



TENTATIVE

LED DOT MATRIX MODULE

MODEL : SIM-320 LAU

(3 Colors LDM for outdoor use)

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1. OVERVIEW

AUK has successfully developed a 8×16 LED dot matrix module for outdoor. It is integrated with ultra brightness LED lamps. This module is compact, slim and light. It is suitable for the wide applications of a graphic & video board beyond a simple message board

2. SPECIFICATION

| ITEM | DESCRIPTION |
|--------------------|----------------------------------|
| Size(W×H×D) | 160×320×30(mm) |
| Display Colors | Red, Green, Amber |
| Number of Dots | 768 (8×16 dots) Red2 + Green4 |
| Drive mode | Static Drive |
| Brightness Control | Variable Resistor |
| Viewing Angle | Horizontal : ±35°, Vertical ±17° |
| Weight | 1000 ±10g |

3. ELECTRICAL CHARACTERISTICS

1) ABSOLUTE MAXIMUM RATINGS(Ta=25℃)

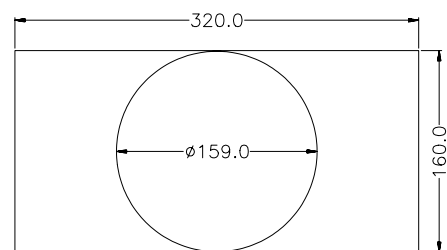
| ITEM | | SYMBOL | RATING | UNIT |
|-----------------------|---------|--------|-------------------|------|
| DC Supply Voltage | Circuit | Vcc1 | 5.25 | V |
| | LED | Vcc2 | 5.25 | V |
| Input Voltage | Circuit | Vin1 | -0.4 to Vcc1 +0.4 | V |
| | LED | Vin2 | -0.3 to Vcc2 | V |
| Current Consumption | Circuit | IC | 0.5 (Vcc=5V) | A |
| | LED | IL | 7.7 (Vcc=5V) | A |
| Clock Frequency | | F | 15 | MHz |
| Operating Temperature | | Topr | -30~45 | ℃ |
| Storage Temperature | | Tstg | -30~85 | ℃ |

2) RECOMMENDABLE DRIVE CONDITIONS

| ITEM | | SYMBOL | RATING | UNIT |
|-----------------------|---------|--------|-----------|------|
| DC Supply Voltage | Circuit | Vcc1 | 4.75~5.25 | V |
| | LED | Vcc2 | 4.75~5.25 | V |
| Operating Temperature | | Topr | -15~40 | ℃ |

4. OPTICAL CHARACTERISTIC

◆ MEASURE AREA : $\Phi 159\text{mm}$
(Note 1)



| ITEM | | SYMBOL | RATING | | | UNIT |
|--------------------------|-------|----------------|--------|------|-----|------------------------------------|
| | | | MIN | TYP | MAX | |
| Luminous intensity | Red | LvR | | 2300 | | cd/m ² (nit), Note 1 |
| | Green | LvG | | 1400 | | " |
| Peak Emission Wavelength | Red | λ_{pR} | | 660 | | nm |
| | Green | λ_{pG} | | 570 | | nm |

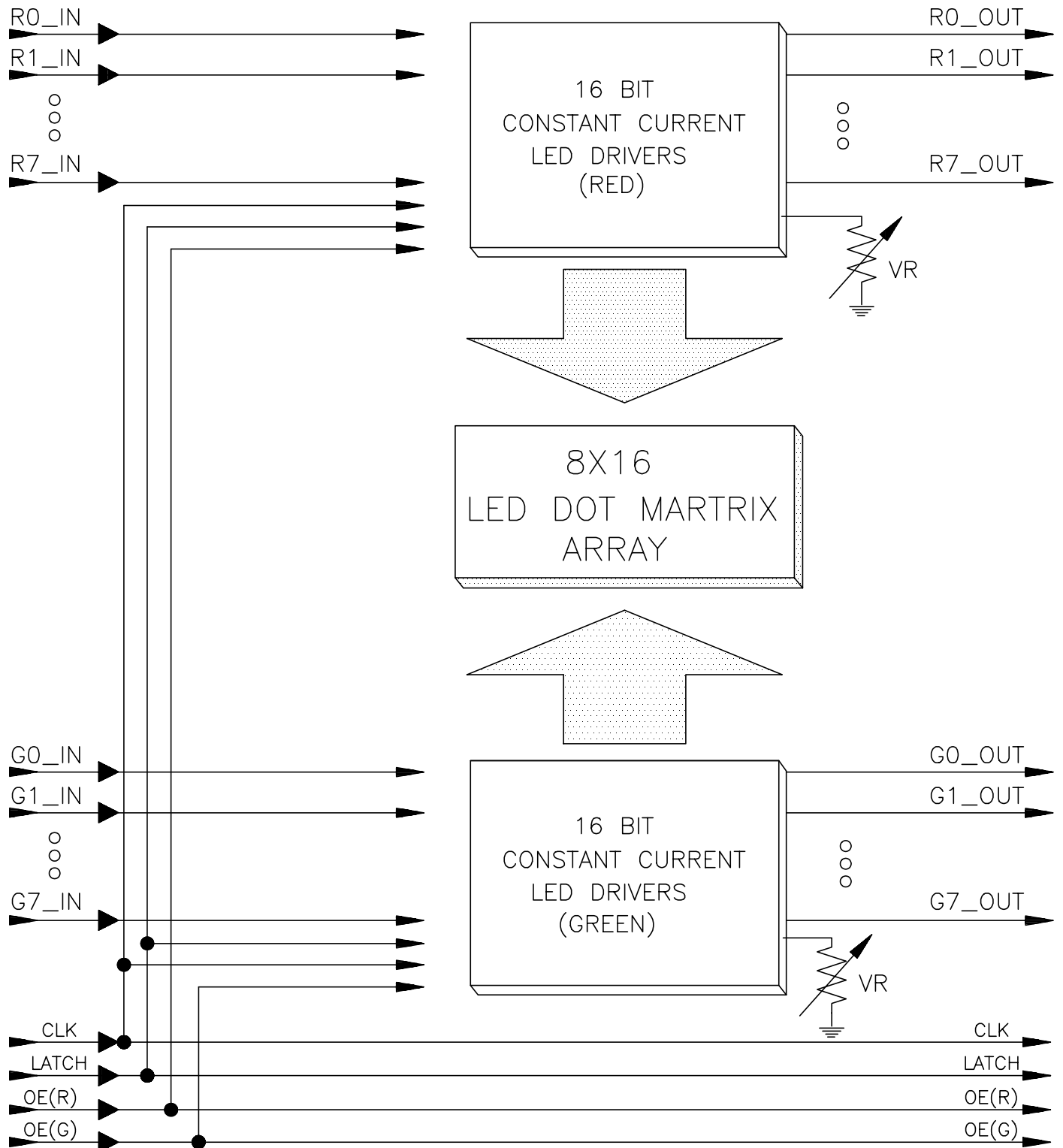
5. INPUT LEVEL

| ITEM | SYMBOL | MIN | TYP | MAX | UNIT |
|----------|--------|-----|-----|-----|------|
| Input"L" | ViL | GND | – | 0.3 | V |
| Input"H" | ViH | 0.7 | – | Vcc | |

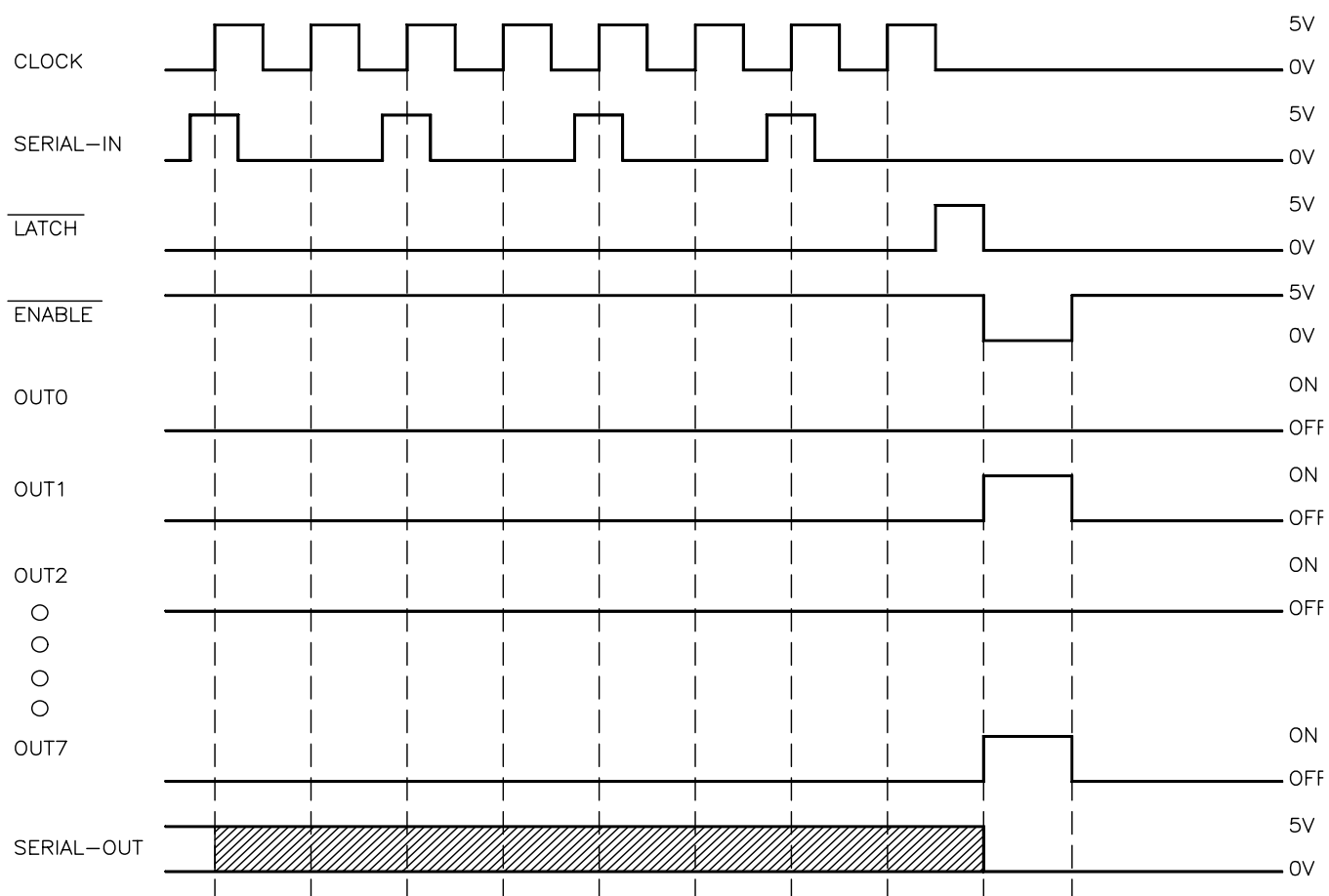
6.FUNCTION

| ITEM | PIN NAME | FUNCTION DESCRIPTION | PIN NO. |
|------------------------------|----------------------------|---|--------------|
| Power Pin(C.N-3) | Vcc1 | Power supply for the circuit | 4 |
| | Vcc2 | Power supply for the Red LED | 1 |
| | GND | Ground of the module | 5,6,7 |
| Data Pin (C.N-1,C.N-2) | RED Data 0 (R0) | Data input for Red color | 11 |
| | RED Data 1 (R1) | | 12 |
| | RED Data 2 (R2) | | 13 |
| | RED Data 3 (R3) | | 14 |
| | RED Data 4 (R4) | | 15 |
| | RED Data 5 (R5) | | 16 |
| | RED Data 6 (R6) | | 17 |
| | RED Data 7 (R7) | | 18 |
| | GREEN Data 0 (G0) | Data input for Green color | 19 |
| | GREEN Data 1 (G1) | | 20 |
| | GREEN Data 2 (G2) | | 21 |
| | GREEN Data 3 (G3) | | 22 |
| | GREEN Data 4 (G4) | | 23 |
| | GREEN Data 5 (G5) | | 24 |
| | GREEN Data 6 (G6) | | 25 |
| | GREEN Data 7 (G7) | | 26 |
| | Clock (CLK) | Clock signal for Data input and display | 9 |
| | Latch | Signal input for Data latch | 7 |
| | Out Enable for Red(OE-R) | Display ON or OFF control | 3 |
| | Out Enable for Green(OE-G) | | 5 |
| | GND | Signal Ground | 1,2,4,6,8,10 |
| Brightness Control Switch | Variable Resistor | Total brightness control of Red color | |
| | Variable Resistor | Total brightness control of Green color | |

7. BLOCK DIAGRAM



8. TIMING

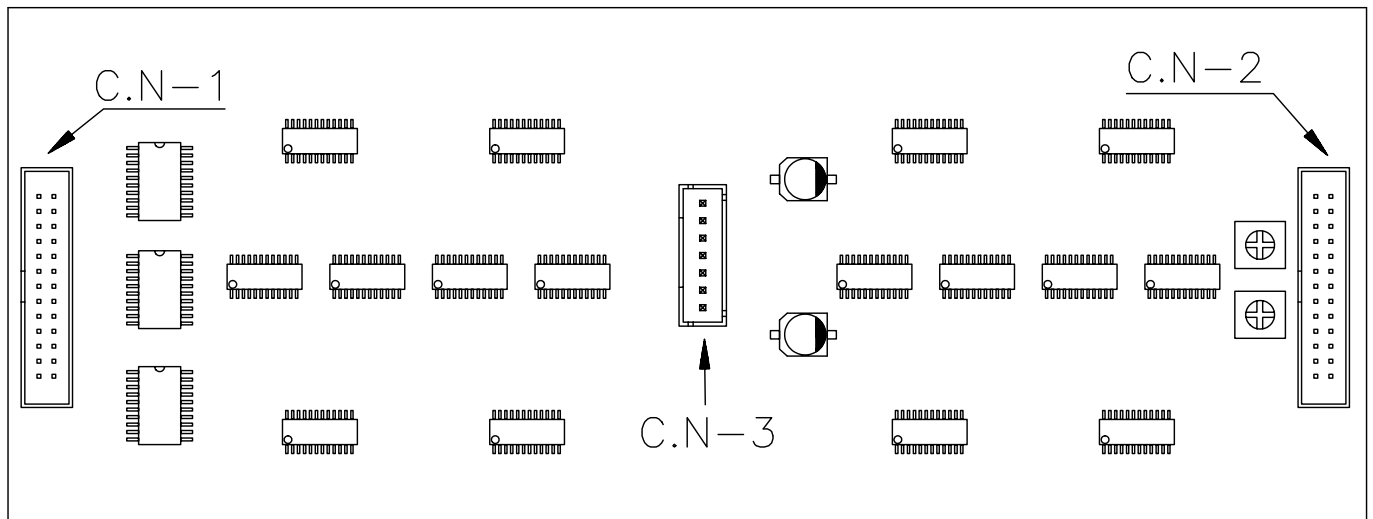


■ OPERATING CONDITION



(Ta=25°C, Vcc=5V)

| NO | ITEM | SYMBOL | MIN | MAX | UNIT |
|----|-----------------------|--------|------|-----|------|
| 1 | Clock Frequency | T | – | 15 | MHz |
| 2 | LATCH Pulse Width | | 100 | – | ns |
| 3 | CLOCK Pulse Width | | 50 | – | ns |
| 4 | ENABLE Pulse Width | | 4500 | – | ns |
| 5 | Set-Up Time for DATA | | 60 | – | ns |
| 6 | Hold Time for DATA | | 20 | – | ns |
| 7 | Set-Up Time for LATCH | | 100 | – | ns |
| 8 | Hold Time for ENABLE | | 60 | – | ns |














9. PIN CONNECTION & SWITCH
















Brightness control "Variable Resistor"

| | | |
|---|------|--------------------------|
|  | UP | Red brightness control |
|  | DOWN | Green brightness control |

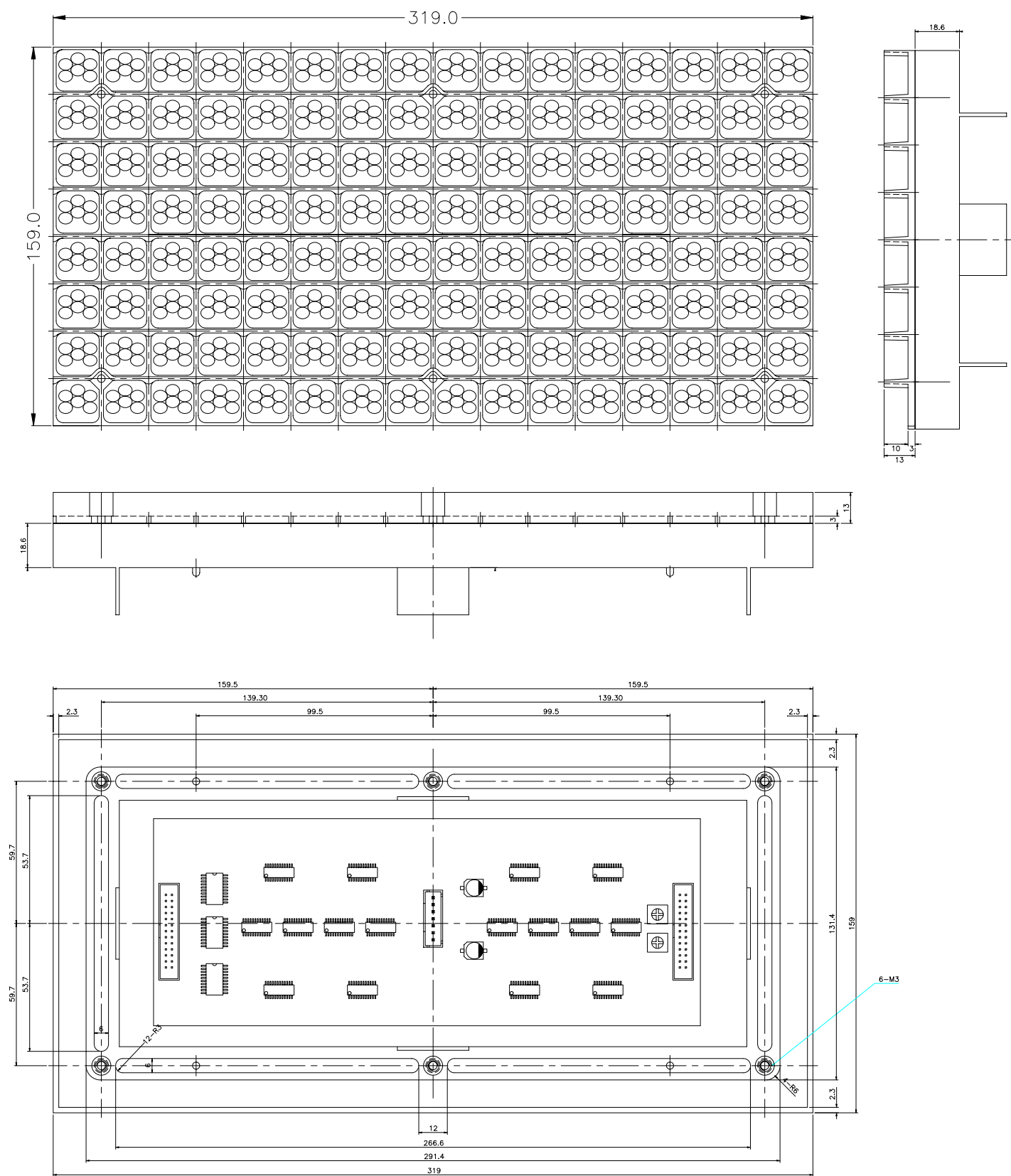
1) C.N-1 (DATA INPUT)

| | | PIN | NAME | PIN | NAME | |
|----|---|-----|------|-------|------|-----|
| 1 |  | 2 | 1 | GND | 2 | GND |
| 3 |  | 4 | 3 | OE-R | 4 | GND |
| 5 |  | 6 | 5 | OE-G | 6 | GND |
| 7 |  | 8 | 7 | LATCH | 8 | GND |
| 9 |  | 10 | 9 | CLK | 10 | GND |
| 11 |  | 12 | 11 | R0 | 12 | R1 |
| 13 |  | 14 | 13 | R2 | 14 | R3 |
| 15 |  | 16 | 15 | R4 | 16 | R5 |
| 17 |  | 18 | 17 | R6 | 18 | R7 |
| 19 |  | 20 | 19 | G0 | 20 | G1 |
| 21 |  | 22 | 21 | G2 | 22 | G3 |
| 23 |  | 24 | 23 | G4 | 24 | G5 |
| 25 |  | 26 | 25 | G6 | 26 | G7 |

2) C.N-2 (DATA OUTPUT)

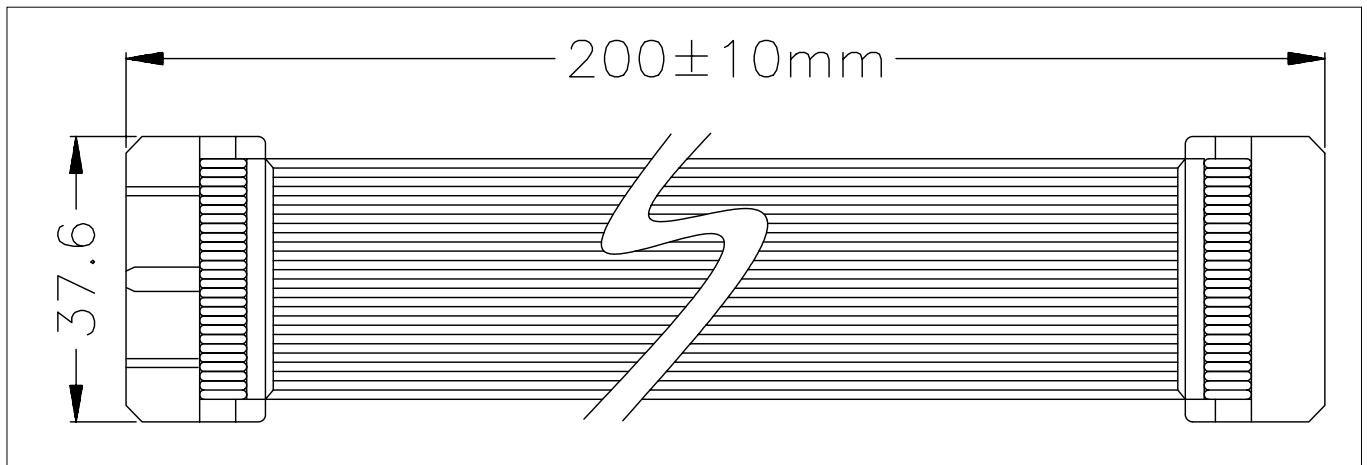
| | | | PIN | NAME | PIN | NAME |
|----|---|----|-----|-------|-----|------|
| 1 |  | 2 | 1 | GND | 2 | GND |
| 3 |  | 4 | 3 | OE-R | 4 | GND |
| 5 |  | 6 | 5 | OE-G | 6 | GND |
| 7 |  | 8 | 7 | LATCH | 8 | GND |
| 9 |  | 10 | 9 | CLK | 10 | GND |
| 11 |  | 12 | 11 | R0 | 12 | R1 |
| 13 |  | 14 | 13 | R2 | 14 | R3 |
| 15 |  | 16 | 15 | R4 | 16 | R5 |
| 17 |  | 18 | 17 | R6 | 18 | R7 |
| 19 |  | 20 | 19 | G0 | 20 | G1 |
| 21 |  | 22 | 21 | G2 | 22 | G3 |
| 23 |  | 24 | 23 | G4 | 24 | G5 |
| 25 |  | 26 | 25 | G6 | 26 | G7 |

10. DIMENSION

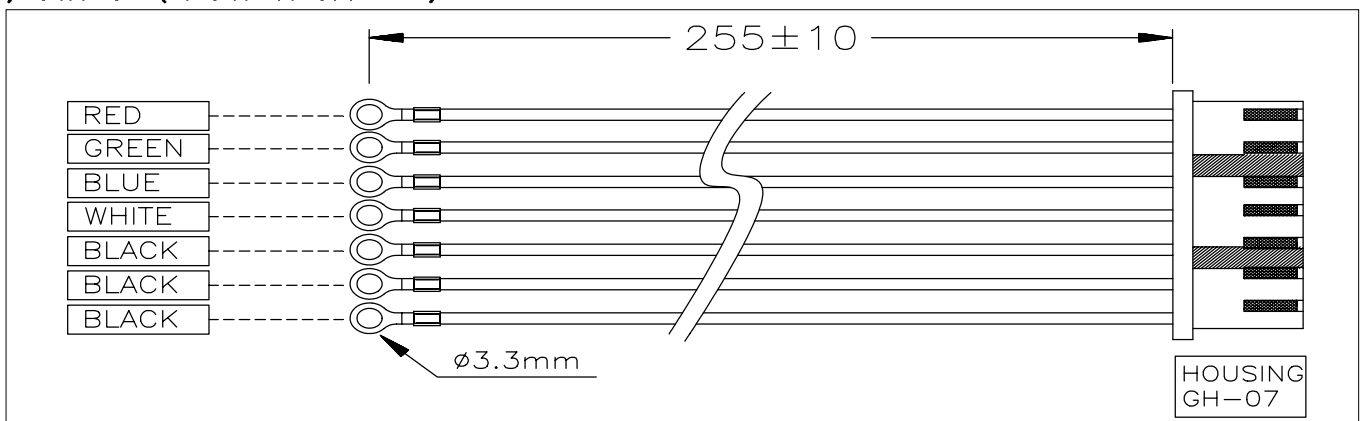


11 CONNECTION & CABLE (STANDARD)

1) C.N-1, C.N-2 (DATA CABLE)

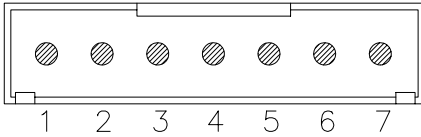


2) C.N-3 (POWER CABLE)

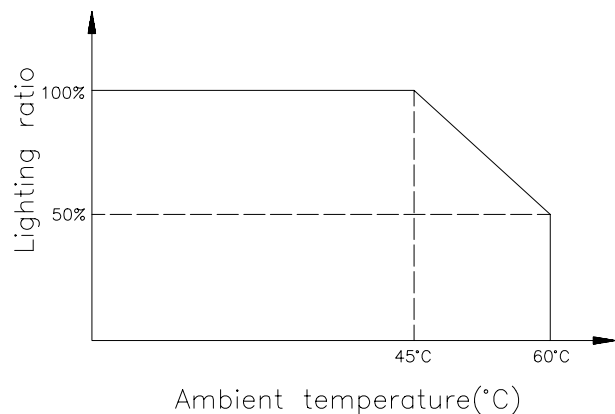


| CONNECTION NO. | MODEL NO. | SPEC |
|----------------|------------------|---------------------|
| C.N-1 , C.N-2 | GDRH03-26200D | 26P*200mm*1.27pitch |
| C.N-3 | GH - 0722 - 250R | 7P * 250mm |

3) C.N-3 (POWER)

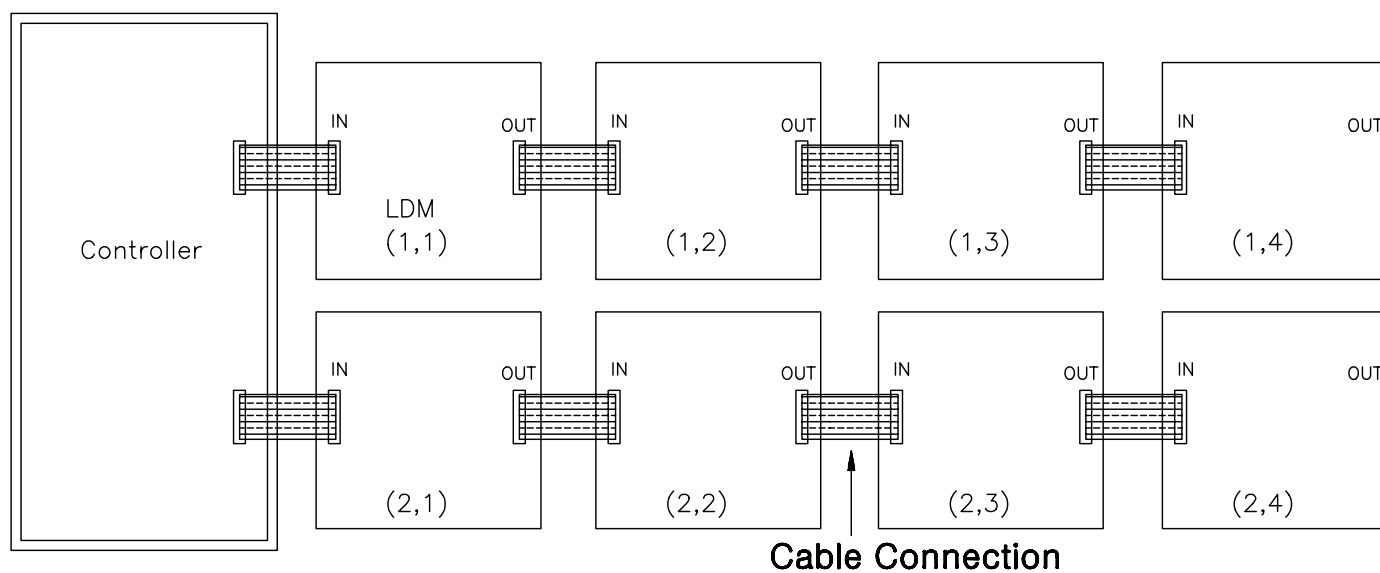
|  | PIN NO | NAME | LEVEL | FUNCTION |
|---|--------|------|-------|-----------------|
| | 4 | Vcc1 | 5V | For the Circuit |
| | 5,6,7 | GND | 0V | Ground |
| | 1,2,3 | Vcc2 | 5V | For the LED |

12. The rate of Lits derating curve



When you drive the module, refer to left graph.

13. Example connection



※ The above drawing shows the back side of LDM

14. Matter on caution when installed (assembly)

설치(조립)시 주의사항

- 1) It should be installed deeply considered in noisy place because wrong operation might be occurred.

NOISE 환경이 취약한 곳에서는 오동작을 유발할 수 있으므로 충분히 고려하여 설치하도록 하여 주십시오.

- 2) Make sure of power source before operating after being assembled module.
Damage may be occurred by over voltage or short circuit.

조립 후 동작을 시험하기 전에 반드시 전원부를 확인하여 주시기 바랍니다.
과전압, 쇼트등에 의해 MODULE이 파손될 수 있습니다.

- 3) Please install module within guaranteed scope and specially escape installation from circumstance of smoke, dust, and SO₂-GAS.

MODULE이 설치되는 환경은 보증범위 내에서 설치하여 주시고, 특히 연기, 먼지, 매연, SO₂-GAS 등의 환경을 피하여 주십시오.

- 4) Please turn off power source if there is no data transmission when you testing its operation after installation.

설치후 동작시험시 DATA 전송이 없을 경우에는 전원을 OFF 하여 주십시오.

- 5) Please establish policy of heat release and use it under circumstance within guarantee scope in case a lot of module is assembled and used.

다량의 MODULE이 조립되어 사용되는 경우에는 충분한 방열대책을 수립하여 보증범위내의 환경에서만 사용하여 주십시오.

- 6) In case it is used under below zero circumstance, it is favorable to use it with high voltage within maximum extent of value of input power source.

영하 이하의 저온환경 하에서 사용되는 경우에는 입력 전원을 정격치의 최대범위 한도내에서 높은 전압으로 사용하는 것이 유리합니다.

- 7) Please make instrument after examining weight fully as module weight is 1000g.

중량을 충분히 검토하여 기구물을 제작하여 주십시오.

15. Matter of reference when handling.

취급시 참고사항

- 1) VR of brightness adjustment-use is adjusted in fixed rank by LOT and supplied therefore don't operate it as you please.

휘도 조절용 VR 은 출하시 LOT 별로 일정한 RANK로 조정되어 출하되고 있으니 임의의 조작을 삼가 주십시오.

- 2) Operating circuit is composed of CMOS, so, please take caution for static electricity.

구동회로부에 CMOS등이 장착되어 있으므로 동작시험 및 조립시 정전기 대책을 행하여 주시기 바랍니다.

- 3) If you have any question for using this, please contact us.

본 제품의 사용상 의문사항이 발생시 영업담당자를 통하여 문의하여 주십시오.

Product warranty

제 품 보 증

Warranty contents

* 보 증 내 용 *

Exchange without compensation will be made for the period of 12 month after having been delivered in case troubles in ordinary treatment in occurred.

Warranty is for delivered products. Expense of exchange work, damage compensation for advertisement suspension is not paid. Also compensative treatment will be made in case of following even for warranty period.

보통 취급상의 고장이 발생했을 경우, 납입후 12개월간은 무상교환하여 드립니다.

또한 보증은 납입제품에 대한 보증이며, 교환작업에 따른 공임, 손해배상, 광고정지에 따른 보상비용등의 경비는 지불하지 않습니다.

또한 다음의 경우에는 보증기간중에도 유상처리 됩니다.

- 1) Troubles by handling carelessness and wrong using.

취급 부주의 및 잘못사용에 따른 고장

- 2) Troubles by inapplicable repair or remarking.

부적절한 수리나 개조등에 따른 고장

- 3) Troubles by natural disaster.

천재지변등에 의한 불가항력적인 고장

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- (4) You should use it within the warranty scope for special maximum rating operation power source electronic voltage scope and heat release ability.

We are not responsible for the defect that occur to instrument when it is used beyond our warranty measures.

설계시에 특히 최대정격, 동작전원 전압범위, 방열성에 대해서는 보증범위 내에서 사용하시기 바랍니다.

보증치수를 넘겨 사용했을 경우 그 후에 발생한 기기의 결함에 대해서는 폐사에서 책임지지 않습니다.

- ◎ If you have any question or change required about the specification, please solve it after agreement with us.

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