

Canovelles, November 2024

The company Mercantil Luz Negra, S.L. with registrated office in
 C/Carles Buhigues 13, Polígono Industrial Can Castells, 08420 Canovelles (Barcelona, Spain)

CERTIFIES

that the following products have undergone the relevant technical tests and are proved satisfactory according to the regulations in force (data issued by the product manufacturer):

Product reference: **18.084**
 Product name: **Opal methacrylate cover IP60 for led profile Azores (L=2M)**

Product information

Part marking code	PMMA
Color	TP
Process	Injection molding Extrusion molding
FR	HB
Material attribute	Optical grase UV resistance grade
Specification	UL 746C F1 UL
Features	Low contamination Special grade
Aplication	CD pick up leds Optical applications Optical lenses
Addictives	UV stabilizer
UL file no.	E256044

Physical property

	Standard	Value	Unit
Density	ISO 1183	1.19	gc/cm ³
Shrinkage	Internal method	0.2~0.6	%
Water absorption 24hr	ISO 62	0.3	%
Melt index 230°C 3.8Kg	ISO 1133	2.0	g/10min
Spiral flow 230°C 2.0mm	Internal method	130	mm
Spiral flow 250°C 2.0mm	Internal method	220	mm

Mechanical behavior

	Standard	Value	Unit
Tensile modulus 1.0mm/min	ISO 527	3.3	GPa
Tensile strength 5mm/min	ISO 527	77	MPa
Elogation break 5mm/min	ISO 527	6	%
Flexural strength	ISO 178	140	MPa
Flexural modulus	ISO 178	3.3	GPa
Charpy notch impact 1eA	ISO 179	1.4	kJ/m ²
Charpy un-notch impact	ISO 179	20	kJ/m ²

Hardness	Standard	Value	Unit
Rockwell hardness R (scale)	ISO 2039	101	-

Optical performance	Standard	Value	Unit
Transmittance	ISo 13468	93	%
Haxe 3000 µm	ISO 14782	0.3	%
Refractive index sodium D line	ISO 489	1.49	-

Thermal	Standard	Value	Unit
HDT 1.8MPa	ISo 75	100	°C
Vicat softening temperature 50°C/hr 50N	ISO 306	107	°C
CLE	JIS K7197	6E-5	cm/cm/°C
Heat conductivity coefficient	JIS A 1412	0.2	W/(m.°C)
Specific heat	JIS K7123	1.5	J/(g.K)

Electrical properties	Standard	Value	Unit
Volume resistivity	JIS K6911	1E13	Ω.m
Surface resistivity	JIS K6911	1E16	Ω
Dielectric strength 4kV/s	JIS K6911	20	MV/m
Dielectric constant 60Hz	JIS K6911	3.7	-
Dissipation factor 60Hz	JIS K6911	0.05	-
Arc resistance rating	JIS K6911	0	PLC

Flammability	Standard	Value	Unit
Flame rating all color 1.5mm	UL94	HB	-
Flame rating all color 3.0	UL94	HB	-

UL	Standard	Value	Unit
UL flame rating all 1.5mm	UL94	HB	-
HWI all 1.5mm	UL 746A	4	PLC
HAI all 1.5	UL 746A	0	PLC
RTI elec all 1.5mm	UL 746B	50	°C
RTI imp all 1.5mm	UL 746B	50	°C
RTI str all 1.5mm	UL 746B	50	°C
UI flame rating all 3.0mm	UL94	HB	-
HWI all 3.0mm	UL 746A	3	PLC
HAI all 3.0	UL 746A	0	PLC
RTI elec all 3.0mm	UL 746B	50	°C
RTI imp all 3.0mm	UL 746B	50	°C
RTI str all 3.0mm	UL 746B	50	°C
Outdoor suitability	UL 746C	f1	-

Injection molding	Value	Unit
Dry temperature	80~90	°C
Dry time	4~6	hr
Melt temperature	210~260	°C
Mould temperature	50~90	°C
Injection pressure	80~140	MPa
Annealing time	1~3	hr
Annealing temperature	85~90	°C

Extrusion molding	Value	Unit
Dry temperature	80~90	°C
Dry time	4~6	hr
Zone 1 temperature	200~230	°C
Zone 2 temperature	220~240	°C
Zone 3 temperature	220~240	°C
Head temperature	220~240	°C
Screw L/D ratio	25:1~36:1	°C
Annealing temperature	85~90	°C
Annealing time	1~3	hr

The product described has been tested according to the standards listed above. It is possible to use the CE marking.

The certificate is issued under the responsibility of the manufacturer (data issued by the manufacturer). For the record and at request of the interested party, this certificate has been issued.

CE

Nuño Téllez
CEO



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