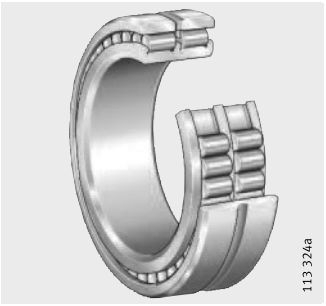
Non-locating bearings

Double row

SL0248, SL0249

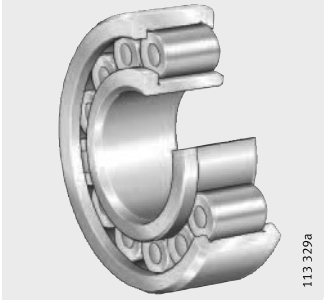


Semi-locating bearings

Single row

SL1818, SL1829, SL1830, SL1822

SL1923



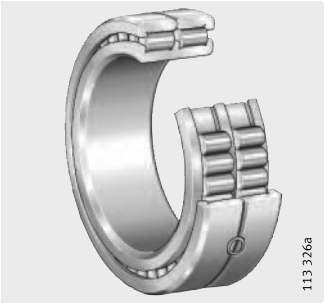
Double row

SL1850

Locating bearings

Double row

SL0148, SL0149



Full complement cylindrical roller bearings

Features

Full complement cylindrical roller bearings have solid outer and inner rings and rib-guided cylindrical rollers. Since they have the maximum possible number of rolling elements, these bearings have extremely high radial load carrying capacity and high rigidity and are suitable for particularly compact designs. Due to the kinematic conditions, however, they do not achieve the high speeds that are possible when using cylindrical roller bearings with cage.

Full complement cylindrical roller bearings are available as non-locating, semi-locating and locating bearings as well as in single and double row designs.

X-life

Numerous sizes are supplied in the X-life grade.
These bearings are indicated in the dimension tables.

Bearings of X-life quality have lower roughness R_a and higher geometrical accuracy of the raceways than comparable designs that are not X-life. As a result, they have higher load carrying capacity and longer life for the same dimensioning. In certain applications, this means that a smaller bearing arrangement can be designed.

Non-locating bearings

Bearings SL0248 (designation to DIN 5 412-9: NNCL 48..V) and bearings SL0249 (designation to DIN 5 412-9: NNCL 49..V) are double row non-locating bearings and can support radial forces only.

Axial displacement

The outer ring without ribs can be axially displaced in both directions in relation to the inner ring. The inner ring has ribs on both sides.

Caution!

The bearings are held together in handling and transport by a transport and mounting retaining device. This retaining device must not be subjected to axial load.

Sealing/lubricant

The cylindrical roller bearings are not sealed and not greased. They can be lubricated with oil or grease. For lubrication, they have a lubrication groove and lubrication holes in the outer ring.

Semi-locating bearings

Semi-locating bearings are available in single row design as SL1818 (dimension series 18), SL1829 (dimension series 29), SL1830 (dimension series 30), SL1822 (dimension series 22), SL1923 (dimension series 23)
and in double row design as SL1850 (dimension series 50).
They can support not only high radial forces but also axial forces in one direction and can therefore guide shafts axially in one direction. They act as non-locating bearings in the opposite direction.

Series SL1923 has only one rib on the inner ring. As a result, the inner ring can be removed from the bearing. This makes fitting and dismantling considerably easier.

Caution!

The bearings SL1818, SL1829, SL1830, SL1822 and SL1850 are held together in handling and transport by a transport and mounting retaining device.

This retaining device must not be subjected to axial load.

Axial displacement of inner ring

The inner ring can be axially displaced in one direction only by the dimension “s” stated in the dimension table.

Sealing/lubricant

The cylindrical roller bearings are not sealed and not greased. They can be lubricated with oil or grease. The semi-locating bearings can be lubricated via the end faces, while the double row designs can additionally be lubricated via a lubrication groove and lubrication holes in the outer ring.

Locating bearings

Cylindrical roller bearings SL0148 (designation to DIN 5 412-9: NNC 48..V) and SL0149 (designation to DIN 5 412-9: NNC 49..V) are double row locating bearings. These bearings can support axial forces from both directions as well as radial forces.

Caution! The outer ring has ribs on both sides, is axially split and held together by fasteners. The inner ring has an additional central rib.

The fasteners must not be subjected to axial load.

Sealing/lubricant

The cylindrical roller bearings are not sealed and not greased. They can be lubricated with oil or grease.

For lubrication, the outer ring has a lubrication groove and lubrication holes.

Operating temperature

Full complement cylindrical roller bearings are suitable for operating temperatures from –30 °C to +120 °C.

Suffixes

Suffixes for available designs: see table.

Available designs

Suffix	Description	Design
BR	Black oxide coated	Special design[1)]
C3	Radial internal clearance larger than normal	Special design[1)]
C4	Radial internal clearance larger than C3	Special design[1)]
C5	Radial internal clearance larger than C4	Special design[1)]
E	Increased capacity design	Special design[1)]
RR	Corrosion-resistant design, with Corrotect® plating	Special design[1)]

1) Available by agreement.

Design and safety guidelines

Axial load carrying capacity

Radial cylindrical roller bearings used as semi-locating and locating bearings can support axial forces in one or both directions in addition to radial forces.

The axial load carrying capacity is dependent on:

- the size of the sliding surfaces between the ribs and the end faces of the rolling elements
- the sliding velocity at the ribs
- the lubrication on the contact surfaces.

Caution! Ribs subjected to load must be supported across their entire height. If severe shaft flexing is present, reversed bending stresses may occur as a result of this support. Special analysis is required in this case. The axial limiting load $F_{a\ max}$ according to the formula must not be exceeded, in order to avoid impermissible pressure at the contact surfaces.

The ratio F_a/F_r should not exceed 0,4. Continuous axial loading without simultaneous radial loading is not permissible.

Permissible and maximum axial load

$$F_{a\,per} = k_S \cdot k_B \cdot {d_M}^{1,5} \cdot n^{-0,6} \leqq F_{a\,max}$$

$$F_{a\,max} = 0,075 \cdot k_B \cdot {d_M}^{2,1}$$

$F_{a\,per}$ N
Permissible axial load

$F_{a\,max}$ N
Axial limiting load

k_S –
Factor dependent on the lubrication method, see table

k_B –
Bearing factor: see table

d_M mm
Mean bearing diameter (d + D)/2 according to dimension table

n min^{-1}
Operating speed.

Factor k_S for lubrication method

Lubrication method[1]	k_S
Minimal heat dissipation, drip feed oil lubrication, oil mist lubrication, low operating viscosity ($\nu < 0,5 \cdot \nu_1$)	7,5 to 10
Poor heat dissipation, oil sump lubrication, oil spray lubrication, low oil flow	10 to 15
Good heat dissipation, recirculating oil lubrication (pressurised oil lubrication)	12 to 18
Very good heat dissipation, recirculating oil lubrication with oil cooling, high operating viscosity ($\nu > 2 \cdot \nu_1$)	16 to 24

1) Doped lubricating oils should be used, e.g. CLP (DIN 51517) and HLP (DIN 51524) of ISO VG classes 32 to 460 and ATF oils (DIN 51502) and gearbox oils (DIN 51512) of SAE viscosity classes 75 W to 140 W.

Bearing factor k_B

Series	k_B
SL1818, SL0148	4,5
SL1829, SL0149	11
SL1830, SL1850	17
SL1822	20
SL1923	30

Equivalent dynamic bearing load

Non-locating bearings

For bearings under dynamic loading, the following applies:

$$P = F_r$$

Semi-locating and locating bearings

If an axial force F_a is present in addition to the radial force F_r, the effect on the life must be calculated using our calculation program BEARINX®.

Equivalent static bearing load

Non-locating bearings

For bearings under static loading, the following applies:

$$P_0 = F_{0r}$$

Semi-locating and locating bearings

If an axial force F_{0a} is present in addition to the radial force F_{0r}, the effect on the static load safety factor must be calculated using our calculation program BEARINX®.

Minimum radial load

In continuous operation, a minimum radial load of the order of $C_{0r}/P < 60$ is necessary.

Caution! If $C_{0r}/P > 60$, please contact us.

Axial location

In order to prevent lateral creep of the bearing rings, they must be located by force or physical locking means.

The abutting shoulders (shaft/housing) should be sufficiently high and perpendicular to the bearing axis.

The transition from the bearing seating to the abutting shoulders must be designed with rounding to DIN 5 418 or an undercut to DIN 509. Note the minimum chamfer dimensions r as given in the dimension tables.

For semi-locating bearings, the bearings only require support on one side, on the rib supporting the axial load.

Caution! Full support must be provided for ribs transmitting forces in axially loaded bearings.

Accuracy

The dimensional and geometrical tolerances of the bearings correspond to tolerance class PN to DIN 620.

Radial internal clearance

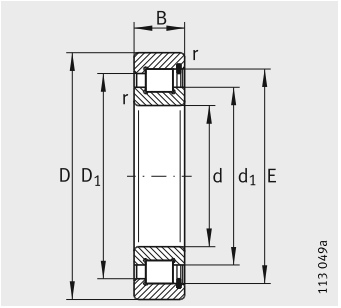
The radial internal clearance corresponds to internal clearance group CN.

Radial internal clearance to DIN 620-4

Bore d mm		Radial internal clearance							
		CN µm		C3 µm		C4 µm		C5 µm	
over	incl.	min.	max.	min.	max.	min.	max.	min.	max.
–	24	20	45	35	60	50	75	65	90
24	30	20	45	35	60	50	75	70	95
30	40	25	50	45	70	60	85	80	105
40	50	30	60	50	80	70	100	95	125
50	65	40	70	60	90	80	110	110	140
65	80	40	75	65	100	90	125	130	165
80	100	50	85	75	110	105	140	155	190
100	120	50	90	85	125	125	165	180	220
120	140	60	105	100	145	145	190	200	245
140	160	70	120	115	165	165	215	225	275
160	180	75	125	120	170	170	220	250	300
180	200	90	145	140	195	195	250	275	330
200	225	105	165	160	220	220	280	305	365
225	250	110	175	170	235	235	300	330	395
250	280	125	195	190	260	260	330	370	440

Cylindrical roller bearings

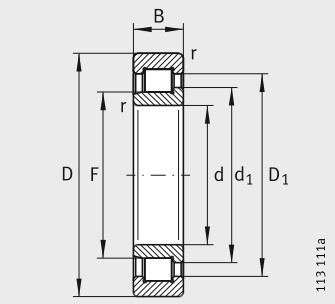
Full complement, single row
Semi-locating bearings



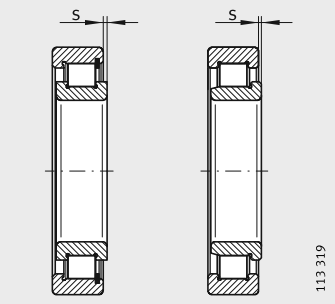
SL1829, SL1830, SL1822
Semi-locating bearings

Dimension table · Dimensions in mm

Designation		Mass	Dimensions					Mounting dimensions	
	X-life	m ≈kg	d	D	B	r min.	s[1)]	F	d_1 ≈
SL183004	**XL**	0,11	**20**	42	16	0,6	1,5	–	28,8
SL182204	**XL**	0,16	**20**	47	18	1	1	–	30,3
SL183005	**XL**	0,12	**25**	47	16	0,6	1,5	–	34,6
SL182205	**XL**	0,18	**25**	52	18	1	1	–	35,3
SL192305	–	0,37	**25**	62	24	1,1	2	31,72	36,7
SL183006	**XL**	0,2	**30**	55	19	1	2	–	40
SL182206	**XL**	0,3	**30**	62	20	1	1	–	42
SL192306	–	0,56	**30**	72	27	1,1	2	38,3	43,5
SL183007	**XL**	0,26	**35**	62	20	1	2	–	44,9
SL182207	**XL**	0,44	**35**	72	23	1,1	1	–	47
SL192307	–	0,74	**35**	80	31	1,5	2	44,68	50,7
SL183008	**XL**	0,31	**40**	68	21	1	2	–	50,5
SL182208	**XL**	0,55	**40**	80	23	1,1	1	–	54
SL192308	–	1,01	**40**	90	33	1,5	2	51,12	57,5
SL183009	**XL**	0,4	**45**	75	23	1	2	–	55,3
SL182209	**XL**	0,59	**45**	85	23	1,1	1	–	57,5
SL192309	–	1,37	**45**	100	36	1,5	3	56,1	62,5
SL183010	**XL**	0,43	**50**	80	23	1	2	–	59,1
SL182210	**XL**	0,64	**50**	90	23	1,1	1	–	64,4
SL192310	–	1,81	**50**	110	40	2	3	60,72	68,3
SL183011	**XL**	0,64	**55**	90	26	1,1	2	–	68,5
SL182211	**XL**	0,87	**55**	100	25	1,5	1	–	70
SL192311	–	2,28	**55**	120	43	2	3	67,11	75,5
SL182912	**XL**	0,29	**60**	85	16	1	1	–	69
SL183012	**XL**	0,69	**60**	95	26	1,1	2	–	71,7
SL182212	**XL**	1,18	**60**	110	28	1,5	1,5	–	76,8
SL192312	–	2,88	**60**	130	46	2,1	3	73,62	82
SL182913	**XL**	0,31	**65**	90	16	1	1	–	75,7
SL183013	**XL**	0,73	**65**	100	26	1,1	2	–	78,1
SL182213	**XL**	1,57	**65**	120	31	1,5	1,5	–	82,3
SL192313	–	3,52	**65**	140	48	2,1	3,5	80,69	90
SL182914	**XL**	0,49	**70**	100	19	1	1	–	81,2
SL183014	**XL**	1,02	**70**	110	30	1,1	3	–	81,5
SL182214	–	1,66	**70**	125	31	1,5	1,5	–	87
SL192314	–	4,33	**70**	150	51	2,1	3,5	84,14	93,5



SL1923
Semi-locating bearings

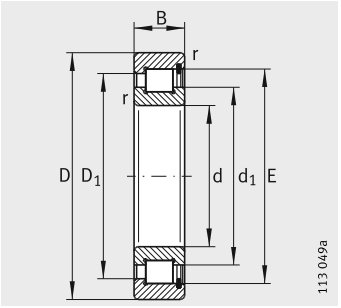


[1] Axial displacement “s”

		Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
D_1 ≈	E	dyn. C_r N	stat. C_{0r} N	C_{ur} N	n_G min^{-1}	n_B min^{-1}
32,8	36,81	30 500	26 500	4 450	10 500	7 400
36,9	41,47	45 500	37 500	6 100	9 700	6 500
38,5	42,51	35 000	32 500	5 500	9 000	6 200
41,9	46,52	51 000	45 000	7 400	8 400	5 500
47,5	–	73 000	60 000	9 400	7 400	4 650
45,4	49,6	45 000	43 000	7 500	7 600	5 600
50,6	55,19	70 000	65 000	10 200	7 000	4 550
56	–	100 000	88 000	14 500	6 400	3 950
51,3	55,52	55 000	55 000	9 400	6 700	4 850
59,3	63,97	88 000	79 000	12 700	6 100	4 200
65,8	–	126 000	112 000	19 000	5 600	3 700
57,1	61,74	66 000	68 000	11 200	6 000	4 300
66,3	70,94	97 000	93 000	14 900	5 400	3 600
75,2	–	170 000	156 000	27 000	5 000	3 150
62,2	66,85	70 000	76 000	12 500	5 400	4 050
69,8	74,43	101 000	99 000	16 000	5 000	3 300
80,3	–	181 000	169 000	30 000	4 450	3 000
67,7	72,33	88 000	96 000	15 100	5 000	3 550
76,7	81,4	109 000	113 000	18 100	4 650	3 000
89,7	–	232 000	219 000	38 500	4 050	2 750
78,8	83,54	120 000	136 000	22 600	4 450	3 150
84,1	88,81	140 000	150 000	25 000	4 200	2 650
99,3	–	270 000	255 000	45 500	3 700	2 550
74,4	78,55	63 000	78 000	13 700	4 450	2 800
82,1	86,74	123 000	145 000	23 700	4 200	2 950
93,9	99,17	169 000	180 000	31 000	3 800	2 550
105,8	–	285 000	280 000	50 000	3 400	2 450
81	85,24	67 000	86 000	15 100	4 200	2 600
88,4	93,09	130 000	159 000	26 000	3 950	2 700
100,7	106,25	198 000	214 000	37 000	3 500	2 410
116,5	–	350 000	355 000	63 000	3 150	3 200
87,8	92,31	88 000	114 000	18 800	3 800	2 490
95,6	100,28	153 000	176 000	29 500	3 600	2 700
105,2	111,45	184 000	227 000	32 000	3 300	2 270
121,6	–	385 000	390 000	69 000	2 950	2 110

Cylindrical roller bearings

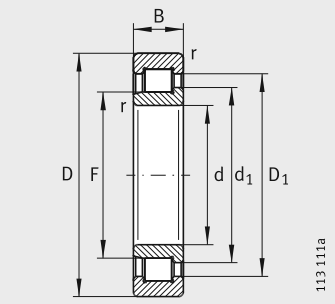
Full complement, single row
Semi-locating bearings



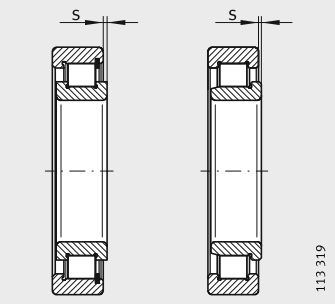
SL1829, SL1830, SL1822
Semi-locating bearings

Dimension table (continued) · Dimensions in mm

Designation		Mass	Dimensions					Mounting dimensions	
	X-life	m ≈kg	d	D	B	r min.	s[1)]	F	d_1 ≈
SL182915	**XL**	0,52	**75**	105	19	1	1	–	86,3
SL183015	**XL**	1,06	**75**	115	30	1,1	3	–	89
SL182215	–	1,75	**75**	130	31	1,5	1,5	–	91,8
SL192315	–	5,3	**75**	160	55	2,1	3,5	91,22	101,6
SL182916	**XL**	0,55	**80**	110	19	1	1	–	91,4
SL183016	–	1,43	**80**	125	34	1,1	4	–	95
SL182216	–	2,15	**80**	140	33	2	1,5	–	98,6
SL192316	–	6,32	**80**	170	58	2,1	3,5	98,24	109,5
SL182917	**XL**	0,81	**85**	120	22	1,1	1	–	96,4
SL183017	–	1,51	**85**	130	34	1,1	4	–	99,4
SL182217	–	2,74	**85**	150	36	2	1,5	–	104,4
SL192317	–	7,34	**85**	180	60	3	4	107,01	118,2
SL182918	**XL**	0,84	**90**	125	22	1,1	1	–	102
SL183018	–	1,97	**90**	140	37	1,5	4	–	106,1
SL182218	–	3,48	**90**	160	40	2	2,5	–	110,2
SL192318	–	8,83	**90**	190	64	3	4	105,26	117,5
SL182919	**XL**	0,86	**95**	130	22	1,1	1	–	106,7
SL182219	–	4,17	**95**	170	43	2,1	2,5	–	122
SL192319	–	10,2	**95**	200	67	3	4	114,65	126,6
SL182920	**XL**	1,14	**100**	140	24	1,1	1,5	–	113,4
SL183020	–	2,15	**100**	150	37	1,5	4	–	115,7
SL182220	–	5,13	**100**	180	46	2,1	2,5	–	127,5
SL192320	–	13	**100**	215	73	3	4	119,3	132,7
SL182922	**XL**	1,23	**110**	150	24	1,1	1,5	–	124
SL183022	–	3,5	**110**	170	45	2	5,5	–	127,3
SL182222	–	7,24	**110**	200	53	2,1	4	–	137
SL192322	–	17	**110**	240	80	3	5	134,27	151,1
SL182924	**XL**	1,73	**120**	165	27	1,1	1,5	–	134,8
SL183024	–	3,8	**120**	180	46	2	5,5	–	138,8
SL182224	–	9,08	**120**	215	58	2,1	4	–	150,7
SL192324	–	22,3	**120**	260	86	3	5	147,39	164,2
SL182926	**XL**	2,33	**130**	180	30	1,5	2	–	146
SL183026	–	5,65	**130**	200	52	2	5,5	–	148,6
SL182226	–	11,25	**130**	230	64	3	5	–	162,3



SL1923
Semi-locating bearings

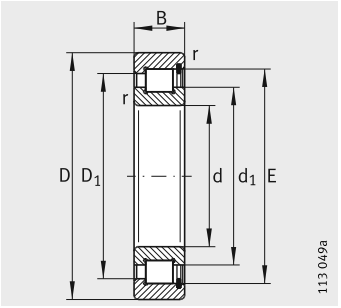


[1] Axial displacement “s”

		Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
D_1 ≈	E	dyn. C_r N	stat. C_{0r} N	C_{ur} N	n_G min^{-1}	n_B min^{-1}
92,8	97,41	91 000	121 000	20 100	3 600	2 340
103,2	107,9	162 000	194 000	32 500	3 400	2 500
110	116,2	190 000	241 000	33 500	3 150	2 140
131,5	–	460 000	465 000	83 000	2 750	1 980
98	102,51	94 000	129 000	21 400	3 400	2 190
111,7	117,4	173 000	225 000	31 000	3 150	2 470
119,3	126,3	226 000	285 000	38 500	2 950	2 000
142,1	–	540 000	560 000	96 000	2 600	1 840
105	109,58	118 000	162 000	25 500	3 150	2 130
116,1	121,95	178 000	237 000	32 000	3 000	2 330
126,3	133,75	255 000	325 000	44 500	2 750	1 930
150,9	–	570 000	620 000	103 000	2 450	1 740
110,7	115,75	122 000	172 000	26 500	3 000	2 010
124,5	130,65	208 000	280 000	38 000	2 800	2 220
133,3	141,15	290 000	370 000	51 000	2 600	1 900
152,5	–	620 000	660 000	112 000	2 310	1 660
117	122,25	132 000	179 000	27 500	2 900	1 910
147,3	155,95	340 000	435 000	58 000	2 450	1 800
161,9	–	650 000	720 000	120 000	2 200	1 560
125,7	130,95	152 000	206 000	31 500	2 700	1 850
134	140,2	219 000	310 000	40 500	2 600	2 010
154,3	163,35	395 000	520 000	70 000	2 310	1 700
172,8	–	790 000	860 000	143 000	2 060	1 420
136,2	141,5	155 000	220 000	34 000	2 490	1 690
149,3	156,7	285 000	395 000	52 000	2 310	1 950
168	177,6	455 000	590 000	78 000	2 090	1 660
199,9	–	950 000	980 000	156 000	1 850	1 280
149	154,3	199 000	295 000	45 500	2 270	1 550
160,7	168,15	300 000	435 000	56 000	2 160	1 820
183	192,9	540 000	730 000	95 000	1 930	1 470
213,1	–	1 130 000	1 240 000	195 000	1 710	1 110
161,1	167,15	238 000	355 000	54 000	2 090	1 470
175,5	184,4	435 000	620 000	79 000	1 960	1 590
197	207,75	630 000	860 000	110 000	1 800	1 350

Cylindrical roller bearings

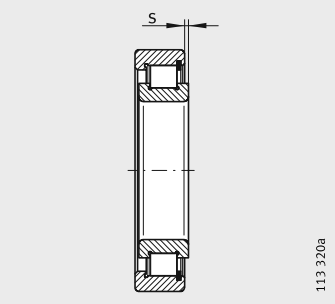
Full complement, single row
Semi-locating bearings



SL1818, SL1829, SL1830, SL1822
Semi-locating bearings

Dimension table (continued) · Dimensions in mm

Designation		Mass	Dimensions					Mounting dimensions	
	X-life	m ≈kg	d	D	B	r min.	s[1)]	d_1 ≈	D_1 ≈
SL182928	**XL**	2,42	**140**	190	30	1,5	2	157	174
SL183028	–	6,04	**140**	210	53	2	5,5	162,2	189,5
SL182228	–	14,47	**140**	250	68	3	5	173,9	211,1
SL182930	**XL**	3,77	**150**	210	36	2	2,5	169	189,6
SL183030	–	7,33	**150**	225	56	2,1	7	170	198
SL182230	–	18,43	**150**	270	73	3	6	185,5	225,2
SL182932	**XL**	4	**160**	220	36	2	2,5	179,7	200,5
SL183032	–	8,8	**160**	240	60	2,1	7	184,8	215,8
SL182232	–	23	**160**	290	80	3	6	208,7	253,4
SL182934	**XL**	4,3	**170**	230	36	2	2,5	190,6	211,3
SL183034	–	12,2	**170**	260	67	2,1	7	198,1	232,7
SL182234	–	28,65	**170**	310	86	4	7	220,3	267,4
SL182936	**XL**	6,2	**180**	250	42	2	3	200,7	224
SL183036	–	16,1	**180**	280	74	2,1	7	212,2	249,4
SL182236	–	29,8	**180**	320	86	4	7	232,4	279,5
SL182938	**XL**	6,5	**190**	260	42	2	2	211,5	238,5
SL183038	–	17	**190**	290	75	2,1	9	221,8	259
SL182238	–	35,65	**190**	340	92	4	9	243,5	295,5
SL181840	–	2,57	**200**	250	24	1,5	2	216,6	231,6
SL182940	**XL**	9,1	**200**	280	48	2,1	3	225,5	252,4
SL183040	–	21,8	**200**	310	82	2,1	9	236,6	276,2
SL182240	–	43,12	**200**	360	98	4	9	246,6	302,4
SL181844	–	2,8	**220**	270	24	1,5	2	237,3	252,3
SL182944	**XL**	9,9	**220**	300	48	2,1	3	246,3	273,2
SL183044	–	28,4	**220**	340	90	3	9	254,6	299,2
SL181848-E	–	4,29	**240**	300	28	2	2	260,5	281
SL182948	–	10,6	**240**	320	48	2,1	3	267,5	294,4
SL183048	–	30,9	**240**	360	92	3	11	277,5	322,1
SL181852-E	–	4,61	**260**	320	28	2	2	281	301,5
SL182952	–	18,5	**260**	360	60	2,1	5	291,5	323,4
SL183052	–	44,5	**260**	400	104	4	11	304	358,4
SL181856-E	–	6,89	**280**	350	33	2	2,5	304	327
SL182956	–	19,7	**280**	380	60	2,1	3,5	314	348,5
SL183056	–	48	**280**	420	106	4	11	319,5	372,9

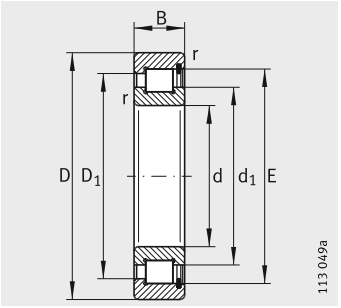


[1] Axial displacement “s”

	Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
E	dyn. C_r	stat. C_{0r}	C_{ur}	n_G	n_B
	N	N	N	min^{-1}	min^{-1}
180	260 000	385 000	57 000	1 960	1 360
198,4	455 000	680 000	85 000	1 850	1 460
222,55	720 000	1 020 000	127 000	1 660	1 190
196,75	340 000	490 000	73 000	1 800	1 340
207,45	480 000	710 000	88 000	1 730	1 380
237,35	830 000	1 180 000	146 000	1 540	1 080
207,6	350 000	520 000	77 000	1 710	1 260
225,45	550 000	820 000	99 000	1 620	1 260
267,1	1 030 000	1 490 000	178 000	1 440	950
218,45	365 000	560 000	80 000	1 620	1 180
243,55	710 000	1 070 000	129 000	1 510	1 110
281,9	1 150 000	1 680 000	199 000	1 350	870
231,85	455 000	690 000	100 000	1 510	1 120
261	820 000	1 260 000	149 000	1 410	1 010
294	1 190 000	1 780 000	204 000	1 300	820
244,15	510 000	790 000	112 000	1 440	1 010
270,6	840 000	1 320 000	155 000	1 350	960
311,5	1 310 000	1 920 000	223 000	1 220	780
237,6	183 000	330 000	33 500	1 440	1 020
261,6	610 000	960 000	134 000	1 350	930
288,6	960 000	1 530 000	178 000	1 270	880
319,4	1 420 000	2 040 000	235 000	1 160	740
258,5	192 000	365 000	36 000	1 320	920
282,45	650 000	1 050 000	144 000	1 250	830
213,1	1 160 000	1 840 000	209 000	1 160	780
287,5	265 000	490 000	51 000	1 200	900
303,7	610 000	1 140 000	124 000	1 160	750
336	1 220 000	2 010 000	224 000	1 080	710
308	275 000	530 000	54 000	1 120	820
333,7	790 000	1 470 000	160 000	1 050	680
375,97	1 620 000	2 550 000	280 000	980	610
335	355 000	670 000	69 000	1 030	750
359,5	920 000	1 740 000	184 000	980	590
390,3	1 670 000	2 700 000	290 000	930	570

Cylindrical roller bearings

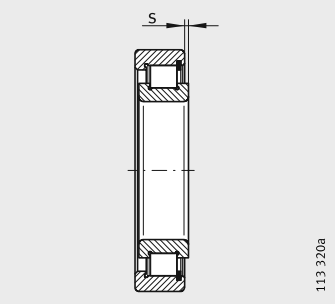
Full complement, single row
Semi-locating bearings



SL1818, SL1829, SL1830
Semi-locating bearings

Dimension table (continued) · Dimensions in mm

Designation	Mass	Dimensions					Mounting dimensions	
	m	d	D	B	r	s[1)]	d_1	D_1
	≈kg				min.		≈	≈
SL181860-E	9,79	**300**	380	38	2,1	3	323,5	350,5
SL182960	31,2	**300**	420	72	3	5	338	376,9
SL183060	66,6	**300**	460	118	4	14	353,6	415,6
SL181864-E	10,36	**320**	400	38	2,1	3	344,5	371,5
SL182964	32,9	**320**	440	72	3	5	358,5	397,4
SL183064	71,7	**320**	480	121	4	14	369,5	430,1
SL181868-E	10,93	**340**	420	38	2,1	3	365,5	392,5
SL182968	34,7	**340**	460	72	3	5	379	418,7
SL183068	95,8	**340**	520	133	5	16	396,1	463,9
SL181872-E	11,49	**360**	440	38	2,1	3	387	413,5
SL182972	36,4	**360**	480	72	3	5	399,5	438,6
SL183072	101	**360**	540	134	5	16	414	481,6
SL181876-E	18,87	**380**	480	46	2,1	4	415,5	448
SL182976	52,1	**380**	520	82	4	5	426	472,1
SL183076	106	**380**	560	135	5	16	431,7	499,5
SL181880-E	19,81	**400**	500	46	2,1	4	432	464,5
SL182980	54,3	**400**	540	82	4	5	450	496,1
SL183080	140	**400**	600	148	5	18	462,5	535,1
SL181884-E	20,6	**420**	520	46	2,1	4	457	489,5
SL182984	56,9	**420**	560	82	4	5	462	509
SL181888-E	21,54	**440**	540	46	2,1	4	473,5	506
SL182988	78,1	**440**	600	95	4	7	490	544,6
SL181892-E	33,21	**460**	580	56	3	5	501,5	541
SL182992	81,1	**460**	620	95	4	7	504	559,6
SL181896-E	34,53	**480**	600	56	3	5	522	561
SL182996	94,7	**480**	650	100	5	7	538	596,6
SL1818/500-E	35,73	**500**	620	56	3	5	542	581,5
SL1829/500	98,3	**500**	670	100	5	7	553	612,7

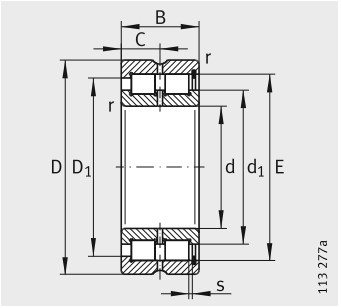


[1] Axial displacement “s”

	Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
E	dyn. C_r	stat. C_{0r}	C_{ur}	n_G	n_B
	N	N	N	min^{-1}	min^{-1}
360	455 000	840 000	86 000	950	700
389,45	1 180 000	2 230 000	235 000	900	530
434,85	2 040 000	3 350 000	325 000	850	500
381	470 000	900 000	90 000	900	640
409,85	1 220 000	2 370 000	246 000	850	485
449,5	2 100 000	3 500 000	340 000	810	475
402,2	485 000	960 000	94 000	850	600
430,2	1 260 000	2 500 000	255 000	810	455
485,65	2 500 000	4 150 000	400 000	750	430
423,5	500 000	1 010 000	98 000	810	550
450,6	1 290 000	2 650 000	265 000	770	420
503,45	2 550 000	4 350 000	410 000	720	405
459	650 000	1 290 000	126 000	750	510
486,7	1 670 000	3 350 000	335 000	720	375
521,25	2 600 000	4 500 000	425 000	690	385
475,5	660 000	1 340 000	130 000	720	475
510,85	1 730 000	3 560 000	350 000	690	350
558,52	3 100 000	5 400 000	500 000	650	345
500	680 000	1 420 000	135 000	690	450
522,95	1 750 000	3 600 000	355 000	660	335
517	700 000	1 470 000	139 000	660	420
562	2 110 000	4 150 000	405 000	620	320
554	940 000	1 890 000	174 000	620	405
576,3	2 140 000	4 300 000	410 000	600	305
474,5	960 000	1 970 000	185 000	600	385
614,75	2 410 000	4 850 000	460 000	570	280
594,5	980 000	2 050 000	190 000	580	365
630	2 450 000	5 000 000	470 000	550	265

Cylindrical roller bearings

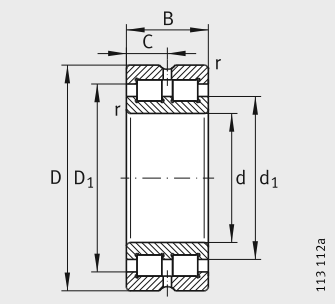
Full complement, double row
Semi-locating, locating and non-locating bearings



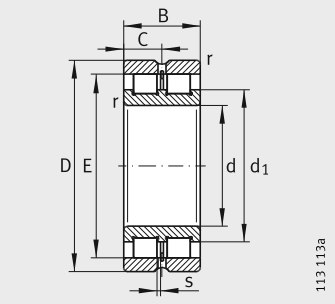
SL1850
Semi-locating bearings

Dimension table · Dimensions in mm

Semi-locating bearings Designation		Locating bearings Designation	Non-locating bearings Designation	Designation to DIN 5 412	Mass	Dimensions				
	X-life				m ≈kg	d	D	B	r min.	s
SL185004	**XL**	–	–	–	0,2	**20**	42	30	0,6	1
SL185005	**XL**	–	–	–	0,23	**25**	47	30	0,6	1
SL185006	**XL**	–	–	–	0,35	**30**	55	34	1	1,5
SL185007	**XL**	–	–	–	0,46	**35**	62	36	1	1,5
SL185008	**XL**	–	–	–	0,56	**40**	68	38	1	1,5
SL185009	**XL**	–	–	–	0,71	**45**	75	40	1	1,5
SL185010	**XL**	–	–	–	0,76	**50**	80	40	1	1,5
SL185011	**XL**	–	–	–	1,16	**55**	90	46	1,1	1,5
–	–	**SL014912**	–	NNC 4912 V	0,49	**60**	85	25	1	–
–	–	–	**SL024912**	NNCL 4912 V	0,47	**60**	85	25	1	1
SL185012	**XL**	–	–	–	1,24	**60**	95	46	1,1	1,5
SL185013	**XL**	–	–	–	1,32	**65**	100	46	1,1	1,5
–	–	**SL014914**	–	NNC 4914 V	0,78	**70**	100	30	1	–
–	–	–	**SL024914**	NNCL 4914 V	0,75	**70**	100	30	1	1
SL185014	**XL**	–	–	–	1,85	**70**	110	54	1,1	3
SL185015	**XL**	–	–	–	1,93	**75**	115	54	1,1	3
–	–	**SL014916**	–	NNC 4916 V	0,88	**80**	110	30	1	–
–	–	–	**SL024916**	NNCL 4916 V	0,85	**80**	110	30	1	1
SL185016	–	–	–	–	2,59	**80**	125	60	1,1	3,5
SL185017	–	–	–	–	2,72	**85**	130	60	1,1	3,5
–	–	**SL014918**	–	NNC 4918 V	1,35	**90**	125	35	1,1	–
–	–	–	**SL024918**	NNCL 4918 V	1,3	**90**	125	35	1,1	1,5
SL185018	–	–	–	–	3,62	**90**	140	67	1,5	4
–	–	**SL014920**	–	NNC 4920 V	1,95	**100**	140	40	1,1	–
–	–	–	**SL024920**	NNCL 4920 V	1,9	**100**	140	40	1,1	2
SL185020	–	–	–	–	3,94	**100**	150	67	1,5	4
–	–	**SL014922**	–	NNC 4922 V	2,15	**110**	150	40	1,1	–
–	–	–	**SL024922**	NNCL 4922 V	2,1	**110**	150	40	1,1	2
SL185022	–	–	–	–	6,32	**110**	170	80	2	5
–	–	**SL014924**	–	NNC 4924 V	2,95	**120**	165	45	1,1	–
–	–	–	**SL024924**	NNCL 4924 V	2,85	**120**	165	45	1,1	3
SL185024	–	–	–	–	6,77	**120**	180	80	2	5



SL0148, SL0149
Locating bearings

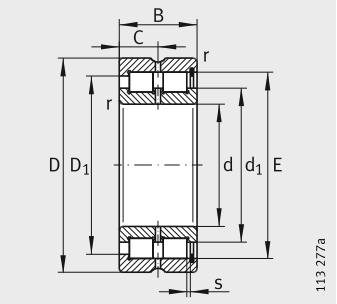


SL0248, SL0249
Non-locating bearings

Mounting dimensions				Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
C	d_1 ≈	D_1 ≈	E	dyn. C_r N	stat. C_{0r} N	C_{ur} N	n_G min^{-1}	n_B min^{-1}
15	28,4	33,3	36,81	53 000	53 000	8 900	10 500	7 300
15	34,5	39	42,51	60 000	65 000	11 100	9 000	6 100
17	40	45,3	49,6	78 000	84 000	15 000	7 600	5 300
18	44,9	51,2	55,52	94 000	109 000	18 800	6 700	4 650
19	50,5	57,2	61,74	113 000	136 000	22 400	6 000	4 100
20	55,3	62,6	66,85	120 000	151 000	24 900	5 400	3 800
20	59,1	67,6	72,33	151 000	191 000	30 000	5 000	3 300
23	68,5	78,7	83,54	206 000	275 000	45 000	4 450	2 950
12,5	70,3	73,5	–	71 000	125 000	17 300	4 450	2 600
12,5	70,3	–	77,51	71 000	125 000	17 300	4 450	2 600
23	71,7	81,9	86,74	212 000	290 000	47 500	4 200	2 750
23	78,1	88,3	93,09	223 000	320 000	52 000	3 550	2 550
15	82,5	87,4	–	108 000	189 000	27 000	3 800	2 310
15	82,5	–	91,87	108 000	189 000	27 000	3 800	2 310
27	81,5	95,7	100,28	265 000	355 000	59 000	3 600	2 600
27	89	102,9	107,9	275 000	390 000	65 000	3 400	2 390
15	91,4	96,2	–	115 000	211 000	30 000	3 400	2 030
15	91,4	–	100,78	115 000	211 000	30 000	3 400	2 030
30	95	111,7	117,4	295 000	450 000	62 000	3 150	2 310
30	99	116,1	121,95	305 000	475 000	64 000	3 000	2 190
17,5	103,9	110,7	–	155 000	295 000	39 000	3 000	1 850
17,5	103	–	115,2	155 000	295 000	39 000	3 000	1 850
33,5	106,1	124,5	130,65	355 000	560 000	76 000	2 800	2 120
20	116,4	125	–	196 000	380 000	47 500	2 700	1 720
20	116,4	–	129,6	196 000	380 000	47 500	2 700	1 720
33,5	115,7	134	140,2	375 000	620 000	81 000	2 600	1 900
20	125	133,6	–	204 000	410 000	50 000	2 490	1 570
20	125	–	138,2	204 000	410 000	50 000	2 490	1 570
40	127,3	149,3	156,7	490 000	790 000	104 000	2 310	1 680
22,5	138,6	148,6	–	228 000	455 000	55 000	2 270	1 540
22,5	138,6	–	153,55	228 000	455 000	55 000	2 270	1 540
40	138,8	160,7	168,15	520 000	870 000	111 000	2 160	1 510

Cylindrical roller bearings

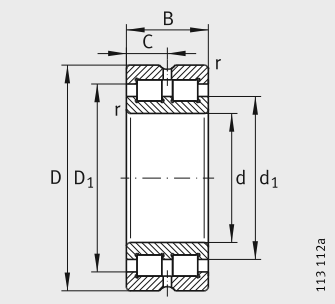
Full complement, double row
Semi-locating, locating and non-locating bearings



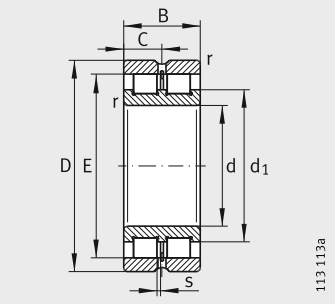
SL1850
Semi-locating bearings

Dimension table (continued) · Dimensions in mm

Semi-locating bearings Designation	Locating bearings Designation	Non-locating bearings Designation	Designation to DIN 5 412	Mass m ≈kg	Dimensions d	D	B	r min.	s
–	**SL014926**	–	NNC 4926 V	3,95	**130**	180	50	1,5	–
–	–	**SL024926**	NNCL 4926 V	3,8	**130**	180	50	1,5	4
SL185026	–	–	–	10,2	**130**	200	95	2	5
–	**SL014928**	–	NNC 4928 V	4,2	**140**	190	50	1,5	–
–	–	**SL024928**	NNCL 4928 V	4,1	**140**	190	50	1,5	4
SL185028	–	–	–	11,1	**140**	210	95	2	5
–	**SL014830**	–	NNC 4830 V	2,9	**150**	190	40	1,1	–
–	–	**SL024830**	NNCL 4830 V	2,8	**150**	190	40	1,1	2
–	**SL014930**	–	NNC 4930 V	6,65	**150**	210	60	2	–
–	–	**SL024930**	NNCL 4930 V	6,45	**150**	210	60	2	4
SL185030	–	–	–	13,3	**150**	225	100	2	6
–	**SL014832**	–	NNC 4832 V	3,1	**160**	200	40	1,1	–
–	–	**SL024832**	NNCL 4832 V	3	**160**	200	40	1,1	2
–	**SL014932**	–	NNC 4932 V	7	**160**	220	60	2	–
–	–	**SL024932**	NNCL 4932 V	6,8	**160**	220	60	2	4
–	**SL014834**	–	NNC 4834 V	4,1	**170**	215	45	1,1	–
–	–	**SL024834**	NNCL 4834 V	3,95	**170**	215	45	1,1	3
–	**SL014934**	–	NNC 4934 V	7,35	**170**	230	60	2	–
–	–	**SL024934**	NNCL 4934 V	7,1	**170**	230	60	2	4
–	**SL014836**	–	NNC 4836 V	4,3	**180**	225	45	1,1	–
–	–	**SL024836**	NNCL 4836 V	4,15	**180**	225	45	1,1	3
–	**SL014936**	–	NNC 4936 V	10,8	**180**	250	69	2	–
–	–	**SL024936**	NNCL 4936 V	10,5	**180**	250	69	2	4
–	**SL014838**	–	NNC 4838 V	5,65	**190**	240	50	1,5	–
–	–	**SL024838**	NNCL 4838 V	5,45	**190**	240	50	1,5	4
–	**SL014938**	–	NNC 4938 V	11,2	**190**	260	69	2	–
–	–	**SL024938**	NNCL 4938 V	10,9	**190**	260	69	2	4
–	**SL014840**	–	NNC 4840 V	5,9	**200**	250	50	1,5	–
–	–	**SL024840**	NNCL 4840 V	5,7	**200**	250	50	1,5	4
–	**SL014940**	–	NNC 4940 V	15,8	**200**	280	80	2,1	–
–	–	**SL024940**	NNCL 4940 V	15,3	**200**	280	80	2,1	5



SL0148, SL0149
Locating bearings

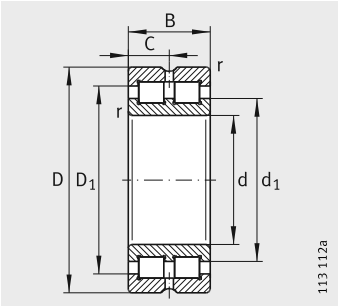


SL0248, SL0249
Non-locating bearings

Mounting dimensions				Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
C	d_1 ≈	D_1 ≈	E	dyn. C_r N	stat. C_{0r} N	C_{ur} N	n_G min^{-1}	n_B min^{-1}
25	148,4	160	–	265 000	530 000	63 000	2 090	1 480
25	149,5	–	165,4	265 000	530 000	63 000	2 090	1 480
47,5	148,6	175,5	184,4	740 000	1 230 000	185 000	1 960	1 300
25	159	170,5	–	275 000	570 000	66 000	1 960	1 360
25	160	–	175,9	275 000	570 000	66 000	1 960	1 360
47,5	162,6	189,5	198,4	780 000	1 360 000	169 000	1 850	1 170
20	165,1	174,2	–	237 000	550 000	62 000	1 910	1 240
20	165,1	–	178,3	237 000	550 000	62 000	1 910	1 240
30	171,8	187,2	–	415 000	840 000	98 000	1 800	1 180
30	171,8	–	192,77	415 000	840 000	98 000	1 800	1 180
50	170	198	207,45	810 000	1 390 000	175 000	1 730	1 110
20	173,7	182,8	–	243 000	580 000	64 000	1 800	1 170
20	173,7	–	186,9	243 000	580 000	64 000	1 800	1 170
30	184,2	200,3	–	435 000	900 000	104 000	1 710	1 090
30	184,2	–	206,16	435 000	900 000	104 000	1 710	1 090
22,5	186,3	197	–	265 000	620 000	68 000	1 680	1 160
22,5	186,3	–	201,3	265 000	620 000	68 000	1 680	1 160
30	193,1	209,1	–	445 000	950 000	108 000	1 620	1 110
30	193,1	–	215,08	445 000	950 000	108 000	1 620	1 010
22,5	199,1	209,8	–	275 000	660 000	72 000	1 600	1 070
22,5	199,1	–	214,1	275 000	660 000	72 000	1 600	1 070
34,5	204,9	224,1	–	580 000	1 230 000	140 000	1 510	910
34,5	204,9	–	230,5	580 000	1 230 000	140 000	1 510	910
25	207,6	220,7	–	315 000	750 000	81 000	1 510	1 020
25	207,6	–	225	315 000	750 000	81 000	1 510	1 020
34,5	215	234,3	–	590 000	1 290 000	145 000	1 440	850
34,5	215	–	240,7	590 000	1 290 000	145 000	1 440	850
25	218,1	231,2	–	325 000	790 000	84 000	1 440	950
25	218,1	–	235,5	325 000	790 000	84 000	1 440	950
40	230,5	252,3	–	690 000	1 480 000	165 000	1 350	820
40	230,5	–	259,34	690 000	1 480 000	165 000	1 350	820

Cylindrical roller bearings

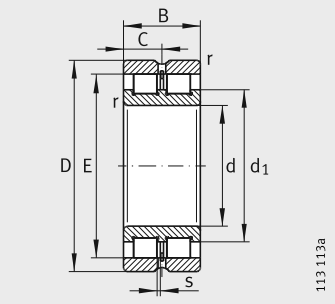
Full complement, double row
Locating and non-locating bearings



SL0148, SL0149
Locating bearings

Dimension table (continued) · Dimensions in mm

Locating bearings Designation	Non-locating bearings Designation	Designation to DIN 5 412	Mass	Dimensions				
			m	d	D	B	r	s
			≈kg				min.	
SL014844	–	NNC 4844 V	6,4	**220**	270	50	1,5	–
–	**SL024844**	NNCL 4844 V	6,2	**220**	270	50	1,5	4
SL014944	–	NNC 4944 V	17,2	**220**	300	80	2,1	–
–	**SL024944**	NNCL 4944 V	16,7	**220**	300	80	2,1	5
SL014848	–	NNC 4848 V	10	**240**	300	60	2	–
–	**SL024848**	NNCL 4848 V	9,9	**240**	300	60	2	4
SL014948	–	NNC 4948 V	18,5	**240**	320	80	2,1	–
–	**SL024948**	NNCL 4948 V	17,9	**240**	320	80	2,1	5
SL014852	–	NNC 4852 V	11	**260**	320	60	2	–
–	**SL024852**	NNCL 4852 V	10,6	**260**	320	60	2	4
SL014952	–	NNC 4952 V	32	**260**	360	100	2,1	–
–	**SL024952**	NNCL 4952 V	31,2	**260**	360	100	2,1	6
SL014856	–	NNC 4856 V	16	**280**	350	69	2	–
–	**SL024856**	NNCL 4856 V	15,6	**280**	350	69	2	4
SL014956	–	NNC 4956 V	34	**280**	380	100	2,1	–
–	**SL024956**	NNCL 4956 V	33,1	**280**	380	100	2,1	6
SL014860	–	NNC 4860 V	23	**300**	380	80	2,1	–
–	**SL024860**	NNCL 4860 V	22	**300**	380	80	2,1	6
SL014960	–	NNC 4960 V	53	**300**	420	118	3	–
–	**SL024960**	NNCL 4960 V	51,9	**300**	420	118	3	6
SL014864	–	NNC 4864 V	24	**320**	400	80	2,1	–
–	**SL024864**	NNCL 4864 V	23,5	**320**	400	80	2,1	6
SL014964	–	NNC 4964 V	56	**320**	440	118	3	–
–	**SL024964**	NNCL 4964 V	54,9	**320**	440	118	3	6
SL014868	–	NNC 4868 V	25,5	**340**	420	80	2,1	–
–	**SL024868**	NNCL 4868 V	25	**340**	420	80	2,1	6
SL014968	–	NNC 4968 V	59	**340**	460	118	3	–
–	**SL024968**	NNCL 4968 V	57,8	**340**	460	118	3	6

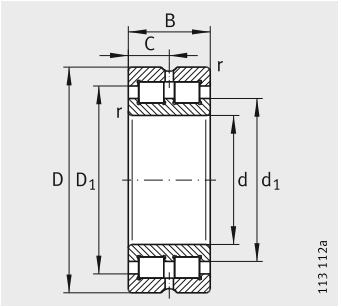


SL0248, SL0249
Non-locating bearings

Mounting dimensions				Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
C	d_1 ≈	D_1 ≈	E	dyn. C_r N	stat. C_{0r} N	C_{ur} N	n_G min^{-1}	n_B min^{-1}
25	239,1	252,3	–	340 000	870 000	90 000	1 320	840
25	239,1	–	256,5	340 000	870 000	90 000	1 320	840
40	248	268,5	–	720 000	1 590 000	174 000	1 250	730
40	248	–	276,52	720 000	1 590 000	174 000	1 250	730
30	259,5	276,7	–	520 000	1 290 000	134 000	1 200	720
30	259,5	–	281,9	520 000	1 290 000	134 000	1 200	720
40	270,6	292,3	–	750 000	1 740 000	186 000	1 160	660
40	270,6	–	299,46	750 000	1 740 000	186 000	1 160	660
30	281,8	298,8	–	540 000	1 400 000	143 000	1 120	650
30	281,8	–	304,2	540 000	1 400 000	143 000	1 120	650
50	294,5	322,1	–	1 120 000	2 500 000	270 000	1 050	570
50	294,5	–	331,33	1 120 000	2 500 000	270 000	1 050	570
34,5	306,8	326,4	–	710 000	1 860 000	189 000	1 030	570
34,5	306,8	–	332,4	710 000	1 860 000	189 000	1 030	570
50	316,5	344,6	–	1 170 000	2 700 000	285 000	980	520
50	316,5	–	353,34	1 170 000	2 700 000	285 000	980	520
40	327,9	349,9	–	830 000	2 120 000	214 000	950	540
40	327,9	–	356,7	830 000	2 120 000	214 000	950	540
59	340,7	374,3	–	1 650 000	3 800 000	390 000	900	435
59	340,7	–	385,51	1 650 000	3 800 000	390 000	900	435
40	350,9	372,9	–	860 000	2 280 000	225 000	900	490
40	350,9	–	379,7	860 000	2 280 000	225 000	900	490
59	367,5	401,1	–	1 720 000	4 100 000	415 000	850	400
59	367,5	–	412,27	1 720 000	4 100 000	415 000	850	400
40	368,1	390,1	–	880 000	2 390 000	233 000	850	460
40	368,1	–	396,9	880 000	2 390 000	233 000	850	460
59	385,3	418,9	–	1 770 000	4 300 000	430 000	810	375
59	385,3	–	430,11	1 770 000	4 300 000	430 000	810	375

Cylindrical roller bearings

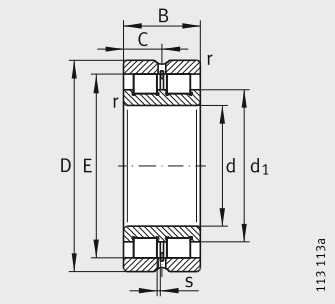
Full complement, double row
Locating and non-locating bearings



SL0148, SL0149
Locating bearings

Dimension table (continued) · Dimensions in mm

Locating bearings Designation	Non-locating bearings Designation	Designation to DIN 5 412	Mass	Dimensions				
			m	d	D	B	r	s
			≈kg				min.	
SL014872	**–**	NNC 4872 V	27	**360**	440	80	2,1	–
–	**SL024872**	NNCL 4872 V	26	**360**	440	80	2,1	6
SL014972	**–**	NNC 4972 V	62,1	**360**	480	118	3	–
–	**SL024972**	NNCL 4972 V	60,8	**360**	480	118	3	6
SL014876	**–**	NNC 4876 V	45,5	**380**	480	100	2,1	–
–	**SL024876**	NNCL 4876 V	44	**380**	480	100	2,1	6
SL014976	**–**	NNC 4976 V	92,4	**380**	520	140	4	–
–	**SL024976**	NNCL 4976 V	90,5	**380**	520	140	4	7
SL014880	**–**	NNC 4880 V	46,5	**400**	500	100	2,1	–
–	**SL024880**	NNCL 4880 V	45,8	**400**	500	100	2,1	6
SL014980	**–**	NNC 4980 V	96,5	**400**	540	140	4	–
–	**SL024980**	NNCL 4980 V	94,6	**400**	540	140	4	7



SL0248, SL0249
Non-locating bearings

Mounting dimensions				Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
C	d_1 ≈	D_1 ≈	E	dyn. C_r N	stat. C_{0r} N	C_{ur} N	n_G min^{-1}	n_B min^{-1}
40	391	413,2	–	910 000	2 550 000	244 000	810	425
40	391	–	419,8	910 000	2 550 000	244 000	810	425
59	404	436,8	–	1 810 000	4 500 000	445 000	770	350
59	404	–	447,95	1 810 000	4 500 000	445 000	770	350
50	419	447,2	–	1 330 000	3 550 000	345 000	750	380
50	419	–	455,8	1 330 000	3 550 000	345 000	750	380
70	430,2	468,7	–	2 280 000	5 600 000	560 000	720	320
70	430,2	–	481,35	2 280 000	5 600 000	560 000	720	320
50	433,8	462	–	1 360 000	3 700 000	355 000	720	355
50	433,8	–	470,59	1 360 000	3 700 000	355 000	720	355
70	450,5	489	–	2 340 000	5 900 000	580 000	690	300
70	450,5	–	501,74	2 340 000	5 900 000	580 000	690	300