TEST REPORT

For

GREEN CREATIVE LTD

519 Codisco Way, Sanford, FL 32771, United States

Test Model: 30PAR38HODIM/940NF25/277V

Report Type:	Flicker testing and Report According to: CEC-400-2018-038-CMF Joint Appendix JA10 NEMA 77-2017: Temporal Light Artifacts: Test Methods and Guidance for Acceptance Criteria
Product Type:	LED Lamp
Project Engineer:	Joker Gu
Report Number:	RKSB210122007-10
Test Date:	2021-01-26
Report Date:	2021-01-28
Reviewed By:	Seven Xia/EE Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan). No.248 Chenghu Road, Kunshan, Jiangsu province, China. Tel: +86-0512-86175000 Fax:+86-0512-88934268

1. Product Description

General Information:

One sample was received on 2021-01-22 and used for testing.

Model Tested:	30PAR38HODIM/940NF25/277V
Brand Name:	GREEN CREATIVE
Light Source Type:	LED
Product Type:	LED Lamp
Dimming:	Dimmable
Dimming Range:	0%-100%

Rated Values:

Rated Voltage/Frequency:	120-277VAC 50/60Hz
Rated Power:	30W
Nominal CCT:	4000K

Dimmer Information:

Sample No.	Manufacturer	Model of Dimmer	Type of Dimmer
Dimmer 1#	LUTRON	DVCL-153P	forward-phase cut

Family Declaration:

GREEN CREATIVE LTD, hereby declare that there are some differences between our Multiple Models and testing products. Details as below:

Testing Model Number	Multiple listed Model Number	Difference	Details
30PAR38HODIM/940 NF25/277V	30PAR38HODIM/XX XYYYY/277V	CCT&CRI	The “XXX” can be “818-965”, which indicate CRI and CCT: The first letter “X” means CRI, it can be 8, 9. 8 means CRI=80; 9 means CRI=90; The other two letters “XX” means CCT, it can be 18~65. 18 means CCT=1800K; 65 means CCT=6500K etc.
		Beam Angle	The “YYYY” can be NF25 or FL40, which indicate beam angle: NF25=25D; FL40=40D.

2. Standards Used

- IES LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting
- CEC-400-2018-021-CMF Appendix JA10 – Test Method for Measuring Flicker of Lighting Systems
- NEMA 77-2017: Temporal Light Artifacts: Test Methods and Guidance for Acceptance Criteria
- ANSI C82.77-10-2014: Harmonic Emission Limits – Related Power Quality Requirements for Lighting Equipment
- ENERGY STAR Test Method: Noise

3. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
Integrating Sphere	EVERFINE	Dia 1.5m	506021	N/A	N/A
Power Meter	INVENTFINE	PF9811	507047	2020-04-02	2021-04-01
light flickering analyzer	EVERFINE	LFA-3000	P185972CJ7371127	2020-12-23	2021-12-22
Thermal Meter	ANYMETRE	TH-20E	N/A	2020-11-30	2021-11-29
Sound Insulation Box	Anteck	N/A	N/A	2020-11-27	2021-11-26
Sound Level Meter	Hangzhou Aihua	AWA5661-1	088568	2020-03-24	2021-03-23
illuminometer	SMART	AR823+	N/A	2020-10-08	2021-10-07
AC POWER SUPPLY	SC	SC/BP-11003	1608110030553	2020-11-25	2021-11-24

4. Test Method

Lamp stabilization shall be determined in accordance with IES LM-79. Sample was tested with no seasoning at rated voltage. Ambient Temperature shall be maintained at a constant temperature of 25°C ±5°C.

For JA10 flicker test:

Oscilloscope and photo sensor was used to measure and record the flicker data for full light output (without dimming). The percent flicker was calculated as follows:

Percent flicker=(Max-Min)/(Max+Min)*100%.

Where the Max is the maximum recorded light level (voltage for oscilloscope) and Min is the minimum recorded light level (voltage for oscilloscope).The percent flicker result after data is filtered is reported as required by JA10.

For NEMA 77-2017 test:

The light output was measured by integrating sphere and light flicker analyzer (sampling speed is set no less than 20 kHz). The Sampling time was set 3 minutes. Flicker was calculated by flicker analyzer according to NEMA 77-2017. The reported value of Pst and SVM was the highest value of all light output level measured.

The noise test was performed when the light output was stabilized. Noise level meter was used to test noise and microphone was set at no more than 1m distance from UUT. The background noise of chamber is less than 18 dBA. The reported noise was the highest value of each position for all dimming level.

5. Test Result

5.1. Electrical parameters at full light output:

Test date: 2021-01-26; Test voltage: AC120V 60Hz

Voltage(V)	Frequency (Hz)	Current(A)	Power(W)	Power Factor	THD
120.0	60	0.250	29.79	0.991	12.8%

5.2. Flicker test result follow by CEC-400-2018-021-CMF Appendix JA10:

Recording Intervals: 0.00005s

Measurement Period: 2s

Dimming Level	100% Dimming Level	20% Dimming Level	Nominal Dimming Level
Maximum Light Output (lm)	3017	601.165	0.435
Minimum Light Output (lm)	2898	558.567	0
Percent Flicker (unfiltered) (%)	2.018	3.673	0.000
Percent Flicker (1000Hz cut-off) (%)	1.741	2.391	0.000
Percent Flicker (400Hz cut-off) (%)	1.625	2.240	0.000
Percent Flicker (200Hz cut-off) (%)	1.474	2.084	0.000
Percent Flicker (90Hz cut-off) (%)	0.227	0.711	0.000
Percent Flicker (40Hz cut-off) (%)	0.203	0.676	0.000

5.3. Flicker test result follow by NEMA 77-2017:

Peak values of Pst, SVM and Noise at all light output level:

Pst	SVM	Maximum Noise(dBA)
0.426	0.050	19.1

6. Product Photo

Directions

1. The information marked "superscript #" is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
3. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.
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