

PDF technical sheet 7021HVUJ84



High precision angular contact ball bearings

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

Product definition	
d	105 mm
D	160 mm
B	26 mm
d1	122.80 mm
D1	142.20 mm
D2	149.84 mm
a	44 mm
Contact angle, α	25 °
rs min	2 mm
r1s min	1 mm
f0	16.195
Precision class	P4
Mass	1.59 kg
Brand	SNR



Product performance	
Dynamic load, C	78 kN
Static load, C0	81.40 kN
Fatigue limit load, Cu	4 kN
Nlim (oil)	12,000 Tr/min
Nlim (grease)	7,900 Tr/min
Axial displacement K Factor	0.42
Preload level	8
Peloid value	2,060 kN
axial rigidity	446 N/ μ m
radial rigidity	893 N/ μ m
Min operating temperature, Tmin	-30 °C
Max operating temperature, Tmax	120 °C
Characteristic cage frequency, FTF	0.45 Hz
Characteristic rolling element frequency, BSF	8.25 Hz
Characteristic outer ring frequency, BPF0	9.81 Hz
Characteristic inner ring frequency, BPF1	12.19 Hz



Abutment dimensions

da min	115 mm
db min	115 mm
Da max	150 mm
Db max	150 mm
r1a max	1 mm
ra max	2 mm
D6	127.90 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

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

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 $Po = Fr$