

## Exposure test by UV accelerated weathering tester (30000H)

This test simulated exposure to intense sunlight of lighting installed outdoors in order to test the impact of long term UV exposure on color temperature and lumens

### Test Sample

Item NO.	CCT	Sample condition	Submitted sample. (pcs)	Length ( cm )
86033,43	2700K	Installed IP68 Screwed connector	3	10
86034,44	5700K	Installed IP68 Screwed connector	3	10
86013,23	2700K	Installed IP68 Screwed connector	3	10
86014,24	5700K	Installed IP68 Screwed connector	3	10
Outdoor	2700K	Installed IP68 Screwed connector	3	10
Outdoor	5700K	Installed IP68 Screwed connector	3	10

### Testing Condition

Irradiation intensity : 0.76W/m<sup>2</sup>, UVB-313nm , 63°C ;

Test time : 2000h ( 83.3days ) (Remark: The irradiation intensity of ultraviolet at 0.76W/m<sup>2</sup>, UVB-313nm is equal to at least 15times of 313nm UV intensity at noon )

The sample were not energized during the test.

### Testing Instrument:

**AUV accelerated weathering tester** ( call " UV test machine" for short )

PMS-80 UV-UIS-Near-IR Spectrophotometer +2M Integrating Sphere

## Test Methods

Use UV test machine to test 2000H, Test light' s photoelectric parameters during the experiment by  
2M Integrating Sphere

## Reference to standard

ASTM G154-2006 Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of  
Nonmetallic Materials

ISO4892.3-2006 PLASTICS--METHODS OF EXPOSURE TO LABORATORY LIGHT SOURCES--PART  
3:FLUORESCET UV LAMPS

## Testing procedures

- 1, Prepare the test specimen, connect with front connector and end cap.
- 2, Test all the samples photoelectric parameters before the experiment
- 3, Arranged the samples and put into the TUV machine
- 4,UV testing Machine setting : .76W/m<sup>2</sup>, 313nm , 63°C , continued exposure.
- 5,Test light' s photoelectric parameters again at the 1<sup>st</sup> day, 2<sup>nd</sup> day, 5<sup>th</sup> day, 10<sup>th</sup> day, 20<sup>th</sup> day, 40<sup>th</sup> day,  
83<sup>th</sup> day during the experiment.



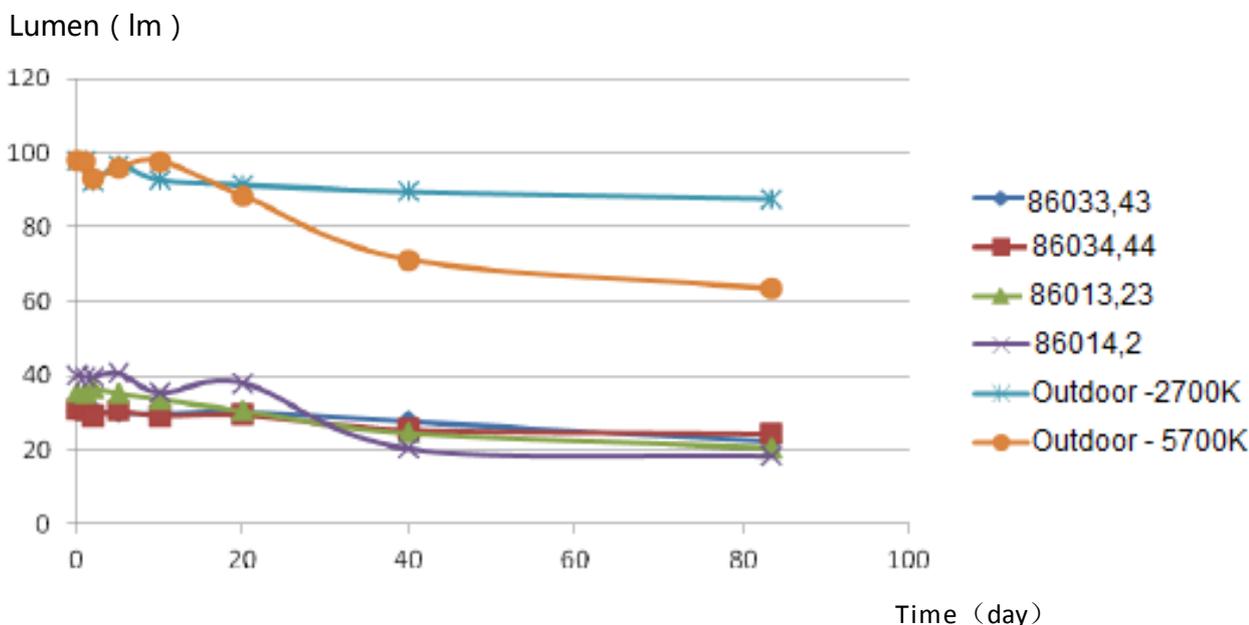
## Testing Result record:

**Table One: Photoelectric parameters at different time(adopt three samples' test result):**

Time ( day )	Outdoor-2700K		Outdoor-5700K		86033,43 -2700K		86034,44-5700K		86013,23-2700K		86014,24-5700K	
	CCT( K )	Lumen ( lm )	CCT ( K )	Lumen ( lm )	CCT( K )	Lumen ( lm )	CCT( K )	Lumen ( lm )	CCT ( K )	Lumen ( lm )	CCT ( K )	Lumen ( lm )
0	2735	98.1	5810	98.2	2642	30.5	5809	31	2653	35.4	6203	39.9
1	2734	97.93	5807	97.62	2620	30	5794	30.7	2622	35.1	6192	39.6
2	2720	92.29	5678	93.3	2586	30.6	5564	29.3	2650	36.5	6168	39.6
5	2724	96.87	5604	95.93	2579	30.1	5401	30.6	2608	35.2	6029	40.6
10	2709	92.72	5406	97.85	2561	29.9	5175	29.3	2409	33.6	5523	35.4
20	2646	91.57	5157	88.39	2541	30.4	4901	29.4	2335	30.5	5572	37.9
40	2578	89.7	4922	71.14	2433	27.8	4611	25.6	2195	24.6	4411	20.4
83.3	2540	87.73	4553	63.31	2269	22.4	4059	24.5	2189	20.6	4036	18.5

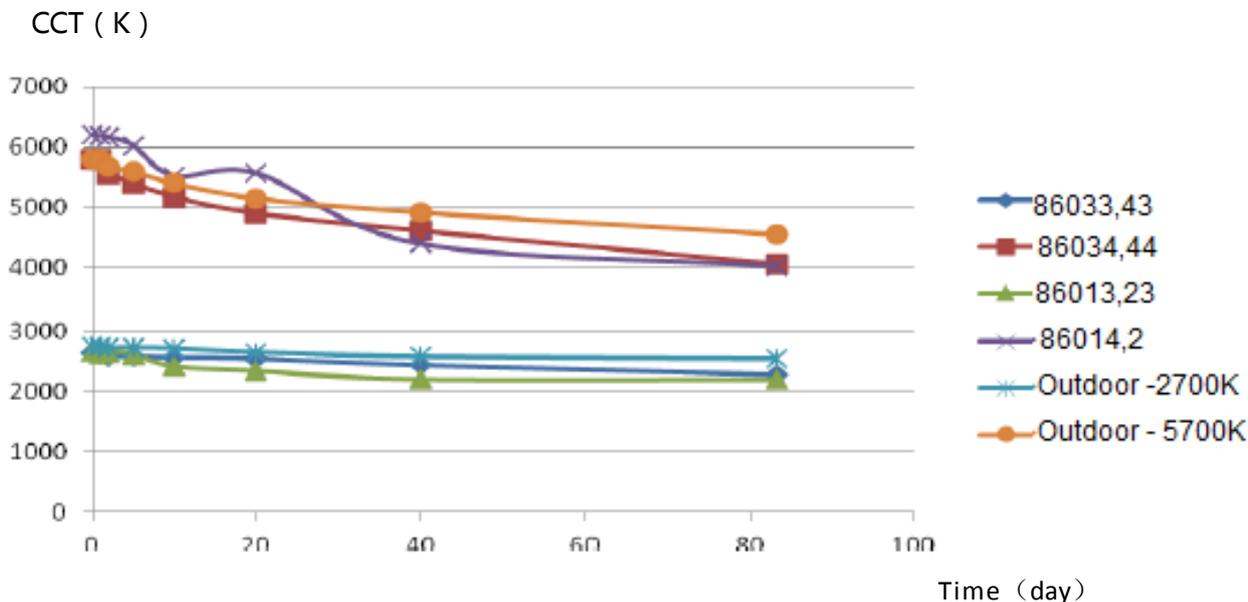
## Testing result analysis

### 1, Table Two: Lumen output VS. exposure time





### 2, Table three: Color temperature and exposure time



### 3, Percentage of Color temperature(lumen)and original parameters

Time ( Day )	Percentage of CCT(lumen)and Lumen output											
	Outdoor-2700K		Outdoor-5700K		86033,43-2700K		86034,44-5700K		86013,23 - 2700K		86014,24-5700K	
	CCT ( K )	Lumen ( lm )	CCT ( K )	Lumen ( lm )	CCT ( K )	Lumen ( lm )	CCT ( K )	Lumen ( lm )	CCT ( K )	Lumen ( lm )	CCT ( K )	Lumen ( lm )
1	100.0%	99.8%	99.9%	99.4%	99.2%	98.4%	99.7%	99.0%	98.8%	99.2%	99.8%	99.2%
2	99.5%	94.1%	97.7%	95.0%	97.9%	100.3%	95.8%	94.5%	99.9%	103.1%	99.4%	99.2%
5	99.6%	98.7%	96.5%	97.7%	97.6%	98.7%	93.0%	98.7%	98.3%	99.4%	97.2%	101.8%
10	99.0%	94.5%	93.0%	99.6%	96.9%	98.0%	89.1%	94.5%	90.8%	94.9%	89.0%	88.7%
20	96.7%	93.3%	88.8%	90.0%	96.2%	99.7%	84.4%	94.8%	88.0%	86.2%	89.8%	95.0%
40	94.3%	91.4%	84.7%	72.4%	92.1%	91.1%	79.4%	82.6%	82.7%	69.5%	71.1%	51.1%
83.3	92.9%	89.4%	78.4%	64.4%	85.9%	73.4%	69.9%	79.0%	82.5%	58.2%	65.1%	46.4%

### Final Analysis Conclusion

- 1, Low CCT LED neon ribbon lights maintain their lumen output better than high CCT products under long term UV exposure;
- 2, These test results allow us to anticipate what will happen to CCT and lumen output under long term UV exposure.