

PDF technical sheet

71900CVUJ74



High precision angular contact ball bearings

High precision angular contact ball bearing, laminated resin cage centred on outer ring

Product definition	
d	10 mm
D	22 mm
B	6 mm
d1	13.60 mm
D1	17.80 mm
D2	19.33 mm
a	5 mm
Contact angle, α	15 °
rs min	0.30 mm
r1s min	0.30 mm
f0	12.597
Precision class	P4
Mass	0.01 kg
Brand	SNR



Product performance	
Dynamic load, C	2.75 kN
Static load, C0	1.35 kN
Fatigue limit load, Cu	0.08 kN
Nlim (oil)	109,000 Tr/min
Nlim (grease)	72,000 Tr/min
Axial displacement K Factor	2.74
Preload level	7
Peloid value	12 kN
axial rigidity	12 N/μm
radial rigidity	73 N/μm
Min operating temperature, Tmin	-30 °C
Max operating temperature, Tmax	120 °C
Characteristic cage frequency, FTF	0.40 Hz
Characteristic rolling element frequency, BSF	4.76 Hz
Characteristic outer ring frequency, BPF0	4.43 Hz
Characteristic inner ring frequency, BPFI	6.57 Hz



Abutment dimensions

da min	12.50 mm
db min	12.50 mm
Da max	19.50 mm
Db max	19.50 mm
r1a max	0.30 mm
ra max	0.30 mm
D6	14.70 mm

Calculation factors

Equivalent dynamic radial load

$$P = X \cdot Fr + Y \cdot Fa$$

Series			e	Single or DT bearing arrangement				DB or DF arrangement			
				Fa / Fr ≤ e		Fa / Fr > e		Fa / Fr ≤ e		Fa / Fr > e	
				X	Y	X	Y	X	Y	X	Y
70 (NTN & SNR) 72 (NTN & SNR) 78 (NTN) 79 (NTN) 719 (SNR)	15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
		0.357	0.4				1.4		1.57		2.28
		0.714	0.43				1.3		1.46		2.11
		1.07	0.46				1.23		1.38		2
		1.43	0.47				1.19		1.34		1.93
		2.14	0.5				1.12		1.26		1.82
		3.57	0.55				1.02		1.14		1.66
		5.35	0.56						1.12		1.63
		7.14	0.56				1		1.12		1.63
	25°		0.68			0.41	0.87		0.92	0.67	1.41
	30°		0.8			0.39	0.76		0.78	0.63	1.24

Equivalent static radial load

$$P_0 = X_0 \cdot Fr + Y_0 \cdot Fa$$

Series			Single or DT bearing arrangement		DB or DF arrangement	
			X ₀	Y ₀	X ₀	Y ₀
70 (NTN & SNR) 72 (NTN & SNR) 78 (NTN) 79 (NTN) 719 (SNR)	15°		0.5	0.46	1	0.92
	25°			0.38		0.76
	30°			0.33		0.66

For single or DT bearing arrangement :

If $P_0 < Fr$, then use $P_0 = Fr$