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### WWW.100Y.COM.TW .100Y.COM.TW N.100Y.COM V.100Y.COM.TW Title : Specification-Flat lamp panel (1.8") CL180610U01 W.100Y.COM.TW WWW.100Y.C WWW.100Y WWW.100Y.COM.

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Issue Date :	92.11.27 92.12.31	WWW.100 X.CO.Y
		WWW.1007.CO

W.100Y.COM.TW Dept. : WWW.100Y

## CCFFL Product

Approved By	Review By	Prepared By
NUT CON	MITH WWW.100Y	COWLIN MMM 100X
WWW.100Y.CO	DILLEW WWW.100	CONTA WWW.100
WWW.100Y.C	Controlled Yes	DR.COM.TW WW.10
	Confidential	JOL. COMPLET
	Document	100X.COM.TY



WWW.100Y.COM Document NO:E911103001 Revision: A1 Page 1 of 10

## Specification-Flat Lamp Panel (1.8") CL180610U01

## 100X.COM.TW V.100Y.COM.TW **PURPOSE**

WWW.100Y.COM.T This specification describes the methods that how we measure CL180610U01 flat lamp panel. It includes CL180610P01 & Inverter reliability, optical characters and outline dimensions.

## WW.100Y.CON NWN.10012 SCOPE

WWW.100Y.C The specifications are applicable to the CL180610U01 flat lamp panel.

## WWW.100Y 3 RESPONSIBILITIES WWW.100Y.C

N.A.

#### 4 REFERENCES

N.A.

#### 5 APPLICABLE DOCUMENTS

N.A.

#### **TERMS AND DEFINITIONS** 6

N.A.

#### **CONTENTS** 7

Operating and storage temperature range : 7.1

Operating and storage temperature r	range :
Operating temperature range	-10 to 60
Storage temperature range	-20 to 70
Outline dimension Refer to the attachment I.	

Outline dimension 7.2

COM.TW Refer to the attachment I.

WWW.100Y.COM.TW 7.3 Weight 6.9 ±0.5 g WWW.100Y.COM.TW

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## 100X.CONLTW 7.4 Surface condition

W.100Y.COM.TW The criteria for defects on that lamp active surface screen is as follows.

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Item	Spec. ( mm ) 0.2		Allowable points	
WWW.100 X.COM				
Spot	0.2 <	0.4	S.COM 3 TH	
	0.4 <	WWW.		

WWW.100Y.COM.TW NOTE : That any two defect spots with diameter of the defect them is less than 10 mm in and the spots. WWW.100Y.COM.TW 0.2 mm <0.4 mm whose distance between WWW.100Y.COM.TW

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WWW.100Y.COM.TW Document NO:E911103001 Revision: A1 Page 3 of 10

OX.COM.TW XWWW.100X.C Reliability : The testing criteria for CL180610U01 is as the following items:

No.	Test Item	Test Condition	Pass/Failure Criteria	
1	Vibration Test	Sweep frequency : 10~55~10Hz Stoke : 1.5 mm Sweeping cycle : 1 cycle in 5 min Period : 2hrs (in each of 3 mutually perpendicular axis)	<ol> <li>Any deformation and visible defect of appearance and structure is not allowed.</li> <li>Optical characteristics specified in §7.6.3 shall be satisfied.</li> <li>The quality of effective screen, as specified in §7.6.3 shall be maintained.</li> </ol>	
2	Shock Test	Peak acceleration : $980 \text{m/s}^2$ (100G) Duration of pulse : $6 \text{ms}$ $\pm X$ , $\pm Y$ , $\pm Z$ Shock: 2 times (in both directions of mutually perpendicular axis)		
3	Drop Test (With normal packing)	Height: 60 cm Drop: 1 time (one corner, three edges and six surfaces)		
4	Pressure Proof Test	Absolute pressure: $1.5 \pm 0.1$ atm Duration: 30 min		
5	High Temperature Storage Test	70±3, 240 hrs	<ol> <li>Any deformation and visible defect of appearance and structure is not allowed.</li> <li>Luminance at the center of the screen should be larger than 70 % of min. of the spec. request in § 7.6.3-2.</li> <li>Operation test condition : 5 V input with 6±1 cm high voltage cable</li> </ol>	
6	Low Temperature Storage Test	-20±3 , 240 hrs		
7	High Temperature & High Humidity Storage Test	60±3 , 90% 240 hrs		
8	Temperature Cycling Storage Test	-20 ±3 /15min 70 ±3 /15 min 24 cycles		
9	High Temperature Operational Test	60 ± 3 240 hrs		
10	Low Temperature Operational Test	-10± 3 240 hrs	藤持力材料 886-3-575	
11	High Temperature & High Humidity Operational Test	60±3 , 90% 240hrs	<i>勝 符 刀 저 科</i> 886-3-575 胜特力电子(上海) 86-21-541 胜特力电子(深圳) 86-755-83 Http://www.100y.com.	



W.100Y.C Document NO:E911103001 Revision: A1 Page 4 of 10

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1,0,	lest Item	Test Condition	Pass/Failure Criteria
12	Life Test	Operation for more than 5000hr ( Ambient temperature : 20~30 )	Luminance at the center of the screen should be more than 50% of min. of the spec. request in
N		OWLAN MAN 100X.CC	§7. 6.3-2. Uniformity shall be more

C7.6 **Optical characteristics** WW.100Y.CO

7.6.1 Applied model number : CL180610U01

- 7.6.2 Test conditions and setups :
  - 7.6.2.1 Temperature and humidity for testing environment: Temperature:  $25 \pm 3$ ; Humidity:  $45 \sim 85\%$
  - 7.6.2.2 Before starting the test, the flat lamp to be measured shall be turned off and kept in the standard testing environment for at least one hour.
- 7.6.2.3 The testing should be held in a windless but not necessarily in airtight atmosphere.
  - 7.6.2.4 Before take the optical characteristics measurement, shall let the flat lamp operate for W.100Y at least one minute to warm up.
  - 7.6.2.5 Input voltage (Inverter)

The tests should use DELTA OPTOELECTRONICS standard inverter. (00A-2351A Ref. Attachment II)

Item		MIN	TYP	MAX	UNIT
Input	voltage	4.7	5	5.3	V100
	Frequency*	19.8	20.8	21.8	KHz
Pulse	Duty*	7.2	7.6	7.8	μs
(input power: Typ. 0.9 w	Pulse Level VH	4.5	007.50M	5.5	V
Max.:1.0 w) (for reference)	Pulse Level VL	-0.5	0.00	0.5	V
	Vsec-pp	111	1600	OM.TW COM.TV	V
WWW.I	lsec-pp	~ 11	40	CONT	mA

"\*": 1. frequency and duty are based on CCFFL panel operation only

2. operating with LCD panel, frequency and duty maybe meed to fine tune to avoid WWW.100Y.COM.TW WWW.100Y.C



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influence.

7.6.2.6 Instrument for measuring luminance and tints: Minolta colorimeter CS-100 with the close-up lens No. 122. (The distance between the lamp and the lens is about 30cm)

7.6.3 Optical measurements: Four optical characteristics optical characteristics.

WT.N	Item	Specification	Remarks
0M.TV 0M.TV 10M.T	Effective Luminous Area	39.0x29.0mm (1.8" inch diagonal)	See attachment I
2	Luminance ( initial state )	2,500 cd/m <sup>2</sup> (typ.) 2000 cd/m <sup>2</sup> (min)	Measured at the center of the effective luminous screen area. ( with reflector )
3	Uniformity ( initial state )	70 %	See Note I
	Tints ( initial state )	CIE : $x=0.30 \pm 0.02$ ; $y=0.30 \pm 0.02$ Phosphor : Three wave spectrum : R : 611nm G : 544nm B : 446nm	Measured at the center of the effective luminous screen area

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#### FORM 8

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V.100Y.COM.T W.100Y.CO9 **ATTACHMENT** 

Attachment I: Outline dimensions Attachment II: Driving circuit Attachment III: Package diagram

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## NWW.100Y.C **10 NOTES** WWW.100

10.1 The luminance is measured at 9 points on the lighting surface of the module as shown below:



### Definition :

WW.100Y.COM.TW Minimum luminance L<sub>min</sub>: the minimum luminance of the 9 measurement points WWW.100X.COM.TV Maximum luminance  $L_{max}$ : the maximum luminance of the 9 measurement points WWW.100Y.COM.T Luminance uniformity: 100 % ×Lmin / Lmax WWW.100Y.COM.

WWW.100Y.COM Document NO:E911103001 Revision: A1 Page 6 of 10 WWW.100Y.COM.TW WWW.100Y



W.100Y.COM Document NO:E911103001 Revision: A1 Page 7 of 10 W.100Y.COM.TW

**10.2 Application Pre-caution** 

- 10.2.1 To avoid the hard object knocking the panel, specially the tube part
- 10.2.2 To care the tube protection for the tray of storage and transportation
- 10.2.3 To avoid the acid liquid contamination on the frit to cause micro-leakage
- 10.2.4 Electrode soldering process
  - 10.2.4.1 To prevent the frit and electrode conjunction damaged, avoid over pulling, bending the electrode
  - 10.2.4.2 To prevent the thermal shock on the frit and electrode conjunction do not solder too long time
- WWW.100Y.COM.TW WWW.100Y.COM. 10.2.5 To prevent inverter input/output voltage drop due to bad soldering, length between power supply and inverter, length between inverter WWW.100Y.COM

  - 10.2.6 Non-correlation between CCFFL turn on voltage and failure mode 10.2.7 Operation and storage temperature 10.2.7 Operation and storage temperature range should be within specification

10.2.8 Inverter input voltage should be within specification WWW.100Y.CON

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Document NO:E911103001 Revision: A1 Page 8 of 10

 $\triangleleft$ C S т ш  $\Box$ ш Ъ. Drawing-No/CL180610U01 [Titte/ CL1806(DIMENSION) 12  $\simeq$ <u>60±2</u> 11(MAX')  $\blacklozenge$ Ξ È 2.6±0.15 熱縮套管 高壓線 沾錫 2003/11/27 10 紅熱縮套管 L T D0 5CMAX') 補膠 मि 0,5(MAX) \$ S 限 Drawer/ Date/ σ σ 有 Date/ ECTRONI J.A. root 4 \$ Å bate/ Date/ Date/ Bate/ Beat/ Bate/ Beat/ 貶 抽氣節 39(V/A) 册 45±0,4 0 E \*  $\infty$ تى Ø 0 P 翰 DELTA J.A.C.  $\sim$ **DELTA** OP TO 黑熱縮套管 terial Scale/ 2,75 1:1 29.0(V/A)(min) Ma 9 9  $\overline{35\pm0.4}$ ωw ant L DAT S ഹ NAME 4 4 RECORD М M 43.00 REVISION  $\sim$ lul  $\sim$ Inverter Ш 28.00 100 1.2  $\bigtriangledown$  $\bigcirc$  $\square$  $\triangleleft$ മ  $\odot$  $\Box$ ш LL. G Т W.100Y.COM.T 力材料 886-3-5753170 勝 特 胜特力电子(上海) 86-21-54151736 胜特力电子(深圳) 86-755-83298787

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Attachment I: Outline dimensions



WWW.100Y.COM Document NO:E911103001 Revision: A1 Page 9 of 10 100Y.COM.TW 100Y.C

W.100Y.COM.TW 00Y.COM Attachment II: Driving circuit

## **Delta Inverter**



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Document NO:E911103001 Revision: A1 Page 10 of 10

# Attachment III: Package diagram



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