Display Device Lifetime Test System

VS-9110 OLED

Life Time of Display Device can be determined by measuring the Luminance degradation. Figure.2 shows a system used to measure the Life Time of OLED Device. It consists of:

1. Data Acquisition Software

2. Multi-Channel Power Supply

3. Luminance Sensors (Si-Photodiode)

4. Device Holder & Test Jig

Figure: 1 VS-9110 OLED

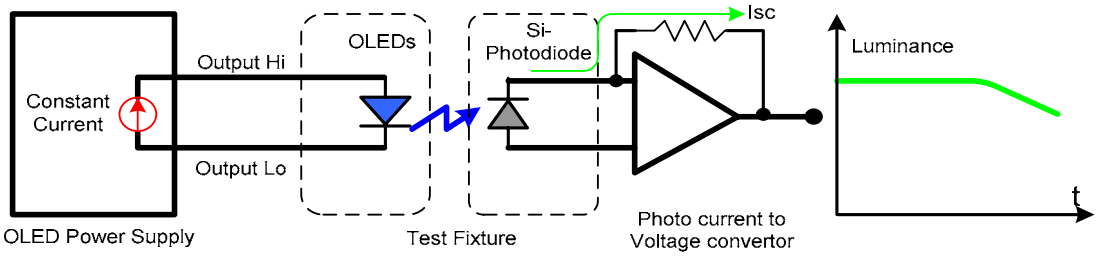

Figure: 2 Test Principles

Data Acquisition Software

Fig. 3: Screen Display

-- **Voltage, Current, Luminance vs Time** are being monitored and recorded simultaneously;

-- Test Data is saved as Text file.

-- 16 devices can be tested & monitored simultaneously;

-- A 16 channels of power supply provides with 16 individual current/voltage settings.

Multi-Channel Power Supply

The Power supplied to the test device can be by a constant Voltage or Constant Current. VS-9110 Multi-channel Power supply provide 8 channel current/Volatge output, and 8 channel photo current amplifiers inputs. The specification are:

Fig. 4: Real View Of PS

Constant Current Output:	0 --- 20mA, 20VDC Maximum
Constant Voltage Output:	0 --- 20VDC, 100mA Maximum;
Channels:	8 channels/Unit,
Resolution:	0.01mA for CC mode setting 0.01V for CV mode setting
Photo current Amplifier:	Vo = 100Kohm x Isc; **or** Vo = 1000Kohm x Isc

Luminance Sensor (Si-Photodiode)

As shown in Fig. 5, the short circuit current (Isc) of Si Photodiodes has a linear relationship with the light it received over a wide range. By monitoring the Isc current changes of Si Photodiode, We are able to know the changes of test device's Luminance.

High performance photo current amplifier enables systme to have accurate Isc measurement over wide range.

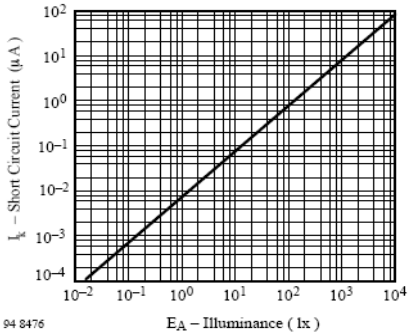

Figure. 5 **Isc vs Illumiance**

Figure. 6 Photosensor

The Luminance degradation is shown by percentage. Luminance calibration is requested to have a absolute data with Unit: Lux

Device Holder & Test Jig

Based on the customer's Test device, **A special designed Device Holder** grantee that Test device has a reliable electric Contact, and a consistent location of Photodiodes

The Spring contact probe makes the contact reliable, durable.

Figure. 7 Test Jigs

Figure 8: Integrated System

Other Options:

19" Rack with industrial Computer

All the test equipments, and device holders are mounted inside of 19" rack with the glass door. It keeps life time test reliable & Safe.

PV Cell Life Time Test

PV Cell life time test function can be integrated into together. As shown on Fig. 8. It includes 24 devices solar Cell life time test software & hardware.

The Conversion efficiency (ŋ), Fill factor (FF) is being monitoring vs Time.

Multi_Substrate Device Life Time Test

It's monitoring Multi devices' resistance changes in micro ohm.

For future information, Please contact:	Manufactory: **VISIONTEC** **Industrial Vision Technology (S) Pte Ltd** #06 - 22/23, Block 67, Ayer Rajah Crescent Singapore 139950 Tel: (65) 65636110 Fax: (65) 6563 1556 email: sales@visiontec.com.sg