Linear Motion Systems with Belt Drive and Ball Guide

Overview

ForceLine **MLSM**

MLSM80Z

Features

- Can be installed in any orientation
- Patented plastic cover band
- High load capabilities
- Low profile height

Parameter		MLSM80Z
Profile size (width × height)	[mm]	240 × 85
Stroke length (Smax), maximum	[mm]	5900
Linear speed, maximum	[m/s]	5,0
Dynamic carriage load (Fz), maximum	[N]	6400
Remarks		-
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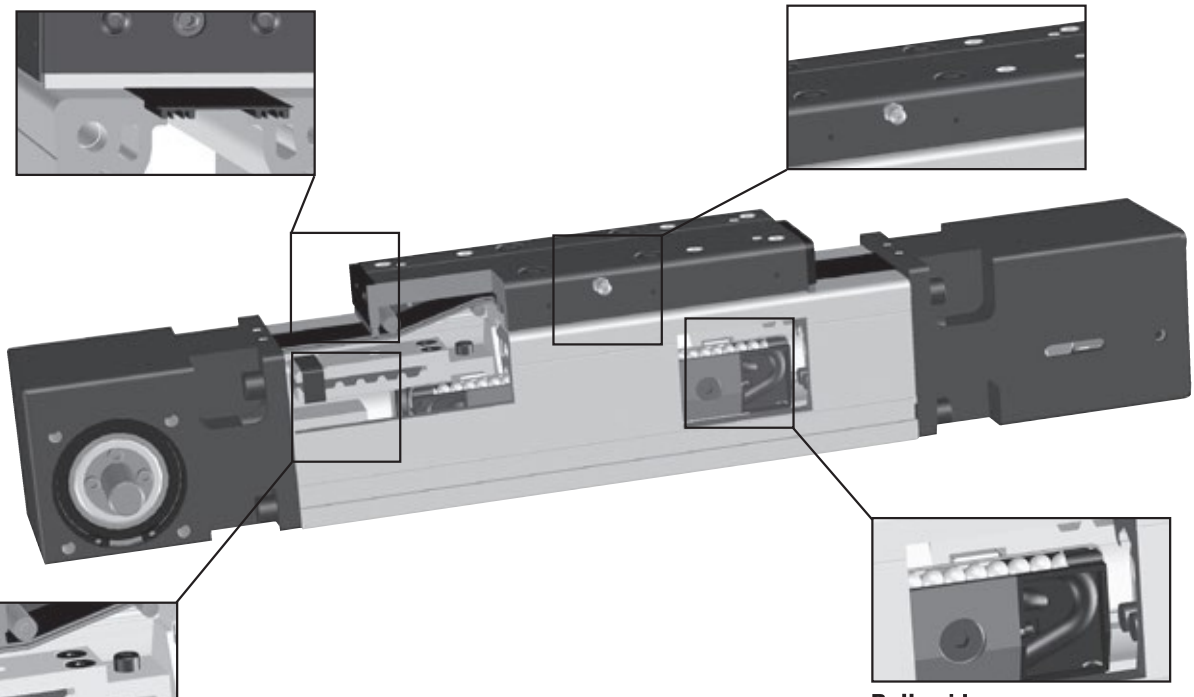
WMZ-Series Technical Presentation

Cover band
The cover band protects the interior of the unit from the penetration of dirt, dust and liquids.

Central lubrication
One central lubrication point on the carriage services the entire unit resulting in a minimum maintenance requirement.



Belt drive
The belt is protected from the outside ensuring long, accurate and safe operation.

Ball guides
Integrated patented ball guides with hardened steel tracks for optimum performance.

Note! the unit is pictured without a RediMount™ flange

MLSM80Z

Belt Drive, Ball Guide

» Ordering key - see page 187
» Accessories - see page 117
» Additional data - see page 173

General Specifications

Parameter	MLSM80Z
Profile size (w × h) [mm]	240 × 85
Type of belt	75 ATL 10
Carriage sealing system	plastic cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

Performance Specifications

for Units with Single Standard Carriage (N)[1]

Parameter		MLSM80Z
Stroke length (Smax), maximum	[mm]	5900
Total length (L tot), maximum	[mm]	6500
Linear speed, maximum	[m/s]	5,0
Acceleration, maximum	[m/s²]	20
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	1500
Operation temperature limits	[°C]	0 – 80
Dynamic load (Fx), maximum	[N]	5000 [2]
Dynamic load (Fy), maximum	[N]	6400
Dynamic load (Fz), maximum	[N]	6400
Dynamic load torque (Mx), maximum	[Nm]	600
Dynamic load torque (My), maximum	[Nm]	720
Dynamic load torque (Mz), maximum	[Nm]	720
Drive shaft force (Frd), maximum [3]	[N]	700
Input/drive shaft torque (Mta), maximum	[Nm]	150
Pulley diameter	[mm]	63,66
Stroke per shaft revolution	[mm]	200
Weight of unit with zero stroke of every 100 mm of stroke of each carriage	[kg]	 30,8 2,2 9,6

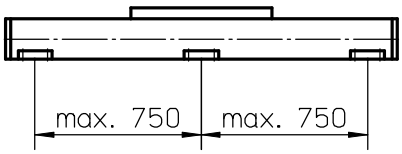
[1] See next page for deviating values of units with other carriage types.
[2] See diagram Force Fx.
[3] Only relevant for units without RediMount flange.

Carriage Idle Torque, (M idle) [Nm]

Input speed [rpm]	Idle torque [Nm]
150	8,5
750	12
1500	14,5

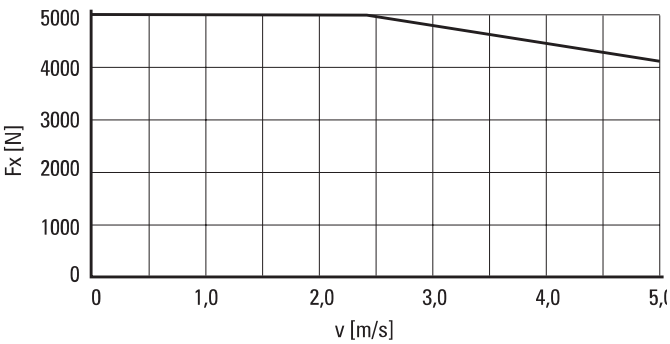
M idle = the input torque needed to move the carriage with no load on it.

Deflection of the Profile

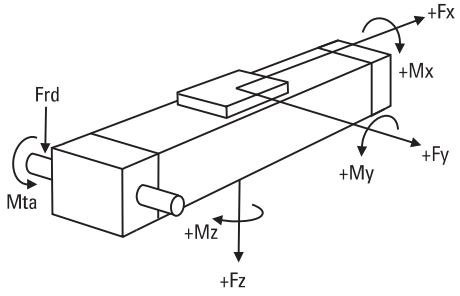


A mounting clamp must be installed at least every 750 mm to be able to operate at maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

Force Fx as a Function of the Speed



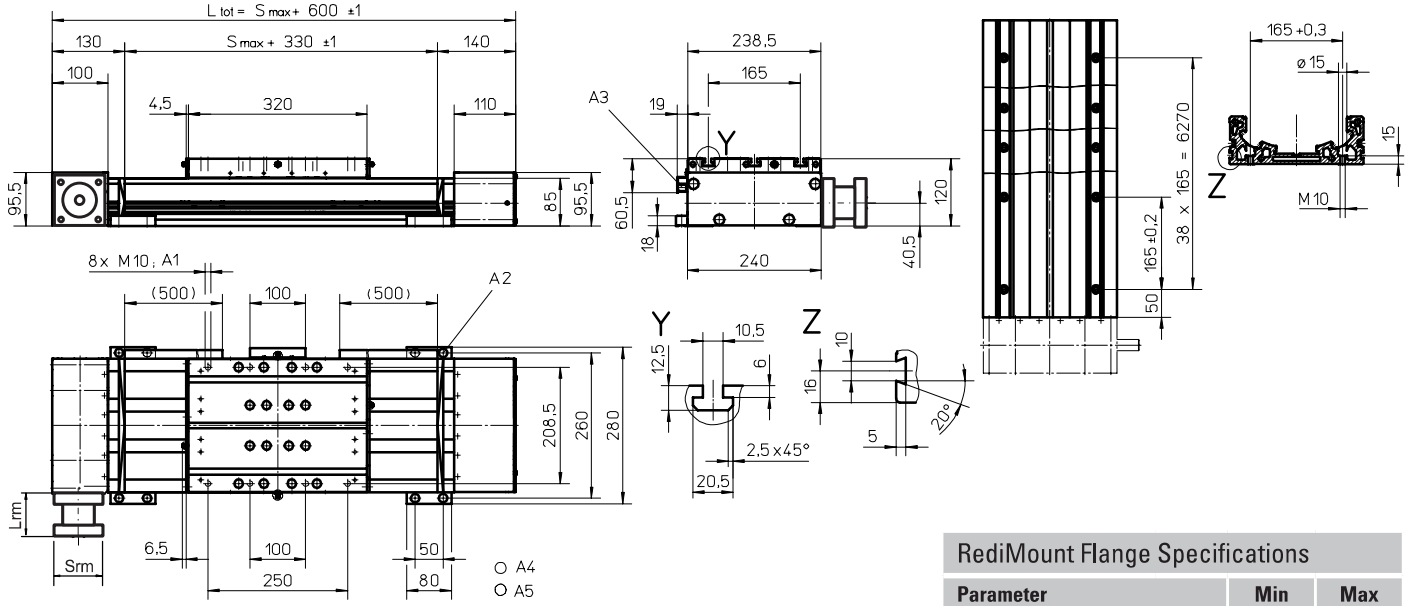
Definition of Forces



MLSM80Z

Belt Drive, Ball Guide

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



A1: depth 15
A2: socket cap screw ISO4762-M8×20 8.8
A3: ENF inductive sensor rail kit (optional - see page 150)
A4: tapered lubricating nipple to DIN71412 M8×1 on fixed-bearing side as standard feature
A5: can be changed over to one of the three alternative lubricating points by the customer

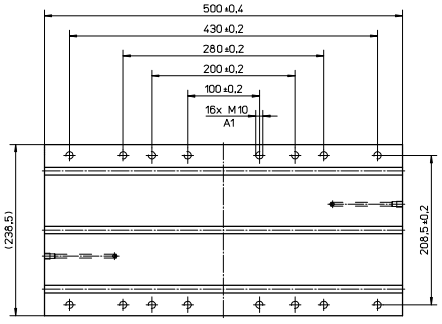
RediMount Flange Specifications

Parameter		Min	Max
Flange length (Lrm)	[mm]	81	143
Flange square (Srm)	[mm]	90	200
Flange weight *	[kg]	5,67	

* Max. weight including coupling and fastening screws

Performance Specifications
for Units with Single Long Carriage (L)

Parameter		MLSM80Z
Stroke length (Smax), maximum	[mm]	5900
Total length (L tot), maximum	[mm]	6680
Carriage length	[mm]	500
Dynamic load torque (My), maximum	[Nm]	1400
Dynamic load torque (Mz), maximum	[Nm]	1400
Weight	[kg]	14

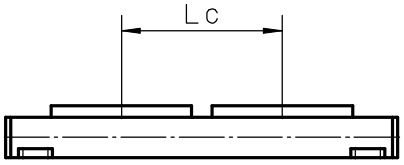


A1: depth 15

Performance Specifications
for Units with Double Standard Carriage (Z)

Parameter		MLSM80Z
Stroke length (Smax), maximum	[mm]	5680
Total length (L tot), maximum	[mm]	6680
Minimum distance between carriages (Lc)	[mm]	400
Dynamic load (Fy), maximum	[N]	12800
Dynamic load (Fz), maximum	[N]	12800
Dynamic load torque (My), maximum	[Nm]	Lc[1] × 6,4
Dynamic load torque (Mz), maximum	[Nm]	Lc[1] × 6,4
Force required to move second carriage	[N]	35
Total length (L tot)	[mm]	Smax + 600 + Lc

[1] Value in mm



Ordering Keys

Linear Motion Systems with Belt Drive and Ball Guides

MLSM80Z							
1	2	3	4	5	6	7	8
MLSM08Z	SX	XXX	-03800	-04645	C	L	0000

1. Type of unit
MLSM08Z = MLSM80 unit

2. Transmission type
LX = inline style, directly coupled, RediMount flange
SX = inline style, directly coupled, no RediMount flange

3. RediMount motor ID code
vvw = alphanumeric motor code for suitable RediMount flange when motor is known
999 = RediMount code used when motor is unknown
XXX = for units without RediMount flange

4. Maximum stroke (Smax)
- xxxxx = distance in mm

5. Total length of unit (L tot)
- yyyyy = distance in mm

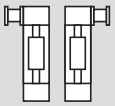
6. Drive shaft / RediMount flange configuration[1]
A = shaft on left side without key way
B = shaft on right side without key way
C = shaft on left side with key way or RediMount
D = shaft on right side with key way or RediMount
E = shaft on left side without key way, shaft on right side with key way or RediMount
F = shaft on left side with key way or RediMount, shaft on right side without key way
G = shaft on left side without key way, shaft on right side for encoder
H = shaft on left side for encoder, shaft on right side without key way
I = shaft on left side with key way or RediMount, shaft on right side for encoder
J = shaft on left side for encoder, shaft on right side with key way or RediMount
L = shaft on left and right side without key way
M = shaft on left side with key way or RediMount, shaft on right side with key way
N = shaft on left side with key way, shaft on right side with key way or RediMount
W = hollow shaft on both sides with clamping unit

7. Carriage configuration
N = single standard carriage
L = single long carriage
Z = double standard carriages

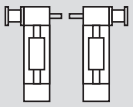
8. Distance between double carriages
0000 = always for single carriages
zzzz = distance in mm

[1] See below for the definition of shafts.

Left, right or both sides with shafts with RediMount



Left or right with RediMount and other side a shaft without RediMount



Left or right without RediMount