

PDF technical sheet

7220HG1UJ74



High precision angular contact ball bearings

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

Product definition	
d	3.9370 "
D	7.0866 "
B	1.3386 "
d1	5.0118 "
D1	6.0236 "
D2	6.6142 "
a	1.9685 "
Contact angle, α	25 °
rs min	0.0827 "
r1s min	0.0433 "
f0	14.821
Precision class	P4
Mass	11.39 oz
Brand	SNR



Product performance	
Dynamic load, C	141 kN
Static load, C0	121 kN
Fatigue limit load, Cu	5.70 kN
Nlim (oil)	10,500 RPM
Nlim (grease)	6,800 RPM
Axial displacement K Factor	0.5
Preload level	7
Peloid value	1,400 kN
axial rigidity	320 N/ μ m
radial rigidity	682 N/ μ m
Min operating temperature, Tmin	-22 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.42 Hz
Characteristic rolling element frequency, BSF	5.36 Hz
Characteristic outer ring frequency, BPF0	5.85 Hz
Characteristic inner ring frequency, BPFI	8.15 Hz



Abutment dimensions

da min	4.4094 "
db min	4.4094 "
Da max	6.6142 "
Db max	6.6142 "
r1a max	0.0394 "
ra max	0.0787 "
D6	5.1575 "

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

$$Po = Xo \cdot Fr + Yo \cdot Fa$$

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 $Po < Fr$, then use $Po = Fr$