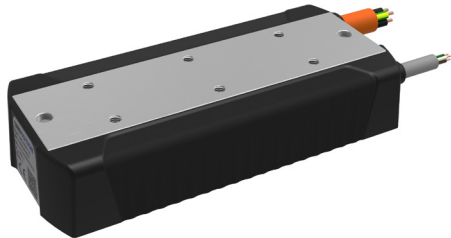


UNIMOTION

LMCA 30 S H DATASHEET

High-speed iron core linear motor with high force density



Can be used with both classic (C) or high performance (H) magnet plates.

Unitronic cables suitable for the cable chains.

Low cogging force

High acceleration

Maintenance-free motion

Direct-drive motor (without mechanical transmission)



General technical data

	PARAMETER	SYM	UNIT	Classic	High Performance
PERFORMANCE	Max. Supply voltage	V_{DC}	V (DC)	600	
	Continuous Force ¹	F_C	N	141	158
	Peak Force (1s) ¹	F_P	N	311	358
	Ultimate Force (0,5s) ¹	F_U	N	391	460
	Attraction force of magnets ²	F_A	N	678	958
	Force constant	K_F	$\frac{N}{A_{RMS}}$	20,5	23,0
	Motor constant	K_M	$\frac{N}{\sqrt{W}}$	17,2	19,3
	Back EMF Phase-Phase Constant	K_{BEMF}	$\frac{V_{RMS}}{(m/s)}$	11,9	13,7
ELECTRICAL	Continuous Current	I_C	A_{RMS}	6,9	6,9
	Peak Current	I_P	A_{RMS}	20,6	20,6
	Ultimate Current	I_U	A_{RMS}	34,3	34,3
	Resistance at 20 °C Phase - Phase	R_{20}	Ω	0,95	0,95
	Resistance at 125 °C Phase - Phase	R_{125}	Ω	1,34	1,34
	Induction Phase - Phase	L_P	mH	5,4	5,4
	Electrical time constant ³	t_c	mS	5,7	5,7
THERMAL	Max. Winding temperature	T_{max}	°C	125	
	Max. Allowed magnet plate temperature	T_{magnet}	°C	90	
	Thermal time constant	τ_{th}	s	69	
	Thermal Resistance	R_{th}	$\frac{K}{W}$	1,10	
	Thermal Resistance to heatsink	$R_{th,HS}$	$\frac{K}{W}$	0,250	
MECHANICAL	Forcer overall length	M_L	mm	128	
	Forcer overall width	M_W	mm	56	
	Forcer overall height	M_H	mm	23,5	
	Forcer mass	m_m	kg	0,8	
	Forcer wires cross-section	S_C	mm ²	1,5	
	Sensor wires cross-section	S_{SC}	mm ²	0,25	
	Forcer cable length	L_M	mm	1000	
	Sensor cable length	L_S	mm	1000	
	Magnet Pitch	τ	mm	30	

¹ Magnets at 20 °C

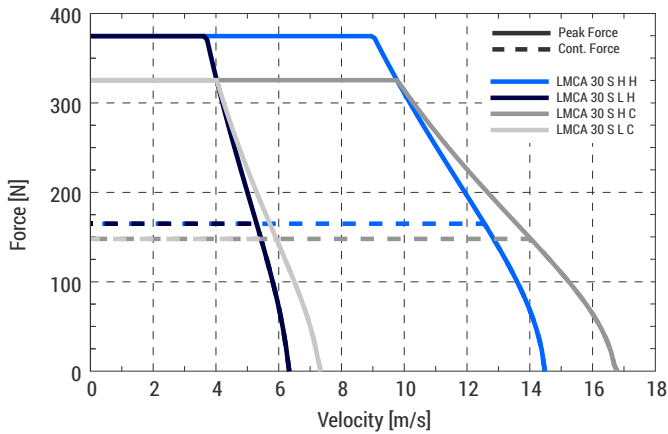
² RMS at 0 A and air gap of 0,6 mm

³ Windings at 20 °C

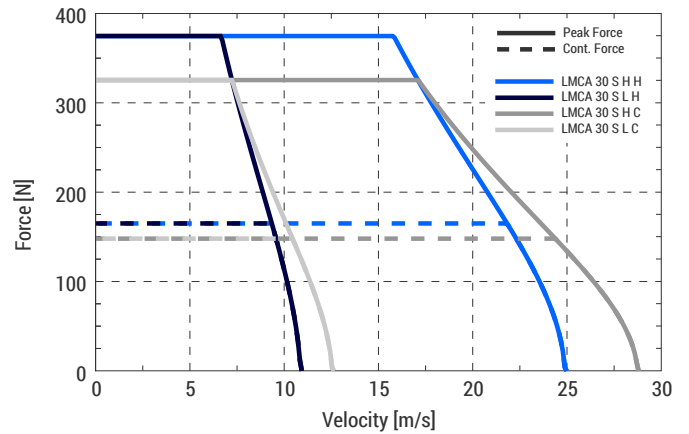
i The specifications were measured without forced cooling. Electrical specifications tolerance is $\pm 10\%$.

Force as a function of velocity diagrams

Bus voltage = 325 V DC

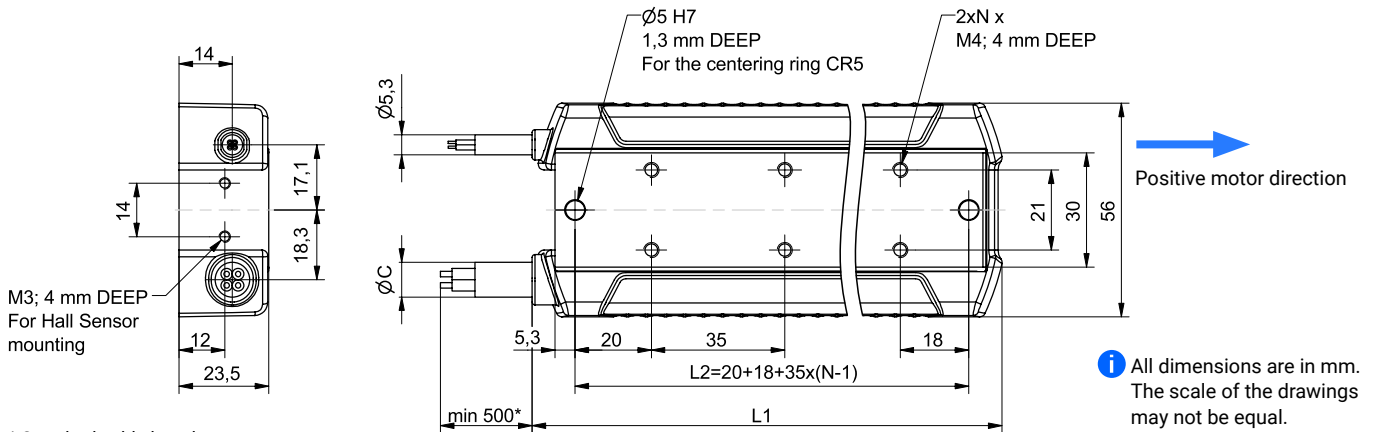


Bus voltage = 565 V DC



Forcer dimensions

* This is a standard cable length.



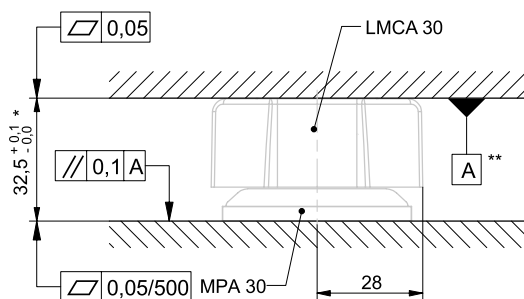
* Standard cable length.

** The stated mounting height is set for the air gap of 0,6 mm. For more information, please refer to the Linear Motors catalogue.

LMCA 30	L1 [mm]	L2 ± 0,02 [mm]	N	ØC	Lc [mm]
LMCA 30 S H	128	108	3	9,1	1000

i 'N' is the number of mounting holes in the x-direction.

Mounting tolerances



* The stated mounting height is set for the air gap of 0,6 mm. For more information, please refer to the Linear Motors catalogue.

** We recommend using a thermally conductive paste between the forcer and heatsink to ensure a better heat transfer.