



# TEST REPORT

According to ANSI/IES LM-80-15  
For

## Hongli Zhihui Group Co.,Ltd. Guangzhou Branch

Room 316, Building 2, No.1, Xianke Yi Road, Huadong Town, Huadu District, Guangzhou, China

<b>Report Type:</b> 10000 Hours Test Report		<b>Product Type:</b> LED Package	
<b>Test Engineer:</b>	Pote Wang		
<b>Report Number:</b>	RSZ180912501-10-10000-M3		
<b>Test Date:</b>	2018-09-17 to 2020-03-10		
<b>Report Date:</b>	2020-08-04		

**Revised Note:** The previous report RSZ180912501-10-10000-M2 is replaced by this report on 2020-08-

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<b>Accreditation:</b>	The IAS Accreditation Number TL-460.



## 1 - General Information

### 1.1 Description of LED Light Sources

#### Sample Size:

60 PCS test samples were in good condition and received on 2018-09-12. The samples were numbered from 1 to 30 and 31 to 60.

#Manufacturer:	Hongli Zhihui Group Co.,Ltd. Guangzhou Branch
#Part Number:	HL-AS-2835HW-2C-S1-08-PCT-HR3
#Part Type:	LED Package
#Drive Level:	DC 150mA
#Nominal CCT:	2700K
#Power:	0.96W
#Average Current Density per LED die:	1159.555 mA/mm <sup>2</sup>
#Average Power Density per LED die:	3.827 W/mm <sup>2</sup>
#CRI:	80
#Die Spacing:	0.15mm

#### Sampling Method:

LED samples for IESNA LM-80 testing consist of units built from a minimum of three manufacturing lots with each manufacturing lot built from different wafer lots built on non-consecutive days.

These manufacturing lots are picked to represent a wide parametric distribution.

#### #Family products covered by this report:

According to *ENERGY STAR® Requirements for the Use of LM-80 Data*, the following products can be covered by this report base on the information and declaration provided by manufacturer. The information of these models shows that the covered products meet all section 4 requirements of *ENERGY STAR® Requirements for the Use of LM-80 Data* (September 28, 2017)

#### This report covers the following models:

Model type	Model name	CRI (typ.)	CCT (typ.)	Series	Parallel	Power density (W/mm <sup>2</sup> )	Current density per LED die (mA/mm <sup>2</sup> )	Current per die (mA)	Distance between of dies	Current (mA)
Tested model	HL-AS-2835HW-2C-S1-08-PCT-HR3	80	2700K	2	1	0.0979	1159.555	150	0.15	150
Multiple models	HL-AS-2835HW-2C-S1-08-PCT-HR3	80	3000K	2	1	0.0979	1159.555	150	0.15	150
		80	4000K	2	1	0.0979	1159.555	150	0.15	150
		80	5000K	2	1	0.0979	1159.555	150	0.15	150
		80	5700K	2	1	0.0979	1159.555	150	0.15	150
		80	6500K	2	1	0.0979	1159.555	150	0.15	150
		80		2	1	0.0979	1159.555	150	0.15	150
Multiple models	HL-AS-2835HW-2C-S1-08-PCT-HR3(R9)	80	2700K	2	1	0.0979	1159.555	150	0.15	150
		80	3000K	2	1	0.0979	1159.555	150	0.15	150
		80	4000K	2	1	0.0979	1159.555	150	0.15	150
		80	5000K	2	1	0.0979	1159.555	150	0.15	150
		80	5700K	2	1	0.0979	1159.555	150	0.15	150
		80	6500K	2	1	0.0979	1159.555	150	0.15	150
		80		2	1	0.0979	1159.555	150	0.15	150



Multiple models	HL-AS-2835HVW-2C-S1-08-PCT-HR3	80	2700K	2	1	0.0582	255.495	30	0.15	30
		80	3000K	2	1	0.0582	255.495	30	0.15	30
		80	4000K	2	1	0.0582	255.495	30	0.15	30
		80	5000K	2	1	0.0582	255.495	30	0.15	30
		80	5700K	2	1	0.0582	255.495	30	0.15	30
		80	6500K	2	1	0.0582	255.495	30	0.15	30
		80		2	1	0.0582	255.495	30	0.15	30
Multiple models	HL-AS-2835HVW-2C-S1-08-PCT-HR3(R9)	80	2700K	2	1	0.0582	255.495	30	0.15	30
		80	3000K	2	1	0.0582	255.495	30	0.15	30
		80	4000K	2	1	0.0582	255.495	30	0.15	30
		80	5000K	2	1	0.0582	255.495	30	0.15	30
		80	5700K	2	1	0.0582	255.495	30	0.15	30
		80	6500K	2	1	0.0582	255.495	30	0.15	30
		80		2	1	0.0582	255.495	30	0.15	30
Multiple models	HL-AS-2835HVW-2C-S1-08L-PCT-HR3	80	2700K	2	1	0.0582	255.495	30	0.15	30
		80	3000K	2	1	0.0582	255.495	30	0.15	30
		80	4000K	2	1	0.0582	255.495	30	0.15	30
		80	5000K	2	1	0.0582	255.495	30	0.15	30
		80	5700K	2	1	0.0582	255.495	30	0.15	30
		80	6500K	2	1	0.0582	255.495	30	0.15	30
		80		2	1	0.0582	255.495	30	0.15	30

Multiple models  
HL-AS-2835HVW-2C-S1

Multiple models	HL-AS-2835DVW-2C-S1-08L-PCT-HR3	80	2700K	2	1	0.0979	273.53	60	0.15	60
		80	3000K	2	1	0.0979	273.53	60	0.15	60
		80	4000K	2	1	0.0979	273.53	60	0.15	60
		80	5000K	2	1	0.0979	273.53	60	0.15	60
		80	5700K	2	1	0.0979	273.53	60	0.15	60
		80	6500K	2	1	0.0979	273.53	60	0.15	60
		80		2	1	0.0979	273.53	60	0.15	60
Multiple models	HL-AS-2835DVW-2C-S1-08L-PCT-HR3(R9)	80	2700K	2	1	0.0979	273.53	60	0.15	60
		80	3000K	2	1	0.0979	273.53	60	0.15	60
		80	4000K	2	1	0.0979	273.53	60	0.15	60
		80	5000K	2	1	0.0979	273.53	60	0.15	60
		80	5700K	2	1	0.0979	273.53	60	0.15	60
		80	6500K	2	1	0.0979	273.53	60	0.15	60
		80		2	1	0.0979	273.53	60	0.15	60
Multiple models	HL-AS-2835DVW-2C-S1-08-PCT-HR3	80	2700K	2	1	0.0979	134.783	30	0.15	30
		80	3000K	2	1	0.0979	134.783	30	0.15	30
		80	4000K	2	1	0.0979	134.783	30	0.15	30
		80	5000K	2	1	0.0979	134.783	30	0.15	30
		80	5700K	2	1	0.0979	134.783	30	0.15	30
		80	6500K	2	1	0.0979	134.783	30	0.15	30
		80		2	1	0.0979	134.783	30	0.15	30
Multiple models	HL-AS-2835DVW-2C-S1-08-PCT-HR3(R9)	80	2700K	2	1	0.0979	134.783	30	0.15	30
		80	3000K	2	1	0.0979	134.783	30	0.15	30
		80	4000K	2	1	0.0979	134.783	30	0.15	30
		80	5000K	2	1	0.0979	134.783	30	0.15	30
		80	5700K	2	1	0.0979	134.783	30	0.15	30
		80	6500K	2	1	0.0979	134.783	30	0.15	30
		80		2	1	0.0979	134.783	30	0.15	30
Multiple models	HL-AS-2835DVW-2C-S1-08L-PCT-HR3	80	2700K	2	1	0.0979	134.783	30	0.15	30
		80	3000K	2	1	0.0979	134.783	30	0.15	30
		80	4000K	2	1	0.0979	134.783	30	0.15	30
		80	5000K	2	1	0.0979	134.783	30	0.15	30
		80	5700K	2	1	0.0979	134.783	30	0.15	30
		80	6500K	2	1	0.0979	134.783	30	0.15	30
		80		2	1	0.0979	134.783	30	0.15	30
Multiple models	HL-AS-2835DVW-2C-S1-08L-PCT-HR3(R9)	80	2700K	2	1	0.0979	134.783	30	0.15	30
		80	3000K	2	1	0.0979	134.783	30	0.15	30
		80	4000K	2	1	0.0979	134.783	30	0.15	30
		80	5000K	2	1	0.0979	134.783	30	0.15	30
		80	5700K	2	1	0.0979	134.783	30	0.15	30
		80	6500K	2	1	0.0979	134.783	30	0.15	30
		80		2	1	0.0979	134.783	30	0.15	30









Multiple models	HL-AS-2835DW-2-S1-08L-PCT-HR3	80	2700K	1	2	0.0979	861.112	150	0.15	300
		80	3000K	1	2	0.0979	861.112	150	0.15	300
		80	4000K	1	2	0.0979	861.112	150	0.15	300
		80	5000K	1	2	0.0979	861.112	150	0.15	300
		80	5700K	1	2	0.0979	861.112	150	0.15	300
		80	6500K	1	2	0.0979	861.112	150	0.15	300
		80		1	2	0.0979	861.112	150	0.15	300
Multiple models	HL-AS-2835DW-2-S1-08L-PCT-HR3(R9)	80	2700K	1	2	0.0979	861.112	150	0.15	300
		80	3000K	1	2	0.0979	861.112	150	0.15	300
		80	4000K	1	2	0.0979	861.112	150	0.15	300
		80	5000K	1	2	0.0979	861.112	150	0.15	300
		80	5700K	1	2	0.0979	861.112	150	0.15	300
		80	6500K	1	2	0.0979	861.112	150	0.15	300
		80		1	2	0.0979	861.112	150	0.15	300
Multiple models	HL-AS-2835HW-2-S1-08-PCT-HR3	80	2700K	1	2	0.0979	1159.555	150	0.15	300
		80	3000K	1	2	0.0979	1159.555	150	0.15	300
		80	4000K	1	2	0.0979	1159.555	150	0.15	300
		80	5000K	1	2	0.0979	1159.555	150	0.15	300
		80	5700K	1	2	0.0979	1159.555	150	0.15	300
		80	6500K	1	2	0.0979	1159.555	150	0.15	300
		80		1	2	0.0979	1159.555	150	0.15	300
Multiple models	HL-AS-2835HW-2-S1-08-PCT-HR3(R9)	80	2700K	1	2	0.0979	1159.555	150	0.15	300
		80	3000K	1	2	0.0979	1159.555	150	0.15	300
		80	4000K	1	2	0.0979	1159.555	150	0.15	300
		80	5000K	1	2	0.0979	1159.555	150	0.15	300
		80	5700K	1	2	0.0979	1159.555	150	0.15	300
		80	6500K	1	2	0.0979	1159.555	150	0.15	300
		80		1	2	0.0979	1159.555	150	0.15	300
Multiple models	HL-AS-2835HW-2-S1-08L-PCT-HR3	80	2700K	1	2	0.0979	1159.555	150	0.15	300
		80	3000K	1	2	0.0979	1159.555	150	0.15	300
		80	4000K	1	2	0.0979	1159.555	150	0.15	300
		80	5000K	1	2	0.0979	1159.555	150	0.15	300
		80	5700K	1	2	0.0979	1159.555	150	0.15	300
		80	6500K	1	2	0.0979	1159.555	150	0.15	300
		80		1	2	0.0979	1159.555	150	0.15	300
Multiple models	HL-AS-2835HW-2-S1-08L-PCT-HR3(R9)	80	2700K	1	2	0.0979	1159.555	150	0.15	300
		80	3000K	1	2	0.0979	1159.555	150	0.15	300
		80	4000K	1	2	0.0979	1159.555	150	0.15	300
		80	5000K	1	2	0.0979	1159.555	150	0.15	300

Multiple models	HL-AS-2835DVW-2-S1-08-PCT-HR3	80	2700K	1	2	0.0979	227.942	50	0.15	100
		80	3000K	1	2	0.0979	227.942	50	0.15	100
		80	4000K	1	2	0.0979	227.942	50	0.15	100
		80	5000K	1	2	0.0979	227.942	50	0.15	100
		80	5700K	1	2	0.0979	227.942	50	0.15	100
		80	6500K	1	2	0.0979	227.942	50	0.15	100
		80		1	2	0.0979	227.942	50	0.15	100
Multiple models	HL-AS-2835DVW-2-S1-08-PCT-HR3(R9)	80	2700K	1	2	0.0979	227.942	50	0.15	100
		80	3000K	1	2	0.0979	227.942	50	0.15	100
		80	4000K	1	2	0.0979	227.942	50	0.15	100
		80	5000K	1	2	0.0979	227.942	50	0.15	100
		80	5700K	1	2	0.0979	227.942	50	0.15	100
		80	6500K	1	2	0.0979	227.942	50	0.15	100
		80		1	2	0.0979	227.942	50	0.15	100
Multiple models	HL-AS-2835DVW-2-S1-08L-PCT-HR3	80	2700K	1	2	0.0979	227.942	50	0.15	100
		80	3000K	1	2	0.0979	227.942	50	0.15	100
		80	4000K	1	2	0.0979	227.942	50	0.15	100
		80	5000K	1	2	0.0979	227.942	50	0.15	100
		80	5700K	1	2	0.0979	227.942	50	0.15	100
		80	6500K	1	2	0.0979	227.942	50	0.15	100
		80		1	2	0.0979	227.942	50	0.15	100
Multiple models	HL-AS-2835DVW-2-S1-08L-PCT-HR3(R9)	80	2700K	1	2	0.0979	227.942	50	0.15	100
		80	3000K	1	2	0.0979	227.942	50	0.15	100
		80	4000K	1	2	0.0979	227.942	50	0.15	100
		80	5000K	1	2	0.0979	227.942	50	0.15	100
		80	5700K	1	2	0.0979	227.942	50	0.15	100
		80	6500K	1	2	0.0979	227.942	50	0.15	100
		80		1	2	0.0979	227.942	50	0.15	100
Multiple models	HL-AS-2835DVW-2-S1-08-PCT-HR3	80	2700K	1	2	0.0979	134.783	30	0.15	60
		80	3000K	1	2	0.0979	134.783	30	0.15	60
		80	4000K	1	2	0.0979	134.783	30	0.15	60
		80	5000K	1	2	0.0979	134.783	30	0.15	60
		80	5700K	1	2	0.0979	134.783	30	0.15	60
		80	6500K	1	2	0.0979	134.783	30	0.15	60
		80		1	2	0.0979	134.783	30	0.15	60
Multiple models	HL-AS-2835DVW-2-S1-08-PCT-HR3(R9)	80	2700K	1	2	0.0979	134.783	30	0.15	60
		80	3000K	1	2	0.0979	134.783	30	0.15	60
		80	4000K	1	2	0.0979	134.783	30	0.15	60
		80	5000K	1	2	0.0979	134.783	30	0.15	60
		80	5700K	1	2	0.0979	134.783	30	0.15	60
		80	6500K	1	2	0.0979	134.783	30	0.15	60
		80		1	2	0.0979	134.783	30	0.15	60







**Bay Area Compliance Laboratories Corp. (Dongguan)**

No.69, Pulongcun, Puxinhu Industrial Area Tangxia ,  
Dongguan, Guangdong, China.  
The IAS Accreditation Number TL-460

Multiple  
models      HL-AS-  
                 2835HW-S1-  
                 08L-

FINAL



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Multiple  
models      HL-AS-  
                 2835DW-S1-  
                 08-

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Multiple models	HL-AS-2835HW-S1-08-PCT-HR3(R9)	80	2700K	1	1	0.051	930.002	150	/	150
		80	3000K	1	1	0.051	930.002	150	/	150
		80	4000K	1	1	0.051	930.002	150	/	150
		80	5000K	1	1	0.051	930.002	150	/	150
		80	5700K	1	1	0.051	930.002	150	/	150
		80	6500K	1	1	0.051	930.002	150	/	150
		80		1	1	0.051	930.002	150	/	150
Multiple models	HL-AS-2835HW-S1-08L-PCT-HR3	80	2700K	1	1	0.051	930.002	150	/	150
		80	3000K	1	1	0.051	930.002	150	/	150
		80	4000K	1	1	0.051	930.002	150	/	150
		80	5000K	1	1	0.051	930.002	150	/	150
		80	5700K	1	1	0.051	930.002	150	/	150
		80	6500K	1	1	0.051	930.002	150	/	150
		80		1	1	0.051	930.002	150	/	150
Multiple models	HL-AS-2835HW-S1-08L-PCT-HR3(R9)	80	2700K	1	1	0.051	930.002	150	/	150
		80	3000K	1	1	0.051	930.002	150	/	150
		80	4000K	1	1	0.051	930.002	150	/	150
		80	5000K	1	1	0.051	930.002	150	/	150
		80	5700K	1	1	0.051	930.002	150	/	150
		80	6500K	1	1	0.051	930.002	150	/	150
		80		1	1	0.051	930.002	150	/	150
Multiple models	HL-**-2835D***W-S1-08*-PCT-HR3(R9)-***-**	80	2700K	1	1	0.0204	210.407	60	/	60
		80	3000K	1	1	0.0204	210.407	60	/	60
		80	4000K	1	1	0.0204	210.407	60	/	60
		80	5000K	1	1	0.0204	210.407	60	/	60
		80	5700K	1	1	0.0204	210.407	60	/	60
		80	6500K	1	1	0.0204	210.407	60	/	60
		80		1	1	0.0204	210.407	60	/	60
Multiple models	HL-**-2835D***W-2-S1-08*-PCT-HR3(R9)-***-**	80	2700K	1	2	0.0367	210.407	60	0.15	120
		80	3000K	1	2	0.0367	210.407	60	0.15	120





Multiple models	SL- *B2835FTA- 21EA**	80	2700K	2	1	0.0979	1159.555	150	0.15	150
		80	3000K	2	1	0.0979	1159.555	150	0.15	150
		80	4000K	2	1	0.0979	1159.555	150	0.15	150
		80	5000K	2	1	0.0979	1159.555	150	0.15	150
		80	5700K	2	1	0.0979	1159.555	150	0.15	150

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Multiple models	SL- *B2835FTA- 11EA*H-**	80	2700K	1	1	0.051	930.002	150	/	150
		80	3000K	1	1	0.051	930.002	150	/	150
		80	4000K	1	1	0.051	930.002	150	/	150
		80	5000K	1	1	0.051	930.002	150	/	150
		80	5700K	1	1	0.051	930.002	150	/	150
		80	6500K	1	1	0.051	930.002	150	/	150
		80		1	1	0.051	930.002	150	/	150
Multiple models	SL- *B2835FTA- 11EA*/*	80	2700K	1	1	0.051	930.002	150	/	150
		80	3000K	1	1	0.051	930.002	150	/	150
		80	4000K	1	1	0.051	930.002	150	/	150
		80	5000K	1	1	0.051	930.002	150	/	150
		80	5700K	1	1	0.051	930.002	150	/	150
		80	6500K	1	1	0.051	930.002	150	/	150
		80		1	1	0.051	930.002	150	/	150
Multiple models	SL- *B2835FTA- 11EA*H/*	80	2700K	1	1	0.051	930.002	150	/	150
		80	3000K	1	1	0.051	930.002	150	/	150
		80	4000K	1	1	0.051	930.002	150	/	150
		80	5000K	1	1	0.051	930.002	150	/	150
		80	5700K	1	1	0.051	930.002	150	/	150
		80	6500K	1	1	0.051	930.002	150	/	150
		80		1	1	0.051	930.002	150	/	150
Multiple models	SL- **B2835FTA- 11EA****- APH***	80	2700K	1	1	0.051	930.002	150	/	150
		80	3000K	1	1	0.051	930.002	150	/	150
		80	4000K	1	1	0.051	930.002	150	/	150
		80	5000K	1	1	0.051	930.002	150	/	150
		80	5700K	1	1	0.051	930.002	150	/	150
		80	6500K	1	1	0.051	930.002	150	/	150
		80		1	1	0.051	930.002	150	/	150
Multiple models	SL- *B2835FTA- 11CA*	80	2700K	1	1	0.0204	463.822	60	/	60
		80	3000K	1	1	0.0204	463.822	60	/	60
		80	4000K	1	1	0.0204	463.822	60	/	60
		80	5000K	1	1	0.0204	463.822	60	/	60
		80	5700K	1	1	0.0204	463.822	60	/	60
		80	6500K	1	1	0.0204	463.822	60	/	60
		80		1	1	0.0204	463.822	60	/	60
Multiple models	SL- *B2835FTA- 11CA*H	80	2700K	1	1	0.0204	463.822	60	/	60
		80	3000K	1	1	0.0204	463.822	60	/	60
		80	4000K	1	1	0.0204	463.822	60	/	60
		80	5000K	1	1	0.0204	463.822	60	/	60
		80	5700K	1	1	0.0204	463.822	60	/	60
		80	6500K	1	1	0.0204	463.822	60	/	60
		80		1	1	0.0204	463.822	60	/	60

Multiple models	SL- *B2835FTA- 11CA*-**	80	2700K	1	1	0.0204	463.822	60	/	60
		80	3000K	1	1	0.0204	463.822	60	/	60
		80	4000K	1						

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g. For the Model name of **\*\*2835D\*\*W-S1-08\*-PCT-HR3(R9)-\*\*-\*\*** and **\*\*2835D\*\*W-2-S1-08\*-PCT-HR3(R9)-\*\*-\*\*** ,  
as below is the the detail remarks :

1. Two different Model name for different market.
2. The first s for the process type.
3. The second s for the brightness level.
4. The third s for the bonding wire style.
5. The fourth

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## Bay Area Compliance Laboratories Corp. (Dongguan)

No.69, Pulongcun, Puxinhu Industrial Area Tangxia ,  
Dongguan, Guangdong, China.  
The IAS Accreditation Number TL-460

The relative humidity within chamber was kept less than 65% during test.

For photometry measurement, the ambient temperature during test was set to  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , RHc[. ]1 491.5Tm han 656(e)4(t)-5( )9(t)-5(o)4( )-5(2)4(5)19(

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## 2 - Summary of Test Result

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Data Set:	Sample Size	Failures Observed:	Test Interval	Test Duration	
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F I N A L

### 3 - Test Data

#### 3.1 Data Set 1, 85°C, 150mA (Lumen Maintenance)

No.	Lumen Maintenance (%)										
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	100.00	99.52	99.22	98.87	98.48	98.17	97.91	97.67	97.49	97.05	96.90
2	99.61	99.94	99.61	99.40	99.20	98.96	98.84	98.67	98.32	97.84	97.58
3	99.45	99.88	99.61	99.30	99.02	98.80	98.49	98.22	97.91	97.87	97.67
4	99.06	99.62	99.30	99.08	98.85	98.57	98.47	98.06	97.86	97.65	97.38
5	100.10	99.55	99.26	98.91	98.53	98.44	98.19	97.99	97.89	97.85	97.69
6	101.70	99.61	99.21	98.92	98.53	98.24	98.20	98.00	97.83	97.67	97.36
7	100.70	99.60	99.30	99.10	98.74	98.47	98.30	98.01	97.76	97.54	97.28
8	98.55	99.81	99.56	99.20	98.99	98.84	98.67	98.43	98.20	98.05	97.81
9	98.80	99.51	99.09	98.86	98.48	98.20	97.98	97.60	97.25	97.15	96.74
10	98.59EMC										



**3.2 Data Set 1, 85°C, 150mA (Forward Voltage)**

No.	Forward Voltage (V)										
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	6.436	6.423	6.411	6.466	6.467	6.385	6.393	6.376	6.383	6.380	6.399

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**3.3 Data Set 1, 85°C, 150mA (Chromaticity Shift)**

No.			CCT(K)										
	Ohr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	0.2627	0.5284	2693	0.0003	0.0005	0.0007	0.0008	0.0011	0.0014	0.0017	0.0021	0.0027	0.0030
2	0.2632	0.5291	2680	0.0004	0.0006	0.0007	0.0009	0.0020	0.0021	0.0022	0.0025	0.0027	0.0028
3	0.2643	0.5280	2661	0.0004	0.0007	0.0010	0.0011	0.0014	0.0015	0.0019	0.0021	0.0018	0.0020
4	0.2636	0.5278	2676	0.0006	0.0008	0.0009	0.0012	0.0018	0.0021	0.0022	0.0025	0.0031	0.0036
5	0.2612	0.5278	2725	0.0007	0.0011	0.0014	0.0015	0.0019	0.0023	0.0025	0.0027	0.0030	0.0035
6	0.2617	0.5279	2715	0.0006	0.0009	0.0012	0.0014	0.0020	0.0031	0.0035	0.0039	0.0035	0.0040
7	0.2614	0.5267	2726	0.0004	0.0006	0.0007	0.0009	0.0009	0.0011	0.0012	0.0013	0.0018	0.0022
8	0.2628	0.5270	2695	0.0006	0.0009	0.0012	0.0015	0.0018	0.0024	0.0027	0.0030	0.0031	0.0036
9	0.2625	0.5283	2697	0.0007	0.0011	0.0012	0.0013	0.0015	0.0021	0.0022	0.0025	0.0035	0.0036
10	0.2644	0.5290	2655	0.0005	0.0008	0.0011	0.0013	0.0014	0.0016	0.0017	0.0018	0.0016	0.0020
11	0.2634	0.5293	2673	0.0004	0.0007	0.0009	0.0011	0.0017	0.0021	0.0024	0.0027	0.0025	0.0027
12	0.2620	0.5274	2710	0.0009	0.0014	0.0016	0.0019	0.0023	0.0034	0.0036	0.0038	0.0038	0.0039
13	0.2629	0.5301	2681	0.0007	0.0012	0.0014	0.0016	0.0020	0.0026	0.0028	0.0031	0.0037	0.0039
14	0.2642	0.5281	2663	0.0006	0.0008	0.0009	0.0010	0.0011	0.0013	0.0015	0.0017	0.0018	0.0022
15	0.2637	0.5285	2672	0.0005	0.0008	0.0010	0.0011	0.0013	0.0016	0.0019	0.0021	0.0017	0.0017
16	0.2616	0.5276	2718	0.0007	0.0009	0.0011	0.0014	0.0023	0.0026	0.0029	0.0032	0.0039	0.0042
17	0.2628	0.5296	2684	0.0005	0.0007	0.0009	0.0011	0.0013	0.0015	0.0017	0.0018	0.0022	0.0023
18	0.2626	0.5284	2694	0.0007	0.0009	0.0011	0.0012	0.0014	0.0018	0.0020	0.0022	0.0013	0.0016
19	0.2630	0.5285	2685	0.0009	0.0012	0.0014	0.0017	0.0023	0.0037	0.0040	0.0043	0.0041	0.0045
20	0.2631	0.5306	2675	0.0006	0.0008	0.0011	0.0014	0.0019	0.0025	0.0026	0.0027	0.0033	0.0036
21	0.2635	0.5292	2673	0.0007	0.0010	0.0011	0.0014	0.0020	0.0025	0.0026	0.0027	0.0032	0.0035
22	0.2634	0.5278	2680	0.0003	0.0004	0.0005	0.0007	0.0009	0.0010	0.0010	0.0011	0.0014	0.0017
23	0.2637	0.5285	2670	0.0008	0.0011	0.0014	0.0015	0.0017	0.0020	0.0021	0.0024	0.0023	0.0025
24	0.2618	0.5294	2707	0.0008	0.0011	0.0013	0.0014	0.0020	0.0025	0.0028	0.0031	0.0029	0.0031
25	0.2633	0.5303	2672	0.0007	0.0011	0.0013	0.0016	0.0020	0.0031	0.0034	0.0036	0.0040	0.0042
26	0.2631	0.5294	2680	0.0007	0.0010	0.0013	0.0014	0.0015	0.0016	0.0016	0.0018	0.0016	0.0017
27	0.2618	0.5286	2709	0.0005	0.0008	0.0011	0.0013	0.0016	0.0018	0.0021	0.0023	0.0016	0.0018
28	0.2630	0.5296	2682	0.0005	0.0009	0.0010	0.0013	0.0019	0.0024	0.0027	0.0030	0.0031	0.0033
29	0.2604	0.5248	2756	0.0006	0.0009	0.0010	0.0011	0.0016	0.0022	0.0025	0.0028	0.0031	0.0034
30	0.2621	0.5269	2710	0.0004	0.0005	0.0007	0.0009	0.0015	0.0017	0.0022	0.0024	0.0020	0.0023
Avg.	0.2628	0.5284	2691	0.0006	0.0009	0.0011	0.0013	0.0017	0.0021	0.0023	0.0026	0.0027	0.0030
Med.	0.2630	0.5285	2683	0.0006	0.0009	0.0011	0.0013	0.0017	0.0021	0.0022	0.0025	0.0028	0.0031
st dev	0.0010	0.0012	23	0.0002	0.0002	0.0003	0.0003	0.0004	0.0007	0.0007	0.0007	0.0009	0.0009
Min.	0.2604	0.5248	2655	0.0003	0.0004	0.0005	0.0007	0.0009	0.0010	0.0010	0.0011	0.0013	0.0016
Max.	0.2644	0.5306	2756	0.0009	0.0014	0.0016	0.0019	0.0023	0.0037	0.0040	0.0043	0.0041	0.0045

**3.4 Data Set 2, 105°C, 150mA (Lumen Maintenance)**

No.	Lumen Maintenance (%)										
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
31	100.40	99.70	99.45	99.20	98.87	98.57	98.50	98.28	97.81	97.16	96.99
32	99.72	99.74	99.47	99.03	98.73	98.69	98.55	98.26	98.07	97.83	97.43
33	100.30	99.30	98.97	98.60	98.29	98.22	98.06	97.83	97.42	97.06	96.72
34	98.73	99.29	99.09	98.75	98.24	97.88	97.70	97.35	97.22	96.78	96.56
35	98.27	99.07	98.73	98.37	98.06	97.79	97.36	97.04	96.84	96.61	96.33
36	101.70	99.51	99.41	99.02	98.62	98.33	97.95	97.69	97.21	96.88	96.55
37	98.24	99.54	99.18	98.99	98.79	98.44	98.03	97.73	97.38	97.19	96.85
38	101.30	99.51	99.11	98.91	98.47	98.23	97.91	97.67	97.37	97.16	96.92
39	100.20	99.45	99.17	98.86	98.56	98.23	98.13	97.84	97.30	97.05	96.65
40	96.62	99.53	99.04	98.77	98.34	98.09	97.76	97.51	97.28	96.64	96.29
41	101.00	99.50	99.11	98.93	98.50	98.44	98.18	97.91	97.71	97.28	97.07
42	98.13	99.39	98.91	98.60	98.34	98.01	97.67	97.25	96.93	96.72	96.48
43	98.43	99.49	98.88	98.55	98.14	97.68	97.59	97.42	97.12	96.86	96.48

**3.5 Data Set 2, 105°C, 150mA (Forward Voltage)**

No.	Forward Voltage (V)										
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
31	6.466	6.432									

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**3.6 Data Set 2, 105°C, 150mA (Chromaticity Shift)**

No.			CCT(K)										
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
31	0.2622	0.5296	2698	0.0003	0.0006	0.0007	0.0009	0.0014	0.0017	0.0019	0.0021	0.0021	0.0025
32	0.2626	0.5291	2691	0.0004	0.0005	0.0007	0.0008	0.0011	0.0015	0.0018	0.0021	0.0025	0.0027
33	0.2621	0.5303	2696	0.0006	0.0009	0.0012	0.0013	0.0014	0.0017	0.0019	0.0021	0.0028	0.0030
34	0.2618	0.5264	2719	0.0006	0.0008	0.0011	0.0013	0.0022	0.0027	0.0028	0.0029	0.0029	0.0032
35	0.2645	0.5306	2648	0.0003	0.0005	0.0006	0.0008	0.0010	0.0015	0.0016	0.0018	0.0030	0.0030
36	0.2646	0.5303	2647	0.0009	0.0012	0.0015	0.0017	0.0020	0.0021	0.0024	0.0026	0.0027	0.0030
37	0.2643	0.5271	2664	0.0008	0.0010	0.0012	0.0013	0.0020	0.0025	0.0028	0.0031	0.0037	0.0040
38	0.2622	0.5292	2699	0.0005	0.0007	0.0010	0.0013	0.0016	0.0018	0.0019	0.0021	0.0022	0.0025
39	0.2613	0.5279	2722	0.0008	0.0009	0.0012	0.0015	0.0018	0.0020	0.0022	0.0024	0.0024	0.0026
40	0.2588	0.5222	2802	0.0009	0.0012	0.0013	0.0016	0.0024	0.0031	0.0033	0.0037	0.0036	0.0040
41	0.2605	0.5270	2744	0.0006	0.0010	0.0012	0.0014	0.0024	0.0029	0.0032	0.0033	0.0038	0.0042
42	0.2618	0.5256	2721	0.0011	0.0013	0.0015	0.0017	0.0021	0.0028	0.0030	0.0033	0.0037	0.0044
43	0.2608	0.5271	2737	0.0010	0.0013	0.0014	0.0017	0.0025	0.0031	0.0034	0.0035	0.0036	0.0041
44	0.2632	0.5301	2676	0.0006	0.0008	0.0010	0.0012	0.0013	0.0014	0.0015	0.0017	0.0016	0.0018
45	0.2637	0.5300	2666	0.0007	0.0010	0.0012	0.0013	0.0017	0.0019	0.0021	0.0022	0.0022	0.0024
46	0.2647	0.5278	2654	0.0008	0.0012	0.0014	0.0017	0.0022	0.0026	0.0030	0.0033	0.0034	0.0038
47	0.2635	0.5281	2677	0.0009	0.0012	0.0013	0.0015	0.0026	0.0031	0.0034	0.0036	0.0040	0.0041
48	0.2616	0.5289	2713	0.0005	0.0007	0.0009	0.0010	0.0013	0.0016	0.0018	0.0019	0.0018	0.0021



## 5 - Report Revision

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Report Number	Report Date	Contents
RSZ180912501-10-10000	2020-03-12	Original report.
RSZ180912501-10-10000-M1	2020-05-04	Update the family products covered in this report.
RSZ180912501-10-10000-M2	2020-06-02	Update the family products covered in this report.
RSZ180912501-10-10000-M3	2020-08-04	Update the family products covered in this report.

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**Directions**

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\*\*\*\*\*END OF REPORT\*\*\*\*\*

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