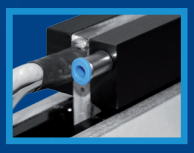


Linear **Motors**

LMS DATA SHEETS

MOTION TECHNOLOGY

Standard

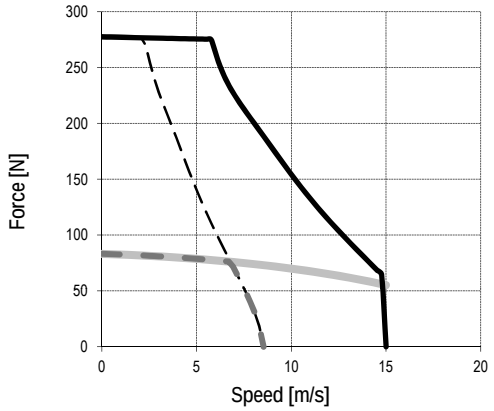
IRONCORE LINEAR MOTOR LMS05-030

		Winding codes	3QA	3TA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	279	279
Fc	Continuous force	N	82.2	83.7
Fs	Stall force	N	64.2	65.4
Kt	Force constant	N/Arms	41.5	22.1
Ku	Back EMF constant (*)	Vrms/(m/s)	25.2	13.4
Km	Motor constant	N/√W	14.7	15.0
R20	Electrical resistance at 20°C (*)	Ohm	5.29	1.44
L1	Electrical inductance (*)	mH	44.2	12.5
Ip	Peak current	Arms	16.3	30.6
Ic	Continuous current	Arms	2.11	4.06
Is	Stall current	Arms	1.60	3.07
Pc	Max. continuous power dissipation	W	50.8	50.8

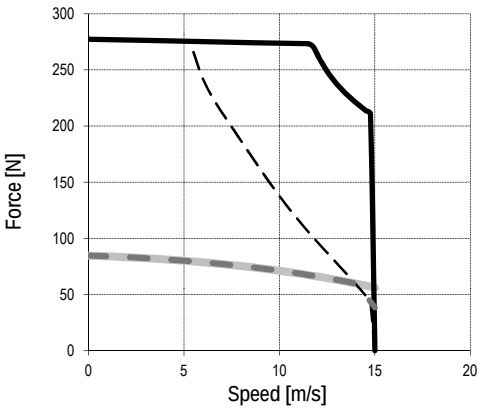
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	889	831
Rth	Thermal resistance	K/W	2.17	2.17
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	3.61	3.61
Mm	Motor mass (magnetic way excluded)	kg	0.762	0.777
Fa	Attraction force	N	580	580
Fd	Max. detent force (average to peak)	N	7.4	7.4
vs	Stall speed	mm/s	0.36	0.39
Gm	Mechanical gap	mm	0.90	0.90

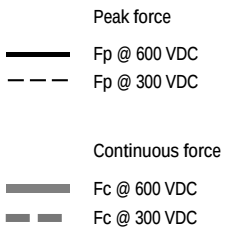
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.03 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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



Force = f(speed) for 3TA





Standard

IRONCORE LINEAR MOTOR LMS05-050

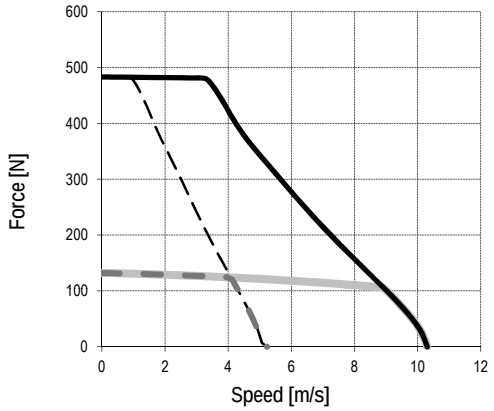
		Winding codes	3QA	3TA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	486	486
Fc	Continuous force	N	131	134
Fs	Stall force	N	100	103
Kt	Force constant	N/Arms	69.5	37.0
Ku	Back EMF constant (*)	Vrms/(m/s)	41.9	22.3
Km	Motor constant	N/√W	20.9	21.4
R20	Electrical resistance at 20°C (*)	Ohm	7.41	1.99
L1	Electrical inductance (*)	mH	68.5	19.3
Ip	Peak current	Arms	16.3	30.6
Ic	Continuous current	Arms	1.99	3.84
Is	Stall current	Arms	1.51	2.91
Pc	Max. continuous power dissipation	W	63.1	63.1

	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1030	974
Rth	Thermal resistance	K/W	1.74	1.74
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	6.34	6.34
Mm	Motor mass (magnetic way excluded)	kg	1.16	1.18
Fa	Attraction force	N	980	980
Fd	Max. detent force (average to peak)	N	12	12
vs	Stall speed	mm/s	0.31	0.33
Gm	Mechanical gap	mm	0.90	0.90

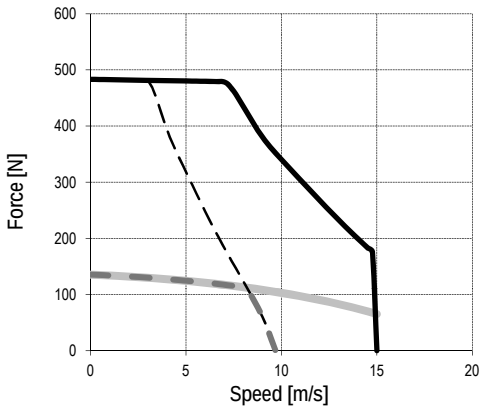
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.03 m² and minimal stroke is 3 times the motor length.

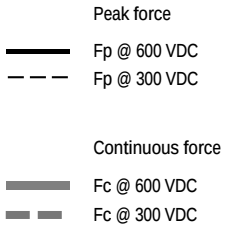
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QA



Force = f(speed) for 3TA





Standard

IRONCORE LINEAR MOTOR LMS05-070

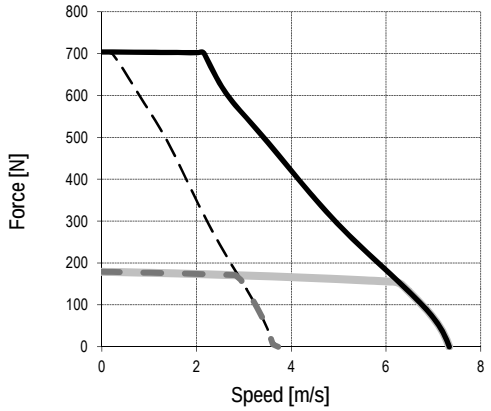
		Winding codes	3QA	3TA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	708	708
Fc	Continuous force	N	177	182
Fs	Stall force	N	137	140
Kt	Force constant	N/Arms	97.7	52.0
Ku	Back EMF constant (*)	Vrms/(m/s)	58.9	31.4
Km	Motor constant	N/√W	25.8	26.6
R20	Electrical resistance at 20°C (*)	Ohm	9.53	2.54
L1	Electrical inductance (*)	mH	97.0	27.4
Ip	Peak current	Arms	16.3	30.7
Ic	Continuous current	Arms	1.89	3.65
Is	Stall current	Arms	1.43	2.77
Pc	Max. continuous power dissipation	W	72.7	72.7

	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1180	1120
Rth	Thermal resistance	K/W	1.51	1.51
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	8.12	8.12
Mm	Motor mass (magnetic way excluded)	kg	1.57	1.59
Fa	Attraction force	N	1300	1300
Fd	Max. detent force (average to peak)	N	17	17
vs	Stall speed	mm/s	0.27	0.29
Gm	Mechanical gap	mm	0.90	0.90

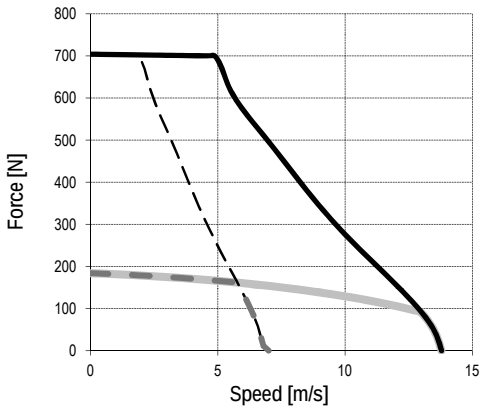
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.03 m² and minimal stroke is 3 times the motor length.

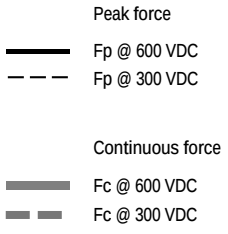
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3QA



Force = f(speed) for 3TA





Standard

IRONCORE LINEAR MOTOR LMS10-030

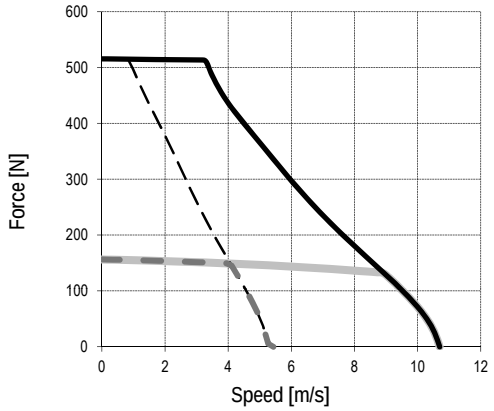
		Winding codes	3RA	3TA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	519	519
Fc	Continuous force	N	154	155
Fs	Stall force	N	121	121
Kt	Force constant	N/Arms	67.0	43.7
Ku	Back EMF constant (*)	Vrms/(m/s)	40.1	26.2
Km	Motor constant	N/√W	21.0	21.0
R20	Electrical resistance at 20°C (*)	Ohm	6.81	2.88
L1	Electrical inductance (*)	mH	59.2	25.2
Ip	Peak current	Arms	18.6	28.5
Ic	Continuous current	Arms	2.44	3.76
Is	Stall current	Arms	1.85	2.85
Pc	Max. continuous power dissipation	W	87.2	87.2

	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	943	892
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	1.42	1.44
Fa	Attraction force	N	1000	1000
Fd	Max. detent force (average to peak)	N	7.9	7.9
vs	Stall speed	mm/s	0.34	0.36
Gm	Mechanical gap	mm	0.9	0.9

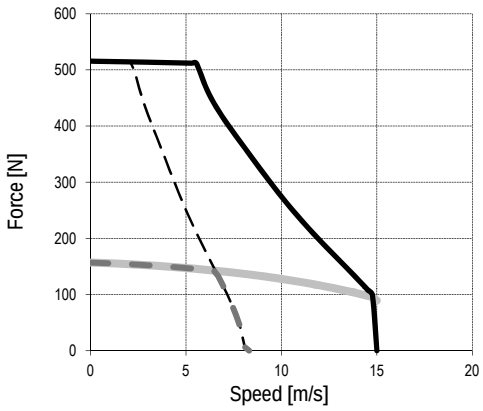
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.05m² and minimal stroke is 3 times the motor length.

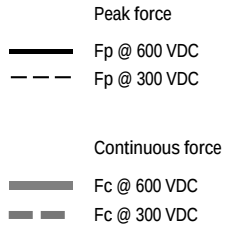
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3RA



Force = f(speed) for 3TA





Standard

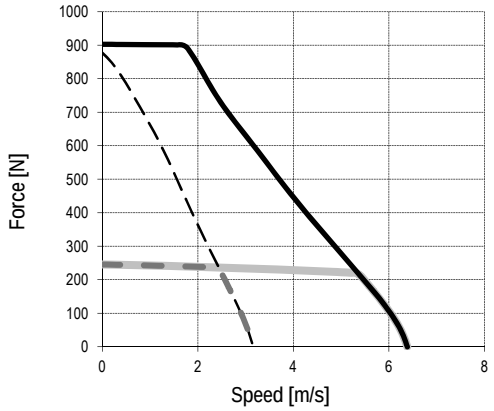
IRONCORE LINEAR MOTOR LMS10-050

		Winding codes	3RA	3TA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	908	908
Fc	Continuous force	N	242	245
Fs	Stall force	N	186	188
Kt	Force constant	N/Arms	112	73.2
Ku	Back EMF constant (*)	Vrms/(m/s)	67.1	43.8
Km	Motor constant	N/√W	29.7	30.0
R20	Electrical resistance at 20°C (*)	Ohm	9.54	3.98
L1	Electrical inductance (*)	mH	91.8	39.1
Ip	Peak current	Arms	18.6	28.5
Ic	Continuous current	Arms	2.28	3.53
Is	Stall current	Arms	1.73	2.67
Pc	Max. continuous power dissipation	W	106	106

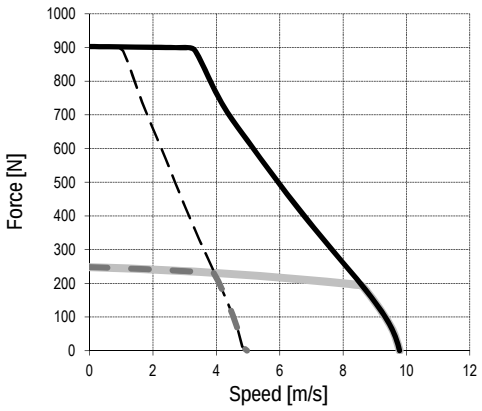
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1120	1070
Rth	Thermal resistance	K/W	1.04	1.04
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	6.34	6.34
Mm	Motor mass (magnetic way excluded)	kg	2.16	2.19
Fa	Attraction force	N	1800	1800
Fd	Max. detent force (average to peak)	N	13	13
vs	Stall speed	mm/s	0.29	0.30
Gm	Mechanical gap	mm	0.9	0.9

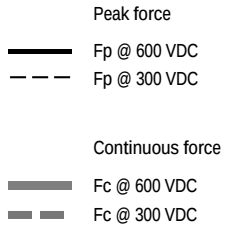
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.05m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous 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 3RA



Force = f(speed) for 3TA





Standard

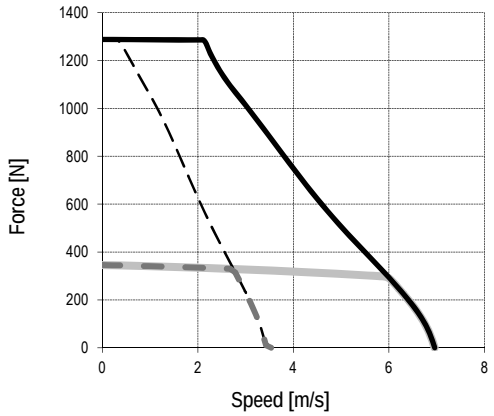
IRONCORE LINEAR MOTOR LMS10-070

		Winding codes	3TA	3VA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1300	1300
Fc	Continuous force	N	342	330
Fs	Stall force	N	265	255
Kt	Force constant	N/Arms	103	59.8
Ku	Back EMF constant (*)	Vrms/(m/s)	61.7	35.8
Km	Motor constant	N/√W	37.3	35.9
R20	Electrical resistance at 20°C (*)	Ohm	5.08	1.85
L1	Electrical inductance (*)	mH	55.1	18.7
Ip	Peak current	Arms	28.5	49.1
Ic	Continuous current	Arms	3.44	5.71
Is	Stall current	Arms	2.61	4.33
Pc	Max. continuous power dissipation	W	129	129

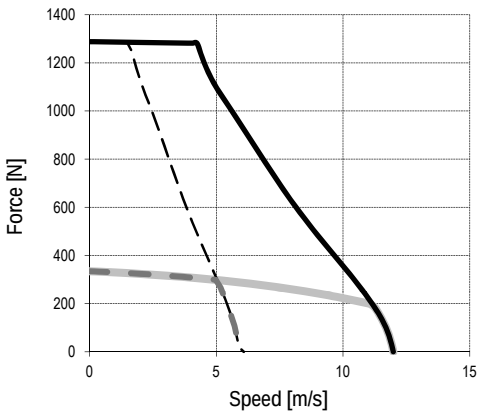
SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1160	1230
Rth	Thermal resistance	K/W	0.850	0.850
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	8.12	8.12
Mm	Motor mass (magnetic way excluded)	kg	2.94	2.89
Fa	Attraction force	N	2500	2500
Fd	Max. detent force (average to peak)	N	19	19
vs	Stall speed	mm/s	0.28	0.26
Gm	Mechanical gap	mm	0.90	0.90

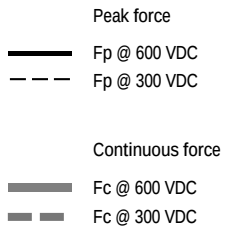
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.06 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous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



Force = f(speed) for 3VA





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Standard

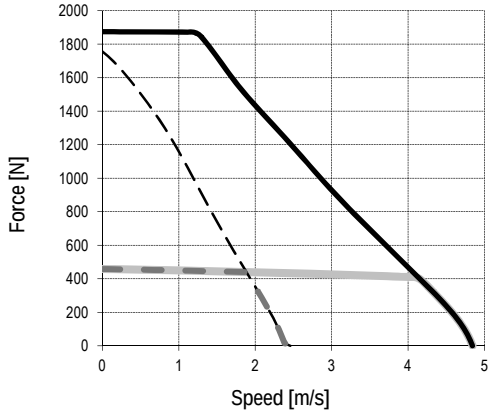
IRONCORE LINEAR MOTOR LMS10-100

		Winding codes	3TA	3VA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1890	1890
Fc	Continuous force	N	452	435
Fs	Stall force	N	345	332
Kt	Force constant	N/Arms	148	85.8
Ku	Back EMF constant (*)	Vrms/(m/s)	88.6	51.5
Km	Motor constant	N/√W	46.5	44.6
R20	Electrical resistance at 20°C (*)	Ohm	6.74	2.47
L1	Electrical inductance (*)	mH	79.0	26.8
Ip	Peak current	Arms	28.5	49.1
Ic	Continuous current	Arms	3.21	5.31
Is	Stall current	Arms	2.43	4.02
Pc	Max. continuous power dissipation	W	149	149

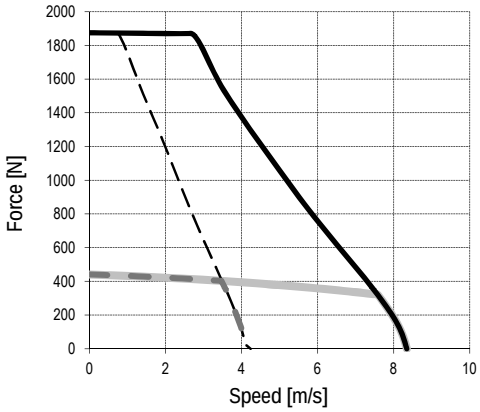
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1380	1470
Rth	Thermal resistance	K/W	0.737	0.737
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	12.8	12.8
Mm	Motor mass (magnetic way excluded)	kg	4.06	4.00
Fa	Attraction force	N	3600	3600
Fd	Max. detent force (average to peak)	N	26	26
vs	Stall speed	mm/s	0.23	0.22
Gm	Mechanical gap	mm	0.90	0.90

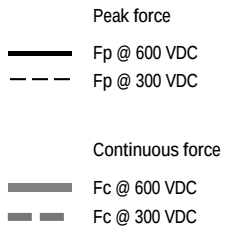
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.06 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous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



Force = f(speed) for 3VA





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Standard

IRONCORE LINEAR MOTOR LMS15-030

PERFORMANCE		Winding codes	3RA	3TA
		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	759	759
Fc	Continuous force	N	218	219
Fs	Stall force	N	169	170
Kt	Force constant	N/Arms	100	65.4
Ku	Back EMF constant (*)	Vrms/(m/s)	60.0	39.2
Km	Motor constant	N/√W	25.6	25.7
R20	Electrical resistance at 20°C (*)	Ohm	10.2	4.31
L1	Electrical inductance (*)	mH	83.8	35.7
Ip	Peak current	Arms	17.7	27.1
Ic	Continuous current	Arms	2.31	3.56
Is	Stall current	Arms	1.75	2.70
Pc	Max. continuous power dissipation	W	117	117

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1030	973
Rth	Thermal resistance	K/W	0.937	0.937
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	3.61	3.61
Mm	Motor mass (magnetic way excluded)	kg	2.07	2.11
Fa	Attraction force	N	1600	1600
Fd	Max. detent force (average to peak)	N	9.8	9.8
vs	Stall speed	mm/s	0.31	0.33
Gm	Mechanical gap	mm	0.9	0.9

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 0.06m² and minimal stroke is 3 times the motor length.
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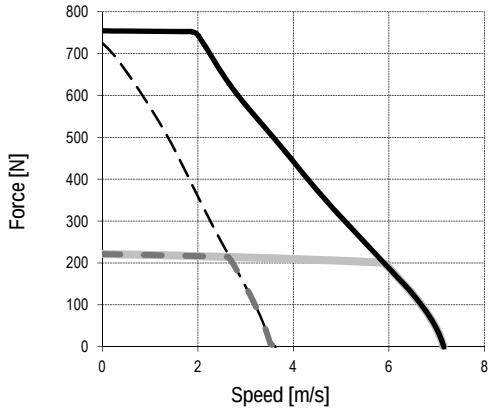
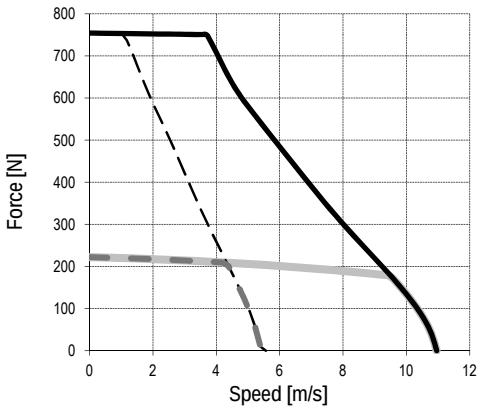
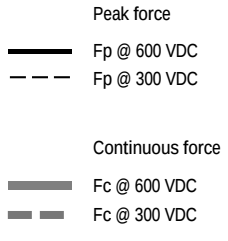
Force = f(speed) for 3RA



Force = f(speed) for 3TA





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Standard

IRONCORE LINEAR MOTOR LMS15-050

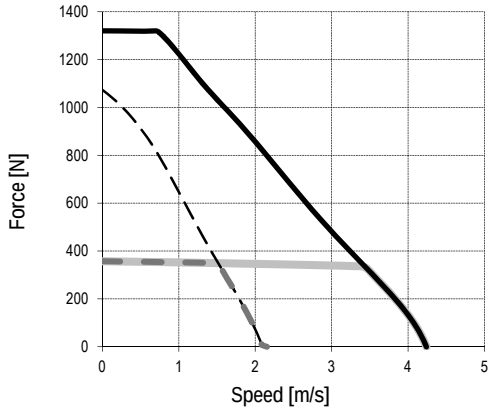
PERFORMANCE		Winding codes	3RA	3TA
		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1330	1330
Fc	Continuous force	N	353	356
Fs	Stall force	N	271	274
Kt	Force constant	N/Arms	169	110
Ku	Back EMF constant (*)	Vrms/(m/s)	101	65.9
Km	Motor constant	N/√W	36.4	36.8
R20	Electrical resistance at 20°C (*)	Ohm	14.3	5.97
L1	Electrical inductance (*)	mH	140	59.7
Ip	Peak current	Arms	17.7	27.1
Ic	Continuous current	Arms	2.20	3.41
Is	Stall current	Arms	1.67	2.58
Pc	Max. continuous power dissipation	W	149	149

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1170	1120
Rth	Thermal resistance	K/W	0.738	0.738
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	6.34	6.34
Mm	Motor mass (magnetic way excluded)	kg	3.16	3.20
Fa	Attraction force	N	2600	2600
Fd	Max. detent force (average to peak)	N	17	17
vs	Stall speed	mm/s	0.27	0.29
Gm	Mechanical gap	mm	0.9	0.9

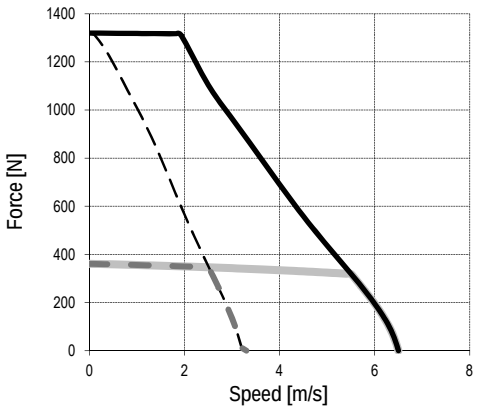
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.07m² and minimal stroke is 3 times the motor length.

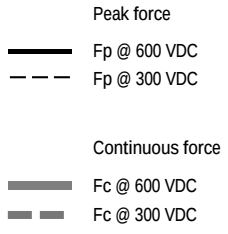
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3RA



Force = f(speed) for 3TA





Standard

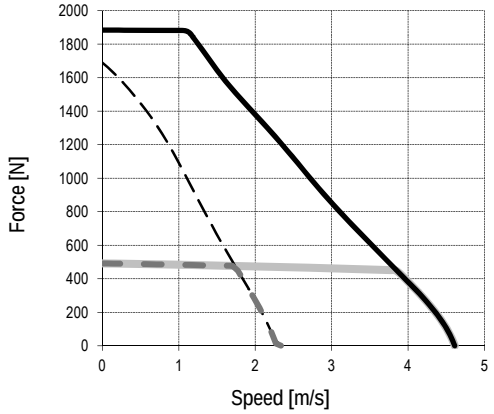
IRONCORE LINEAR MOTOR LMS15-070

		Winding codes	3TA	3VA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	1900	1900
Fc	Continuous force	N	485	468
Fs	Stall force	N	372	358
Kt	Force constant	N/Arms	155	90.2
Ku	Back EMF constant (*)	Vrms/(m/s)	92.8	53.9
Km	Motor constant	N/√W	45.9	44.1
R20	Electrical resistance at 20°C (*)	Ohm	7.63	2.78
L1	Electrical inductance (*)	mH	83.8	28.3
Ip	Peak current	Arms	27.1	46.7
Ic	Continuous current	Arms	3.29	5.46
Is	Stall current	Arms	2.50	4.13
Pc	Max. continuous power dissipation	W	178	178

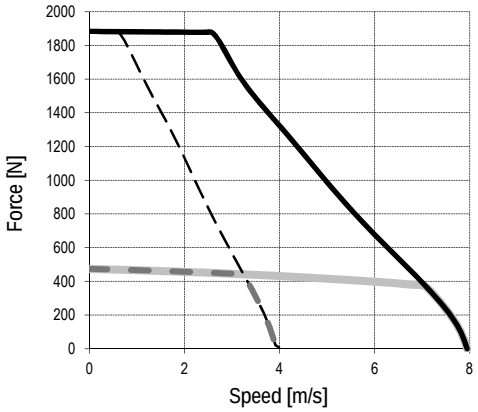
	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1230	1320
Rth	Thermal resistance	K/W	0.619	0.619
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	8.12	8.12
Mm	Motor mass (magnetic way excluded)	kg	4.29	4.22
Fa	Attraction force	N	3600	3600
Fd	Max. detent force (average to peak)	N	23	23
vs	Stall speed	mm/s	0.26	0.24
Gm	Mechanical gap	mm	0.90	0.90

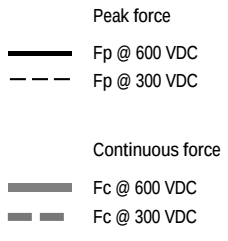
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Carriage's dissipation area is 0.08 m² and minimal stroke is 3 times the motor length.
Caution: Any use of the motor beyond speed/force limit could lead to hazardous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



Force = f(speed) for 3VA





Standard

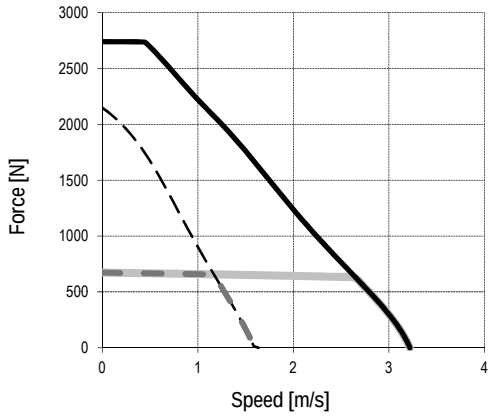
IRONCORE LINEAR MOTOR LMS15-100

		Winding codes	3TA	3VA
PERFORMANCE		UNIT	FREE AIR CONVECTION	FREE AIR CONVECTION
Fp	Peak force	N	2760	2760
Fc	Continuous force	N	664	638
Fs	Stall force	N	507	487
Kt	Force constant	N/Arms	222	129
Ku	Back EMF constant (*)	Vrms/(m/s)	133	76.9
Km	Motor constant	N/√W	57.1	54.8
R20	Electrical resistance at 20°C (*)	Ohm	10.1	3.70
L1	Electrical inductance (*)	mH	120	40.6
Ip	Peak current	Arms	27.1	46.7
Ic	Continuous current	Arms	3.14	5.19
Is	Stall current	Arms	2.38	3.93
Pc	Max. continuous power dissipation	W	214	214

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1410	1490
Rth	Thermal resistance	K/W	0.515	0.515
2τp	Magnetic period	mm	32	32
Mw	Magnetic way mass	kg/m	12.8	12.8
Mm	Motor mass (magnetic way excluded)	kg	5.92	5.83
Fa	Attraction force	N	5200	5200
Fd	Max. detent force (average to peak)	N	33	33
vs	Stall speed	mm/s	0.23	0.21
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 0.09 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 3TA



Force = f(speed) for 3VA