

MLSM80D

Ball Screw Drive, Ball Guide

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General Specifications

Parameter	MLSM80D
Profile size (w × h) [mm]	240 × 85
Type of screw	ball screw with double nuts
Carriage sealing system	plastic cover band
Screw supports	included in all units that require screw supports
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

Performance Specifications

Parameter		MLSM80D
Stroke length (S max), maximum	[mm]	5200
Linear speed, maximum	[m/s]	2,0
Acceleration, maximum	[m/s ²]	20
Repeatability	[± mm]	0,01
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	0 – 80
Dynamic load (F _x), maximum	[N]	12000 screw lead 5, 10, 20 mm 8000 screw lead 40 mm
Dynamic load (F _y), maximum	[N]	8000 ¹ / 71860 ²
Dynamic load (F _z), maximum	[N]	8000 ¹ / 71860 ²
Dynamic load torque (M _x), maximum	[Nm]	780 ¹ / 5890 ²
Dynamic load torque (M _y), maximum	[Nm]	900 ¹ / 6640 ²
Dynamic load torque (M _z), maximum	[Nm]	900 ¹ / 6640 ²
Drive shaft force (F _{rd}), maximum	[N]	700
Drive shaft torque (M _{ta}), maximum	[Nm]	85
Ball screw diameter (d ₀)	[mm]	32
Ball screw lead (p)	[mm]	5, 10, 20, 40
Weight	[kg]	
of unit with zero stroke		29,5
of every 100 mm of stroke		2,7
of each carriage		11,5

¹ Value for the complete unit

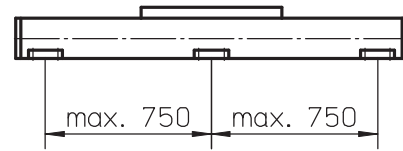
² Value for the ball guide only

Carriage Idle Torque (M_{idle}) [Nm]

Input speed [rpm]	Screw lead [mm]			
	p = 5	p = 10	p = 20	p = 40
150	1,6	2,2	2,5	2,8
1500	2,7	3,2	3,4	4,0
3000	3,2	4,0	4,2	4,5

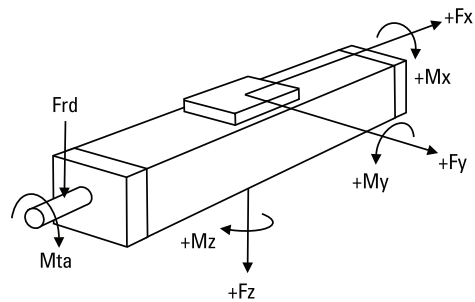
M_{idle} = the input torque needed to move the carriage with no load on it.

Deflection of the Profile



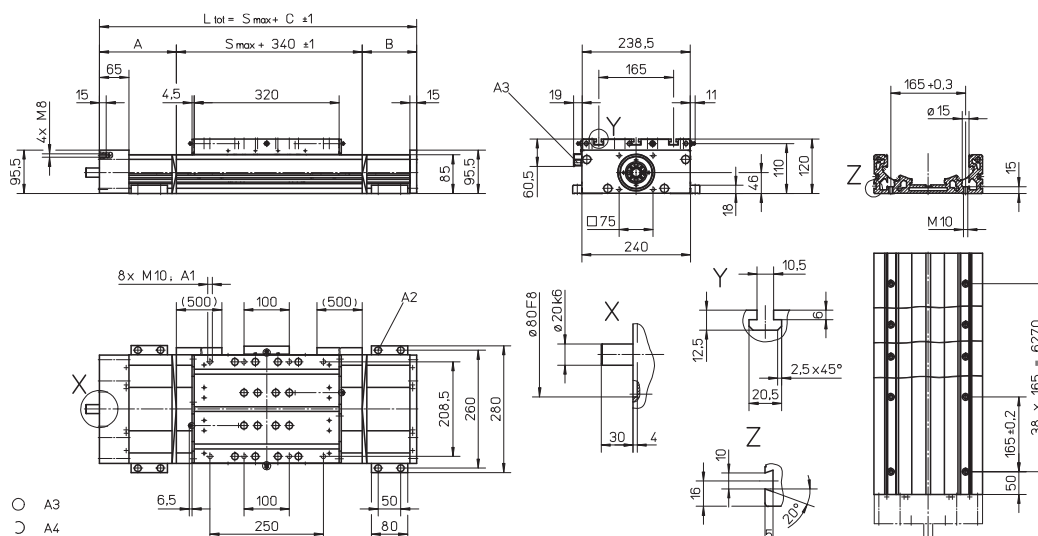
A mounting clamp must be installed at least at every 750 mm to be able to operate the maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

Definition of Forces



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A1: depth 15
 A2: socket cap screw ISO4762-M8x20 8.8
 A3: ENF inductive sensor rail option kit (optional)

A4: tapered lubricating nipple to DIN71412 M8x1 on fixed-bearing side as standard feature
 A5: can be changed over to one of the three alternative lubricating points by the customer

Stroke length (S max) [mm]	A [mm]	B [mm]	C [mm]
0 - 750 (0 - 570)	100	90	530 (710)
751 - 1140 (571 - 960)	130	120	590 (770)
1141 - 1880 (961 - 1700)	160	150	650 (830)
1881 - 2620 (1701 - 2440)	190	180	710 (890)

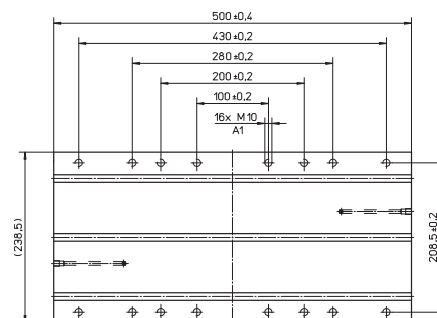
Stroke length (S max) [mm]	A [mm]	B [mm]	C [mm]
2621 - 3360 (2441 - 3180)	220	210	770 (950)
3361 - 4100 (3181 - 3920)	250	240	830 (1010)
4101 - 4840 (3921 - 4660)	280	270	890 (1070)
4841 - 5000 (4661 - 4820)	310	300	950 (1130)

Values between brackets = for units with long carriage

Long Carriage

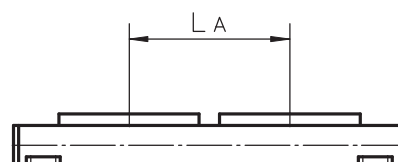
Parameter	MLSM80D
Carriage length [mm]	500
Dynamic load torque (My), maximum [Nm]	1750
Dynamic load torque (Mz), maximum [Nm]	1750
Weight [kg]	16

A1: depth 15



Double Carriages

Parameter	MLSM80D
Minimum distance between carriages (LA) [mm]	400
Dynamic load (Fy), maximum [N]	16000
Dynamic load (Fz), maximum [N]	16000
Dynamic load torque (My), maximum [Nm]	$L A^1 \times 8$
Dynamic load torque (Mz), maximum [Nm]	$L A^1 \times 8$
Force required to move second carriage [N]	350
Total length (L tot) [mm]	$S \text{ max} + C + L A$



¹ Value in mm