

# LG1



www.hexagon.de

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

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6300

BEARING SPECS for Groove ball bearing 6300			
Borehole Diameter	d	mm	10
Outer Diameter	D	mm	35
Bearing Width	B	mm	11
Basic load rating dynamic	C	N	8060
Basic load rating static	C0	N	3400
Intrinsic fatigue resistance	Cu	N	0
Permittable Axiale Strain	Faz	N	650
Min. Strain Radial	Frm	N	10,63

OPERATING DATA Groove ball bearing 6300			
Rot. Speed	n	1/min	1000
Operat. Temperature	theta	°C	80
Nominal Viscosity at 40°C	nue n	mm²/s	100
Reference Viscosity	nue 1	mm²/s	30
Operat. Viscosity at 80°C	nue b	mm²/s	18
Life Expectancy		%	90
Static Equivalent Strain	P0	N	2000
Dynamic Equivalent Strain	P	N	2000
Static Safety	S0		1,7
Dynamic Safety	S		4,03
Life Expect. Revolutions	L10	1e6	66,46
Life Expect. Hours	L10h	h	1091
Lubricat. & Material Factor	a23		0,42
Life Expectancy Factor	a1		1,00
Modif. Nominal Rating Life	L10a	1e6	27,4b
Modif. Nom. Rat. Life	L10ah	h	467,8

### 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, permissible 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.

WORKING DATA

Load

Radial load Fr 2000 N

minimum radial load Fr min 20 N

Axial load Fa 500 N

WORKING DATA

Average Speed n 1000 1/min

Operating Temperature theta 80 °C

Nominal Viscosity Lubricant at 40 C 100 mm²/s

Occurrence Probability

90% (a1=1.00)

95% (a1=0.62)

96% (a1=0.53)

97% (a1=0.44)

98% (a1=0.33)

99% (a1=0.21)

eC

maximum cleanliness

high cleanliness

regular cleanliness

light contamination

typical contamination

strong contamination

very strong contamination

input ec 0,2

Lubricant and Material Coefficient

a23 to SKF calculation

a23 manual entry 0,419 <

aISO calc. to ISO 281

aISO manual entry 0,1 <

OK Cancel Help Text Aux. Image a23 ? N < > lbf Calc

Bearing Load Fr = 2000 N Fa = 500 N LG1 Database Needle cage

NAME	FW	EW	BC	CR	COB	CUR	NG	NE
K5x8x8-TV	5	8	8	2350	1920	237	39000	
K5x8x10-TV	5	8	10	3000	2650	350	39000	
K6x8x8-TV	6	9	8	2600	2280	285	36500	
K6x9x10-TV	6	9	10	3350	3150	420	36500	
K6x10x13-TV	6	10	13	3800	3100	395	35500	
K7x9x7-TV	7	9	7	1730	1770	215	35500	
K7x10x8-TV	7	10	8	2850	2650	330	34500	
K7x10x10-TV	7	10	10	3650	3600	485	34500	
K8x11x8-TV	8	11	8	3100	3000	375	32500	
K8x11x10-TV	8	11	10	3950	4100	560	32500	
K8x11x13-TV	8	11	13	5100	5800	790	32500	
K8x12x10-TV	8	12	10	5000	4700	560	31500	
K9x12x10-TV	9	12	10	4500	5000	680	31000	
K9x12x13-TV	9	12	13	5900	7100	970	31000	
K10x13x10-TV	10	13	10	4750	5500	750	29500	
K10x13x13-TV	10	13	13	6200	7800	1060	29500	
K10x13x16-TV	10	13	16	7100	9300	1310	29500	
K10x14x10-TV	10	14	10	5800	6000	720	29000	
K10x14x13-TV	10	14	13	7500	8400	1020	29000	

## 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

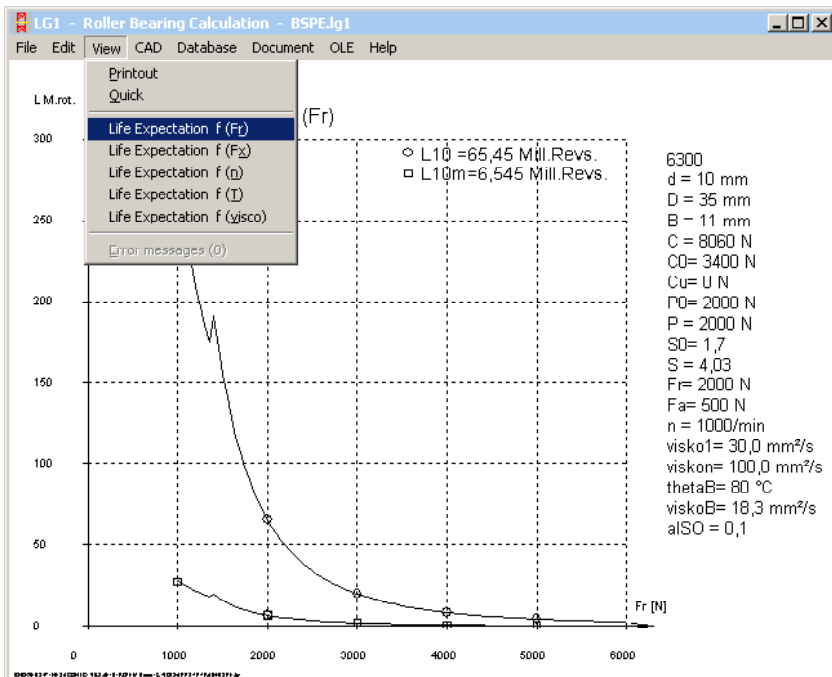
Quick View shows roller bearing drawing together with tables of bearing data and calculation results.

## 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

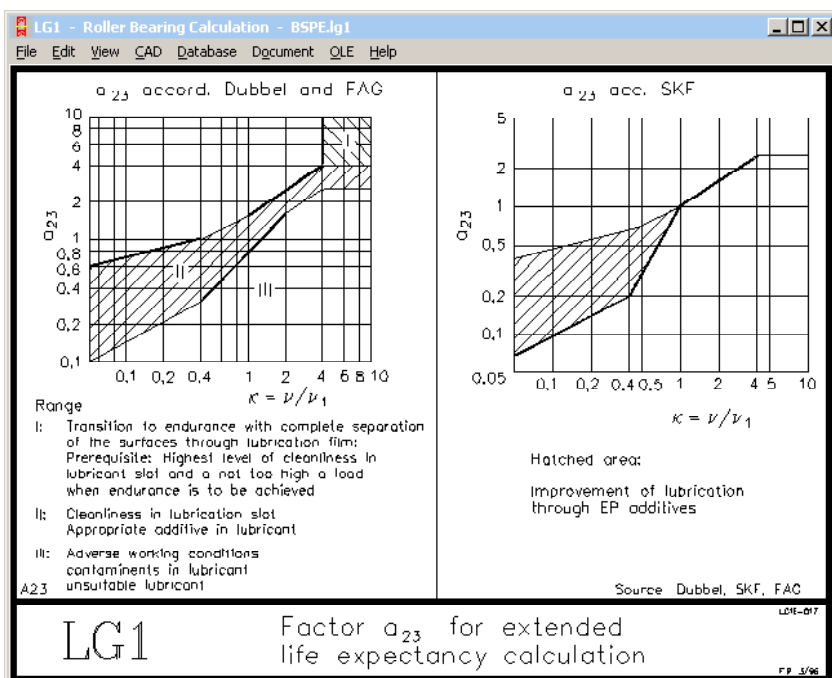
Integrated help texts and auxiliary images ensure a short familiarization time and provide a quick overview, for example with the explanations for data base symbols. If error messages occur, you can get description and remedy suggestion.

## 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 XP, Vista, Windows 7, 8, 10.

## Scope of Delivery

LG1 program with roller-bearing database files, example applications and help images, user manual (pdf), license agreement for an indefinite period of time

## Guarantee

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

## Maintenance

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