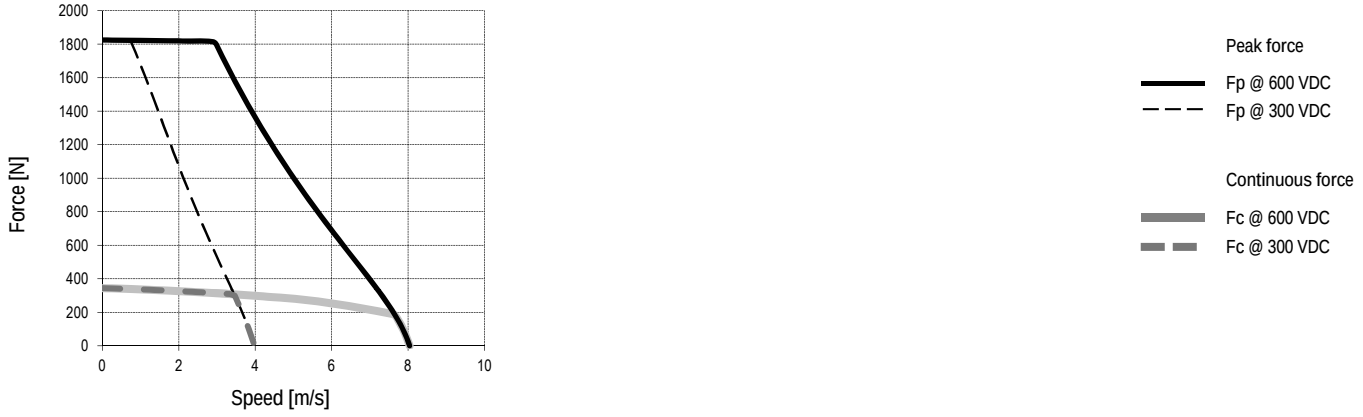
IRONCORE LINEAR MOTOR — LMG10-100

		Winding codes	3QB	
PERFORMANCE		UNIT	FREE AIR CONVECTION	
Fp	Peak force	N	1830	
Fc	Continuous force	N	339	
Fs	Stall force	N	256	
Kt	Force constant	N/Arms	89.0	
Ku	Back EMF constant (*)	Vrms/(m/s)	54.1	
Km	Motor constant	N/√W	36.2	
R20	Electrical resistance at 20°C (*)	Ohm	4.03	
L1	Electrical inductance (*)	mH	27.4	
Ip	Peak current	Arms	31.1	
Ic	Continuous current	Arms	3.95	
Is	Stall current	Arms	2.99	
Pc	Max. continuous power dissipation	W	135	

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	
τth	Thermal time constant	s	1200	
Rth	Thermal resistance	K/W	0.815	
2τp	Magnetic period	mm	32	
Mw	Magnetic way mass	kg/m	12.8	
Mm	Motor mass (magnetic way excluded)	kg	3.05	
Fa	Attraction force	N	3600	
Fd	Max. detent force (average to peak)	N	24	
vs	Stall speed	mm/s	0.27	
Gm	Mechanical gap	mm	0.90	

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.06 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QB



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Standard

IRONCORE LINEAR MOTOR LMG15-030

		Winding codes	3QA	3QC
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	759	759
Fc	Continuous force	N	173	173
Fs	Stall force	N	131	131
Kt	Force constant	N/Arms	80.2	26.7
Ku	Back EMF constant (*)	Vrms/(m/s)	48.6	16.2
Km	Motor constant	N/√W	20.7	20.7
R20	Electrical resistance at 20°C (*)	Ohm	10.1	1.12
L1	Electrical inductance (*)	mH	49.9	5.55
Ip	Peak current	Arms	14.9	44.7
Ic	Continuous current	Arms	2.21	6.63
Is	Stall current	Arms	1.68	5.02
Pc	Max. continuous power dissipation	W	106	106

	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	858	858
Rth	Thermal resistance	K/W	1.04	1.04
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	3.61	3.61
Mm	Motor mass (magnetic way excluded)	kg	1.63	1.63
Fa	Attraction force	N	1600	1600
Fd	Max. detent force (average to peak)	N	8.9	8.9
vs	Stall speed	mm/s	0.37	0.37
Gm	Mechanical gap	mm	0.90	0.90

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.06 m² and minimal stroke is 3 times the motor length.
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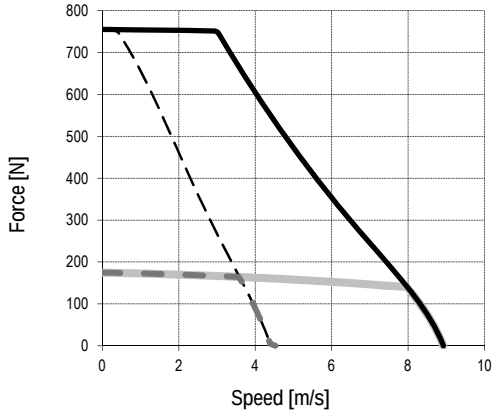
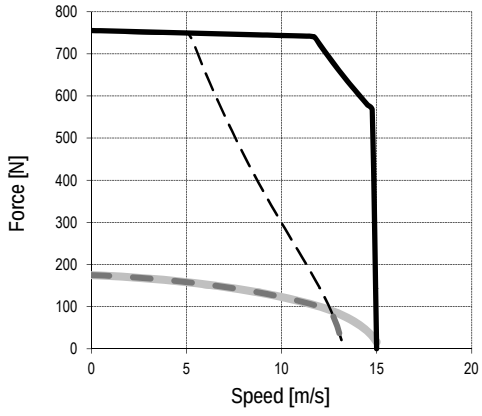
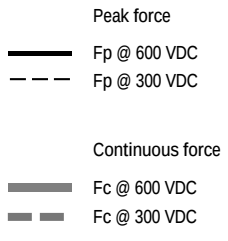
Force = f(speed) for 3QA



Force = f(speed) for 3QC





Standard

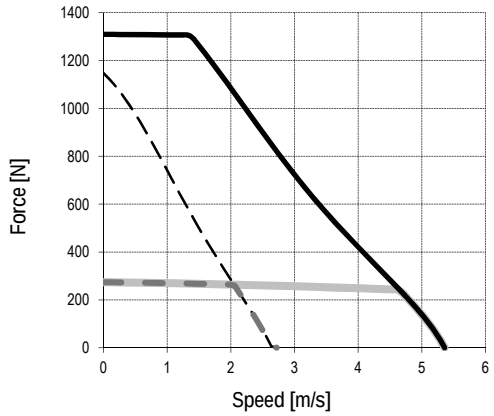
IRONCORE LINEAR MOTOR LMG15-050

		Winding codes	3QA	3QC
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1320	1320
Fc	Continuous force	N	271	271
Fs	Stall force	N	205	205
Kt	Force constant	N/Arms	134	44.5
Ku	Back EMF constant (*)	Vrms/(m/s)	81.0	27.0
Km	Motor constant	N/√W	29.0	29.0
R20	Electrical resistance at 20°C (*)	Ohm	14.1	1.57
L1	Electrical inductance (*)	mH	83.3	9.26
Ip	Peak current	Arms	14.9	44.7
Ic	Continuous current	Arms	2.10	6.31
Is	Stall current	Arms	1.59	4.78
Pc	Max. continuous power dissipation	W	134	134

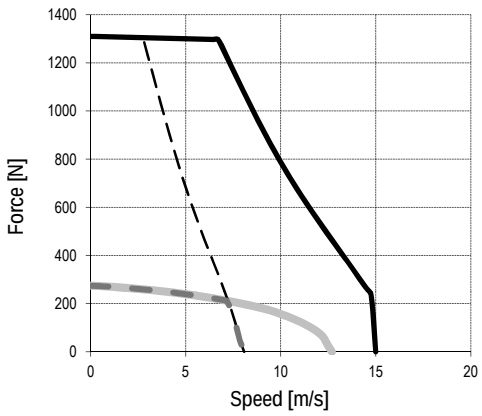
SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	986	986
Rth	Thermal resistance	K/W	0.820	0.820
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	6.34	6.34
Mm	Motor mass (magnetic way excluded)	kg	2.43	2.43
Fa	Attraction force	N	2600	2600
Fd	Max. detent force (average to peak)	N	15	15
vs	Stall speed	mm/s	0.32	0.32
Gm	Mechanical gap	mm	0.90	0.90

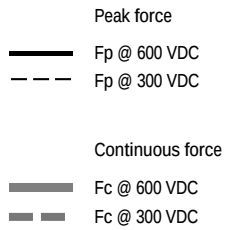
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.07 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QA



Force = f(speed) for 3QC





Standard

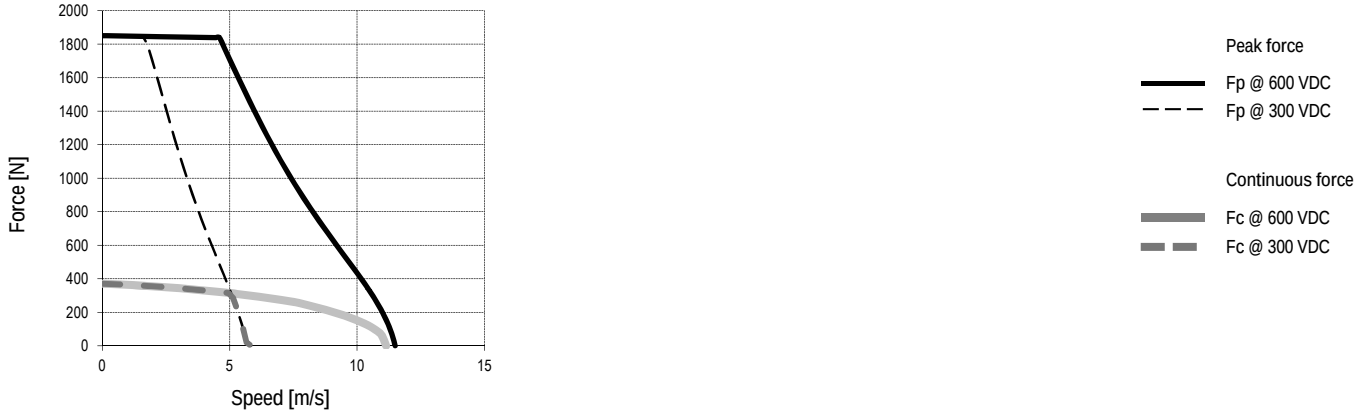
IRONCORE LINEAR MOTOR LMG15-070

PERFORMANCE		Winding codes	3QC	
		UNIT	FREE AIR CONVECTION	
Fp	Peak force	N	1860	
Fc	Continuous force	N	366	
Fs	Stall force	N	278	
Kt	Force constant	N/Arms	62.3	
Ku	Back EMF constant (*)	Vrms/(m/s)	37.8	
Km	Motor constant	N/√W	35.9	
R20	Electrical resistance at 20°C (*)	Ohm	2.01	
L1	Electrical inductance (*)	mH	13.0	
Ip	Peak current	Arms	44.7	
Ic	Continuous current	Arms	6.10	
Is	Stall current	Arms	4.62	
Pc	Max. continuous power dissipation	W	161	

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	
τth	Thermal time constant	s	1080	
Rth	Thermal resistance	K/W	0.685	
2τp	Magnetic period	mm	32	
Mw	Magnetic way mass	kg/m	8.12	
Mm	Motor mass (magnetic way excluded)	kg	3.24	
Fa	Attraction force	N	3600	
Fd	Max. detent force (average to peak)	N	21	
vs	Stall speed	mm/s	0.30	
Gm	Mechanical gap	mm	0.90	

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.08 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QC



Standard

IRONCORE LINEAR MOTOR — LMG15-100

		Winding codes	3QC	
PERFORMANCE		UNIT	FREE AIR CONVECTION	
Fp	Peak force	N	2680	
Fc	Continuous force	N	494	
Fs	Stall force	N	373	
Kt	Force constant	N/Arms	89.1	
Ku	Back EMF constant (*)	Vrms/(m/s)	54.0	
Km	Motor constant	N/√W	44.3	
R20	Electrical resistance at 20°C (*)	Ohm	2.69	
L1	Electrical inductance (*)	mH	18.6	
Ip	Peak current	Arms	44.7	
Ic	Continuous current	Arms	5.79	
Is	Stall current	Arms	4.38	
Pc	Max. continuous power dissipation	W	194	

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	
τth	Thermal time constant	s	1230	
Rth	Thermal resistance	K/W	0.568	
2τp	Magnetic period	mm	32	
Mw	Magnetic way mass	kg/m	12.8	
Mm	Motor mass (magnetic way excluded)	kg	4.45	
Fa	Attraction force	N	5200	
Fd	Max. detent force (average to peak)	N	30	
vs	Stall speed	mm/s	0.26	
Gm	Mechanical gap	mm	0.90	

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.09 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QC