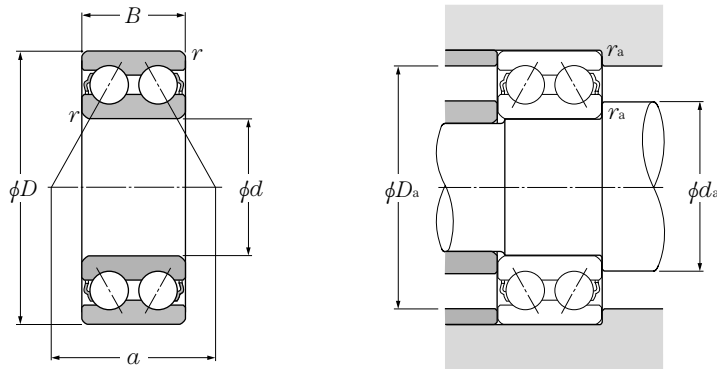


Double Row Angular Contact Ball Bearings



Dynamic equivalent radial load

$$P_r = XF_r + YF_a$$

e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
	X	Y	X	Y
0.68	1	0.92	0.67	1.41

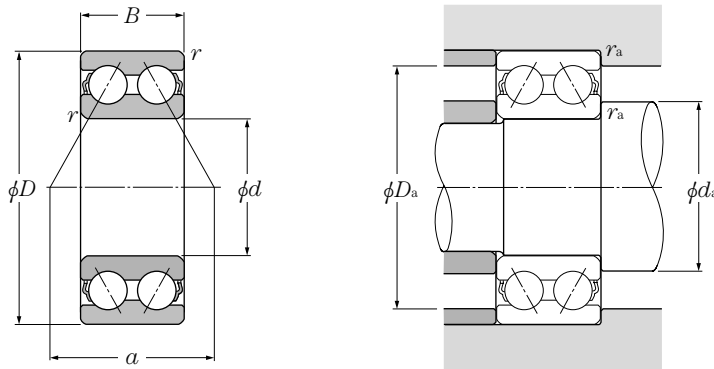
Static equivalent radial load

$$P_{or} = F_r + 0.76F_a$$

d 10 ~ 65mm

d	Boundary dimensions			Basic load ratings				Limiting speeds		Bearing numbers	Abutment and fillet dimensions			Load center	Mass
	mm			dynamic	static	dynamic	static	min ⁻¹			mm				
	D	B	r _{s min} ¹⁾	C _r	C _{or}	C _r	C _{or}	grease	oil		d _{a min}	D _{a max}	r _{as max}		
10	30	14.3	0.6	7.15	3.90	730	400	17 000	22 000	5200S	15	25	0.6	14.5	0.05
	12	32	15.9	0.6	10.5	1 070	590	15 000	20 000		5201S	17	27	0.6	16.7
15	35	15.9	0.6	11.7	7.05	1 190	715	13 000	17 000	5202S 5302S	20	30	0.6	18.3	0.07
	42	19	1	17.6	10.2	1 800	1 040	11 000	15 000		21	36	1	22.0	0.11
17	40	17.5	0.6	14.6	9.05	1 490	920	11 000	15 000	5203S 5303S	22	35	0.6	20.8	0.09
	47	22.2	1	21.0	12.6	2 140	1 280	10 000	13 000		23	41	1	25.0	0.14
20	47	20.6	1	19.6	12.4	2 000	1 270	10 000	13 000	5204S 5304S	26	41	1	24.3	0.12
	52	22.2	1.1	24.6	15.0	2 510	1 530	9 000	12 000		27	45	1	26.7	0.23
25	52	20.6	1	21.3	14.7	2 170	1 500	8 500	11 000	5205S 5305S	31	46	1	26.8	0.19
	62	25.4	1.1	32.5	20.7	3 350	2 110	7 500	10 000		32	55	1	31.8	0.34
30	62	23.8	1	29.6	21.1	3 000	2 150	7 100	9 500	5206S 5306S	36	56	1	31.6	0.29
	72	30.2	1.1	40.5	28.1	4 150	2 870	6 300	8 500		37	65	1	36.5	0.51
35	72	27	1.1	39.0	28.7	4 000	2 920	6 300	8 000	5207S 5307S	42	65	1	36.6	0.43
	80	34.9	1.5	51.0	36.0	5 200	3 700	5 600	7 500		44	71	1.5	41.6	0.79
40	80	30.2	1.1	44.0	33.5	4 500	3 400	5 600	7 100	5208S 5308S	47	73	1	41.5	0.57
	90	36.5	1.5	56.5	41.0	5 800	4 200	5 300	6 700		49	81	1.5	45.5	1.05
45	85	30.2	1.1	49.5	38.0	5 050	3 900	5 000	6 700	5209S 5309S	52	78	1	43.4	0.62
	100	39.7	1.5	68.5	51.0	7 000	5 200	4 500	6 000		54	91	1.5	50.6	1.40
50	90	30.2	1.1	53.0	43.5	5 400	4 400	4 800	6 000	5210S 5310S	57	83	1	45.9	0.67
	110	44.4	2	81.5	61.5	8 300	6 250	4 300	5 600		60	100	2	55.6	1.95
55	100	33.3	1.5	56.0	49.0	5 700	5 000	4 300	5 600	5211S 5311S	64	91	1.5	50.1	0.96
	120	49.2	2	95.0	73.0	9 700	7 450	3 800	5 000		65	110	2	60.6	2.30
60	110	36.5	1.5	69.0	62.0	7 150	6 300	3 800	5 000	5212S 5312S	69	101	1.5	56.5	1.35
	130	54	2.1	125	98.5	12 800	10 000	3 400	4 500		72	118	2	69.2	3.15
65	120	38.1	1.5	76.5	69.0	7 800	7 050	3 600	4 500	5213S 5313S	74	111	1.5	59.7	1.65
	140	58.7	2.1	142	113	14 500	11 500	3 200	4 300		77	128	2	72.8	3.85

1) Smallest allowable dimension for chamfer dimension r.



Dynamic equivalent radial load

$$P_r = X F_r + Y F_a$$

e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
	X	Y	X	Y
0.68	1	0.92	0.67	1.41

Static equivalent radial load

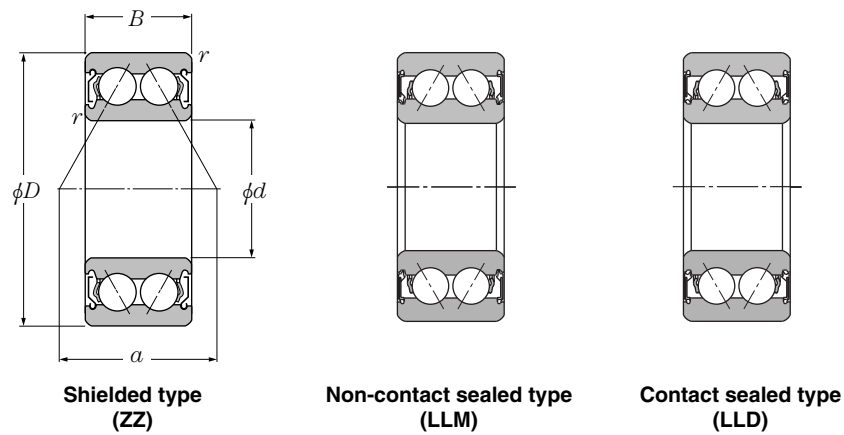
$$P_{or} = F_r + 0.76 F_a$$

d 70 ~ 85mm

	Boundary dimensions				Basic load ratings				Limiting speeds		Bearing numbers	Abutment and fillet dimensions			Load center	Mass
	mm				dynamic	static	dynamic	static	min ⁻¹			mm				
d	D	B	r _{s min} ¹⁾	C _r	C _{or}	C _r	C _{or}	grease	oil	d _{a min}	D _{a max}	r _{as max}	a	(approx.)		
70	125	39.7	1.5	94.0	82.0	9 600	8 400	3 400	4 500	5214S 5314S	79	116	1.5	63.8	1.80	
	150	63.5	2.1	159	128	16 200	13 100	3 000	3 800		82	138	2	78.3	4.90	
75	130	41.3	1.5	93.5	83.0	9 550	8 500	3 200	4 300	5215S	84	121	1.5	66.1	1.90	
80	140	44.4	2	99.0	93.0	10 100	9 500	3 000	3 800	5216S	90	130	2	69.6	2.50	
85	150	49.2	2	116	110	11 800	11 200	2 800	3 600	5217S	95	140	2	75.3	3.40	

1) Smallest allowable dimension for chamfer dimension r.

Double Row Angular Contact Ball Bearings



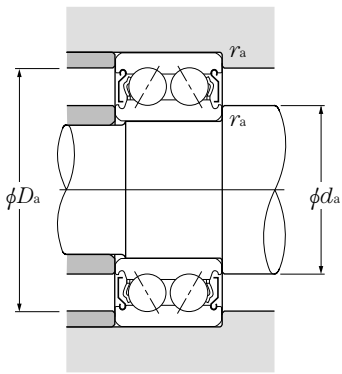
d 10 ~ 40mm

d	Boundary dimensions			Basic load ratings				Limiting speeds			Bearing numbers ²⁾		
	D	B	$r_{s \min}^{1)}$	dynamic kN	static kN	dynamic kgf	static kgf	min ⁻¹			sealed	non-contact type	contact type
	mm	mm	mm	C_r	C_{or}	C_r	C_{or}	grease ZZ,LLM	oil LLD	oil Z,LM			
10	30	14.3	0.6	7.15	3.90	730	400	17 000	15 000	22 000	5200SCZZ	LLM	LLD
12	32	15.9	0.6	8.50	5.30	865	540	15 000	12 000	20 000	5201SCZZ	LLM	LLD
15	35	15.9	0.6	8.50	5.30	865	540	13 000	12 000	17 000	5202SCZZ	LLM	LLD
17	40	17.5	0.6	12.7	8.30	1 290	850	11 000	10 000	15 000	5203SCZZ	LLM	LLD
	47	22.2	1	19.6	12.4	2 000	1 270	10 000	9 500	13 000	5303SCZZ	LLM	LLD
20	47	20.6	1	15.9	10.7	1 620	1 090	10 000	9 000	13 000	5204SCZZ	LLM	LLD
25	52	20.6	1	16.9	12.3	1 730	1 260	8 500	7 500	11 000	5205SCZZ ³⁾	LLM	LLD
	62	25.4	1.1	25.2	18.2	2 570	1 850	7 500	6 300	10 000	5305SCZZ	LLM	LLD
30	62	23.8	1	25.2	18.2	2 570	1 850	7 100	6 300	9 500	5206SCZZ	LLM	LLD
	72	30.2	1.1	39.0	28.7	4 000	2 920	6 300	5 300	8 500	5306SCZZ	LLM	LLD
35	72	27.0	1.1	34.0	25.3	3 500	2 580	6 300	5 300	8 500	5207SCZZ	LLM	LLD
	80	34.9	1.5	44.0	33.5	4 500	3 400	5 600	4 800	7 500	5307SCZZ	LLM	LLD
40	80	30.2	1.1	36.5	29.0	3 700	2 960	5 600	4 800	7 100	5208SCZZ ³⁾	LLM	LLD
	90	36.5	1.5	49.5	38.0	5 050	3 900	5 300	4 500	6 700	5308SCZZ	LLM	LLD

1) Smallest allowable dimension for chamfer dimension r .

2) This bearing number is for double sealed and double shielded type bearings, but single sealed and single shielded type are also available.

3) Resin formed cage is standard for 5205SC and 5208SC.



Dynamic equivalent radial load

$$P_r = X F_r + Y F_a$$

e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
	X	Y	X	Y
0.68	1	0.92	0.67	1.41

Static equivalent radial load

$$P_{or} = F_r + 0.76 F_a$$

Abutment and fillet dimensions				Load center mm
mm				
d_a min	d_a max	D_a max	r_{as} max	a
14	15.5	26	0.6	14.5
16	19.0	28	0.6	16.3
19	19.0	31	0.6	16.3
21	23.5	36	0.6	20.1
23	25.5	41	1	24.3
26	26.5	41	1	23.0
31	32.0	46	1	25.4
32	38.5	55	1	30.9
36	38.5	56	1	30.9
37	44.5	65	1	36.6
42	45.0	65	1	36.3
44	50.5	71	1.5	41.5
47	50.5	73	1	39.4
49	53.0	81	1.5	43.0