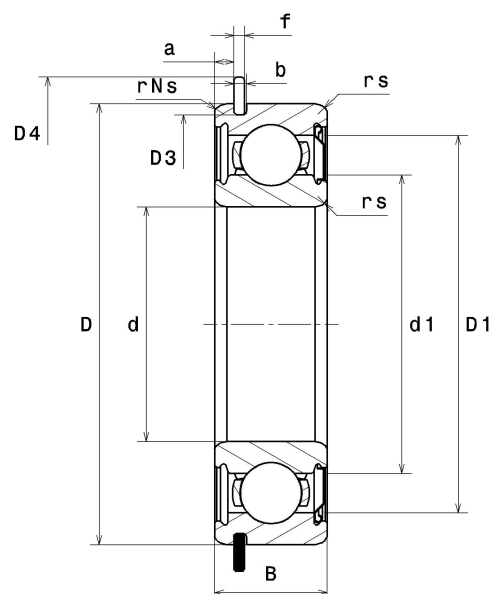


PDF technical sheet 6311ZNR



Single row deep groove ball bearings

Product definition	
d	55 mm
D	120 mm
B	29 mm
a min	3.86 mm
a max	4.06 mm
Ca min	6.58 mm
Ca max	6.88 mm
rs min	2 mm
rNs min	0.50 mm
D3 max	115.21 mm
b min	3.10 mm
b max	3.40 mm
r0 max	0.60 mm
D4 max	129.70 mm
f	2.82 mm
Snap ring reference	R120
Radial clearance class	CN
Mass	1.37 kg
Brand	NTN



Product performance	
Dynamic load, C	71.50 kN
Static load, C0	45 kN
Fatigue limit load, Cu	2.05 kN
f0	13.2
Nlim (oil)	6,800 Tr/min
Nlim (grease)	5,800 Tr/min
Min operating temperature, Tmin	-20 °C
Max operating temperature, Tmax	120 °C
Characteristic cage frequency, FTF	0.38 Hz
Characteristic rolling element frequency, BSF	4.08 Hz
Characteristic outer ring frequency, BPF0	3.07 Hz
Characteristic inner ring frequency, BPF1	4.93 Hz



Abutment dimensions

da min	64 mm
Da max	111 mm
ra max	2 mm
rNa max	0.50 mm
Db min	131.50 mm

Calculation factors

Equivalent dynamic radial load

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

$\frac{f_0 F_a}{C_0}$	e	$F_a / Fr \leq e$		$F_a / Fr > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.3
0.345	0.22				1.99
0.689	0.26				1.71
1.03	0.28				1.55
1.38	0.3				1.45
2.07	0.34				1.31
3.45	0.38				1.15
5.17	0.42				1.04
6.89	0.44				1

Equivalent static radial load

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

X_0	Y_0
0.6	0.5

For single or DT bearing arrangement:

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