

PDF technical sheet 7040HVUJ74



High precision angular contact ball bearings

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

Product definition	
d	7.8740 "
D	12.2047 "
B	2.0079 "
d1	9.2520 "
D1	10.8278 "
D2	11.5015 "
a	3.3465 "
Contact angle, α	25 °
rs min	0.0827 "
r1s min	0.0433 "
f0	15.951
Precision class	P4
Mass	42.86 oz
Brand	SNR



Product performance	
Dynamic load, C	262 kN
Static load, C0	337 kN
Fatigue limit load, Cu	11.80 kN
Nlim (oil)	6,300 RPM
Nlim (grease)	4,100 RPM
Axial displacement K Factor	0.34
Preload level	7
Peload value	3,800 kN
axial rigidity	657 N/ μ m
radial rigidity	1,388 N/ μ m
Min operating temperature, Tmin	-22 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.44 Hz
Characteristic rolling element frequency, BSF	7.54 Hz
Characteristic outer ring frequency, BPF0	9.26 Hz
Characteristic inner ring frequency, BPF1	11.74 Hz



Abutment dimensions

da min	8.3465 "
db min	8.3465 "
Da max	11.7323 "
Db max	11.7323 "
r1a max	0.0394 "
ra max	0.0787 "
D6	9.5906 "

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		0.78		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 $Po = Fr$