

LINEAR MOTION TECHNOLOGY

ARC/HRC & AR/HR
Ball Type Linear Guide Series



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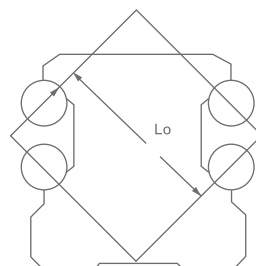
ARC/HRC & AR/HR

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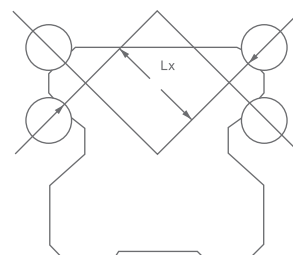
◎ AR/HR Ball Type Linear Guide Series

cpc's AR/HR Series ball-type linear guides incorporate four rows of recirculating balls. An O-shape arrangement, with a 45 degree contact angle between the raceway and steel balls efficiently increases rigidity and torsion resistance.

Although the linear guides' design space has been limited, **cpc** is capable of increasing the number of balls and adopts larger steel balls to enhance load capacity.



O-Type Arrangement

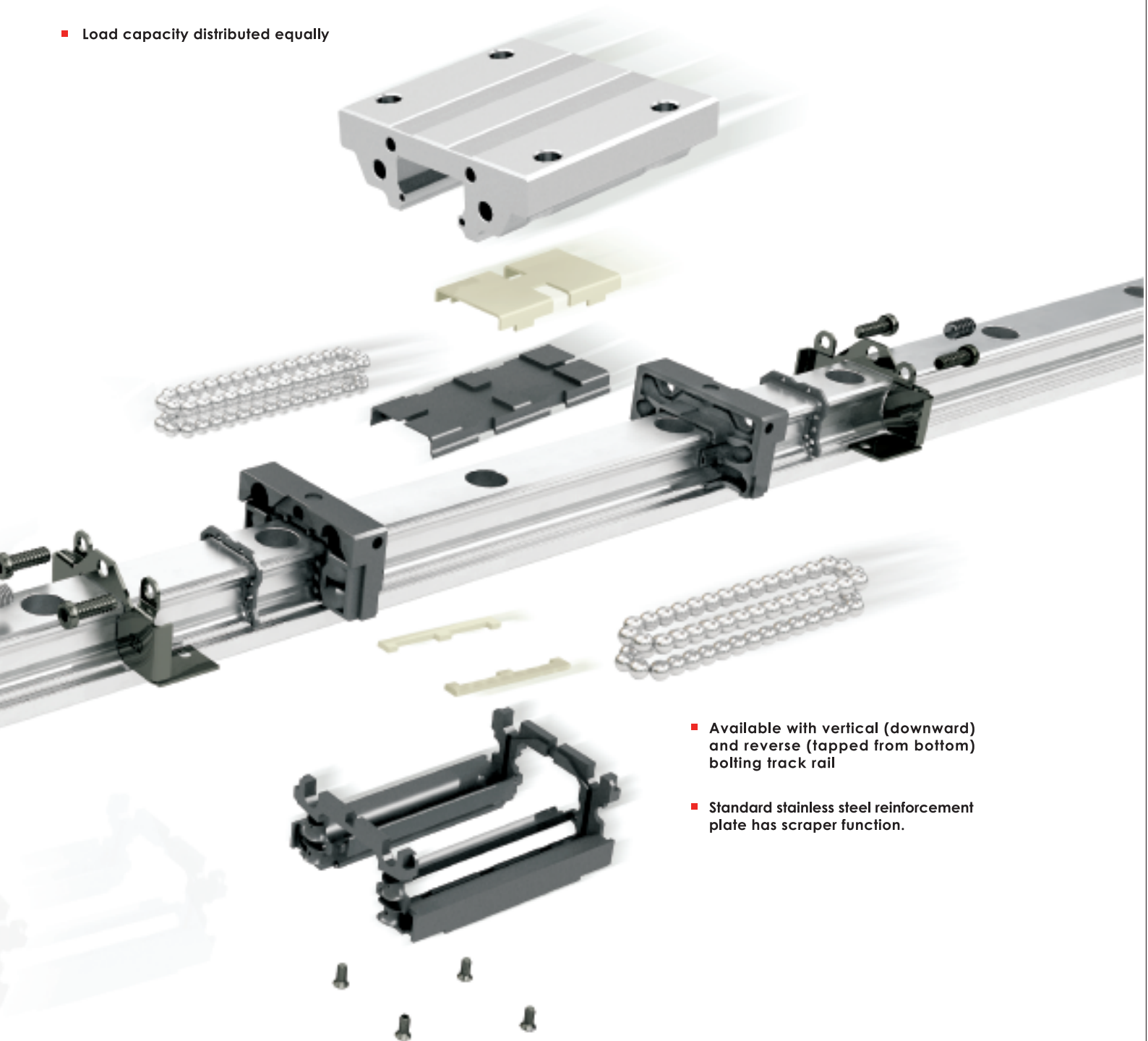


X-Type Arrangement

- Environmentally-friendly lubrication system : Long-term low maintenance design requiring minimal lubrication
- Multiple-direction lubrication replenishment system
- High rigidity structure

- Lightweight and compact slide block
- Industry standard interchangeability

- Excellent dynamic function: $V_{max} > 5 \text{ m/s}$, $a_{max} > 300 \text{ m/s}^2$
- Load capacity distributed equally



- Available with vertical (downward) and reverse (tapped from bottom) bolting track rail
- Standard stainless steel reinforcement plate has scraper function.

- Dust protection in the end seal is designed with a double wipe blade. Standard and reinforced end seals are available.
- Available with special surface treatment.

◎ Accuracy

		Accuracy Grades					
		Ultra Precision (UP)	Super Precision (SP)	Precision (P)	High (H)	Normal (N)	
	Accuracy Grades (μm)						
	Tolerance of dimension height	H	± 5	± 10	± 20	± 40	± 100
	Variation of height for different runner block on the same position of track rail	ΔH	3	5	7	15	30
	Tolerance of dimension width	W2	± 5	± 7	± 10	± 20	± 40
	Variation of width for different runner block on the same position of track rail	$\Delta W2$	3	5	7	15	30

Accuracy of the running parallelism

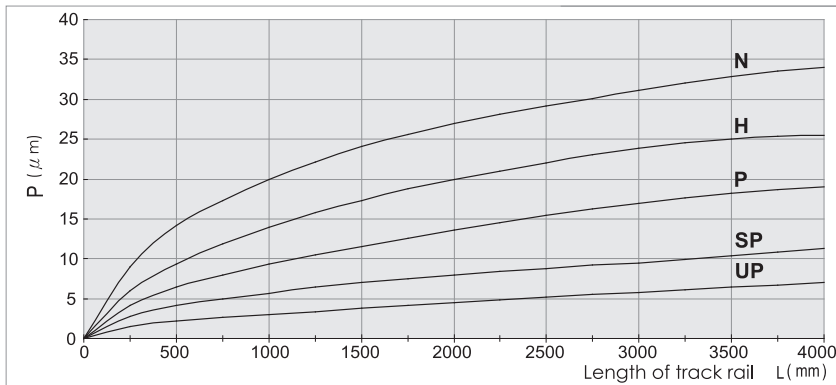


Table of Preload

Preload Classes	V0	V1	V2
AR	0 } 0.02C	0.05C	0.08C
HR	0 } 0.02C	0.08C	0.13C

◎ Order information

Model Code														
AR(U)	E	15	M	N	B	2	Z	V1	P	-1480L	-20	-20	II	J
Customization code														
Number of rails on the same moving axis														
End hole pitch (mm)														
Starting hole pitch (mm)														
Rail length (mm)														
Accuracy grades Normal (N), High (H), Precision (P), Super Precision (SP), Ultra Precision (UP)														
Preload classes V0 : Standard, V1 : Light Preload, V2 : Medium preload														
Embedded lubrication storage														
Block quantity Number of blocks on the same rail														
End seal type B : Standard, S : Reinforced														
Block length L : Long, N : Standard, S : Short														
Block type M : Standard, F : Flange														
Rail size The size of the track rail : 15, 20, 25, 30														
E The track rail size 15 mounting hole 6 x 3.5 x 4.5														
Product Type – AR/ARC : automation series, HR/HRC : heavy load series, U : Tapped from bottom														

>> Customization code

The meaning of suffix characters:

- J** Butt-jointing track rail
- G** Customer designated lubricant
- I** Inspection report
- C** Chromium surface treatment is applied to the casing and track rail
- CR** Chromium surface treatment is applied to the track rail
- M** Manganese surface treatment is applied to the block and track rail
- MR** Manganese surface treatment is applied to the track rail
- R** Special process for track rail
- B** Special process for slide block

Environmentally-Friendly Design - Z Series

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cpc AR/HR Z Series Lubrication Storage Pad Testing Report

A linear guide is a category of rolling guidance. By using unlimited recirculating stainless steel balls operating between the raceways of the rail and the runner block, the carriage achieves high precision and low friction linear movement. If the linear guides do not have sufficient lubrication, rolling friction will increase, causing wear and shortened linear guide life span.

cpc has added and embedded PU lubricant storage pads to prolong the life of the linear guide; the pads directly contact and lubricate the rolling balls. This design supplies sufficient lubrication even in short stroke operations.

cpc's design, due to the embedded pad's absorption and retention capabilities, results in a product that features a long operational life and long-term lubrication.

The following are the results of **cpc**'s in-house testing.

AR15 Lubrication Storage Pad Testing Data

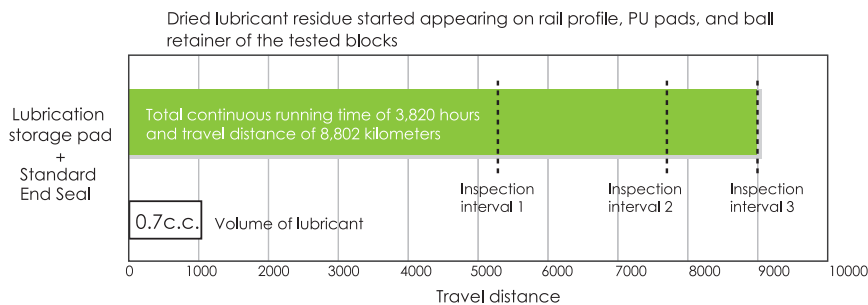
Tested products: AR15 blocks with lubrication storage pads, 8 pieces, and AR15 rails, N accuracy grade, 1500mm Length, 4 pieces

Testing condition	
Rating load capacities(each Block)	1.8KN(C=9KN、C0=17.5KN)
Stroke	0.96m
Max running speed	1m/s
Lubricant	DAPHNE SUPER MULTI 68 (Viscosity64.32 CST 40OC)
Lubrication period	No lubrication added during testing period

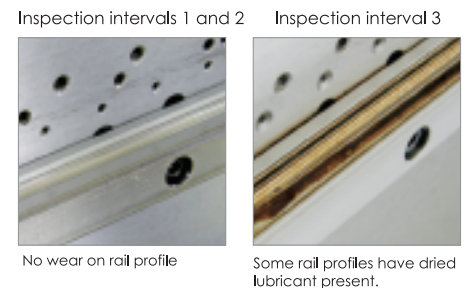
■ Testing equipment



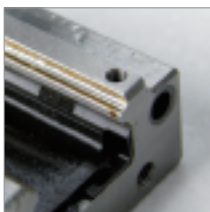
■ Testing result



■ Test results at inspection intervals



Inspection intervals 1 and 2: Lubrication Maintained



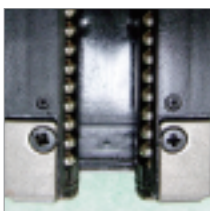
- Upward lubrication storage pads in good condition.
- Downward lubrication storage pads in good condition.
- Lubricant supply in good condition.
- Lubricant supply in good condition.
- No wear on the running profile of the rail.

Inspection interval 3: Lubricant residue



- Dried lubricant residue started appearing broken on the upward lubrication storage pads from the tested blocks.
- Dried lubricant residue started appearing broken on the downward lubrication storage pads from the tested blocks.

Plastic parts and end seal in good condition



Plastic parts in good condition

End seal in good condition

■ Test Summary

Total continuous running time of 3820 hours and travel distance of 8802 kilometers.

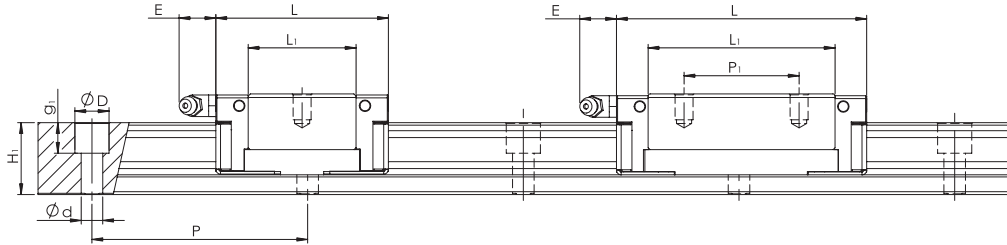
Out of eight test blocks, dried lubricant residue appeared on 2 blocks and 1 rail. Dried lubricant residue is indicative of a need for re-lubrication.

The test results indicate that the lubrication pad design effectively extends the time between re-lubrication and thus lengthens the operational life of the linear guide.

ARC/HRC & AR/HR

ARC/HRC & AR/HR Ball Type Linear Guide Series

⊙ Dimensions and Specifications

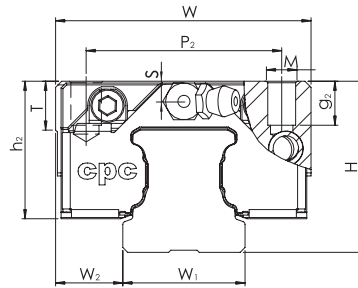
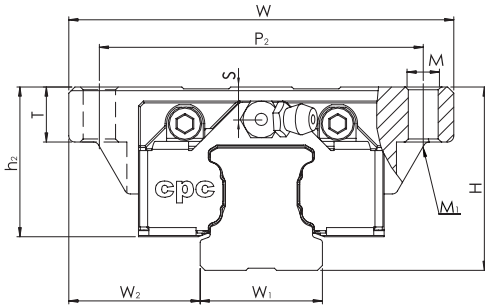


AR Automation Series

Model Code	Fabrication Dimensions		Rail Dimensions (mm)				Block Dimensions (mm)						Block Dim	
	H	W ₂	W ₁	H ₁	P	D×d×g ₁	W	L	L ₁	h ₂	P ₁	P ₂	E	M×g ₂
AR 15 MS	24	9.5	15	15	60	7.5x4.5x5.3 (6x3.5x4.5)	34	40.8	24.2	20.1	-	26	4.5	M4x7
AR 15 MN	24	9.5	15	15	60		34	56.1	39.5	20.1	26	26	4.5	M4x7
AR 15 FS	24	18.5	15	15	60		52	40.8	24.2	20.1	-	41	4.5	M5x7
AR 15 FN	24	18.5	15	15	60		52	56.1	39.5	20.1	26	41	4.5	M5x7
AR 20 MS	28	11	20	20	60	9.5x6x8.5	42	48.2	30	22.5	-	32	12	M5x7
AR 20 MN	28	11	20	20	60		42	70.2	52	22.5	32	32	12	M5x7
AR 20 FS	28	19.5	20	20	60		59	48.2	30	22.5	-	49	12	M6x9
AR 20 FN	28	19.5	20	20	60		59	70.2	52	22.5	32	49	12	M6x9
AR 25 MS	33	12.5	23	23	60	11x7x9	48	57.2	37	26.6	-	35	12	M6x9
AR 25 MN	33	12.5	23	23	60		48	80.2	60	26.6	35	35	12	M6x9
AR 25 FS	33	25	23	23	60		73	57.2	37	26.6	-	60	12	M8x10
AR 25 FN	33	25	23	23	60		73	80.2	60	26.6	35	60	12	M8x10
ARC 30 MN	42	16	28	27	80	14x9x12	60	97.5	71.5	35.4	40	40	12	M8x10
ARC 30 FN	42	31	28	27	80		90	97.5	71.5	35.4	40	72	12	M10x12

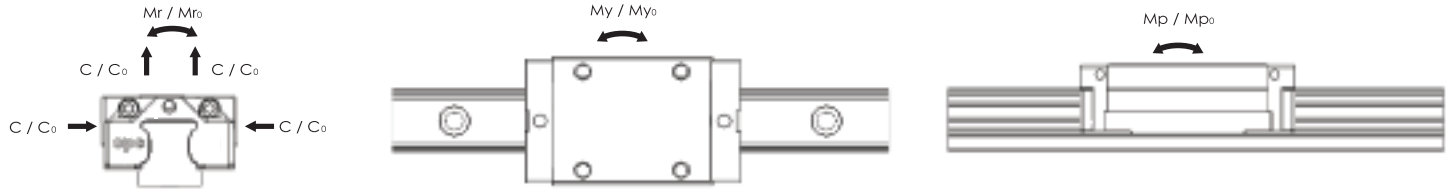
HR Heavy Load Series

Model Code	Fabrication Dimensions		Rail Dimensions (mm)				Block Dimensions (mm)						Block Dim	
	H	W ₂	W ₁	H ₁	P	D×d×g ₁	W	L	L ₁	h ₂	P ₁	P ₂	E	M×g ₂
HR 15 MN	28	9.5	15	15	60	7.5x4.5x5.3 (6x3.5x4.5)	34	56.1	39.5	24.1	26	26	4.5	M4x7
HR 15 FN	24	16	15	15	60		47	56.1	39.5	20.1	30	38	4.5	M5x9
HR 20 MN	30	12	20	20	60	9.5x6x8.5	44	70.2	52	24.5	36	32	12	M5x8.5
HR 20 ML	30	12	20	20	60		44	90.2	72	24.5	50	32	12	M5x8.5
HR 20 FN	30	21.5	20	20	60		63	70.2	52	24.5	40	53	12	M6x9
HR 20 FL	30	21.5	20	20	60		63	90.2	72	24.5	40	53	12	M6x9
HR 25 MN	40	12.5	23	23	60	11x7x9	48	80.2	60	33.6	35	35	12	M6x9
HR 25 ML	40	12.5	23	23	60		48	100.2	80	33.6	50	35	12	M6x9
HR 25 FN	36	23.5	23	23	60		70	80.2	60	29.6	45	57	12	M8x10
HR 25 FL	36	23.5	23	23	60		70	100.2	80	29.6	45	57	12	M8x10
HRC 30 MN	45	16	28	27	80	14x9x12	60	97.5	71.5	38.4	40	40	12	M8x10
HRC 30 FN	42	31	28	27	80		90	97.5	71.5	35.4	52	72	12	M10x12



Dimensions (mm)			Load Capacities (KN)		Static Moment (Nm)			Weight		Model Code
M1	S	T	C _{100B}	C ₀	M _{r0}	M _{p0}	M _{y0}	Block(g)	Rail(g/m)	
	4	6	6.40	10.80	80	40	40	95	1290	AR 15 MS
	4	6	9.00	17.50	140	100	100	140		AR 15 MN
M4	4	7	6.40	10.80	80	40	40	120		AR 15 FS
M4	4	7	9.00	17.50	140	100	100	180		AR 15 FN
	3.5	8	10.90	16.30	170	80	80	170	2280	AR 20 MS
	3.5	8	15.60	29.80	310	220	220	260		AR 20 MN
M5	3.5	9	10.90	16.30	170	80	80	210		AR 20 FS
M5	3.5	9	15.60	29.80	310	220	220	360		AR 20 FN
	5	8	12.30	21.20	220	110	110	285	3020	AR 25 MS
	5	8	18.80	36.40	410	300	300	380		AR 25 MN
M6	5	10	12.30	21.20	220	110	110	325		AR 25 FS
M6	5	10	18.80	36.40	410	300	300	440		AR 25 FN
-	7.5	12	32.70	58.90	770	520	520	800	4380	ARC 30 MN
M8	7.5	12	32.70	58.90	770	520	520	1150		ARC 30 FN

Dimensions (mm)			Load Capacities (KN)		Static Moment (Nm)			Weight		Model Code
M1	S	T	C _{100B}	C ₀	M _{r0}	M _{p0}	M _{y0}	Block(g)	Rail(g/m)	
	8	6	9.00	17.50	140	100	100	185	1290	HR 15 MN
	4	7	9.00	17.50	140	100	100	180		HR 15 FN
	5.5	10	15.60	29.80	310	220	220	310	2280	HR 20 MN
	5.5	10	20.80	43.30	430	420	420	400		HR 20 ML
M5	5.5	9	15.60	29.80	310	220	220	385		HR 20 FN
M5	5.5	9	20.80	43.30	430	420	420	505		HR 20 FL
	12	12	18.80	36.40	410	300	300	530	3020	HR 25 MN
	12	12	23.40	48.50	560	520	520	665		HR 25 ML
M6	8	10	18.80	36.40	410	300	300	470		HR 25 FN
M6	8	10	23.40	48.50	560	520	520	585		HR 25 FL
-	10.5	12	32.70	58.90	770	520	520	890	4380	HRC 30 MN
M8	7.5	12	32.70	58.90	770	520	520	1110		HRC 30 FN



ER Series

Model Code	Fabrication Dimensions		Rail Dimensions (mm)				Block Dimensions (mm)						Block Dimensions (mm)				
	H	W2	W1	H1	P	Dxdxg1	W	L	L1	h2	P1	P2	E	Mxg2	M1	S	T
ER 25MN	36	12.5	23	23	60	11x7x9	48	80.2	60	29.6	35	35	12	M6x9		8	8
ER 25ML	36	12.5	23	23	60		48	100.2	80	29.6	50	35	12	M6x9		8	8

Load Capacities (KN)		Static Moment (Nm)			Weight		Model Code
C100B	C0	Mr0	Mp0	My0	Block(g)	Rail(g/m)	
18.80	36.40	410	300	300	475	3020	ER 25MN
23.40	48.50	560	520	520	550		ER 25ML

The above rating load capacities and static moment are calculated according to ISO14728 standard. The rating life for basic dynamic load rating is defined as the total 100km travel distance that 90% of a group of identical linear guides can be operated individually under the same conditions free from any material damage caused by rolling fatigue. When the standard of 50km travel distance is applied, the above basic dynamic load rating C of ISO14728 should be multiplied by 1.26 for conversion.