

WM80D

Ball Screw Drive, Ball Guide, Double Ball Nuts

» Ordering key - see page 193
» Accessories - see page 131
» Additional data - see page 188

General Specifications

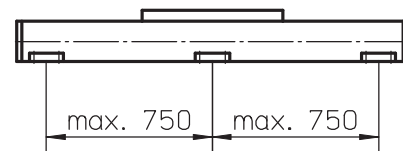
Parameter	WM80D
Profile size (w × h) [mm]	80 × 80
Type of screw	ball screw with double nuts
Carriage sealing system	self-adjusting plastic cover band
Screw supports	included in all units that require screw supports
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

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

Input speed [rpm]	Screw lead [mm]			
	$p = 5$	$p = 10$	$p = 20$	$p = 50$
150	1,1	1,5	1,8	2,3
1500	1,7	2,1	2,3	3,0
3000	2,1	2,5	2,6	3,6

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 every 750 mm to be able to operate at maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information. Units with a profile length over 6300 mm consist of two profiles where the joint between the two profiles must be adequately supported on both sides.

Performance Specifications

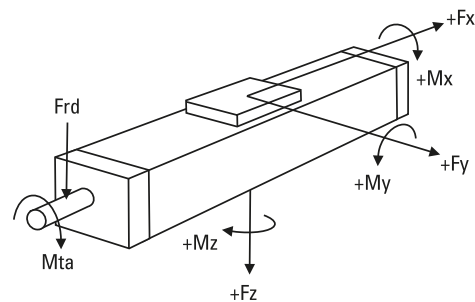
for Units with Single Standard Carriage (N)¹

Parameter		WM80D
Stroke length (S_{max}), maximum	[mm]	11000
screw lead 5, 10, 20 mm		4965
screw lead 50 mm		
Total length (L_{tot}), maximum	[mm]	12075
screw lead 5, 10, 20 mm		5780
screw lead 50 mm		
Linear speed, maximum	[m/s]	2,5
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]	5000
Dynamic load (F_y), maximum	[N]	3000
Dynamic load (F_z), maximum	[N]	3000
Dynamic load torque (M_x), maximum	[Nm]	350
Dynamic load torque (M_y), maximum	[Nm]	300
Dynamic load torque (M_z), maximum	[Nm]	300
Drive shaft force (F_{rd}), maximum ²	[N]	700
Input/drive shaft torque (M_{ta}), maximum	[Nm]	55
Ball screw diameter (d_0)	[mm]	25
Ball screw lead (p)	[mm]	5, 10, 20, 50
Weight	[kg]	
of unit with zero stroke		11,57
of every 100 mm of stroke		1,08
of each carriage		4,26

¹ See next page for deviating values of units with other carriage types.

² Only relevant for units without RediMount flange.

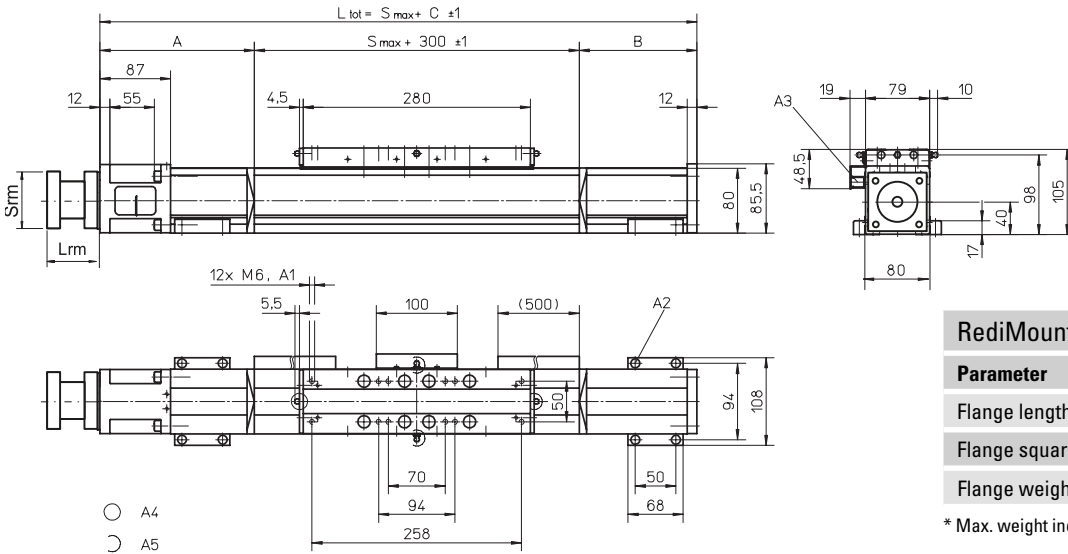
Definition of Forces



WM80D

Dimensions	Projection	Online Sizing & Selection!
METRIC		www.LinearMotioneering.com

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Parameter	Min	Max
Flange length (Lrm) [mm]	83	145
Flange square (Srm) [mm]	90	200
Flange weight * [kg]	5,64	

* Max. weight including coupling and fastening screws

- A1: depth 12 mm
- A2: socket cap screw ISO4762-M6x20 8.8
- A3: ENF inductive sensor rail kit (optional - see page 166)

- A4: tapered lubricating nipple to DIN71412 AM6 on fixed-bearing side as standard feature
- A5: can be changed over to one of three alternative lubrication points by customer

Stroke length (Smax) [mm]	A [mm]	B [mm]	C [mm]
0 - 780 (0 - 610)	120	80	500 (670)
781 - 1535 (611 - 1365)	170	125	595 (765)
1536 - 2375 (1366 - 2205)	190	145	635 (805)
2376 - 3205 (2206 - 3035)	215	170	685 (855)

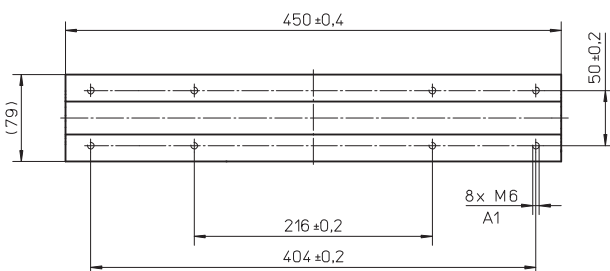
Values between brackets = for units with long carriage

Stroke length (Smax) [mm]	A [mm]	B [mm]	C [mm]
3206 - 4045 (3036 - 3875)	235	190	725 (895)
4046 - 4885 (3876 - 4715)	255	210	765 (935)
4886 - 5000 (4716 - 4830)	280	235	815 (985)
5001 - 11000 (4717 - 10830)	contact customer service		

Performance Specifications

for Units with Single Long Carriage (L)

Parameter	WM80D
Stroke length (Smax), maximum screw lead 5, 10, 20 mm screw lead 50 mm	10830 4795
Total length (L tot), maximum screw lead 5, 10, 20 mm screw lead 50 mm	12075 5780
Carriage length	450
Dynamic load torque (My), maximum	750
Dynamic load torque (Mz), maximum	750
Weight	6,4



A1: depth 12 mm

Performance Specifications

for Units with Double Standard Carriage (Z)

Parameter	WM80D
Stroke length (Smax), maximum screw lead 5, 10, 20 mm screw lead 50 mm	10640 4655
Total length (L tot), maximum screw lead 5, 10, 20 mm screw lead 50 mm	12075 5780
Minimum distance between carriages (Lc)	360
Dynamic load (Fy), maximum	6000
Dynamic load (Fz), maximum	6000
Dynamic load torque (My), maximum	L c ¹ × 3
Dynamic load torque (Mz), maximum	L c ¹ × 3
Force required to move second carriage	25
Total length (L tot)	Smax + C + Lc

¹ Value in mm

