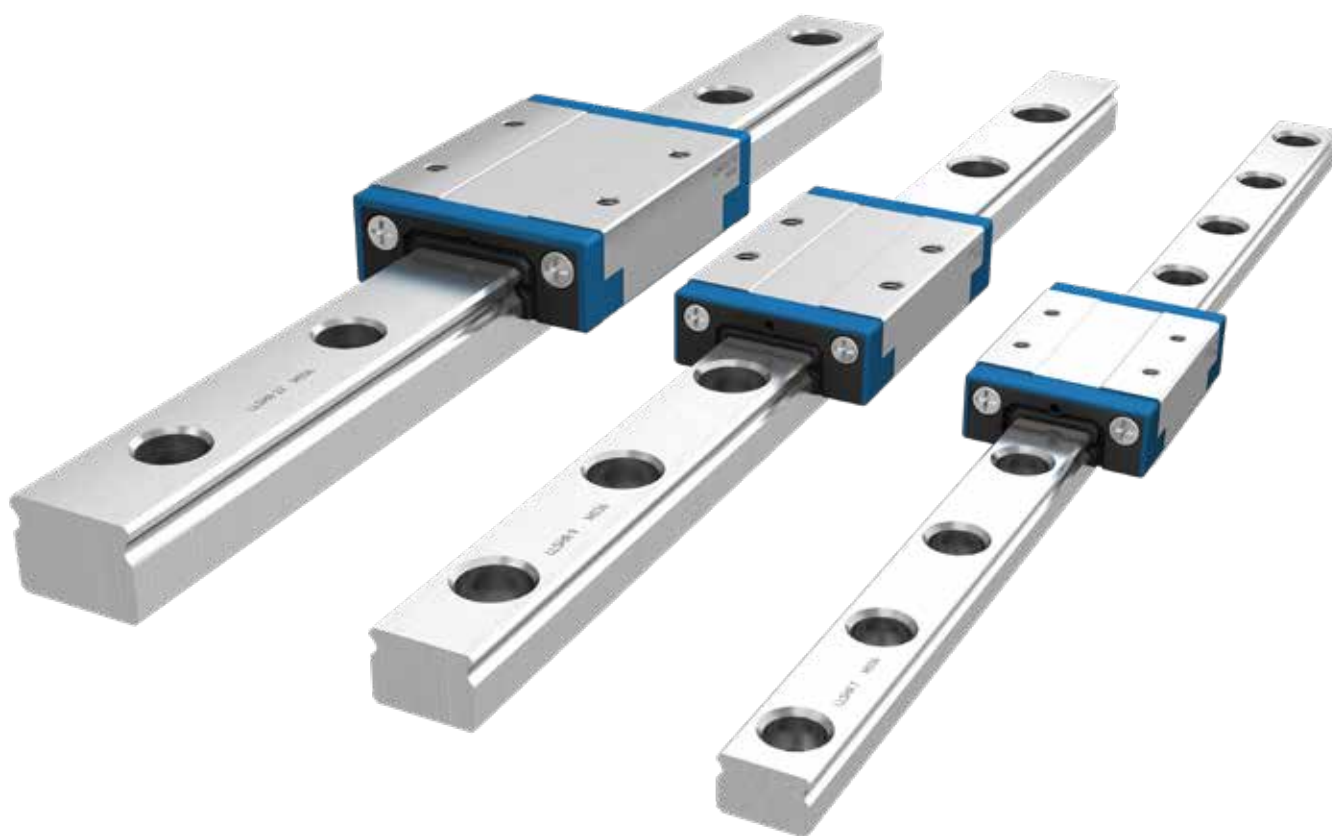


# Miniature profile rail guides - LLS



# The heritage of innovation

Ewellix is a global innovator and manufacturer of linear motion and actuation solutions. Today, our state-of-the-art linear solutions are designed to increase machine performance, maximise uptime, reduce maintenance, improve safety and save energy.

## Technology leadership

Our journey began **over 50 years** ago as part of the SKF Group, and our history with SKF provided us with the **expertise to continuously develop new technologies** and use them to create cutting edge products that offer our customers a competitive advantage.

In 2019, we became independent from SKF and changed our name to Ewellix. We are proud of our heritage. This gives us a unique foundation on which to build an agile business with engineering excellence and innovation as our core strengths.

## Global presence and local support

With our **global** presence, we are uniquely positioned to deliver **standard components and custom-engineered solutions**, with full technical and applications support around the world. Long standing relationships with our distributor partners allow us to support customers in a variety of different industries. At Ewellix, we don't just provide products; **we engineer integrated solutions** that help customers realise their ambitions.



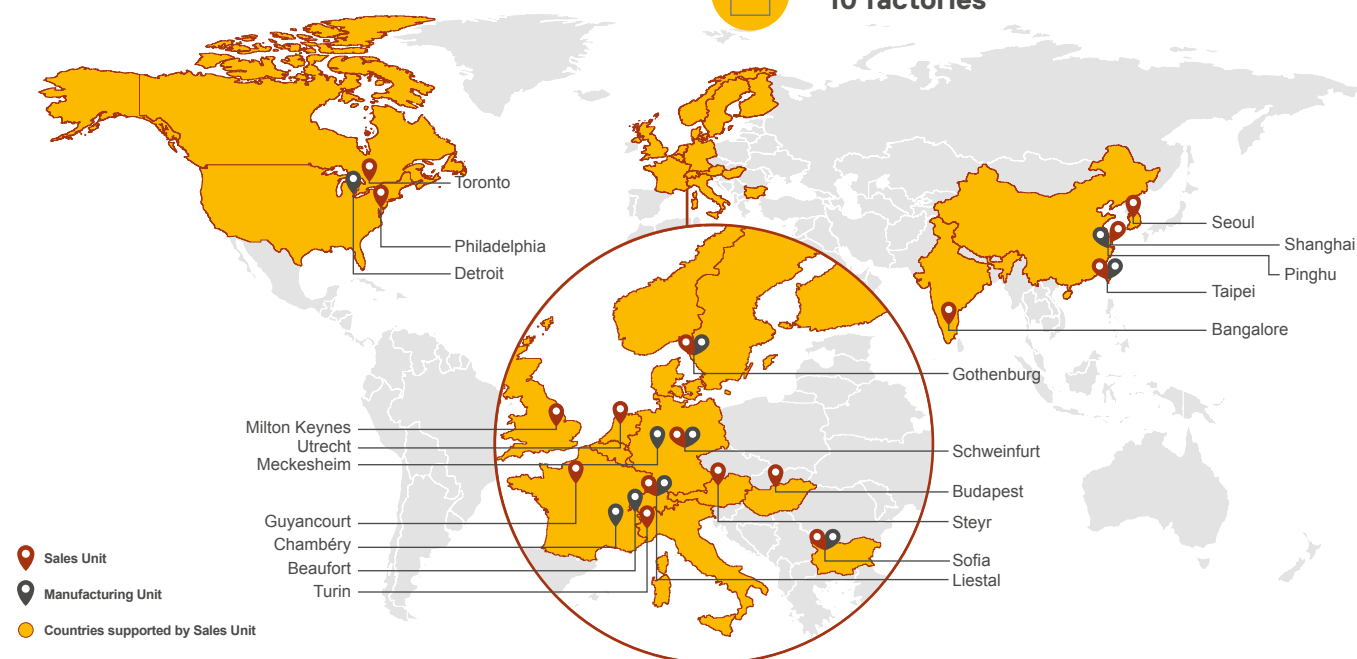
**1 200 employees**



**16 sales units**



**10 factories**



# Solid design meets smooth running

The new miniature profile rail guide series for industrial and laboratory automation

Miniature profile rail guides are the ideal solution for applications requiring compact dimensions, high running accuracy, long service life and low noise as for example in laboratory and small industrial machinery.

With the new miniature profile rail guide series LLS, Ewellix has coupled its practical experience gained in the automation industry with the latest findings from its own research and development into the new design.

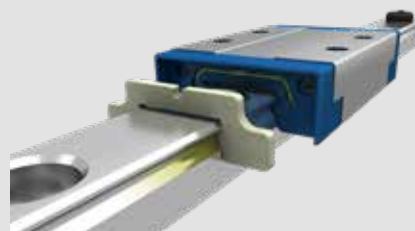
The demands placed on modern linear guidance technology have risen significantly in recent years - especially in terms of service life, precise motion combined with a high robustness of the product. At the same time, users expect installation and maintenance outlay to be as low as possible and this is particularly true in the field of medical applications.



*Robust ball retention system*



*Lubrication channel*



*Lubrication reservoir*



*Optimized seal design*

## Features

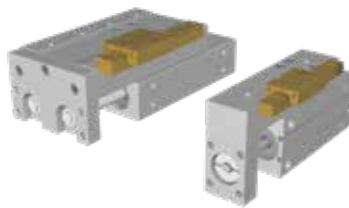
- Secure and safe mounting with unique and robust ball retention system
- Smooth running performance with optimized ball recirculation
- Nearly maintenance-free operation, by factory pre-lubrication
- Up to 20 000 km in service life with lubrication reservoir
- Extremely low friction with new and optimized seal design
- Zero Rail Concept (ZRC) increase flexibility with interchangeable carriages on rails
- High stiffness due to optimized raceway and carriage design
- High dynamic values: speed  $v = 5 \text{ m/s}$   
acceleration  $a = 140 \text{ m/s}^2$
- Extended temperature range  $-20 \text{ }^{\circ}\text{C}$  to  $+100 \text{ }^{\circ}\text{C}$   
(sealed version  $+80 \text{ }^{\circ}\text{C}$ )

# Optimized for your application

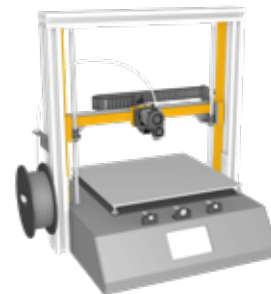
Minimal service requirements combined with low friction and silent running, the new LLS series provides high performance for industrial and laboratory automation.



*Dental milling machine*



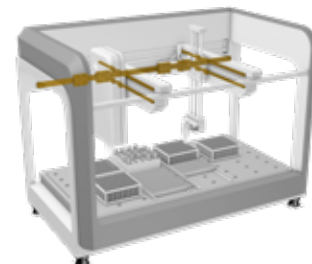
*Minislides in automation*



*3D Printing machine*

## Benefits

- Low noise for laboratory and office environments
- Self-lubrication for long service life in any application
- Smooth running for more position accuracy
- Secure machine performance with no steel ball losses during mounting
- Safe mounting with two reference sides on rails and carriages
- More flexibility and availability with new ZRC range offer
- Good environment resistance using stainless steel components
- RoHs and REACH conform products

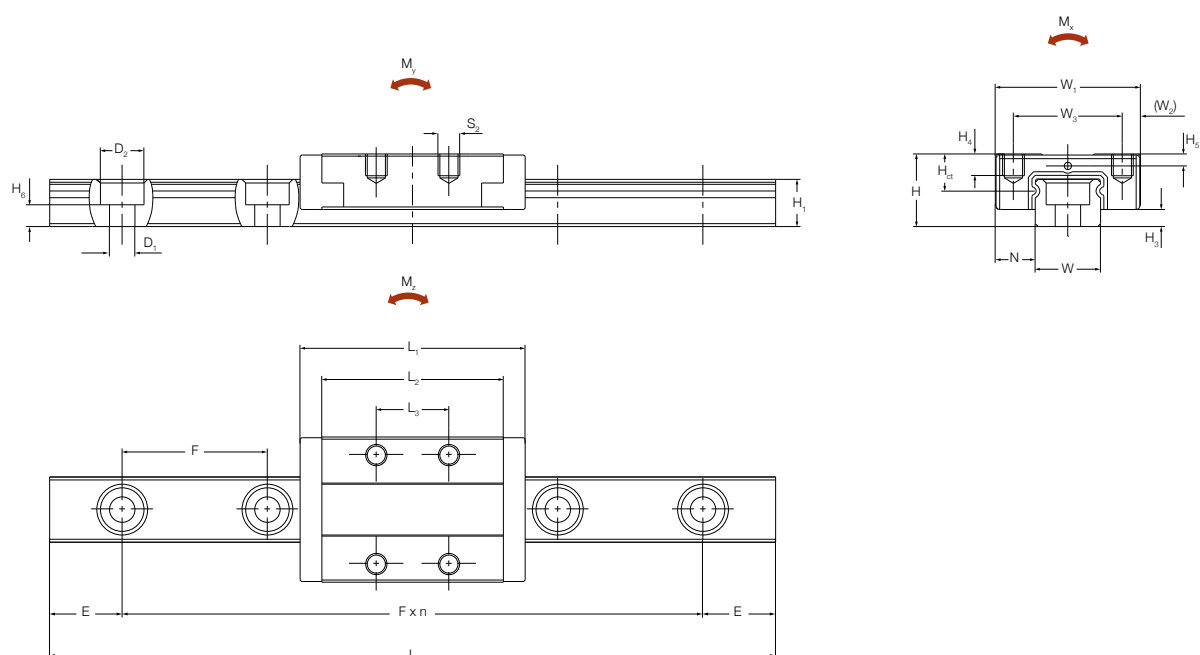


*Robotic analyzer for laboratories*

## Typical applications

- Laboratory analyzer
- Minislides in automation
- 3D-Printing machine
- Laboratory machine tool
- Engraving machine
- Dental equipment

## Dimensional drawing



Designation	Size	H	W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	S <sub>2</sub>	H <sub>1</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	H <sub>6</sub>	H <sub>ct</sub>	W	N	L ±1,5	D <sub>1</sub> xD <sub>2</sub>	E <sub>min</sub> ±0,5	E <sub>max</sub> ±0,5	F
mm																						
LLSHS 7 TA	7	8	17	2,5	12	23,5	18	8	M2	4,8	1,5	2,5	1,7	2,3	4,6	7	5	1 000	2,5 × 4,5	4,5	12	15
LLSHS 7 LA	7	8	17	2,5	12	31,5	26	13	M2	4,8	1,5	2,5	1,7	2,3	4,6	7	5	1 000	2,5 × 4,5	4,5	12	15
LLSHS 9 TA	9	10	20	2,5	15	31	25	10	M3	6,5	2,35	3	1,65	3	5,1	9	5,5	1 000	3,5 × 6	5	16	20
LLSHS 9 LA	9	10	20	2,5	15	40,5	34,4	16	M3	6,5	2,35	3	1,65	3	5,1	9	5,5	1 000	3,5 × 6	5	16	20
LLSHS 12 TA	12	13	27	3,5	20	35	29	15	M3	8,8	3,35	3,5	2,65	4,3	6,5	12	7,5	1 000	3,5 × 6	5	21	25
LLSHS 12 LA	12	13	27	3,5	20	46,5	40,5	20	M3	8,8	3,35	3,5	2,65	4,3	6,5	12	7,5	1 000	3,5 × 6	5	21	25

## Technical data

Designation	Size	C	C <sub>o</sub>	M <sub>xc</sub>	M <sub>xc0</sub>	M <sub>yc</sub> /M <sub>zc</sub>	M <sub>yc0</sub> /M <sub>zc0</sub>	Weight Carriage	Rail
		100 km		dyn	stat	dyn	stat	kg	kg/m
		N		Nm					
LLSHS 7 TA	7	915	1 460	3,0	4,6	1,7	2,6	0,01	0,23
LLSHS 7 LA	7	1 270	2 400	4,1	7,6	3,9	7,4	0,02	0,23
LLSHS 9 TA	9	1 700	2 800	7,1	11,5	4,6	7,5	0,02	0,4
LLSHS 9 LA	9	2 280	4 300	9,6	17,7	9,6	18,0	0,03	0,4
LLSHS 12 TA	12	2 500	3 900	14,0	21,5	7,5	11,7	0,04	0,75
LLSHS 12 LA	12	3 550	6 300	19,9	34,8	17,1	30,4	0,06	0,75

The newly developed Zero Rail Concept (ZRC) offers freedom in flexibility and availability. Within the ZR-Concept any carriage can be mounted together with the rail of the same size. Spare parts can be handled much quicker and due to standardization delivery times are shorter in comparison to system configurations.

Zero Rail Concept carriages and rails are delivered separately. The ZRC offer is standardized for precision class P5 (Standard precision) together with preload class T0 (Zero preload) and T1 (Light preload). Any carriage or rail from this range must be ordered with the suffix ZRC in the ordering key.



LLS Miniature profile rail guide series												- 5 0 0 P 5 W 2 . E 1 0											
<b>System type</b>																							
H Standard type																							
<b>Type code</b>																							
S System consisting of carriage and rail																							
<b>Size</b>																							
7, 9, 12																							
<b>Carriage type</b>																							
TA Standard carriage																							
LA Standard carriage, extended length																							
<b>Seal options</b>																							
. Shielded carriage <sup>1)</sup>																							
R Low friction sealed carriage																							
<b>Number of carriages per rail</b>																							
1, 2, 3, 4, 6																							
<b>Preload Class</b>																							
T0 Zero preload																							
T1 Light preload																							
T2 Medium preload (On request)																							
<b>Rail Length</b>																							
up to 1 000 mm length (in 1 mm steps)																							
<b>Precision Class</b>																							
P5 Standard precision																							
P1 High precision (Available as system only)																							
<b>Rail arrangement (Number of parallel mounted rails)</b>																							
. Arrangement of single rail as standard <sup>1)</sup>																							
W2 Arrangement of two parallel mounted rails																							
Wx Arrangement of x number of parallel mounted rails																							
<b>Rail type</b>																							
. Standard rail <sup>1)</sup>																							
D Customized rail																							
<b>Distance between end face and the center of the first mounting hole of the rail</b>																							
E0 Standard "E" dimension, even when not selected. The holes at both rails and will be positioned equidistantly from either end of the rails with shortest possible distance																							
Exx Specified "E" dimension for one rail end with the following options per size: Size 7 from 4,5 mm to 11 mm, Size 9 from 5 mm to 15 mm, Size 12 from 5 mm to 20 mm																							

<sup>1)</sup> No code for standard

Examples : LLSHS12TAR3T0-652P5E10 or LLSHS9LA1T1-140P1W2E0 or LLSHS7LA2T0-210P5W3E6

## Ordering key carriages ZRC range

LLS Miniature profile rail guide series	12	T A R	T 0	P 5	Z R C
System type					
H Standard type					
Type code					
C Carriage					
Size					
7, 9, 12					
Carriage type					
TA Standard carriage					
LA Standard carriage, extended length					
Seal options					
. Shielded carriage <sup>1)</sup>					
R Low friction sealed carriage					
Preload Class					
T0 Zero preload					
T1 Light preload					
Precision Class					
P5 Standard precision					
Zero Rail Concept					
ZRC The Zero Rail Concept (ZRC) offers the interchangeability of carriages and rails. Any carriage does fit onto any rail of the same size, if both components belong to the Zero Rail Concept. ZRC component have the suffix ZRC and can be ordered as components only. Single carriages do not have standard the ZRC suffix					

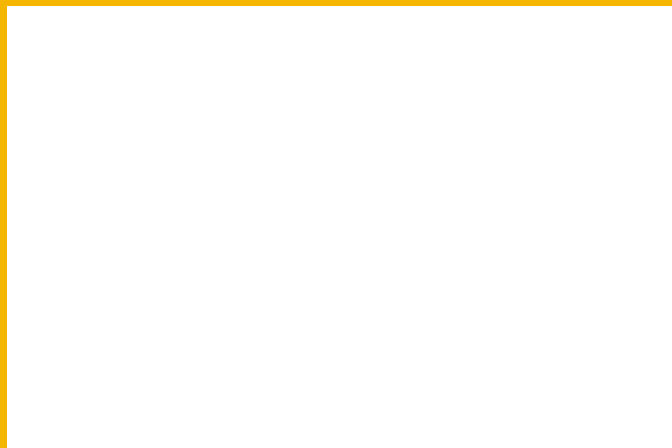
<sup>1)</sup>No code for standard

Examples : LLSHC 12 LAR T0 P5 ZRC or LLSHC 7 TA T1 P5 ZRC

## Ordering key rails ZRC range

LLS Miniature profile rail guide series	9 - 1 0 0 0	P 5	E 0	Z R C
System type				
H Standard type				
Type code				
R Rail				
Size				
7, 9, 12				
Rail Length				
up to 1 000 mm length (in 1 mm steps)				
Precision Class				
P5 Standard precision				
Distance between end face and the center of the first mounting				
E0 Standard "E" dimension, even when not selected. The holes at both rails and will be positioned equidistantly from either end of the rails with shortest possible distance				
Exx Specified "E" dimension for one rail end with the following options per size: Size 7 from 4,5 mm to 11 mm, Size 9 from 5 mm to 15 mm, Size 12 from 5 mm to 20 mm				
Zero Rail Concept				
ZRC The Zero Rail Concept (ZRC) offers the interchangeability of carriages and rails. Any carriage does fit onto any rail of the same size, if both components belong to the Zero Rail Concept. ZRC component have the suffix ZRC and can be ordered as components only. Single carriages do not have standard the ZRC suffix.				

Examples : LLSHR 12-1000 P5 E8 ZRC or LLSHR 7-200 P5 ZRC or LLSHR 9-326 P5 E0 ZRC



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