

# Linear units with spindle drive

# LES 6

## Features

- Aluminium shaft housing profile W150 × H75 mm, naturally anodised
- Clamping area and profile underside milled flat
- With 4 precision steel shafts Ø 12 h6, material Cf53, Hardness 60 ± 2 HRC
- Aluminium shaft slides WS 5/70, 2 x WS 5/70 (70 mm long), adjustable for no play, central lubrication system
- Recirculating ball drive 2.5/4/5/10 and 20 mm pitches
- Profile sealing with friction-resistant lip seals
- Cast aluminium end plates
- With 2 limit or reference switches, Repeat accuracy ± 0.02 mm
- Sealed angular contact bearings in drive - steel flange



LES 6 with side belt drive module

## Ordering key

2 3 4 XXX 0 XXX

### Drive

- 6 = Preparation Direct drive modules
- 7 = Preparation Belt drive module

### Shaft slides

- 0 = 2 Shaft slides 70 mm
- 2 = 4 Shaft slides 70 mm

### Profile length (L1)

- e.g. 029 = 290 mm (min.)
- 299 = 2990 mm (max.)

(rounded to the last digit)

Standard profile lengths available in 100 mm raster

### Recirculating ball drive

- 0 = without
- 1 = Pitch 2.5 mm
- 2 = Pitch 4.0 mm
- 3 = Pitch 5.0 mm
- 4 = Pitch 10 mm
- 5 = Pitch 20 mm

## Options:

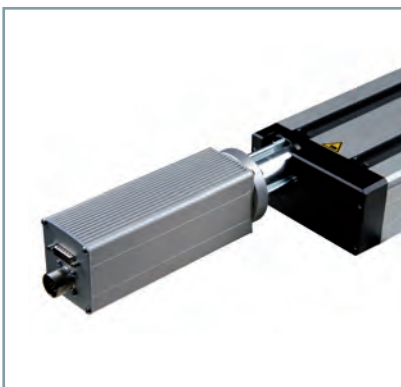
- Black powder-coated aluminium profile
- Electromagnetic brake
- Steel slides LS2 (Part no. 223007)
- Limit switch attachment kit (see accessories)

## To order:

- Length measuring system
- Bellows gaiter cover
- Assembly left of the motor module

## Drive modules

see pages 2-68 et seq. of the catalogue



## Technical specification

### Aluminium profile

Aluminium profile LES 6	
Moment of inertia I <sub>x</sub>	707.100 cm <sup>4</sup>
Moment of inertia I <sub>y</sub>	212.200 cm <sup>4</sup>
*Centre of gravity <small>see dimensioned drawing</small>	32.78 mm
Cross-sectional area	30.07 cm <sup>2</sup>
Material	AlMgSi0, 5F22
Anodising	E6/EV1
Weight with steel shafts	11.4 kg/m
Weight with steel shafts and spindles	12.8 kg/m

## No load running torques

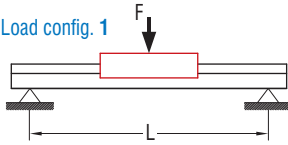
No load torques (Ncm)					
Speed (rpm)	Spindle pitch				
	2.5	4	5	10	20
500	17	17	18	20	21
1500	20	20	22	24	25
3000	24	25	26	29	30

# Linear units with spindle drive

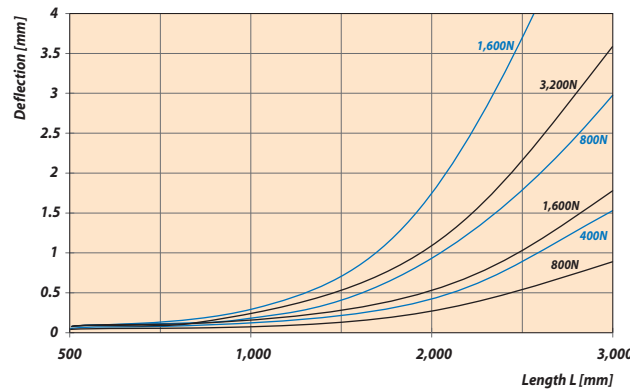
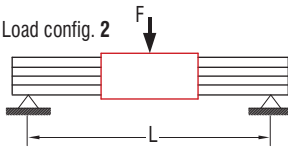
## LES 6

### Bending

Load config. 1



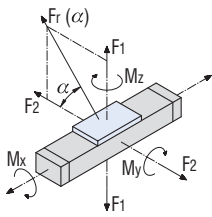
Load config. 2



### Load factors

$$Fr(\alpha) = \frac{F_2}{\cos \alpha}$$

$$Fr(\alpha) = \frac{F_1}{\sin \alpha}$$



LES 6 with two WS 5/70	
$C_0$	5153.30 N
C	2319.41 N
$F_1$ stat.	4401.33 N
$F_1$ dyn.	1980.96 N
$F_2$ stat.	5153.30 N
$F_2$ dyn.	2319.14 N
$M_x$ stat.	211.54 Nm
$M_y$ stat.	164.31 Nm
$M_z$ stat.	192.39 Nm
$M_x$ dyn.	95.21 Nm
$M_y$ dyn.	73.95 Nm
$M_z$ dyn.	86.59 Nm

LES 6 with four WS 5/70	
$C_0$	6,606 N
C	3,746 N
$F_1$ stat.	5,642 N
$F_1$ dyn.	3,198 N
$F_2$ stat.	6,606 N
$F_2$ dyn.	3,746 N
$M_x$ stat.	211.575 Nm
$M_y$ stat.	366.73 Nm
$M_z$ stat.	429.39 Nm
$M_x$ dyn.	119.925 Nm
$M_y$ dyn.	207.87 Nm
$M_z$ dyn.	243.49 Nm

### permissible spindle speeds

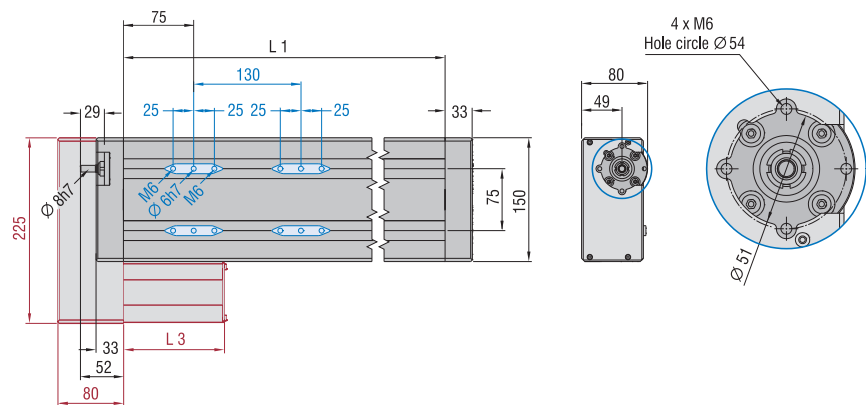
LES 4 / 5 / 6	Spindle pitch [mm]	max. permissible feed speed v permissible [mm/s]				
		2.5	4	5	10	20
490	4000	167	267	333	667	1333
990	3000	125	200	250	500	1000
1390	1500	63	100	125	250	500
1490 *	3000	125	200	250	500	1000
1990 *	1650	69	110	138	275	550
2490 *	1050	44	70	88	175	350
2990 *	750	31	50	63	125	250

\* with spindle support

### dimensioned drawing

process travel  
at 2xWS 5/70 = L1 -150 mm  
at 4xWS 5/70 = L1 -280 mm

external limit switches see page 2-83



### dimensioned drawing Aluminium profile

