

## Color channel output of LED samples

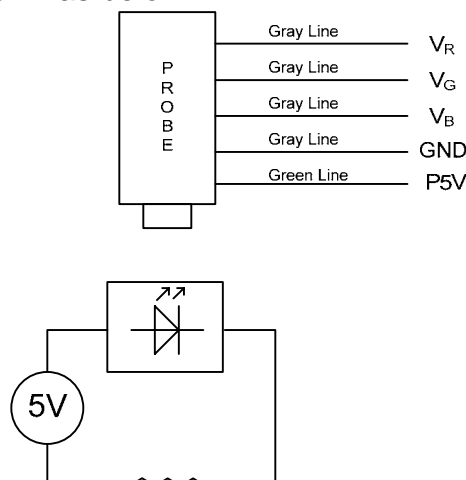
### 1. Purpose

This test is designed to give some ideas to select the probe model according as the LED luminous intensity.

LED samples from Stanley Electric are tested with the LED color test probes, and test data is shown in the result table.

### 2. Measurement approach

(1) The test schema is shown as below:



(2) Under indoor temperature;

(3) The working distance between LED and the probe is approximately 3mm;

(4) LEDs under test

Part No.	Material	Emitted Color	Dominant Wavelength $\lambda_d$ (nm)		Luminous Intensity $I_v$ (mcd)	
			TYP.	$I_F$	TYP.	$I_F$
FA1112H	AlGaInP	Orange	605	20	65	20
FR1112H	AlGaInP	Red	626	20	50	20
FY1112H	AlGaInP	Yellow	590	20	65	20
YBG1112H	AlGaInP	Green	562	20	12	20

Maker : STANLEY ELECTRIC CO., LTD

<http://www.stanley-components.com>

for the detailed LED specification, please check the data sheet in the appendix.

### 3. Test result

Measured LED Measured Value (V) Probe Type	Orange (FA1112H)			Red (FR1112H)			Yellow (FY1112H)			Green * (YBG1112H)		
	V <sub>R</sub>	V <sub>G</sub>	V <sub>B</sub>	V <sub>R</sub>	V <sub>G</sub>	V <sub>B</sub>	V <sub>R</sub>	V <sub>G</sub>	V <sub>B</sub>	V <sub>R</sub>	V <sub>G</sub>	V <sub>B</sub>
KEC2101	5.14	0.58	0.27	5.14	0.34	0.49	1.82	1.37	0.21	0.09	0.46	0.15
KEC2102	4.38	0.26	0.09	5.09	0.18	0.19	0.73	0.58	0.07	0.03	0.22	0.04
KEC2103	1.95	0.13	0.01	3.44	0.09	0.05	0.32	0.27	0.01	0.01	0.10	0.01

\* For the reason of the typical luminous intensity of Green LED(YBG1112G) is about one fifth of that of the other LEDs, the measured values of Green led is smaller than the others..

According to the measurement values, the following selection is suggested

FR112H (Red)	KEC2103
YBG112H (Green)	KEC2101
FY112H (Yellow)	KEC2101
FA112H (Orange)	KEC2102

### 4. Suggestions for selecting probes

- 1) Red, Green, and Blue LED,  
It is suggested that users should select the probe model according to "Order information" table in the probe data sheet.
- 2) Orange LED  
The wavelength is close to that of Red LED.  
Suggest users to select the probe model one more rank higher than the one described in "Order information" table in the probe data sheet.  
Please be noted that the higher model number is, the lower the probe sensibility is.
- 3) Yellow LED  
The wavelength is between the RED and GREEN.  
It is suggested that users select the probe model with one or two rank higher than the one described at "Order information" table in the probe data sheet.  
Please be noted that the higher model number is, the lower the probe sensibility is.
- 4) Do not saturate the probe output  
If the probe output is up to power voltage, the probe amplifier is saturated. It can detect that the LED is on, but may cause the color missing judgment. Please select the probe with low sensibility (higher model number).
- 5) The embedded amplifier and probe RGB sensors have a very good linearity, and the amplifier input offset is less than 20mV. As our suggestion, the probe is selected to have an output over 300mV in the main color channel.



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## Modification history

#KEC108D004V10E	2008.01	first version
#KEC108D004V10E	2011.03	Modify the schematic diagram