

TECACOMP® LCP LDS black 4107V - Compounds

Chemical Designation

LCP (Liquid crystal polymer)

Colour

black

Density

1.73 g/cm³

Main features

- developed for the LPKF-LDS® process
- low thermal expansion

Target Industries

- automotive industry
- electrical engineering
- LED lighting technology
- mechanical engineering

The compound is in the phase of further development. The characteristic values of this product may change.

Mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	50 mm/min	11500	MPa	DIN EN ISO 527-1	
Tensile strength	50 mm/min	95	MPa	DIN EN ISO 527-1	
Elongation at break	50 mm/min	1,3	%	DIN EN ISO 527-1	
Impact strength (Charpy)		10	kJ/m ²	DIN EN ISO 179-1eU	
Thermal properties	parameter	value	unit	norm	comment
Melting temperature		320	°C	DIN 53765	
Heat distortion temperature	HDT A	274	°C	ISO-R 75 Method A	
Service temperature	short term	260	°C	-	
Service temperature	long term	200	°C	-	
Thermal expansion (CLTE)	longitudinal (at 50 - 100 °C)	16	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 50 - 100 °C)	32	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 100 - 150 °C)	25	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 100 - 150 °C)	40	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 150 - 200 °C)	30	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 150 - 200 °C)	49	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 200 - 250 °C)	34	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 200 - 250 °C)	60	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,25	J/(g*K)	DIN EN 821	
Thermal conductivity	in-plane	1,61	W/(K*m)	DIN EN 821	
Thermal conductivity	through-plane	0,76	W/(K*m)	DIN EN 821	
Thermal diffusivity	in-plane	0,93	mm ² /s	DIN EN 821	
Thermal diffusivity	through-plane	0,31	mm ² /s	DIN EN 821	
Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance		4,1 x 10 ¹²	Ω	DIN EN 61340-2-3	
Specific volume resistance		3,8 x 10 ¹¹	Ω*m	DIN EN 61340-2-3	
Dielectric loss factor	test frequency of 1 kHz	0,0160		DIN 53483-1	
Dielectric constant	test frequency of 1 kHz	4,01		DIN 53483-1	
Resistance to tracking (CTI)		275	V	DIN EN 60112	
Other properties	parameter	value	unit	norm	comment
Molding shrinkage	longitudinal	0,10	%	DIN EN ISO 294-4	(1) test method: pull-off-test
Molding shrinkage	transverse	0,30	%	DIN EN ISO 294-4	
Adhesive strength (metal path)		9,1	N/mm ²	-	1)
Laser Marking Parameter	Power	2 - 5	W	-	
Laser Marking Parameter	Frequency	100 - 200	kHz	-	
Laser Marking Parameter	Forward movement	1,6 - 3,2	m/s	-	
Processing parameter	parameter	value	unit	norm	comment
Cylinder/processing temperature		320 - 340	°C	-	
Mould temperature		160	°C	-	
Material temperature		320	°C	-	

- This material can be processed as a thermoplastic taking the normal technical provisions into account. The above mentioned information refers exclusively to the injection moulding process.
- Back pressure and injection rate should be adjusted to the component geometry accordingly. The optimum processing temperature depends upon the respective geometry of the moulded part and can be different from machine to machine.

<i>Predrying</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Drying temperature		150	°C	-	
Drying time		2 - 3	h	-	

- In order to achieve optimum mechanical properties, pre-drying of the material is recommended with the parameters mentioned above.
- Granulate should preferably be stored in dry rooms at normal temperatures and be protected from direct sunlight.

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