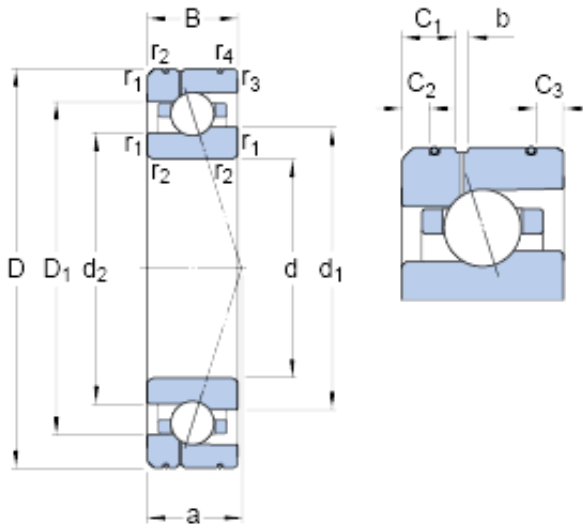




# NTN Bearing Rolamentos do Brasil Ltda.



95 mm x 145 mm x 24 mm skf 7019  
CE/HCP4AL1 Super-precision Angular contact  
ball bearings

Bearing No. 7019 CE/HCP4AL1

7019 CE/HCP4AL1 Bearing 2D drawings and 3D CAD  
models

Size	95x145x24 mm
Bore Diameter	95 mm
Outer Diameter	145 mm
Width	24 mm
d	95 mm
D	145 mm
B	24 mm
d <sub>1</sub>	112.38 mm
d <sub>2</sub>	109.2 mm
D <sub>1</sub>	127.61 mm
b	1.8 mm
C <sub>1</sub>	7.1 mm
C <sub>2</sub>	4.3 mm
C <sub>3</sub>	4.3 mm
r <sub>1,2</sub> - min.	1.5 mm
r <sub>3,4</sub> - min.	1 mm
a	28.2 mm
d <sub>a</sub> - min.	102 mm
d <sub>b</sub> - min.	102 mm
D <sub>a</sub> - max.	138 mm
D <sub>b</sub> - max.	139.4 mm
r <sub>a</sub> - max.	1.5 mm
r <sub>b</sub> - max.	1 mm
d <sub>n</sub>	115.4 mm



## NTN Bearing Rolamentos do Brasil Ltda.

Basic dynamic load rating - C	44.2 kN
Basic static load rating - C <sub>0</sub>	38 kN
Fatigue load limit - P <sub>u</sub>	1.5 kN
Limiting speed for grease lubrication	15000 r/min
Limiting speed for oil lubrication	23000 mm/min
Ball - D <sub>w</sub>	12.7 mm
Ball - z	26
G <sub>ref</sub>	17 cm <sup>3</sup>
Calculation factor - f <sub>0</sub>	9.4
Preload class A - G <sub>A</sub>	230 N
Preload class B - G <sub>B</sub>	700 N
Preload class C - G <sub>C</sub>	1400 N
Calculation factor - f	1.11
Calculation factor - f	1
Calculation factor - f <sub>2A</sub>	1
Calculation factor - f <sub>2B</sub>	1.03
Calculation factor - f <sub>2C</sub>	1.05
Calculation factor - f <sub>HC</sub>	1.01
Preload class A	93 N/micron
Preload class B	148 N/micron
Preload class C	204 N/micron
d <sub>1</sub>	112.38 mm
d <sub>2</sub>	109.2 mm
D <sub>1</sub>	127.61 mm
C <sub>1</sub>	7.1 mm
C <sub>2</sub>	4.3 mm
C <sub>3</sub>	4.3 mm
r <sub>1,2</sub> min.	1.5 mm



## NTN Bearing Rolamentos do Brasil Ltda.

$r_{3,4}$ min.	1 mm
$d_a$ min.	102 mm
$d_b$ min.	102 mm
$D_a$ max.	138 mm
$D_b$ max.	139.4 mm
$r_a$ max.	1.5 mm
$r_b$ max.	1 mm
$d_n$	115.4 mm
Basic dynamic load rating C	44.2 kN
Basic static load rating $C_0$	38 kN
Fatigue load limit $P_u$	1.46 kN
Attainable speed for grease lubrication	15000 r/min
Attainable speed for oil-air lubrication	23000 r/min
Ball diameter $D_w$	12.7 mm
Number of balls z	26
Reference grease quantity $G_{ref}$	17 cm <sup>3</sup>
Preload class A $G_A$	230 N
Static axial stiffness, preload class A	93 N/ $\mu$ m
Preload class B $G_B$	700 N
Static axial stiffness, preload class B	148 N/ $\mu$ m
Preload class C $G_C$	1400 N
Static axial stiffness, preload class C	204 N/ $\mu$ m
Calculation factor f	1.11
Calculation factor $f_1$	1
Calculation factor $f_{2A}$	1
Calculation factor $f_{2B}$	1.03
Calculation factor $f_{2C}$	1.05
Calculation factor $f_{HC}$	1.01



## NTN Bearing Rolamentos do Brasil Ltda.

Calculation factor $f_0$	9.4
Mass bearing	1.08 kg