

**WCN-21616HY-DC02****SPECIFICATION**

WCN			CUSTOMER Confirmed
Prepared by	Checked by	Approved by	
Fei 2016-3-28	Athena		
REVISION RECORD			



REVISION: A0

# WCN Opto Group Co., Limited

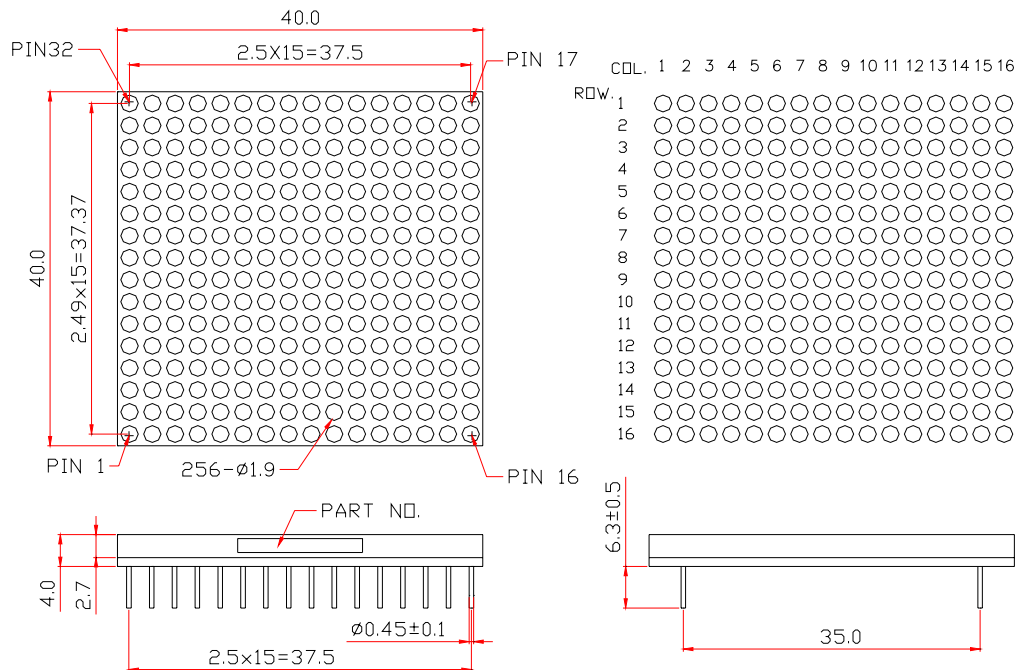
## ■ Features:

- High Reliability
- Color: Yellow
- Low Power Requirement
- Flat Package and Light Weight
- Easy Assembly

## ■ Description:

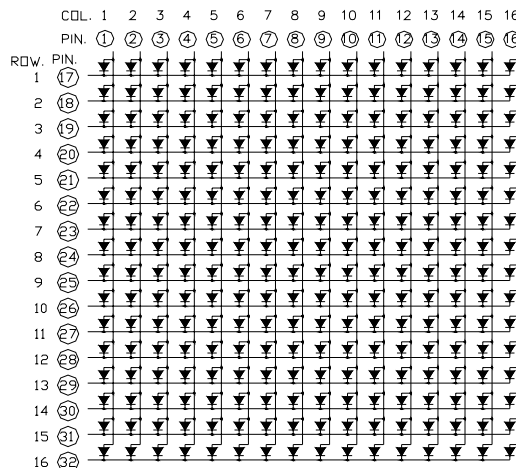
- 16x16 LED Dot Matrix
- $\phi$  1.9 mm Dot and Pitch 2.5 mm
- Black Face and Milky Dots

## ■ Outer Dimension:



Notes : Unless otherwise stated, The tolerance is  $\pm 0.25$ mm.

## ■ Circuit Diagram



■ Absolute Maximum Rating (Ta=25°C) / Per Dice:

Parameter	Symbol	Condition	Color	Rating	Units
Maximal Power Dissipation (When completely Lighting)	P <sub>d</sub>	—	Yellow	65	mW
Maximal Forward Current (When completely Lighting)	I <sub>F</sub>	—	Yellow	25	mA
Peak Forward Current	I <sub>FP</sub>	1/8Duty 10khz	Yellow	100	mA
Reverse Voltage	V <sub>R</sub>	—	Yellow	5	V
Operating Temperature Range	Topr	—	—	-40~+85	°C
Storage Temperature Range	Tstg	—	—	-40~+85	°C

■ Electrical/Optical Characteristics Rating(Ta=25°C)

Item	Symbol	Test conditions	Location	Rating			Units
				Min.	Typ.	Max.	
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	Per Dice	1.80	2.0	2.60	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	Per Dice	—	—	100	μA
Luminous Intensity	I <sub>V</sub>	I <sub>F</sub> =10mA	Per Dice	4.001	6.5	10.5	mcd
Wave Length	λ <sub>P</sub>	I <sub>F</sub> =20mA	Per Dice	—	593	—	nm
	λ <sub>d</sub>				588		
Spectral Line Half Width	△λ	I <sub>F</sub> =20mA	Per Dice	—	20	—	nm
Luminous Intensity Matching Ratio (Dot To Dot)	I <sub>V-M</sub>	1/8Duty I <sub>FP</sub> =40mA				1.2:1	

■ Luminous Intensity Sorting (1/8Duty ; I<sub>FP</sub> =40mA ;The Tolerance is +/-10%)

BIN Color	L	M	N	O	P
Yellow ( mcd )	4.001-5.000	5.001-6.100	6.101-7.20	7.201-8.500	8.501-10.500

■ Soldering Conditions: Soldering Temp. ≤+260°C

Soldering Time. ≤3sec.

( at 2mm Distance from The Case of Reflector Edge)

■ **Typical Elector-Optical Characteristics Curve:**

Fig 1. Forward Current vs. Forward Voltage

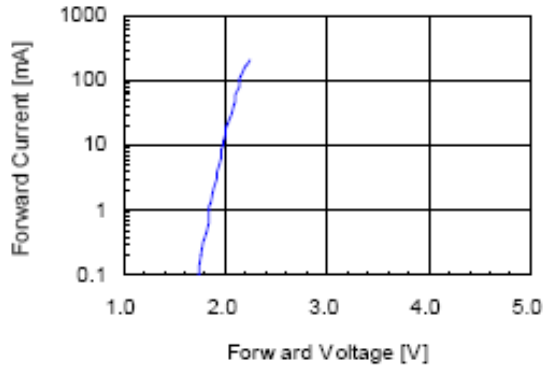


Fig 2. Relative Intensity vs. Forward Current

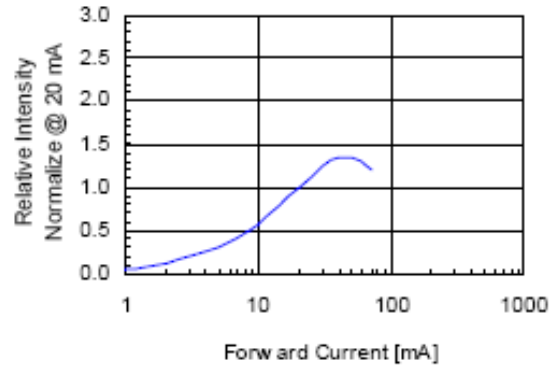


Fig 3. Forward Voltage vs. Temperature

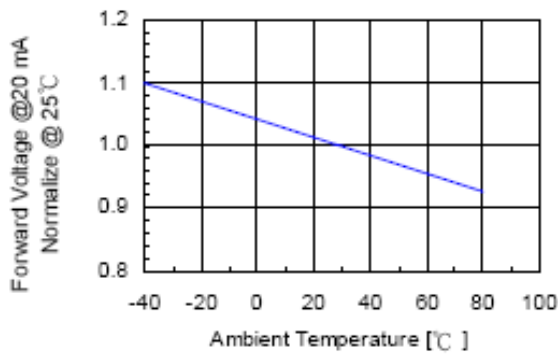


Fig 4. Relative Intensity vs. Temperature

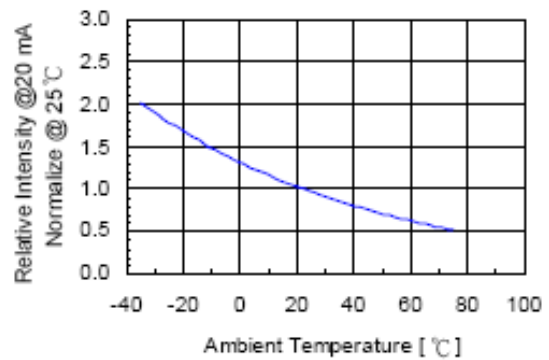
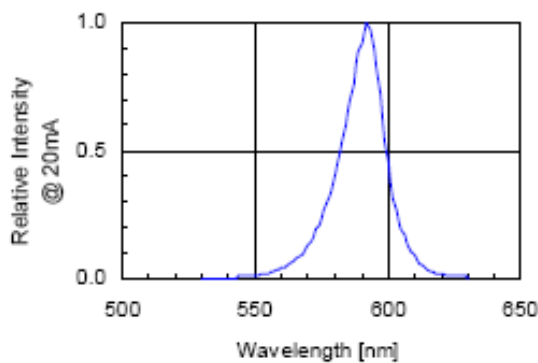


Fig 5. Relative Intensity vs. Wavelength



## LED Displays Reliability Test:

CLASSIFICATION	TEST ITEM	DESCRIPTION AND TEST CONDITION
ENDURANCE TEST	OPERATION LIFE	EVALUATES RESISTANCE OF THE DEVICE WHEN OPERATED AT ELECTRICAL STRESS $T_a =$ UNDER ROOM TEMPERATURE $I_f = I_f \text{ max}$
	HIGH TEMPERATURE HIGH HUMIDITY STORAGE	EVALUATES MOISTURE RESISTANCE OF THE DEVICE WHEN STORED FOR A LONG TERM AT HIGH TEMPERATURE AND HUMIDITY $T_a = 65 \pm 5^\circ\text{C}$ RH=90~95%RH TEST TIME=240 $\pm$ 2Hrs
	HIGH TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN HIGH TEMPERATURE $T_a = 85 \pm 5^\circ\text{C}$ (COB: $T_a = 65 \pm 5^\circ\text{C}$ ) TEST TIME=1000Hrs(-24Hrs, +72Hrs)
	LOW TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE $T_a = -35 \pm 5^\circ\text{C}$ TEST TIME=1000Hrs(-24Hrs, +72Hrs)
ENVIRONMENTAL TEST	TEMPERATURE CYCLING	EVALUATES RESISTANCE OF DEVICE AT THERMAL STRESSES OR EXPANSION AND CONTRACTION $85^\circ\text{C} \sim 25^\circ\text{C} \sim -35^\circ\text{C} \sim 25^\circ\text{C}$ 30min 5min 30min 5min 10 CYCLES(COB: $T_{\text{hot}}=65^\circ\text{C}$ , $T_{\text{cold}}=-25^\circ\text{C}$ )
	THERMAL SHOCK	EVALUATES DEVICE STRUCTURE AND STRUCTURE AND MECHANICAL RESISTANCE WHEN SUDDENLY EXPOSED AT SERVE CHANGES $85 \pm 5^\circ\text{C} \sim -35 \pm 5^\circ\text{C}$ 10min 10min 10 CYCLES(COB: $T_{\text{hot}}=65^\circ\text{C}$ , $T_{\text{cold}}=-25^\circ\text{C}$ )
	SOLDERABILITY	EVALUATES SOLDERABILITY ON LEADS OF DEVICE $T_{\text{SOL}}=230 \pm 5^\circ\text{C}$ DWELL TIME=5 $\pm$ 1sec.
	SOLDER RESISTANCE	EVALUATES RESISTANCE TO THERMAL STRESS CAUSED BY SOLDERING $T_{\text{SOL}}=260 \pm 5^\circ\text{C}$ DWELL TIME=10 $\pm$ 1sec.

### Packing method A:

32 pcs / Expandable Polyethylene.

220 pcs / Box(360\*175\*130mm).

1320 pcs / Catton(550\*380\*280mm).