

## PDF technical sheet 6316L1



### Single row deep groove ball bearings

Deep groove ball bearing, radial contact, machined cage, open

#### Product definition

|                        |         |
|------------------------|---------|
| d                      | 80 mm   |
| D                      | 170 mm  |
| B                      | 39 mm   |
| rs min                 | 2.10 mm |
| Radial clearance class | CN      |
| Mass                   | 3.59 kg |
| Brand                  | NTN     |



#### Product performance

|                                               |              |
|-----------------------------------------------|--------------|
| Dynamic load, C                               | 123 kN       |
| Static load, C0                               | 86.50 kN     |
| Fatigue limit load, Cu                        | 3.50 kN      |
| f0                                            | 13.3         |
| Nlim (oil)                                    | 4,700 Tr/min |
| Nlim (grease)                                 | 4,000 Tr/min |
| Min operating temperature, Tmin               | -20 °C       |
| Max operating temperature, Tmax               | 120 °C       |
| Characteristic cage frequency, FTF            | 0.39 Hz      |
| Characteristic rolling element frequency, BSF | 4.15 Hz      |
| Characteristic outer ring frequency, BPF0     | 3.09 Hz      |
| Characteristic inner ring frequency, BPFI     | 4.91 Hz      |



### Abutment dimensions

|        |        |
|--------|--------|
| da min | 91 mm  |
| Da max | 159 mm |
| ra max | 2 mm   |

### Calculation factors

#### Equivalent dynamic radial load

$$P = X.F_r + Y.F_a$$

| $\frac{f_0 F_a}{C_0}$ | e    | $F_a / F_r \leq e$ |   | $F_a / F_r > e$ |      |
|-----------------------|------|--------------------|---|-----------------|------|
|                       |      | 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

$$P_0 = X_0.F_r + Y_0.F_a$$

| $X_0$ | $Y_0$ |
|-------|-------|
| 0.6   | 0.5   |

For single or DT bearing arrangement:

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