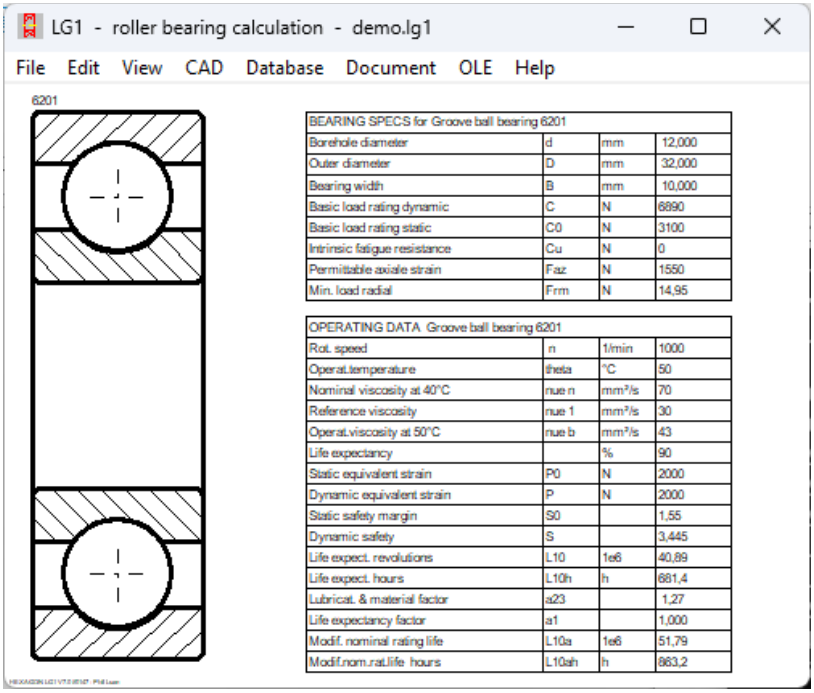
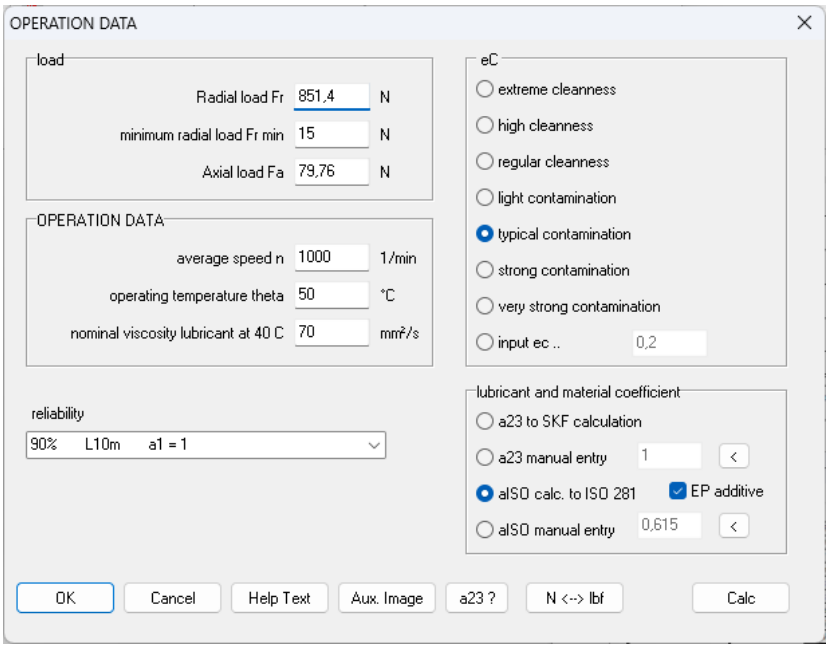
L G 1

Software for Roll-contact Bearings with interface to CAD and Database

for Windows

© Copyright 1992-2024 by HEXAGON Software, Kirchheim, Berlin, Neidlingen



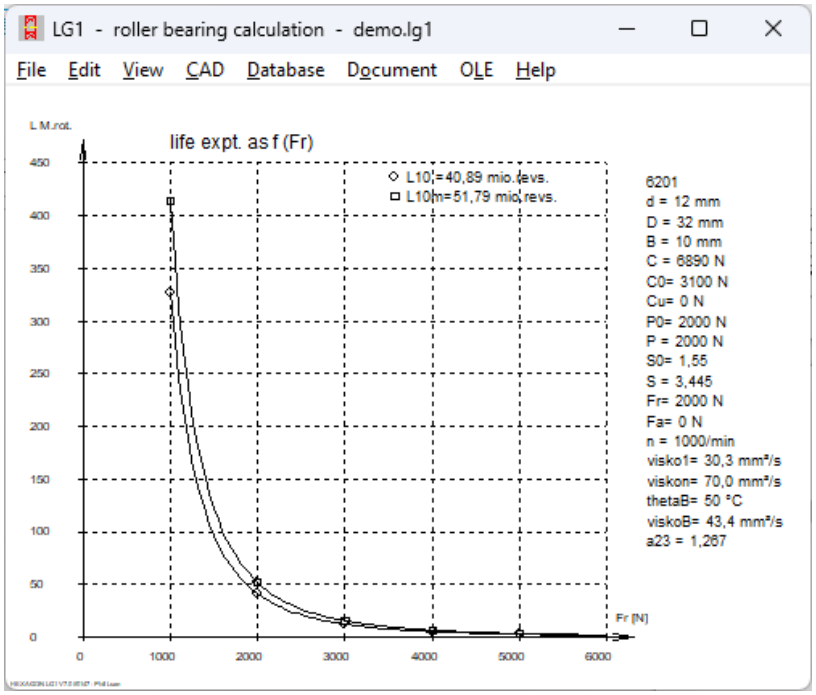


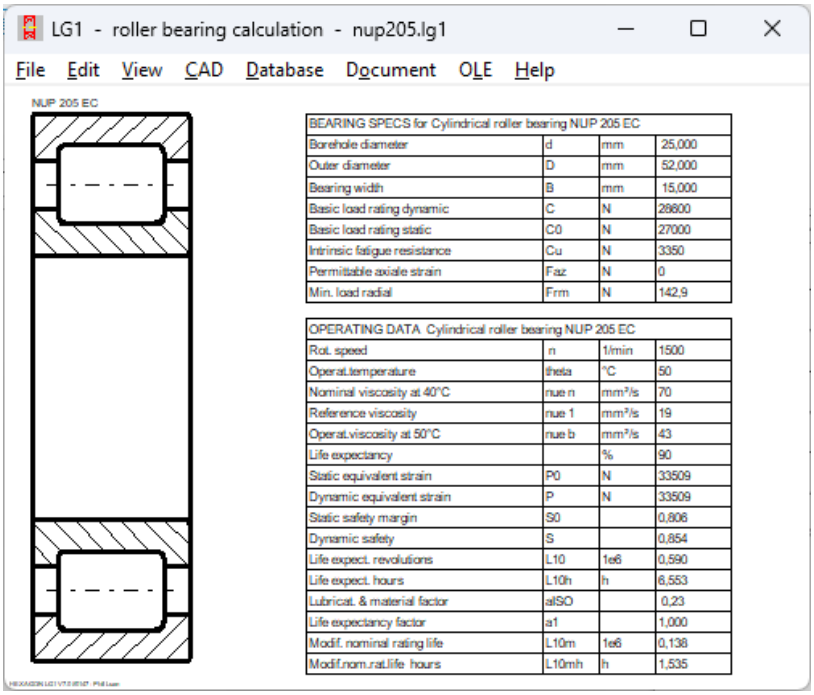
Roller Bearing Calculation with LG1
The LG1 software calculates the bearing lifetime for grooved ball bearings, self-aligning ball bearings, needle bushes, cylinder roller bearings, taper roller bearings and self-aligning roll bearings according to DIN. Modified lifetime according to specifications of the roller bearing manufacturers can also be calculated when you input the data for lubricant viscosity, bearing temperature and life expectancy. For a more accurate calculation which takes lubricant gap cleanliness into account you can either enter your own data for the lubricant and material factor a23 or aISO (according to DIN ISO 281), or have LG1 calculate it for you.

Load
You can enter the mean radial and/or axial load directly, or have them calculated by LG1 from a load spectrum, or from static and alternating force components, or from constantly increasing forces.

Data Base
LG1 loads all dimensions and bearing data from the integrated data base so that you only have to choose the required bearing. The package includes data on 600 grooved ball bearings, 100 self-aligning ball bearings, 65 needle bushes, 170 needle bearings, 500 cylinder roller bearings, 300 taper roller bearings, 360 self-aligning roller bearings, 60 angular contact ball bearings, 50 two-row angular contact ball bearings, 230 needle roller cage. Dimensions, support data, permissable speed are provided by the SKF and INA (needle bushes) companies. The data base files use the common DBF (xBase) format and can be modified and appended as required. An info field is provided for your own input.

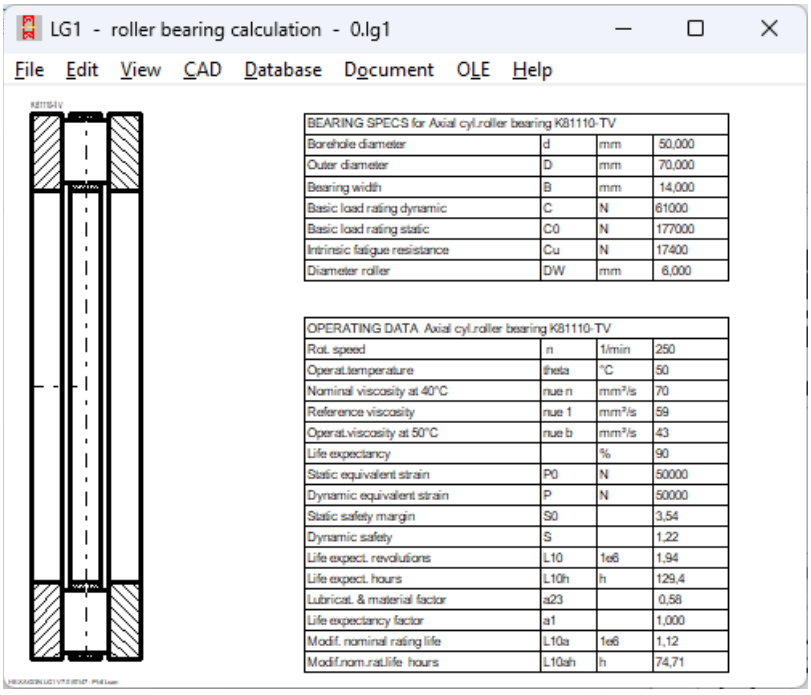
Graphic and CAD Interface
The roller bearing which was selected from the database can be displayed on screen or sent as a true-scale drawing to CAD via DXF or IGES file. Dimensions available in the database are used for generating the drawing, which means that newly entered bearings can also be drawn.





BEARING SPECS for Cylindrical roller bearing NUP 205 EC			
Borehole diameter	d	mm	25,000
Outer diameter	D	mm	52,000
Bearing width	B	mm	15,000
Basic load rating dynamic	C	N	28600
Basic load rating static	C0	N	27000
Intrinsic fatigue resistance	Cu	N	3350
Permittable axiale strain	Faz	N	0
Min. load radial	Frm	N	142,9

OPERATING DATA Cylindrical roller bearing NUP 205 EC			
Rot. speed	n	1/min	1500
Operat.temperature	theta	°C	50
Nominal viscosity at 40°C	nue n	mm²/s	70
Reference viscosity	nue 1	mm²/s	19
Operat.viscosity at 50°C	nue b	mm²/s	43
Life expectancy		%	90
Static equivalent strain	P0	N	33509
Dynamic equivalent strain	P	N	33509
Static safety margin	S0		0,806
Dynamic safety	S		0,854
Life expect. revolutions	L10	1e6	0,590
Life expect. hours	L10h	h	6,553
Lubricat. & material factor	aISO		0,23
Life expectancy factor	a1		1,000
Modif. nominal rating life	L10m	1e6	0,138
Modif.nom.ratLife hours	L10mh	h	1,535



BEARING SPECS for Axial cyl.roller bearing K81110-TV			
Borehole diameter	d	mm	50,000
Outer diameter	D	mm	70,000
Bearing width	B	mm	14,000
Basic load rating dynamic	C	N	61000
Basic load rating static	C0	N	177000
Intrinsic fatigue resistance	Cu	N	17400
Diameter roller	DW	mm	6,000

OPERATING DATA Axial cyl.roller bearing K81110-TV			
Rot. speed	n	1/min	250
Operat.temperature	theta	°C	50
Nominal viscosity at 40°C	nue n	mm²/s	70
Reference viscosity	nue 1	mm²/s	59
Operat.viscosity at 50°C	nue b	mm²/s	43
Life expectancy		%	90
Static equivalent strain	P0	N	50000
Dynamic equivalent strain	P	N	50000
Static safety margin	S0		3,54
Dynamic safety	S		1,22
Life expect. revolutions	L10	1e6	1,94
Life expect. hours	L10h	h	129,4
Lubricat. & material factor	a23		0,58
Life expectancy factor	a1		1,000
Modif. nominal rating life	L10a	1e6	1,12
Modif.nom.ratLife hours	L10ah	h	74,71

Tables
Bearing data and load values can be displayed on screen as tables, or generated as DXF or IGES files and included in the CAD drawing.

Quick View
Quick View shows roller bearing drawing together with tables of bearing data and calculation results.

Life Expectancy
Diagrams You can have a life expectancy curve generated for the bearing dependent on radial or axial force, speed, temperature or lubricant viscosity.

Text Printout
The calculation results, along with the input data can be displayed on screen, printed on Windows printer, saved to text file or HTML file, or directly be loaded with MS-Excel.

Graphic Printout
Drawings and diagrams can be printed or saved as DXF or IGES files for CAD import.

Units
LG1 can be switched between metric units (mm, N. MPa) and imperial units (inch, lbf, psi)

Graphic Help Function
Integrated help texts and auxiliary images ensure a short familiarization time and provide a quick overview, for example with the explanations for data base symbols. If error messages occur, you can get description and remedy suggestion.

Export Formats
DXF, IGES, HTML, TXT, DBF, Excel, LG1. Import Formats TXT, DBF, Excel, LG1.

System Requirements
LG1 is available as 32-bit app or as 64-bit app for Windows 11, Windows 10, Windows 7.

Scope of Delivery
Program with user manual (pdf), example applications and help images, non-expiring license for unlimited time use with update rights.

Software Maintenance
HEXAGON Software is continuously improved and updated. Registered users are regularly kept informed of updates and new editions.

Guarantee
HEXAGON gives a 24 month guarantee on full functionality of the software. We provide help and support by email without extra charge.