

# SOLID LUBRICANT SLIDING BUSHINGS



## LUMET - Solid lubricant sliding bushings made from solid bronze, cast iron and steel.

In the solid lubricant sliding bushing product category, we offer products made from three different materials. LUMET solid lubricant sliding bushings are made from solid bronze with a permanently integrated graphite lubricant, while LUMET-4 solid lubricant sliding bushings are made from HT250 cast iron.


LUMET-5 sliding bushings are made of GCr15 steel, are characterised by high compressive strength and are particularly suitable for use in lifting and conveyor machinery.



## LUMET

LUMET solid lubricant sliding bushings are made of solid bronze with pre-integrated solid graphite lubricant. Their load limit is considerably higher than standard sliding bushings, where lubrication is dependent upon there being a film of oil.


It is suitable for heavy-duty operation and corrosive environments as well as hard-to-reach lubrication points, for example in die casting, mining, shipbuilding, turbo generators, and injection molding machines.

Profile	Design	Base material	Dynamic load N/mm <sup>2</sup>	Density	Hardness HB	Elongation %	Temperature limit	Yield point N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Max. speed (dry)
	LUMET	CuZn24Al6/ CuZn25Al 6Fe3Mn4	100	8	>210	>12	+300°C	>450	>750	15 m/min

## LUMET-SH1

LUMET-SH1 is based on the CuSn5Pb5Zn5 alloy and combines good wear resistance with reliable emergency running properties and high corrosion resistance. The material


is suitable for medium loads up to 400 °C and enables dry sliding operation up to approx. 10 m/min.

Profile	Design	Base material	Dynamic load N/mm <sup>2</sup>	Density	Hardness HB	Elongation %	Temperature limit	Yield point N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Max. speed (dry)
	LUMET-SH1	CuSn5Pb5Zn5	60	8.9	>70	>15	+400°C	>90	>200	10 m/min

## LUMET-SH2

Made from CuAl10Ni5Fe5 aluminium bronze, LUMET-SH2 offers high strength, excellent fatigue resistance and very good chemical resistance. The alloy is a versatile all-rounder


for high loads up to 400 °C and sliding speeds up to approx. 20 m/min.

Profile	Design	Base material	Dynamic load N/mm <sup>2</sup>	Density	Hardness HB	Elongation %	Temperature limit	Yield point N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Max. speed (dry)
	LUMET-SH2	CuAl10Ni5Fe5	50	7.8	>150	>10	+400°C	>260	>600	20 m/min

## LUMET-SH3

Based on the high-alloy tin bronze CuSn12, LUMET-SH3 has good toughness, high wear resistance and reliable emergency running properties even with limited lubrication. The alloy is


suitable for alternating loads up to 400 °C and sliding speeds up to approx. 10 m/min.

Profile	Design	Base material	Dynamic load N/mm <sup>2</sup>	Density	Hardness HB	Elongation %	Temperature limit	Yield point N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Max. speed (dry)
	LUMET-SH3	CuSn12	70	8.9	>95	>8	+400°C	>150	>260	10 m/min

## LUMET-SH5

Made from CuZn25Al5Mn4Fe3 aluminium-manganese bronze, LUMET-SH5 offers very high strength, hardness and outstanding corrosion resistance. The material can withstand


temperatures of up to +150 °C and speeds of around 15 m/min and is particularly suitable for high point loads at moderate speeds.

Profile	Design	Base material	Dynamic load N/mm <sup>2</sup>	Density	Hardness HB	Elongation %	Temperature limit	Yield point N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Max. speed (dry)
	LUMET-SH5	CuZn25Al5Mn4Fe3	120	8	>250	>8	+150°C	>450	>800	15 m/min

## LUMET-HHP

Made from CuZn25Al5Mn4Fe3 aluminium-manganese bronze, LUMET-SH5 offers very high strength, hardness and outstanding corrosion resistance. The material can be loaded


up to +150 °C and approx. 15 m/min and is particularly suitable for high point loads with a moderate speed profile.

Profile	Design	Base material	Dynamic load N/mm <sup>2</sup>	Density	Hardness HB	Elongation %	Temperature limit	Yield point N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Max. speed (dry)
	LUMET-HHP	CuZn32Al5Ni3	150	8	>280	>0.3	+150°C	>450	>540	15 m/min

## LUMET-4

LUMET-4 solid lubricant sliding bushings have a HT250 cast iron base. These sliding bushings are used when a cost-effective solution is required and when the mechanical

requirements are not too high, e.g. in guide rods for moulding tools, cast-iron plates for plastic injection moulding machinery.


Profile	Design	Base material	Dynamic load N/mm <sup>2</sup>	Density	Hardness HB	Elongation %	Temperature limit	Yield point N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Max. speed (dry)
	LUMET-4	HT250	60		HB180 HB230		+400°C			15 m/min

## LUMET-5

LUMET-5 solid lubricant sliding bushings are reinforced-material products from the LUMET series and have a GCr15 steel base.

lifting machinery and winding equipment. They are also used in winches and cranes. They should not be used in water or in acidic or alkaline conditions.

These sliding bushings have high levels of compression resistance and are particularly suitable for use in guides for

Profile	Design	Base material	Dynamic load N/mm <sup>2</sup>	Density	Hardness HB	Elongation %	Temperature limit	Yield point N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Max. speed (dry)
	LUMET-5	100 Cr6	250		HRC58 HRC60		+350°C			6 m/min

## Structure

The lubricator, which is based on maintenance-free solid lubricant or graphite, is embedded into the steel or bronze of the sliding bearing. The lubricator makes it possible, and easier, to work in dry environments.

LUMET sliding bearings are more resistant at higher temperatures compared to other types of sliding bearings.

## Technical information

The application conditions must be observed without fail when selecting the solid lubricant.

Application conditions			
Maximum specific load		P	100 N/mm <sup>2</sup>
Maximum speed		v	0.5 m/s
Maximum sliding bearing load		pv	1.65 N/mm <sup>2</sup> × m/s
Temperature	PTFE/graphit + MoS <sub>2</sub> With lubricant	T	- 40 to + 300 °C - 40 to + 150 °C
Friction coefficient		m	0.16

## Movement

LUMET sliding bushings are suitable for applications with heavy loads and low speeds. They mainly operate laterally.

## Application

Underwater sliding bearings, e.g. floodgates, foundries, steel work, tool operations, the printing and mining industries, building construction and civil engineering.

## Possible lubricants

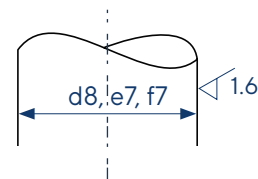
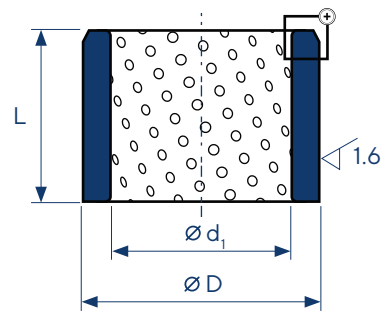
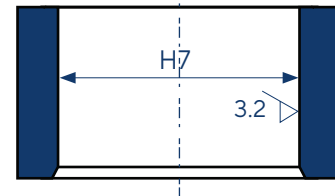
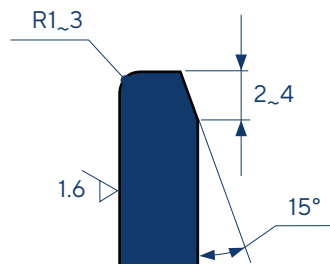
- Graphite
- Graphit + MoS<sub>2</sub>
- PTFE

## LUMET sliding bearing range

The product range includes cylindrical sliding bushings, flanged sliding bearings, thrust bearing washers and panels. For specific enquiries, please contact our technical team.

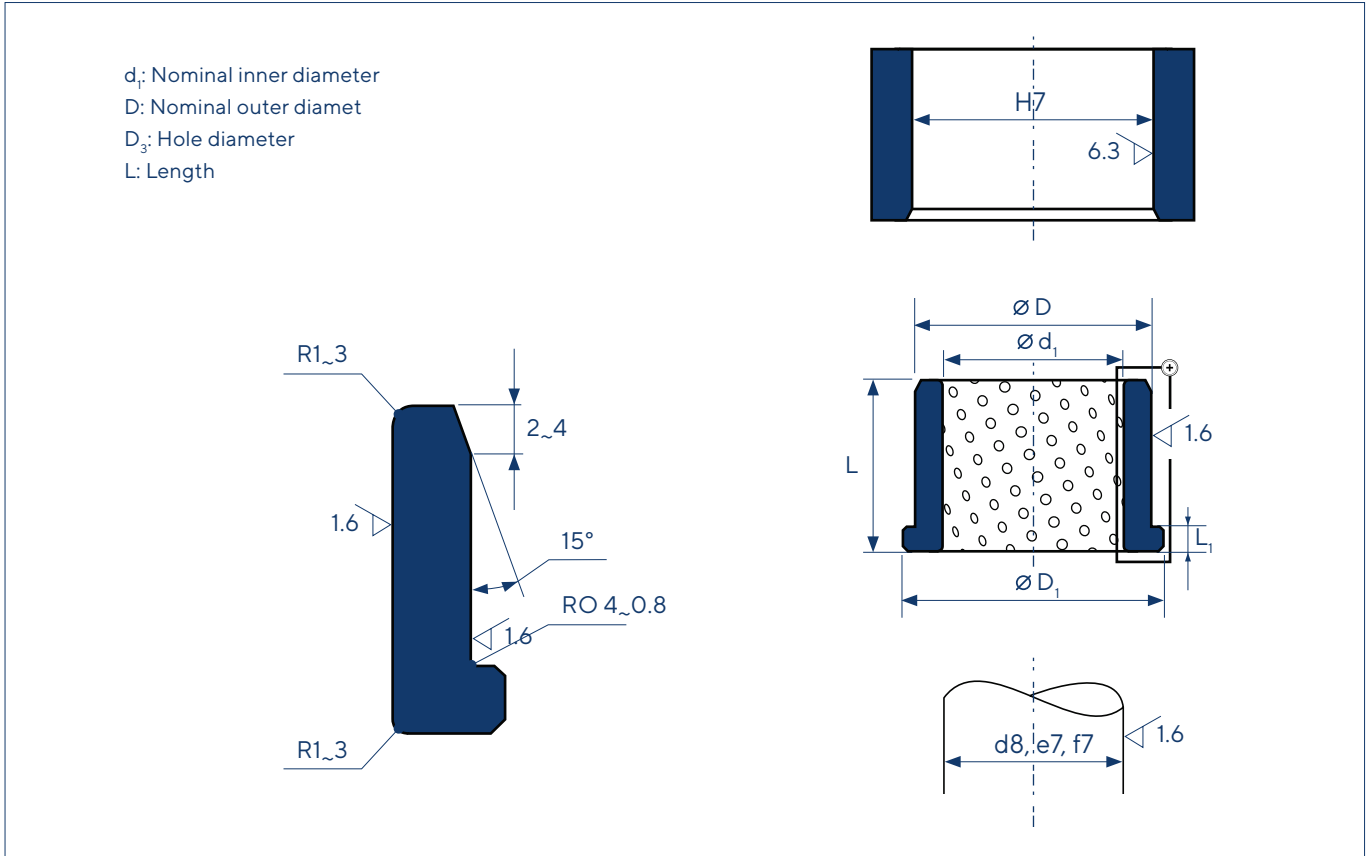
## LUMET – Solid lubricant sliding bushings – Cylindrical standard dimensions

$d_1$ : Nominal inner diameter  
 $D$ : Nominal outer diameter  
 $D_3$ : Hole diameter  
 $L$ : Length



$d_1$	$d_1^{F7}$	$D$	$D^{m6}$	$L^{-0.30}$													
				8	15	20	25	30	35	40	45	50	60	70	80		
8	+0.028	12	+0.018 +0.007	081208	081210	081212	081215										
10	+0.013	14		101408	101410	101412	101415		101420								
12		18			121810	121812	121815	121816	121820	121825	121830						
13		19			131910		131915	131916									
14	+0.034	20	+0.021 +0.008		142010	142012	142015		142020	142025	142030						
15	+0.008	21			152110	152112	152115	152116	152120	152125	152130						
16		22			162210	162212	162215	162216	162220	162225	162230	162235	162240				
18		24				182412	182415	182416	182420	182425	182430	182435	182440				
20		28			202810	202812	202815	202816	202820	202825	202830	202835	202840	202850			
22		+0.041		32			223212	223215		223220	223225						
25	+0.020	33	+0.025 +0.009			253312	253315	253316	253320	253325	253330	253335	253340	253350	253360		
30		38				303812	303815		303820	303825	303830	303835	303840	303850	303860		
35			45							354520	354525	354530	354535	354540	354550	354560	
40	+0.050		50							405020	405025	405030	405035	405040	405050	405060	
45	+0.025	55	+0.030								455530	455535	455540	455550	455560		
50		60	+0.011									506030	506035	506040	506050	506060	

## LUMET – Solid lubricant sliding bushings – Flanged sliding bearings, standard dimensions



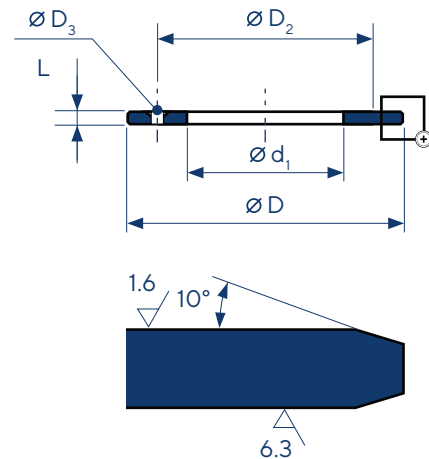
$d_i$	$d_i E7$	$D$	$D r6$	$F$	$L_i^{-0.10}$	$L^{-0.30}$										
						15	20	25	30	35	40	50	60	80	100	
10	+0.040 +0.025	14	+0.034	22	2	1015	1020									
12		18	+0.023	25		1215	1220									
13		19		26		1315	1320									
14	+0.050 +0.032	20		27	3	1413	1420									
15		21	+0.041 +0.028	28		1515	1520	1525	1530							
16		22		29		1615	1620	1625	1630							
20		30		40		2015	2020	2025	2030		2040					
25	+0.061 +0.040	35		45		2515	2520	2525	2530		2540					
30		40		50			3020	3025	3030	3035	3040	3050				
31.5		40	+0.050 +0.034	50			3120			3135						
35		45		60	5		3520		3530		3540	3550				
40	+0.075 +0.050	50		65			4020		4030		4040	4050				
45		55		70				4530		4540	4550	4560				
50		60	+0.060 +0.041	75				5030		5040	5050	5060				
55	+0.090	65		80						5540		5560				
60	+0.060	75	+0.062 +0.043	90	7.5						6040	6050		6080		

## LUMET – Solid lubricant sliding bushings – Flanged sliding bearings, standard dimensions

d <sub>1</sub>	d <sub>1</sub> E7	D	D r6	F	L <sub>1</sub> <sup>-0.10</sup>	L <sup>-0.30</sup>									
						15	20	25	30	35	40	50	60	80	100
63	+0.090 +0.060	75	+0.062 +0.043	85	7.5									6367	
70		85	+0.073 +0.051	105							7050		7080		
75		90		110								7560			
80	+0.107 +0.072	100	+0.076 +0.054	120	10							8060	8080	80100	
90		110		130							9060	9080			
100		120		150									10080	100100	
120		140	+0.088 +0.063	170									12080	120100	

## LUMET – Solid lubricant sliding bushings – Thrust washers, standard dimensions

$d_1$ : Nominal inner diameter  
 $D$ : Nominal outer diameter  
 $D_2$ : Screw hole position  
 $D_3$ : Screw hole diameter  
 $L$ : Thickness



Shaft Diameter f7	d	D	Bolt			
			$D_2$	Quality	Size	$D_3$
10	10.2	30				
12	12.2	40	28	2	M3	3.5
13	13.2					
14	14.2					
15	15.2	50	35		M5	6
16	16.2					
18	18.2					
20	20.2					
25	25.2	55	40		M6	7
30	30.2	60	45			
35	35.2	70	50			
40	40.2	80	60			
45	45.2	90	67.5			
50	50.2	100	75			
55	55.2	110	85			
60	60.2	120	90			
65	65.2	125	95			
70	70.2	130	100			
75	75.2	140	110			
80	80.2	150	120			
90	90.2	170	140			
100	100.2	190	160	M10	11	
120	120.2	200	175			