

# CrystalHeat

Transparent LCD Heater

## Mechanical and Dimensional Characteristics

**Standard Construction:** Single 7 mil layer of transparent film coated with transparent layer of ITO coating on both sides of film.

**Sizes:** 1/2"x1/2" thru to 16"x20"

**Borders:** Minimum Busbar Width .100 inches. (It is desirable to have as wide a busbar as possible to avoid excessive drop in the busbars)

**Cable and Connector:** Heater can have lead wires to be terminated to a connector and be supplied with a miniature temperature sensor. All heaters are supplied with protective liners covering both sides. Dimensional Tolerances and Limits – Overall size  $\pm .030$  inch for heaters less than 12"  $\pm .100$  inch for greater than 12" Lead Wire length  $\pm .125$  inch Thickness  $\pm .005$  inch Printing  $\pm .010$  inch

## Performance Characteristics

**Light Transmission:** 90% Visual Light Transmission

**Environmental Characteristics:** Temperature Operating - -40 to +100c humidity 5-95%  
Temperature Storage - -40c to 100c humidity 5-95%

*Contact factory for environmental requirements outside the standard range*

## Electrical Characteristics

**Input Voltage:** 0-24 Volts DC or AC

**Wattage:** 0.1 to 1.0 watt/in is recommended

**Heater Resistance:** Heater resistance is a function of desired heater wattage, available input voltage and heater geometry  $R = E^2/w$  where  $e =$  input voltage and  $w =$  Desired wattage. For a rectangular shape of length "L" and width "W" the heater resistance is  $R = (SR) (W)/L$   
SR = sheet resistance defined in ohms. Resistance of a square piece of conductive film regardless of its size. Available sheet resistance 10,30,60,80,200,300 ohms  $\pm 20\%$

*Contact factory of other available resistant's.*