

# iLMA60

## General technical data

			iLMA 60															
			Version S				Version M				Version L				Version XL			
			Classic Plate		High Performance		Classic Plate		High Performance		Classic Plate		High Performance		Classic Plate		High Performance	
PARAMETER	SYM	UNIT	Low Speed	High Speed	Low Speed	High Speed	Low Speed	High Speed	Low Speed	High Speed	Low Speed	High Speed	Low Speed	High Speed	Low Speed	High Speed	Low Speed	High Speed
Supply voltage	V <sub>DC</sub>	V (DC)	600															
Continuous Force*	F <sub>C</sub>	N	296		330		585		652		874		974		1162		1296	
Peak Force (1s)*	F <sub>P</sub>	N	651		749		1286		1481		1921		2212		2557		2944	
Ultimate Force (0,5s)*	F <sub>U</sub>	N	820		964		1620		1904		2420		2845		3221		3785	
Attraction force of magnets**	F <sub>A</sub>	N	1356		1916		2490		3518		3624		5120		4758		6722	
Cogging (Detent) force	F <sub>G</sub>	N	10		12		0		0		0		0		0		0	
Force constant	K <sub>F</sub>	$\frac{N}{A_{RMS}}$	98,7	43,1	110,0	48,0	97,5	42,6	108,7	47,5	97,1	42,4	108,2	47,3	96,8	42,3	108,0	47,1
Motor constant	K <sub>M</sub>	$\frac{N}{\sqrt{W}}$	27,6	27,6	30,8	30,8	38,6	38,6	43,0	43,0	47,1	47,1	52,5	52,5	54,3	53,9	60,6	60,1
Back EMF Phase-Phase Constant	K <sub>BEMF</sub>	$\frac{V}{(m/s)}$	57,0	24,9	65,8	28,7	56,3	24,6	65,0	28,4	56,0	24,5	64,7	28,3	55,9	24,4	64,6	28,2
Maximum Continuous Current	I <sub>C</sub>	A <sub>RMS</sub>	3,0	6,9	3,0	6,9	6,0	13,7	6,0	13,7	9,0	20,6	9,0	20,6	12,0	27,5	12,0	27,5
Peak Current	I <sub>P</sub>	A <sub>RMS</sub>	9,0	20,6	9,0	20,6	18,0	41,2	18,0	41,2	27,0	61,8	27,0	61,8	36,0	82,4	36,0	82,4
Ultimate Current	I <sub>U</sub>	A <sub>RMS</sub>	15,0	34,3	15,0	34,3	30,0	68,7	30,0	68,7	45,0	103,0	45,0	103,0	60,0	137,4	60,0	137,4
Resistance at 20°C Phase - Phase	R <sub>25</sub>	Ω	8,5	1,6	8,5	1,6	4,3	0,8	4,3	0,8	2,8	0,5	2,8	0,5	2,1	0,4	2,1	0,4
Resistance at 125°C Phase - Phase	R <sub>120</sub>		12,0	2,3	12,0	2,3	6,0	1,1	6,0	1,1	4,0	0,8	4,0	0,8	3,0	0,6	3,0	0,6
Induction Phase - Phase	L <sub>P</sub>	mH	54,0	10,4	54,3	10,4	27,0	5,2	27,2	5,2	18,1	3,4	18,1	3,4	13,6	2,6	13,6	2,6
Electrical time constant***	t <sub>C</sub>	mS	6,4	6,4	6,4	6,4	6,4	6,4	6,4	6,4	6,4	6,3	6,4	6,3	6,4	6,3	6,4	6,3
Max. Winding temperature****	T <sub>max</sub>	°C	125															
Thermal Resistance	R <sub>th</sub>	$\frac{K}{W}$	0,648				0,324				0,216				0,162			
Thermal Resistance to heatsink	R <sub>th_HS</sub>	$\frac{K}{W}$	0,180				0,090				0,060				0,045			
Motor overall length	ML	mm	128,4				233,4				338,4				443,4			
Motor overall width	MW	mm	90															
Motor overall height	MH	mm	23,5															
Motor mass	mm	kg	0				2,48				0				0			
Motor wires cross-section	SC	mm <sup>2</sup>	1,5								2,5							
Sensor wires cross-section	SSC	mm <sup>2</sup>	0,25															
Motor cable length	LM	mm	400															
Sensor cable length	LS	mm	400															
Magnet Pitch	τ	mm	30															

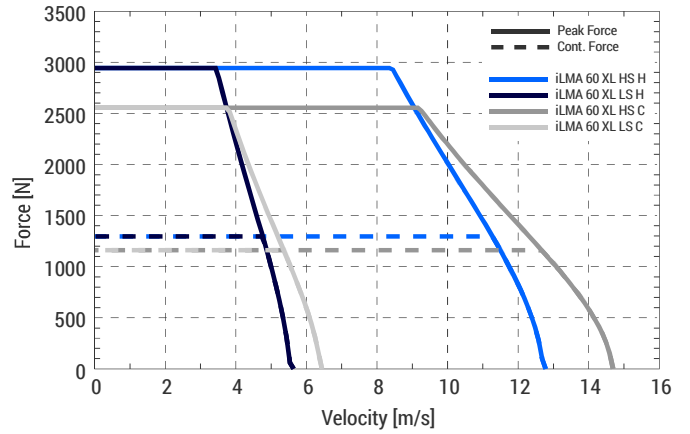
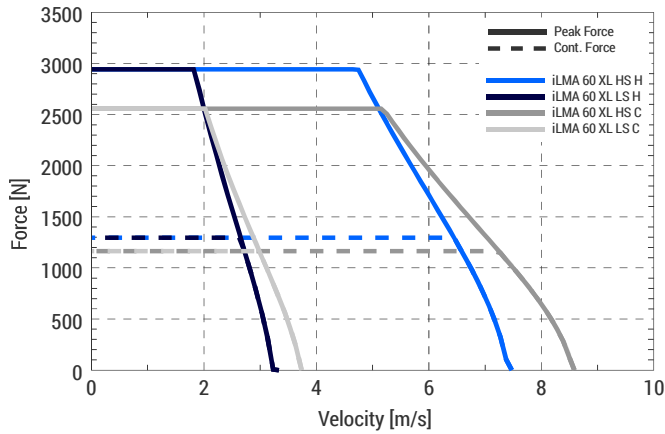
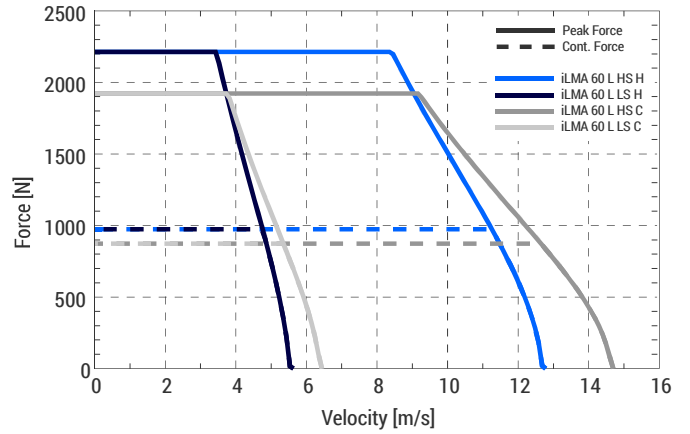
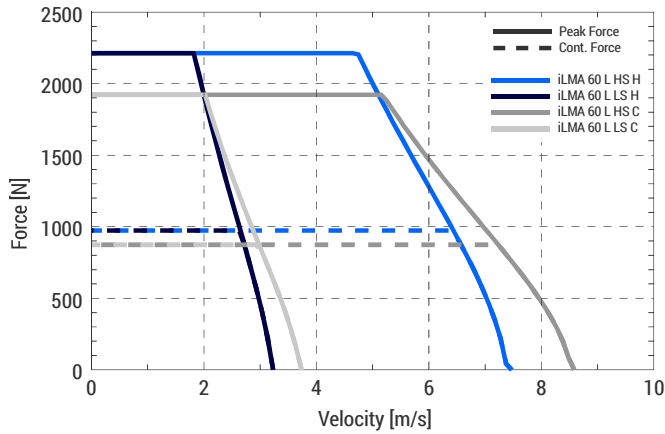
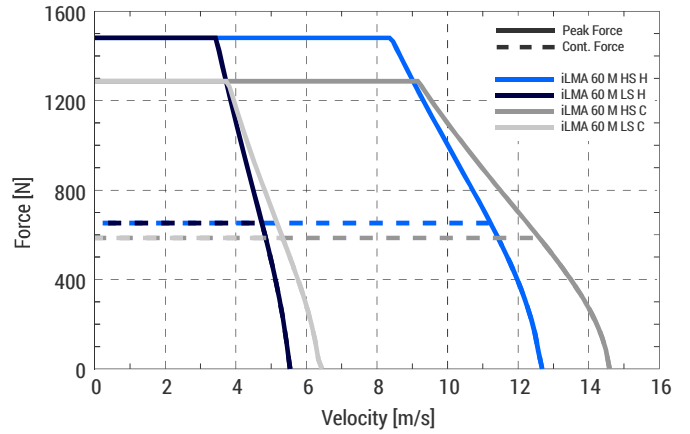
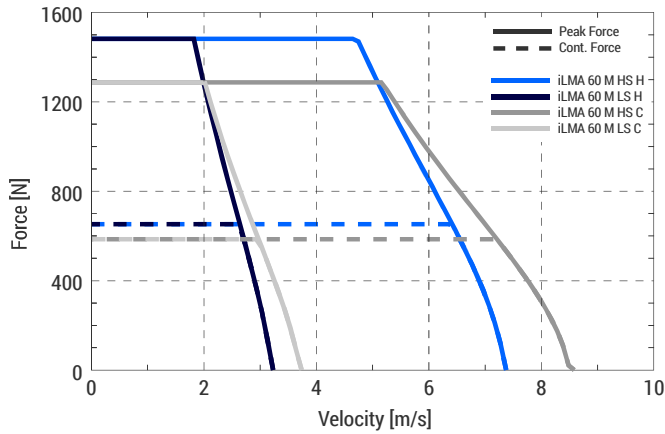
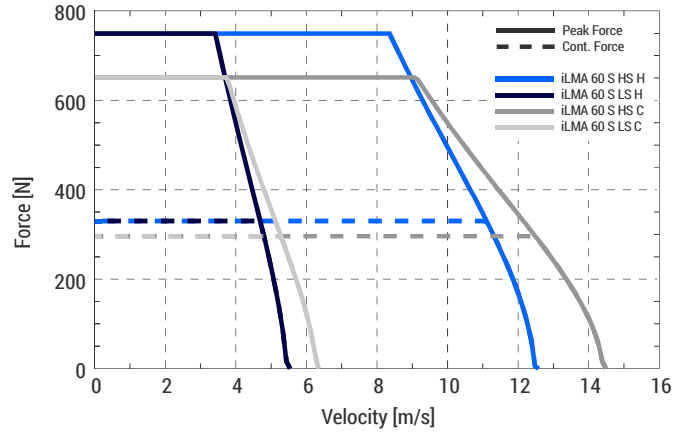
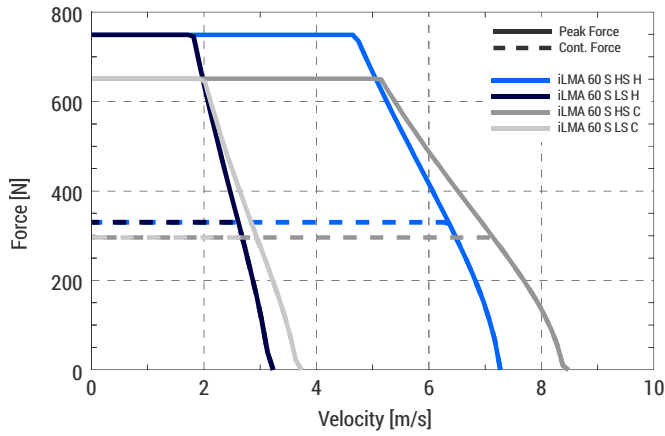
\* Magnets at 20 °C

\*\* RMS at 0 A and air gap of 0,6 mm

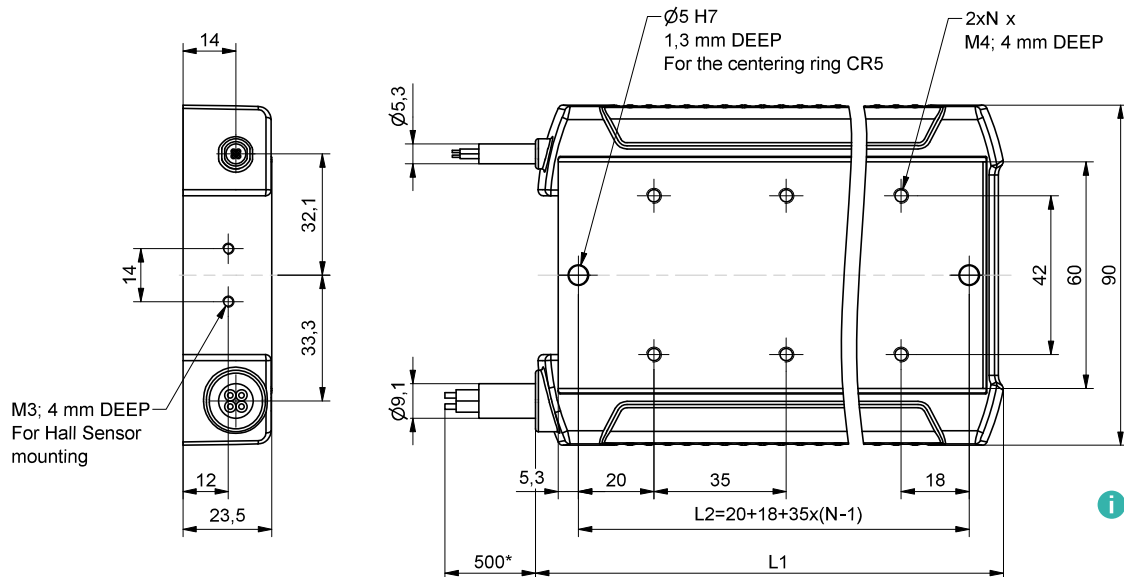
\*\*\* Windings at 20 °C

\*\*\*\* Maximum allowed magnet plate temperature is 90 °C

Force as a function of velocity diagrams



## Forcer dimensions

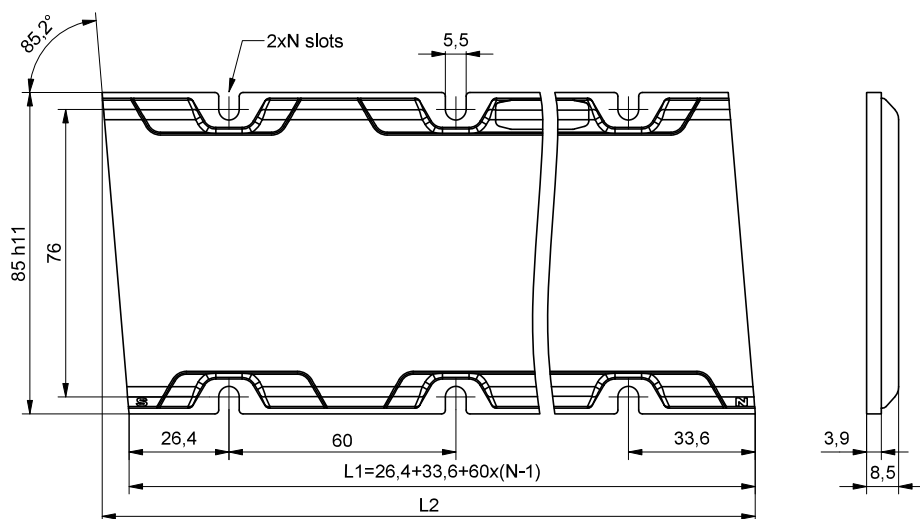


**i** All dimensions are in mm.  
The scale of the drawings  
may not be equal.

\* This is a standard cable length.

iLMA60	L1	L2	N
iLMA 60 S HS/LS	128	108	3
iLMA 60 M HS/LS	233	213	6
iLMA 60 L HS/LS	338	318	9
iLMA 60 XL HS/LS	443	423	12

## Magnet plate dimensions

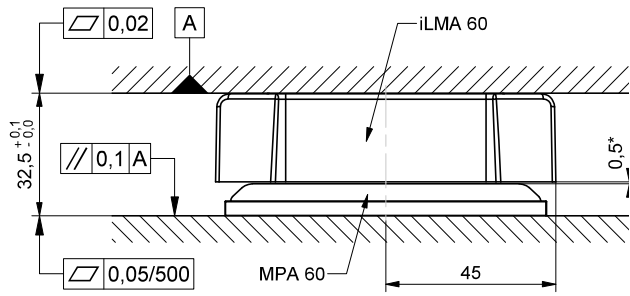


MPA60	L1	L2	N
MPA 60 120 C/H	120	127,1	2
MPA 60 180 C/H	180	187,1	3
MPA 60 300 C/H	300	307,1	5

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## Mounting tolerances

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\*This the recommended air gap between the forcer and the magnet plate.