

**LUXACRYL®-IR** is ttv's precision cast acrylic (PMMA) for applications with requirements of excellent optical quality, in black tint with maximum transmittance for near infrared light.

**Applications:** mainly used as windows in any infrared-application, such as light barriers, light grids, sensors, or control units.

**Sheet size:** Standard: 850 x 850 mm; thicknesses from 0.5 through 6.0 mm, thickness tolerance  $\pm 0.1$  mm (up to thickness 3.0 mm). ttv also supplies cut to size or machined to customer's drawings (including silk screen printing and adhesive).

TECHNICAL DATA	TEST METHOD	UNIT	VALUE*
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### PHYSICAL

Density	ASTM D-792	g/cm <sup>3</sup>	1.19
Pencil Hardness	ASTM D-3363		approx. 2 – 3H
Water Absorption	ASTM D-570	%	0.3

### OPTICAL

Transmittance (from app. 800nm)	ASTM D-1003	%	aprox. 92
Reflective Index	ASTM D-542		1.49

### THERMAL

Vicat Softening Temperature	ISO 306	°C	98 – 102
Max. Continuous Temperature		°C	80
Heat Distortion Temperature	ASTM D-648	°C	100
Coefficient of Thermal Expansion	ASTM D-696	1/°C	$7 \times 10^{-5}$
Coefficient of Thermal Conductivity	DIN 52612	W/mK	0.16

### ELECTRICAL

Rupture strength (tensile)	ASTM D-638	kg/cm <sup>2</sup>	750
Rupture strength (flexural)	ASTM D-790	kg/cm <sup>2</sup>	1300
Elongation	ASTM D-638	%	5
E-Module	ISO 527-2/1B/1	MPa	3300
Impact strength	ISO 180/1 A	kJ/m <sup>2</sup>	1.6

### CHEMICAL RESISTANCE

“+” = no change, “x” = conditionally resistant, “-” = not resistant

- Acetone	- Alcohol (96%)	+ Dilute Alcohol (50%)	- Amine
- Aniline	x Ether	- Aromatic Hydrocarbon	+ Ethylene glycol
+ Benzine	- Benzene	x Bromine Vapors	x Chlorine Vapors
- Chlorinated Hydrocarbon	- Ester	x Fluorine Vapors	x Formaldehyde (10-40%)
+ Glycerine	+ Factory fume	+ Hexane	- Ketones
- Paint thinner	+ Lanolin	+ Bases (10%)	x Bases (20%)
+ Methylamine	+ Mineral Oil	+ Chlorinated Paraffin	+ Petroleum Ether
- Phenole	+ Salt Solutions	+ Acids (20%)	- Carbon Tetrachloride
- Fuel mixture	+ Water	+ Xylene	

\* Values provided cannot be guaranteed in your application due to circumstances beyond our control.



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