

TECACOMP® PPA LDS black 4109

Polyphthalamide
Ensinger GmbH

Message:

Main features
developed for the LPKF-LDS® process
high thermal conductivity
Target Industries
automotive industry
electrical engineering
LED lighting technology
mechanical engineering

General Information			
Features	Heat conduction		
Uses	Laser Direct Structuring		
	LEDs		
	Lighting Applications		
	Application in Automobile Field		
Appearance	Black		
Forms	Particles		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density	1.54	g/cm³	
Melt Mass-Flow Rate (MFR) (300°C/5.0 kg)	32	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/5.0 kg)	20.6	cm³/10min	ISO 1133
Molding Shrinkage			ISO 294-4
Transverse flow	0.60	%	ISO 294-4
Flow	0.60	%	ISO 294-4
Water Absorption (Equilibrium, 23°C, 50% RH)	< 0.10	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	9000	MPa	ISO 527-2/50
Tensile Stress	43.0	MPa	ISO 527-2/50
Tensile Strain (Break)	0.50	%	ISO 527-2/50
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength	5.0	kJ/m²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (1.8 MPa, Unannealed)	222	°C	ISO 75-2/A
Glass Transition Temperature	100 - 140	°C	DIN 53765

Melting Temperature	285 - 315	°C	DIN 53765
Linear thermal expansion coefficient			ISO 11359-2
Flow: 50 to 100°C	3.3E-5	cm/cm/°C	ISO 11359-2
Flow: 100 to 150°C	5.3E-5	cm/cm/°C	ISO 11359-2
Flow: 150 to 200°C	7.7E-5	cm/cm/°C	ISO 11359-2
Horizontal: 50 to 100°C	3.4E-5	cm/cm/°C	ISO 11359-2
Horizontal: 100 to 150°C	5.9E-5	cm/cm/°C	ISO 11359-2
Horizontal: 150 to 200°C	9.4E-5	cm/cm/°C	ISO 11359-2
Specific Heat	1090	J/kg/°C	DIN EN 821
Thermal Conductivity			DIN EN 821
-- ¹	1.3	W/m/K	DIN EN 821
-- ²	4.3	W/m/K	DIN EN 821
Service Temperature			
long term	150	°C	
short term	250	°C	
Thermal Diffusivity			DIN EN 821
In-plane	2.53	cSt	DIN EN 821
Through-plane	0.770	cSt	DIN EN 821
Adhesion Strength - metal path	20.2	MPa	
Lazer Marking			
Forward moving	2.0 - 3.0	m/sec	
Frequency	100 - 200	kHz	
Power	2.00 - 6.00	Watts	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	4.7E+12	ohms	DIN EN 61340
Volume Resistivity	5.2E+13	ohms·cm	DIN EN 61340
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flammability Classification	HB		IEC 60695-11-10, -20
Injection	Nominal Value	Unit	
Drying Temperature	100	°C	
Drying Time	2.0 - 3.0	hr	
Suggested Max Moisture	0.10	%	
Processing (Melt) Temp	320 - 340	°C	
Mold Temperature	150 - 170	°C	
NOTE			
1.	Through-plane		
2.	In-plane		

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