


UNCONTROLLED DOCUMENT


3.5" ACTIVE MATRIX FULL COLOR TFT PANEL

6:00 VIEW, LED BACKLIGHT, $-20^{\circ} \mathrm{C}$ TO $+70^{\circ} \mathrm{C}$ OPERATING TEMP.

CONFIDENTAL INFORMATIN
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| DRAWN BY: <br> JN | CHECKED BY: | APPROVED BY: | DATE: 04.27 .09 <br> PAGE: 2 OF 9 <br> SCALE: $\mathrm{N} / \mathrm{A}$ |
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| ELECTRICAL CHARASTERISTICS |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | SYMBOL | STANDARD VALUE |  |  | UNIT | REMARKS |
|  |  | MIN | TYP. | MAX |  |  |
| POWER VOLTAGE | VDD | 1.8 | - | 2.5 | V |  |
|  | VDDIO | 1.4 | - | 3.6 | V |  |
|  | VIC | 2.508VDDIO | - | 3.6 | V |  |
| GATE ON VOLTAGE | VGH | 9.3 | 15 | 16.5 | V |  |
| GATE OFF VOLTAGE | VGL | -15 | -10 | -5.1 | V |  |
| INPUT HIGH VOLTAGE | VIH | 0.8*VDDIO | - | VDDIO | V |  |
| INPUT LOW VOLTAGE | VIL | Vss | - | 0.2*VDDIO | V |  |
| OUTPUT HIGH VOLTAGE | VOH | 0.9*VDDIO | - | VD | V | $10 \mathrm{H}=100 \mathrm{uA}$ |
| OUTPUT LOW WOLTAGE | VOL | Vss | - | 0.1*VDDIO | V | $10 \mathrm{~L}=100 \mathrm{uA}$ |
| VCOM HIGHT OUTPUT VOLTAGE | VCOMH | 2.5 | 3.6 | 4.5 | $V$ |  |
| VCOM LOW OUTPUT VOLTAGE | VCOML | -3.0 | -2.4 | 0 | V |  |


| BACKLIGHT SPECIFICATIONS |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | SYMBOL | STANDARD VALUE |  |  | UNIT | REMARKS |
|  |  | MIN | TYP. | MAX |  |  |
| FORWARD VOLTAGE | Vf | 8.8 | 10 | 10.5 | V | $1 \mathrm{f}=40 \mathrm{~mA}$ |
| ABSOLUTE MAX FORWARD CURRENT | Ifm | 35 | - | 50 | mA |  |
| REVERSE VOLTAGE | Vr | 10.5 | - | 15 | V |  |
| RESERVE CURRENT | Ir | - | - | 200 | A | $\mathrm{V}=15 \mathrm{~V}$ |
| CHROMACITY COORDINATES | X | 0.26 | - | 0.32 | - |  |
|  | Y | 0.26 | - | 0.32 | - |  |
| LUMINANCE (BLU ONLY) | LV | 2800 | 3000 | - | $\mathrm{cd} / \mathrm{m}^{2}$ | $1 \mathrm{f}=40 \mathrm{~mA}$ |
| UNIFORMITY | $\triangle$ | 80 | 85 | - | \% | MIN/MAX*100\% |
| REMARK | LED PATENTED |  |  |  |  |  |
| HALF-BRIGHTNESS LIFE TIME | 50000 HOURS |  |  |  |  |  |


| ITEM | SYMBOL | TEST CONDITION | STANDARD VALUE |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | MIN | TYP. | MAX |  |
| POWER VOLTAGE | VDDIO | Vss=0 | -0.3 | - | 4.0 | V |
|  | VDD | Vss=0 | -0.3 | - | 2.7 | $V$ |
|  | VIC | Vss $=0$ | Vss-0.3 | - | 5.0 | V |


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| ITEM | SYMBOL | CONDITION | STANDARD VALUE |  |  | UNIT | NOTE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | MIN | TYP. | MAX |  |  |
| RESPONSE TIME | Tr | $\theta=00^{\circ} \mathrm{C}$ | - | 15 | 20 | V | 1 |
|  | Tf |  | - | 35 | 50 | V |  |
| CONTRAST RATIO | CR | $\theta=\theta=0^{\circ} \mathrm{C}$ | 150 | 250 | - | V | 2 |
| $\underset{(C R \geq 10)}{\text { VIEWING }}$ ANGLE | RIGHT | $\phi=0^{\circ} \mathrm{C}$ | - | 45 | - | DEG | 3 |
|  | LEFT | $\phi=180^{\circ} \mathrm{C}$ | - | 45 | - | DEG |  |
|  | UPPER | $\phi=90^{\circ} \mathrm{C}$ | - | 15 | - | DEG |  |
|  | LOWER | $\phi=270^{\circ} \mathrm{C}$ | - | 35 | - | DEG |  |
| LUMINANCE OF WHITE (CENTER POINT OF LCM) | L | - | 200 | 220 | - | $\mathrm{Cd} / \mathrm{m}^{2}$ | 5 |
| COLOR CROMACITY (ClE1931) | Rx | $\theta=0.00^{\circ} \mathrm{C}$ | 0.610 | 0.640 | 0.670 | - | 4 |
|  | Ry |  | 0.314 | 0.344 | 0.374 | - |  |
|  | Gx |  | 0.268 | 0.298 | 0.328 | - |  |
|  | Gy |  | 0.553 | 0.583 | 0.613 | - | "SIMULATION REFERENCE ONLY" |
| "SIMULATION DATA REFERENCE ONLY" | Bx |  | 0.102 | 0.132 | 0.162 | - |  |
|  | By |  | 0.107 | 0.137 | 0.167 | - |  |
|  | Wx |  | 0.282 | 0.312 | 0.342 | - |  |
|  | Wy |  | 0.319 | 0.349 | 0.379 | - |  |
| OPTIMUM VIEWING DIRECTION | 6 O'CLOCK |  |  |  |  |  | - |

NOTE (1): DEFINITION OF RESPONSE TIME

DISPLAY DATA

| WHITE (TFT OFF) | BLACK |
| :--- | :--- | :--- |



NOTE(2): DEFINITION OF CONTRAST RATIO
CR=BRIGHTNESS AT ALL PIXELS "WHITE" / BRIGHTNESS AT ALL PIXELS "BLACK"

NOTE(4): MEASURED AT CENTER POINT VERTICALLY WITH BACKLIGHT ON."

NOTE(5): AFTER STABILIZING AND LEAVING THE PANEL ALONE AT GIVEN
TEMPERATURE FOR $30 M I N$, THE MEASUREMENT SHOULD BE EXECUTED.
MEASURMENT SHOULD BE EXECUTED IN STABLE, WINDLESS, AND DARK ROOM
30 MINS AFTER LIGHTING THE BACK-LIGHT. THIS SHOULD BE MEASURED IN THE
CENTER OF SCREEN
ENVIROMENT CONDITION: $T a=25 \pm 2^{\circ} \mathrm{C}$ BACK-LIGHT ON CONDITION

NOTE(3): DEFINITION OF VIEWING ANGLE
$12^{\prime}$ a'CLICK $^{\prime}$


UNCONTROL $\angle E D$ D $D O C U M E N T$


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STANDARD SPECIFICATION OF REABILITY TEST

| NO | TEST ITEM | CONTENT OF TEST | TEST CONDITION | APPLICABLE STANDARD |
| :---: | :---: | :---: | :---: | :---: |
| 1 | HIGH TEMPERATURE STORAGE | ENDURANCE TEST APPLYING THE HIGH STORAGE TEMPERATURE FOR A LONG TIME. | 80+/-30 ${ }^{\text {C }} 240 \mathrm{HRS}$ | - - - - |
| 2 | LOW TEMPERATURE STORAGE | ENDURANCE TEST APPLYING THE LOW STORAGE TEMPERATURE FOR A LONG TIME. | $-30+/-3^{\circ} \mathrm{C} 240 \mathrm{HRS}$ | - - - |
| 3 | HIGH TEMPERATURE OPERATION | ENDURANCE TEST APPLYING THE ELECTRIC STRESS (VOLTAGE \& CURRENT) AND THE THERMAL STRESS TO THE ELEMENT FOR A LONG TIME. | 70+/-30C 240HRS | - - - - |
| 4 | LOW TEMPERATURE OPERATION | ENDURANCE TEST APPLYING THE ELECTRIC STRESS UNDER LOW TEMPERATURE FOR A LONG TIME. | $-20+/-3^{\circ} \mathrm{C}$ 240HRS | - - - - |
| 5 | high Temperature/ HUMIDITY OPERATION | ENDURANCE TEST APPLYING THE ELECTRIC STRESS (VOLTAGE \& CURRENT) AND TEMPERATURE / HUMIDITY STRESS TO THE ELEMENT FOR A LONG TIME. | $40^{\circ} \mathrm{C}, 90 \% \mathrm{RH} 120 \mathrm{HRS}$ | $\begin{aligned} & \text { MLL-202E-103B } \\ & \text { JIS-C5023 } \end{aligned}$ |
| 6 | TEMPERATURE CYCLE | ENDURANCE TEST APPLYING THE LOW AND HIGH TEMPERATURE CYCLE. $\xrightarrow{\substack{-20^{\circ} \mathrm{C} \\ 30 \mathrm{MNN}}} \stackrel{\begin{array}{l} 25^{\circ} \mathrm{C} \\ 5 \mathrm{MMN} \end{array}}{\stackrel{1}{\mathrm{CYCLE}}} \stackrel{70^{\circ} \mathrm{C}}{\rightleftharpoons} \quad 30 \mathrm{MIN} .$ | $\begin{aligned} & -20^{\circ} \mathrm{C} / 70^{\circ} \mathrm{C} \\ & 10 \text { CYCLES } \end{aligned}$ | - - - - |
| MECHANICAL TEST |  |  |  |  |
| 7 | DROP TEST | ENDURANCE TEST APPLYING THE DROP DURING TRANSPORTATION. | $\|$PACKED, 100 cm <br> FALL( 6 SREE <br> SLIDES, <br> CORNER, <br> 3 | - - - - |

REMARKS:

1. FOR OPERATION TEST, ABOVE SPECIFICATION IS APPLICABLE WHEN TEST PATTERN IS CHANGING DURING ENTIRE OPERATION TEST. 2. INSPECTIONS AFTER RELIABILITY TESTS ARE PERFORMED WHEN THE DISPLAY TEMPERATURE RESUMES BACK TO ROOM TEMPERATURE. 3. IT IS A NORMAL CHARACTERISTIC THAT SOME DISPLAY ABNORMALTY CAN BE SEEN DURING REABILTY TEST. IF THE DISPLAY abNormality can resume back to normal condition at room temperature within 24 hours, there is no permanent DESTRUCTION OVER THE DISPLAY. THE DISPLAY STILL POSSESSES ITS FUNCTIONALITY AFTER REABILITY TESTS.

| $\begin{gathered} \text { REV. PART NUMBER } \\ \text { LCT-H320240M35W } \end{gathered}$ | CONFIDENTIAL INFORMATION <br> THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFCCALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTANED HEREIN CONFIENTAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THRD PARTIES. <br> RELABBILTY NOTE <br> OUR MANY YEARS OF EXPERIENCE DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FALLURE. PLEASE PAY ATTENTION TO YOUR SOLDERING PROCESS. | Creating LED and LCD Solutions Togetherm290 E. HELEN ROAD <br> PALATINE, IL 60067-6976 <br> PHONE: + 1.847 .359 .2790 <br> US WEB: www. lumex.com <br> TW WEB: www.lumex.com.tw |  |  |  |  |
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ACCEPTABLE QUALITY LEVEL (AQL)
EACH LOT SHOULD SATISFY THE QUALTY LEVEL DEFINED AS FOLLOWS:
A. INSPECTION METHOD: MLL-SDT-105E LEVEL II NORMAL ONE TIME SAMPLING.
B. AQL LEVEL.

| CATEGORY | AQL | DEFINITION |
| :---: | :---: | :--- |
| MAJOR | $0.25 \%$ | FUNCTIONAL DEFECTIVE AS PRODUCT. |
| MINOR | $1.00 \%$ | SATISFY ALL FUNCTIONS AS PRODUCT BUT NOT SATISFY COSMETIC <br> STANDARD. |

COSMETIC SCREENING CRITERIA

| NO | DEFECT | JUDGMENT CRITERIA | CATEGORY |
| :---: | :---: | :---: | :---: |
| 1 | SPOTS/DUST /BUBBLE (ROUND TYPE) |   <br> SIZE, $D(\mathrm{~mm})$ ACCEPTABLE <br> QUANTITY  <br> D $\leq 0.15$ DISREGARD <br> $0.15<D \leq 0.20$ 3 <br> $D>0.20$ 0 | MINOR |
| 2 | DUST/ SCRATCHES/ <br> BLACK STREAK <br> (LINE TYPE) |   ACCEPTABLE QUANTTY <br>    <br> WIDTH, W(mm) LENGTH, $L(\mathrm{~mm})$ <br> W IN ACTVE AREA  <br> W $\leq 0.02$ DISREGARD DISREGARD <br> W $\leq 0.03$ $L \leq 1.0$ DISREGARD <br> W $\leq 0.05$ $L \leq 2.0$ 3 <br> $W>0.05$ DISREGARD 0 | MINOR |
| 3 | ALLOWABLE DENSITY | ABOVE DEFECTS SHOULD BE SEPARATED MORE THAN 5 mm EACH OTHER. | MINOR |
| 4 | RAINBOW | OBVIOUS UNVEN COLOR (RAINBOW) SHALL NOT BE NOTICEABLE. | MINOR |
| 5 | DISPLAY CONDITION | DIM DISPLAY ON THE PATTERNS, EXTRA PATTERN AND SHORT CIRCUIT ARE NOT ACCEPTABLE. | MAJOR |
| 6 | NO DISPLAY OR MISSING DISPLAY | THE PATEERNS OF DISPLAY SHALL LIGHT UP AS REQUIRED. NO DISPLAY OR MISSING DISPLAY ARE NOT ACCEPTABLE. | MAJOR |

NOTE: $D=($ LONG LENGTH + SORTH LENGTH) $/ 2$

## FAlLURE JUDGMENT CRITERIA

AFTER REABILITY TEST ABOVE, TEST SAMPLE SHALL BE LET RUN TO ROOM TEMPERATURE AND HUMDITY AT LEAST 4 HOURS BEFORE FINAL TESTS ARE CARRIED OUT.

| CRITERION ITEM | FALLURE JUDGMENT CRITERIA |
| :--- | :--- |
| ELECTRICAL CHARACTERISTIC | ELECTRICAL SHORT AND OPEN. |
| MECHANICAL CHARACTERISTIC | OUT OF MECHANICAL SPECIFICATION. |
| OPTICAL CHARACTERISTIC | OUT OF APPERANCE STANDARD. |


| REV. | PART NUMBER |
| :---: | :---: |
|  | $\angle C T-H 320240 M 35 \mathrm{M}$ |

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RELIABIC DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FALURE. please pay attention to your soldering process.
$4 \square 5$, Cr

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DRAWN BY: $\quad$ CHECKED BY:

## HANDLING PRECAUTIONS

1, THE DISPLAY PANEL IS MADE OF GLASS AND POLARIZER. DO NOT SUBJECT IT TO MECHANICAL SHOCK BY DROPPING OR IMPACT WITCH MAY CAUSE CHIPPING ESPECIALLY ON THE EDGES.
2. DO NOT TOUCH, PUSH OR RUB THE EXPOSED POLARIZERS WITH ANYTHING HARDER THAN AN HB PENCIL LEAD (GLASS,TWEEZERS, ETC.). THE POLARIZER COVERING THE DISPLAY SURFACE OF THE LCD MODULE IS SOFT AND EASILY SCRATCHED. HANDLE THIS POLARIZER CAERFULLY.
3. IF THE DISPLAY SURFACE BECOMES CONTAMINATED, BREATHE ON THE SURFACE AND GENTLY WIPE IT WTH A SOFT DRY CLOTH. IF IT IS HEAVLY CONTAMINATED, MOISTEN CLOTH WITH ISOPROPYL ALCOHOL OR ETHYL ALCOHOL. AVOID USING SOLVENTS LIKE ACETONE (KETENE), WATER, TOLUENE, ETHANOL TO CLEAN THE POLARIZER SURFACE
4. PLEASE KEEP THE TEMPERATURE WITHIN SPECIFIED RANGE FOR USE AND STORAGE. POLARIZATION DEGRADATION, BUBBLE GENERATION OR POLARIZER PEEL-OFF MAY OCCUR WITH HIGH TEMPERATURE AND HIGH HUMIDITY.
5. DO NOT APPLY EXCESSIVE FORCE TO THE DISPLAY SURFACE OR THE ADJOINING AREAS SINCE THIS MAY CAUSE THE COLOR TONE TO VARY
6. INSTALL THE LCD MODULE BY USING THE MOUNTING HOLES. WHEN MOUNTING THE LCD MODULE MAKE SURE IT IS FREE OF TWISTING, WARPING AND DISTORTION.
7. EXERCISE CARE TO MINIMIZE CORROSION OF THE ELECTRODE. CORROSION OF THE ELECTRODES IS ACCELERATED BY WATER DROPLETS, MOISTURE CONDENSATION OR A CURRENT FLOW IN A HIGH-HUMIDITY ENVIRONMENT.
8. NC TERMINAL SHOULD BE OPEN. DO NOT CONNECT ANYTHING.
9. IF THE LOGIC CIRCUIT POWER IS OFF, DO NOT APPLY THE INPUT SIGNALS.
10. AVOID CONTACTING OIL AND FATS.
11. CONDENSATION ON THE SURFACE AND CONTACT WITH TERMINALS DUE TO COLD WILL DAMAGE, STAI OR DIRTY THE POLARIZERS. AFIER PRODUCTS ARE TESTED AT LOW TEMPERATURE THEY MUST BE WARMED UP IN A CONTAINER BEFORE COMING IN CONTACT WITH ROOM TEMPERATURE AR.
12. WIPE OFF SALIVA OR WATER DROPS IMMIDEATLY, CONTACT WITH WATER OVER A LONG PERIOD OF TIME MAY CAUSE DEFORMATION OR COLOR FADING.

PRECAUTION OF SOLDERING TO THE LCM
1, OBSERVE THE FOLLOWING WHEN SOLDERING LEAD WIRE, CONNECTOR CABLE AND ETC. TO THE LCD MODULE.

- SOLDERING IRON TEMPERATURE: $300 \sim 350^{\circ} \mathrm{C}$.
- SOLDERING TIME: $\leq 3$ SEC.
- SOLDER: EUTECTIC SOLDER.

ABOVE IS A RECOMMENDED APPROACH. DUE TO DIFFERENT SOLDER COMPOSITION AND PROCESSING METHOD, IT IS RECOMMENDED THAT CUSTOMER TO STUDY AND FINE TUNING THEIR SOLDERING PROCESS PARAMETERS ACCORDINGLY.
2. IF SOLDERING FLUX IS USED, BE SURE TO REMOVE ANY REMANING FLUX AFTER FINISHING TO SOLDERING OPERATION. (THIS DOES NOT APPLY IN THE CASE OF A NON-HALOGEN TYPE OF FLUX.) IT IS RECOMMENDED THAT YOU PROTECT THE LCD SURFACE WITH A COVER DURING SOLDERING TO PREVENT ANY DAMAGE DUE TO FLUX SPATTERS.

## PRECAUTION FOR OPERATION

1. VIEWing angle varies with the change of liquid crystal driving voltage (Vo). adjust vo to SHOW THE BEST CONTRAST
2. DRIVING THE LCD IN THE VOLTAGE ABOVE THE LIMIT SHORTERNS ITS LIFEIIME.
3. RESPONSE TIME IS GREATLY DELAYED AT TEMPERATURE BELOW THE OPERATING TEMPERATURE RANGE. HOWEVER, IT WILL RECOVER WHEN IT RETURNS TO THE SPECIFIED TEMPERATURE RANGE
4. IF THE DISPLAY AREA IS PUSHED HARD DURING OPERATION, THE DISPLAY WILL BECOME ABNORMAL.

HOWEVER, IT WILL RETURN TO NORMAL IF IT IS TURNED OFF AND THEN BACK ON.
5. WHEN TURNING THE POWER ON, INPUT EACH SIGNAL AFTER THE POSITIVE/NEGATVE VOLTAGE BECOMES STABLE (BELOW FIGURE IS A GENERAL ILLUSRATION WHERE TYPICAL VALUE DEPENDS ON INDIVIDUAL PRODUCT DESIGN).

## ELECTRO-STATIC DISCHARGE CONTROL

1, SINCE THIS MODULE USES A CMOS LSI, THE SAME CAERFUL ATIENTION SHOULD BE PAID TO ELECTROSTATIC DISCHARGE AS FOR AN ORDINARY CMOS IC.
2. BE SURE TO GROUND THE BODY WHEN HANDLING THE LCD MODULES. TOOLS REQUIRED FOR ASSEMBLING, SUCH AS SOLDERING IRONS, MUST BE PROPERLY GROUNDED.
3. TO REDUCE THE AMOUNT OF STATIC ELECTRICITY GENERATED, DO NOT CONDUCT ASSEMBLING AND OTHER WORK UNDER DRY CONDITIONS. TO REDUCE THE GENERATION OF STATIC ELECTRICITY, BE CARFUL THAT THE AIR IN THE WORK AREA IS NOT TOO DRY. A RELATVE HUMIDITY OF $50 \%-60 \%$ IS RECOMMENDED.
4. THE LCD MODULE IS COATED WITH A FILM TO PROTECT THE DISPLAY SURFACE. EXERCISE CARE WHEN PEELING OFF THIS PROTECTIVE FILM SINCE STATIC ELECTRICITY MAY BE GENERATED.
5. WHEN SOLDERING THE TERMINAL OF LCM, MAKE CERTAIN THE AC POWER SOURCE FOR THE SOLDERING IRON DOES NOT LEAK.




| 1. CADMIUM AND CADMIUM COMPOUNDS | LESS THAN 100PPM |
| :--- | :--- |
| 2. HEXAVALENT CHROMIUM COMPOUNDS | LESS THAN 1000PPM |
| 3. LEAD AND LEAD COMPOUNDS | LESS THAN 1000PPM |
| 4. MERCURY AND MERCURY COPMPOUNDS | LESS THAN 1000PPM |
| 5. POLYBROMINATED BIPHENYLS (PBBs) | LESS THAN 1000PPM |
| 6. POLYBROMINATED DIPHENYL ETHERS (PBDEs) | LESS THAN 1000PPM |

PACKAGING STANDARD

| PRODUCT NO. | LCT-H320240M35W | RELEASE DATE | 2009 |
| :--- | :--- | :---: | :---: |
| PRODUCT NAME. | TFT MODULE | PREPARE BY: |  |
| QUANTITY/ EACH BOX | 168 PCS. | BOX MATERIAL | PAPER CARTON |
| OUTER CARTON <br> BOX SIZE | $465 \mathrm{~mm} \times 405 \mathrm{~mm} \times 305 \mathrm{~mm}$ | BOX TYPE | NEW |
| QUANTITY/ INER BOX <br> QUANTITY/ OUTER BOX | $12 \times 7 \times 2=168$ PCS. | WEIGHT | 8.6 KG |

THERE ARE 12 PCS LCD PER EACH ANTI-STATIC PLASTIC PLATE.
THERE ARE 7 LAYER PLASTIC PLATES PER EACH INNER CARTON BOX.
THERE ARE 2 INNER CARTON BOX PER EACH OUTER CARTON BOX.

## STORAGE

1. WHEN STORING LCDS AS SPARES FOR SOME YEARS, THE FOLLOWING PRECAUCTIONS ARE NECESSARY.
2. STORE THEM IN A SEALED POLYETHYLENE BAG. IF PROPERLY SEALED, THERE IS NO NEED FOR DESICCANT.
3. STORE THEM IN A DARK PLACE. DO NOT EXPOSE TO SUNLIGHT OR FLUORESCENT LIGHT, KEEP THE

TEMPERATURE BETWEEN $0^{\circ} \mathrm{C}$ AND $35^{\circ} \mathrm{C}$.
4. ENVIRONMENTAL CONDITIONS:
5. DO NOT LEAVE THEM FOR MORE THAN 168 HRS . AT $60^{\circ} \mathrm{C}$.
6. SHOULD NOT BE LEFT FOR MORE THAN 48HRS. AT $-20^{\circ} \mathrm{C}$.

SAFETY

1. ITS RECOMMENDED TO CRUSH DAMAGED OR UNNECESSARY LCD INTO PIECES AND WASH THEM OFF WITH SOLVENTS SUCH AS ACETONE AND ETHANOL, WHICH SHOULD LATER BE BURNED.
2. IF ANY LIQUID LEAKS OUT OF DAMAGED GLASS CELL AND COMES IN CONTACT WITH THE HANDS, WASH OFF THOROUGHLY WITH SOAP AND WATER.


(4.)

(3.)

ANTISTATIC BAG
adhesive tape


QUTER CARTUN BLX
BCX
(6.)



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