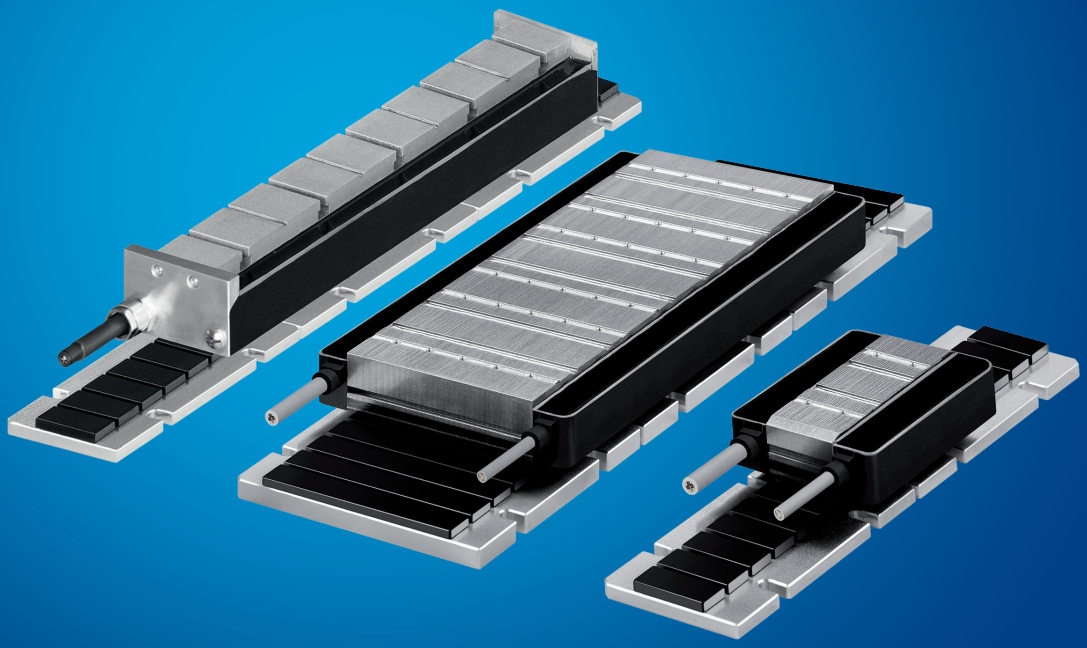


Linear Motors

LMA DATA SHEETS

ETEL

Standard

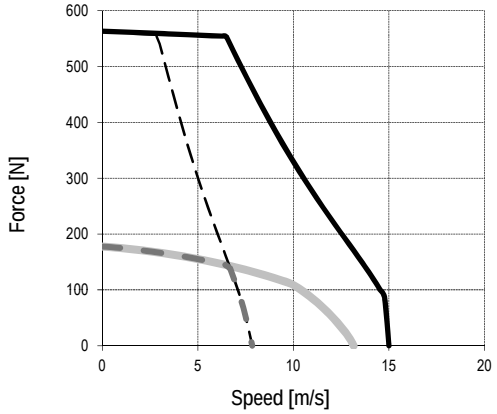
IRONCORE LINEAR MOTOR LMA11-030

		Winding codes	3TA	3WA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	567	567
Fc	Continuous force	N	175	174
Fs	Stall force	N	133	132
Kt	Force constant	N/Arms	45.4	23.2
Ku	Back EMF constant (*)	Vrms/(m/s)	26.3	13.4
Km	Motor constant	N/√W	23.2	23.0
R20	Electrical resistance at 20°C (*)	Ohm	2.56	0.680
L1	Electrical inductance (*)	mH	21.8	5.71
Ip	Peak current	Arms	20.5	40.0
Ic	Continuous current	Arms	3.98	7.72
Is	Stall current	Arms	3.02	5.85
Pc	Max. continuous power dissipation	W	87.1	87.1

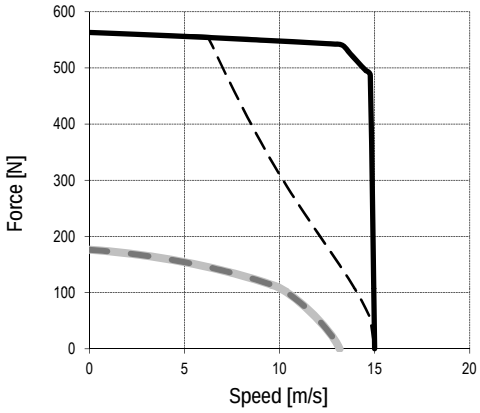
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1230	1230
Rth	Thermal resistance	K/W	1.26	1.26
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	3.61	3.61
Mm	Motor mass (magnetic way excluded)	kg	2.16	2.17
Fa	Attraction force	N	1200	1200
Fd	Max. detent force (average to peak)	N	6.2	6.2
vs	Stall speed	mm/s	0.26	0.26
Gm	Mechanical gap	mm	0.80	0.80

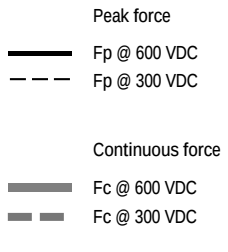
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.06 m² and minimal stroke is 2 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3TA



Force = f(speed) for 3WA





Standard

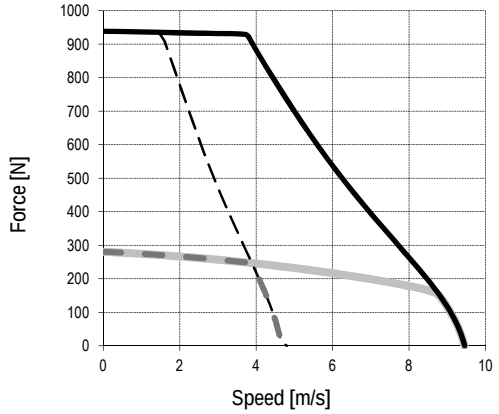
IRONCORE LINEAR MOTOR LMA11-050

		Winding codes	3TA	3WA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	945	945
Fc	Continuous force	N	277	277
Fs	Stall force	N	210	210
Kt	Force constant	N/Arms	75.7	38.7
Ku	Back EMF constant (*)	Vrms/(m/s)	43.8	22.4
Km	Motor constant	N/√W	32.9	33.0
R20	Electrical resistance at 20°C (*)	Ohm	3.53	0.920
L1	Electrical inductance (*)	mH	36.5	9.53
Ip	Peak current	Arms	20.5	40.0
Ic	Continuous current	Arms	3.79	7.42
Is	Stall current	Arms	2.87	5.63
Pc	Max. continuous power dissipation	W	109	109

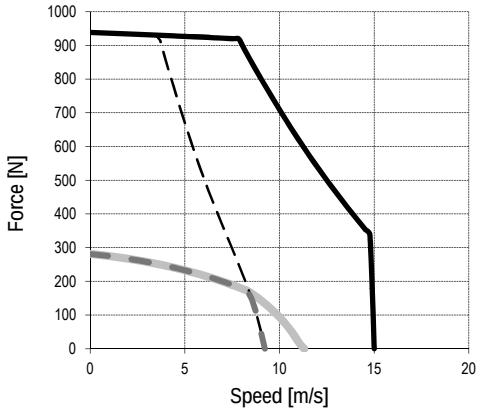
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1540	1540
Rth	Thermal resistance	K/W	1.01	1.01
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	6.34	6.34
Mm	Motor mass (magnetic way excluded)	kg	3.32	3.32
Fa	Attraction force	N	2000	2000
Fd	Max. detent force (average to peak)	N	10	10
vs	Stall speed	mm/s	0.21	0.21
Gm	Mechanical gap	mm	0.80	0.80

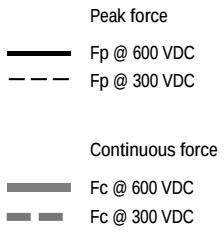
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.07 m² and minimal stroke is 2 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3TA



Force = f(speed) for 3WA





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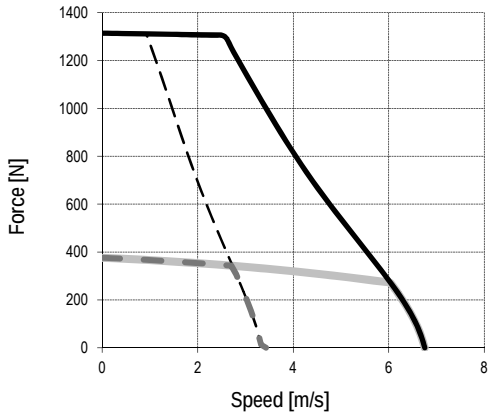
IRONCORE LINEAR MOTOR LMA11-070

		Winding codes	3TA	3WA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1320	1320
Fc	Continuous force	N	371	370
Fs	Stall force	N	281	281
Kt	Force constant	N/Arms	106	54.2
Ku	Back EMF constant (*)	Vrms/(m/s)	61.3	31.3
Km	Motor constant	N/√W	40.8	40.7
R20	Electrical resistance at 20°C (*)	Ohm	4.51	1.18
L1	Electrical inductance (*)	mH	51.2	13.4
Ip	Peak current	Arms	20.5	40.0
Ic	Continuous current	Arms	3.64	7.10
Is	Stall current	Arms	2.75	5.38
Pc	Max. continuous power dissipation	W	128	128

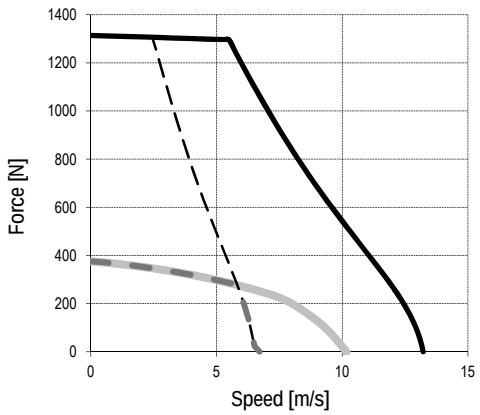
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1780	1780
Rth	Thermal resistance	K/W	0.861	0.861
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	8.12	8.12
Mm	Motor mass (magnetic way excluded)	kg	4.49	4.49
Fa	Attraction force	N	2900	2900
Fd	Max. detent force (average to peak)	N	14	14
vs	Stall speed	mm/s	0.18	0.18
Gm	Mechanical gap	mm	0.80	0.80

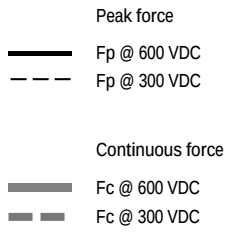
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.07 m² and minimal stroke is 2 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3TA



Force = f(speed) for 3WA





Standard

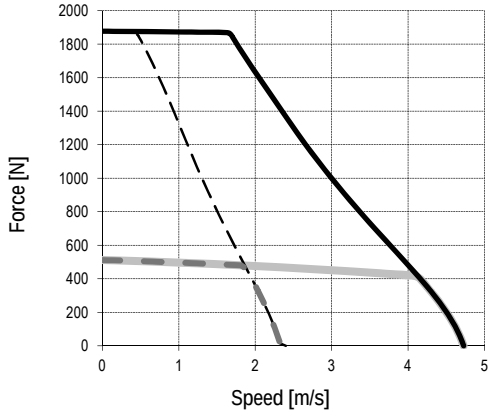
IRONCORE LINEAR MOTOR LMA11-100

		Winding codes	3TA	3WA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1890	1890
Fc	Continuous force	N	504	503
Fs	Stall force	N	382	381
Kt	Force constant	N/Arms	152	77.4
Ku	Back EMF constant (*)	Vrms/(m/s)	87.5	44.7
Km	Motor constant	N/√W	50.7	50.6
R20	Electrical resistance at 20°C (*)	Ohm	5.96	1.56
L1	Electrical inductance (*)	mH	73.2	19.1
Ip	Peak current	Arms	20.5	40.0
Ic	Continuous current	Arms	3.47	6.78
Is	Stall current	Arms	2.63	5.13
Pc	Max. continuous power dissipation	W	154	154

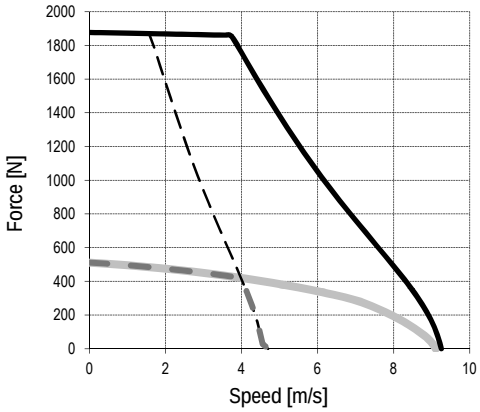
SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2090	2090
Rth	Thermal resistance	K/W	0.714	0.714
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	12.8	12.8
Mm	Motor mass (magnetic way excluded)	kg	6.24	6.24
Fa	Attraction force	N	4100	4100
Fd	Max. detent force (average to peak)	N	21	21
vs	Stall speed	mm/s	0.15	0.15
Gm	Mechanical gap	mm	0.80	0.80

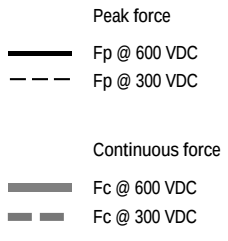
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.08 m² and minimal stroke is 2 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3TA



Force = f(speed) for 3WA





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Standard

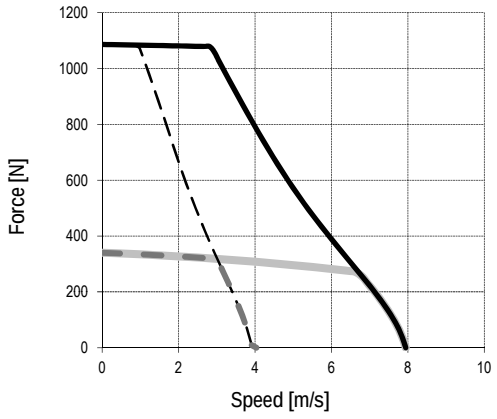
IRONCORE LINEAR MOTOR LMA22-030

		Winding codes	3TA	3TB
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1100	1100
Fc	Continuous force	N	336	336
Fs	Stall force	N	256	256
Kt	Force constant	N/Arms	90.1	45.1
Ku	Back EMF constant (*)	Vrms/(m/s)	52.1	26.0
Km	Motor constant	N/√W	32.5	32.5
R20	Electrical resistance at 20°C (*)	Ohm	5.12	1.28
L1	Electrical inductance (*)	mH	48.0	12.0
Ip	Peak current	Arms	20.2	40.5
Ic	Continuous current	Arms	3.85	7.70
Is	Stall current	Arms	2.92	5.83
Pc	Max. continuous power dissipation	W	163	163

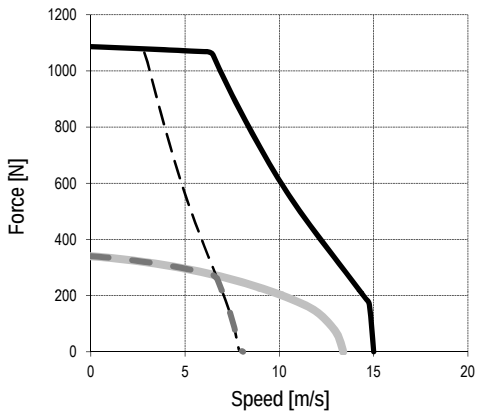
SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1270	1270
Rth	Thermal resistance	K/W	0.676	0.676
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	3.61	3.61
Mm	Motor mass (magnetic way excluded)	kg	4.13	4.13
Fa	Attraction force	N	2400	2400
Fd	Max. detent force (average to peak)	N	8.1	8.1
vs	Stall speed	mm/s	0.25	0.25
Gm	Mechanical gap	mm	0.80	0.80

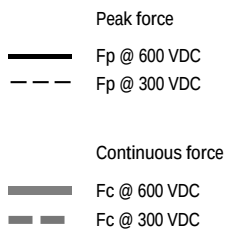
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.11 m² and minimal stroke is 2 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3TA



Force = f(speed) for 3TB





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Standard

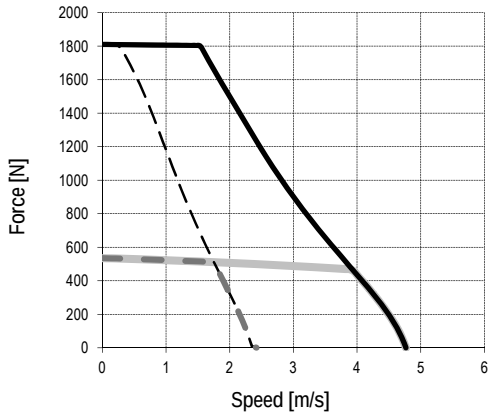
IRONCORE LINEAR MOTOR LMA22-050

		Winding codes	3TA	3TB
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1830	1830
Fc	Continuous force	N	528	528
Fs	Stall force	N	401	401
Kt	Force constant	N/Arms	150	75.1
Ku	Back EMF constant (*)	Vrms/(m/s)	86.8	43.4
Km	Motor constant	N/√W	46.1	46.1
R20	Electrical resistance at 20°C (*)	Ohm	7.06	1.77
L1	Electrical inductance (*)	mH	80.3	20.1
Ip	Peak current	Arms	20.2	40.5
Ic	Continuous current	Arms	3.65	7.29
Is	Stall current	Arms	2.76	5.52
Pc	Max. continuous power dissipation	W	202	202

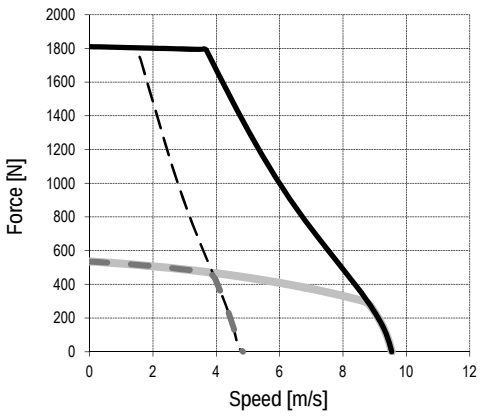
SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1600	1600
Rth	Thermal resistance	K/W	0.546	0.546
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	6.34	6.34
Mm	Motor mass (magnetic way excluded)	kg	6.35	6.35
Fa	Attraction force	N	3900	3900
Fd	Max. detent force (average to peak)	N	14	14
vs	Stall speed	mm/s	0.20	0.20
Gm	Mechanical gap	mm	0.80	0.80

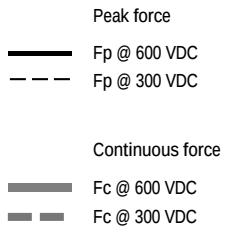
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.12 m² and minimal stroke is 2 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3TA



Force = f(speed) for 3TB





Standard

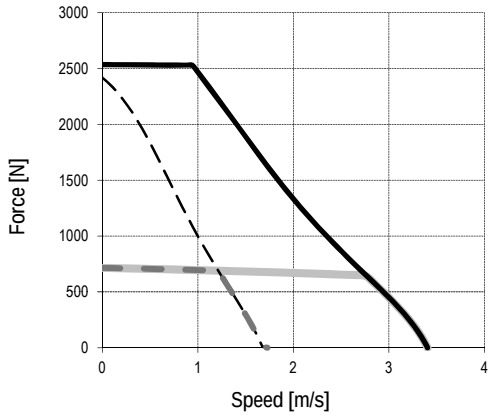
IRONCORE LINEAR MOTOR LMA22-070

		Winding codes	3TA	3TB
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	2560	2560
Fc	Continuous force	N	705	705
Fs	Stall force	N	535	535
Kt	Force constant	N/Arms	210	105
Ku	Back EMF constant (*)	Vrms/(m/s)	122	60.8
Km	Motor constant	N/√W	57.2	57.2
R20	Electrical resistance at 20°C (*)	Ohm	9.01	2.25
L1	Electrical inductance (*)	mH	113	28.2
Ip	Peak current	Arms	20.2	40.5
Ic	Continuous current	Arms	3.49	6.97
Is	Stall current	Arms	2.64	5.28
Pc	Max. continuous power dissipation	W	235	235

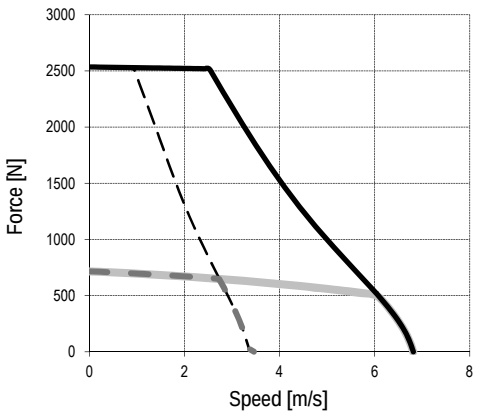
SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1870	1870
Rth	Thermal resistance	K/W	0.468	0.468
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	8.12	8.12
Mm	Motor mass (magnetic way excluded)	kg	8.58	8.58
Fa	Attraction force	N	5500	5500
Fd	Max. detent force (average to peak)	N	19	19
vs	Stall speed	mm/s	0.17	0.17
Gm	Mechanical gap	mm	0.80	0.80

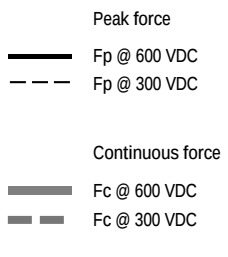
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.13 m² and minimal stroke is 2 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3TA



Force = f(speed) for 3TB





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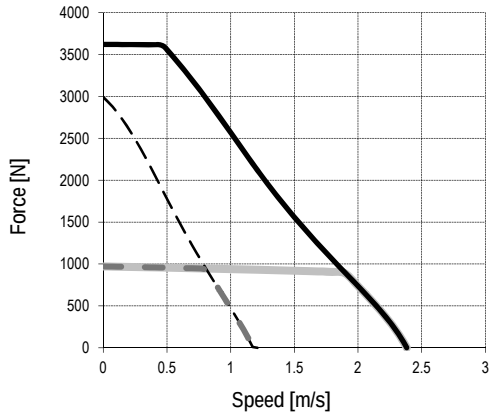
IRONCORE LINEAR MOTOR LMA22-100

		Winding codes	3TA	3TB
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	3650	3650
Fc	Continuous force	N	956	956
Fs	Stall force	N	725	725
Kt	Force constant	N/Arms	300	150
Ku	Back EMF constant (*)	Vrms/(m/s)	174	86.8
Km	Motor constant	N/√W	71.1	71.1
R20	Electrical resistance at 20°C (*)	Ohm	11.9	2.98
L1	Electrical inductance (*)	mH	162	40.4
Ip	Peak current	Arms	20.2	40.5
Ic	Continuous current	Arms	3.32	6.63
Is	Stall current	Arms	2.51	5.02
Pc	Max. continuous power dissipation	W	281	281

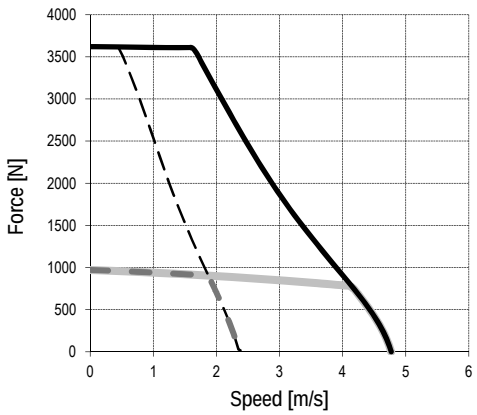
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2200	2200
Rth	Thermal resistance	K/W	0.391	0.391
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	12.8	12.8
Mm	Motor mass (magnetic way excluded)	kg	11.9	11.9
Fa	Attraction force	N	7900	7900
Fd	Max. detent force (average to peak)	N	27	27
vs	Stall speed	mm/s	0.15	0.15
Gm	Mechanical gap	mm	0.80	0.80

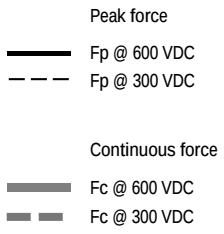
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.15 m² and minimal stroke is 2 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3TA



Force = f(speed) for 3TB





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