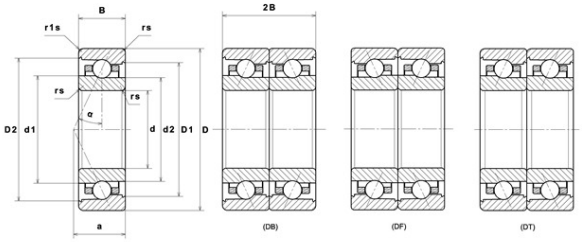
# PDF technical sheet
# ML7009CVUJ84S

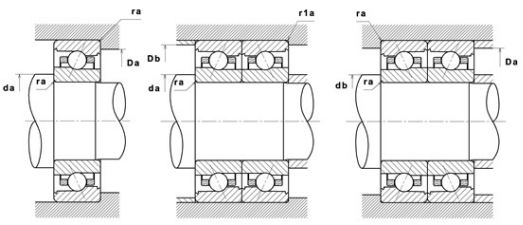
## High precision angular contact ball bearings

High precision angular contact ball bearing, high speed series ML, laminated resin cage centred on outer ring

| Product definition | |
|---|---|
| d | 45 mm |
| D | 75 mm |
| B | 16 mm |
| d1 | 54.70 mm |
| d2 | 52.40 mm |
| D1 | 66.31 mm |
| D2 | 68.46 mm |
| a | 17 mm |
| Contact angle, a | 17 ° |
| rs min | 1 mm |
| r1s min | 0.60 mm |
| f0 | 8.278 |
| Precision class | P4S |
| Mass | 0.24 kg |
| Brand | SNR |




| Product performance | |
|---|---|
| Dynamic load, C | 10.80 kN |
| Static load, C0 | 7 kN |
| Fatigue limit load, Cu | 0.40 kN |
| Nlim (oil) | 37,000 Tr/min |
| Nlim (grease) | 27,000 Tr/min |
| Axial displacement K Factor | 1.23 |
| Preload level | 8 |
| Peload value | 160 kN |
| axial rigidity | 65 N/$\mu$m |
| radial rigidity | 308 N/$\mu$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 | 9.16 Hz |
| Characteristic outer ring frequency, BPF0 | 9.86 Hz |
| Characteristic inner ring frequency, BPFI | 12.14 Hz |

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| Abutment dimensions | |
|---|---|
| da min | 50.50 mm |
| db min | 50.50 mm |
| Da max | 69.50 mm |
| Db max | 69.50 mm |
| r1a max | 0.60 mm |
| ra max | 1 mm |
| D6 | 56.90 mm |

## Calculation factors

**Equivalent dynamic radial load**

$P = X.Fr + Y.Fa$

| 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)<br>72 (NTN & SNR)<br>78 (NTN)<br>79 (NTN)<br>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**

$P_o = X_o.Fr + Y_o.Fa$

| Series | | Single or DT bearing arrangement | | DB or DF arrangement | |
|---|---|---|---|---|---|
| | | $X_0$ | $Y_0$ | $X_0$ | $Y_0$ |
| 70 (NTN & SNR)<br>72 (NTN & SNR)<br>78 (NTN)<br>79 (NTN)<br>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