

# Typical Environmental Tests & Mechanical Tests For LCD

## Typical Environmental Tests\*

| TEMPERATURE TESTS                               | COMMERCIAL GRADE                                                          | EXTENDED GRADE                                                            |
|-------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>High temperature storage</b><br>(IEC 68-2-2) | +70°C/3 days                                                              | +85°C/4 day                                                               |
| <b>Low temperature storage</b><br>(IEC 68-2-1)  | -25°C/3 days                                                              | -40°C/4 days                                                              |
| <b>Temperature, cyclic</b><br>(IEC 68-2-14)     | -25°C/30 min<br>+25°C/30 min<br>+70°C/30 min<br>+25°C/30 min<br>10 cycles | -40°C/30 min<br>+25°C/30 min<br>+85°C/30 min<br>+25°C/30 min<br>10 cycles |
| <b>Damp heat, cyclic</b><br>(IEC 68-2-30)       | 25°C/95% RH/24h<br>40°C/93% RH/24h<br>6 cycles                            | 25°C/95% RH/24h<br>40°C/93% RH/24h<br>21 cycles                           |
| <b>Damp heat, steady state</b><br>(IEC 68-2-3)  | 40°C/93% RH<br>every 4 days                                               | 40°C/93% RH<br>every 21 days                                              |

- \* Expected lifetime under normal operating conditions  
 -- 50,000 hours (commercial) /100,000 hours (extended temperature).  
 These are minimum test. For other specifications, please consult VARITRONIX.

## Mechanical Tests

|                                                                                      |                                                         |                                                                                            |
|--------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>Low air pressure</b><br>(IEC 68-2-13)                                             | i@                                                      | 25°C/86 to 106Pa                                                                           |
| <b>Vibration</b><br>(IEC 68-2-6)<br>cells must be mounted<br>on a suitable connector | frequency<br>amplitude<br>duration                      | 10 to 55 Hz<br>0.75 mm<br>20 cycles in each<br>direction                                   |
| <b>Shock</b><br>(IEC 68-2-27)<br>Half-sine pulse shape                               | pulse duration<br>peak acceleration<br>number of shocks | 11 ms<br>$981 \text{ m/s}^2 = 100\text{g}$<br>3 shocks in 3 mutually<br>perpendicular axes |
| <b>Bump</b><br>(IEC 68-2-29)                                                         | pulse duration<br>peak acceleration<br>number of shocks | 6 ms<br>392 m/s <sup>2</sup><br>1000±10                                                    |

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