

VC BRANDS LLC

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

211208061GZU-001

ISSUE DATE

7 January 2022

REVISION DATE

None

NUMBER OF PAGES

13

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Report No.: 211208061GZU-001

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700FMCST17XX-LED927

RENDERED TO

VC BRANDS LLC

Contact Name: Tess Gallagher

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TEST: Electrical and Photometric as required to the IES LM-79 test standard.

STATEMENT OF LIMITATION: The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

AUTHORIZATION: The testing performed was authorized by signed quote number: QGZ211208009.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IES LM-79: 2008 Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI C78.377:2017 Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model 700FMCST17XX-LED927. The sample was received, in undamaged condition. The sample designation was S211208061-001.

DATES OF TESTS: 8 December 2021 to 7 January 2022

ISSUED BY: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

TEST LOCATION: Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	700FMCST17XX-LED927 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700FMCST17XX-LED927

Criteria	Result
Total Lumen Output	684.3 lm
Total Power	25.3 W
Luminaire Efficacy	27.04 lm/W
S/MH(C0/180)	1.41
S/MH(C90/270)	1.37
Correlated Color Temperature (CCT)	2649 K
Color Rendering Index (CRI)	90
R9	51
Chromaticity Coordinate (x)	0.4640
Chromaticity Coordinate (y)	0.4113
Chromaticity Coordinate (u')	0.2648
Chromaticity Coordinate (v')	0.5282

Remark:

Measurement uncertainty for applicable tests has been established.

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TEST REPORT

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Temperature Meter	RS210	SA047-126
Sensing - DC Power Supply	IT6122	SA063-12-09
Sensing- AC power source for Integrating Sphere System	APW-105N	SA063-12-05
Everfine - AC power source for Goniophotometer System	DPS1060	SA063-16-03
Two meter integrating sphere unit	Sensing – 2M	SA063-12-01
YOKOGAWA – Digital Power Meter	WT-210	SA011-122
Everfine – Goniophotometer	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard lamp	S82134	SA063-12-13
Standard lamp	S1320039	SA063-12-24
Standard lamp	D908S	SA063-16-05
Standard lamp	D215S	SA063-16-06

GENERAL REMARK

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When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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TEST REPORT

TEST METHOD

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IES LM-79

Light Distribution and Output Measurements

Light Distribution and total light output (luminous flux) were measured using a Go-R5000 Type-C Rotating Mirror Goniophotometer. Temperature 25°C and relative humidity of 60% was measured at a position in the testing laboratory.

The lamp rotates only around the fixed vertical axle in the prescribed burning position. The lamp and mirror permit the measurement of luminous intensity at the direction of any horizontal or vertical angle without tilting the lamp. The lamp was allowed to stabilize before measurements were made.

Chromaticity Measurements

Chromaticity was measured using a 2 meters integrating sphere spectral lamp measurement system, 4 π geometry, with an interior coating reflectance no less than 95 %. Temperature was measured at a position inside the sphere shielded from direct light. Relative humidity of 65% was measured at a position in the testing laboratory.

Spectral radiant flux measurements were made using spectroradiometer attached to the detector port of the integrating sphere. Each lamp was allowed to stabilise before measurements were made. The calibration of the integrating sphere spectroradiometer system is by the reference/standard lamps which are traceable to National Institute of Metrology P.R. CHINA. Lamp efficacy (lumens per watt) for each lamp model was then computed based on the luminous flux result. Electrical measurements including voltage, power and power factor were measured using YOKOGAWA - Digital Power Meter., model WT210.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D908S

Current: 7.255A

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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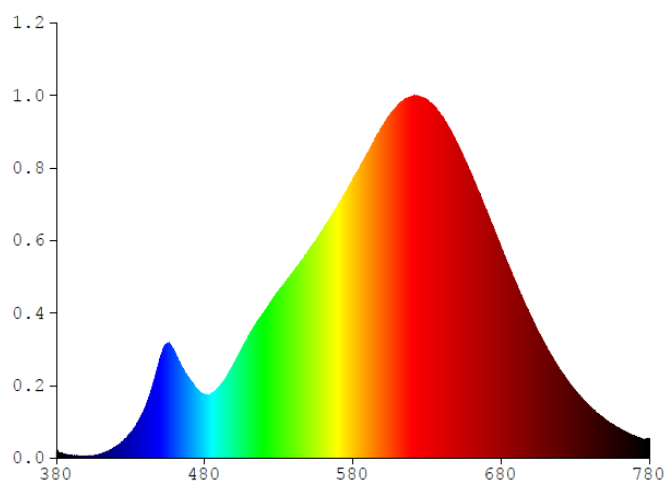
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700FMCST17XX-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0594	480	0.5709	580	2.5080	680	1.8978	780	0.1783
385	0.0369	485	0.5828	585	2.6264	685	1.7400		
390	0.0241	490	0.6417	590	2.7503	690	1.5773		
395	0.0170	495	0.0000	595	2.8857	695	1.4205		
400	0.0133	500	0.8563	600	2.9928	700	1.2786		
405	0.0193	505	0.9832	605	3.0934	705	1.1406		
410	0.0338	510	1.1084	610	3.1722	710	1.0123		
415	0.0625	515	1.2210	615	3.2297	715	0.8996		
420	0.1045	520	1.3135	620	3.2620	720	0.7919		
425	0.1536	525	1.4154	625	3.2528	725	0.6969		
430	0.2288	530	1.5081	630	3.2164	730	0.6076		
435	0.3248	535	1.5908	635	3.1659	735	0.5344		
440	0.4594	540	1.6807	640	3.0795	740	0.4634		
445	0.6576	545	1.7710	645	2.9736	745	0.4023		
450	0.8993	550	1.8649	650	2.8417	750	0.3498		
455	1.0357	555	1.9612	655	2.7029	755	0.3050		
460	0.9428	560	2.0635	660	2.5498	760	0.2654		
465	0.8035	565	2.1683	665	2.4008	765	0.2295		
470	0.7054	570	2.2750	670	2.2355	770	0.1994		
475	0.6196	575	2.3929	675	2.0690	775	0.1725		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMCST17XX-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

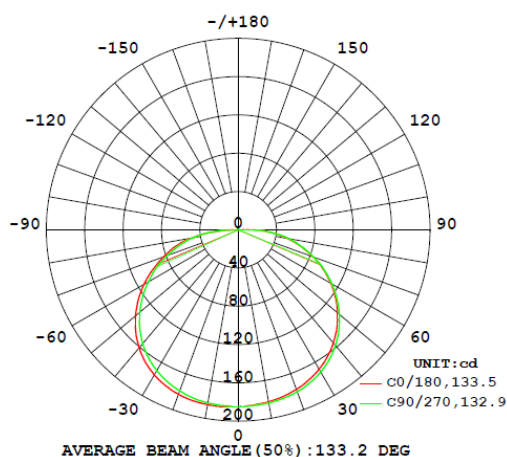
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y	Chromaticit y	Chromaticit y	Chromaticit y
					Coordinate (x)	Coordinate (y)	Coordinate (u')	Coordinate (v')
700FMCST17XX-LED927								
S2112080 61-001	--	2649	90	51	0.4640	0.4113	0.2648	0.5282

Photometric and Electrical Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
700FMCST17XX-LED927							
S2112080 61-001	--	120.0	213.4	25.3	0.988	684.3	27.04

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMCST17XX-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	184.7	184.7	184.7	184.5	184.6
5	183.8	183.7	183.9	184.0	184.3
10	182.3	182.3	182.6	183.0	183.7
15	180.3	180.5	180.8	181.3	182.4
20	177.4	177.6	178.0	178.8	180.1
25	173.5	173.7	174.3	175.1	176.5
30	168.4	168.7	169.2	170.2	171.6
35	162.0	162.3	162.9	163.9	165.4
40	154.3	154.6	155.3	156.2	157.7
45	145.3	145.7	146.2	147.0	148.4
50	135.2	135.5	136.1	136.6	137.7
55	123.8	124.2	124.6	125.0	125.7
60	111.2	111.7	111.9	112.2	112.7
65	97.6	98.1	98.3	98.4	98.7
70	83.1	83.5	83.5	83.5	83.7
75	67.4	68.1	68.3	68.5	68.7
80	52.3	53.0	53.4	53.8	54.2
85	34.2	34.6	34.9	35.1	34.6
90	15.9	16.4	16.5	16.0	14.2
95	1.3	1.7	1.7	1.4	1.2
100	0.1	0.1	0.1	0.1	0.1
105	0.1	0.1	0.1	0.1	0.1
110	0.1	0.1	0.1	0.1	0.1
115	0.1	0.1	0.1	0.2	0.1
120	0.2	0.1	0.1	0.1	0.1
125	0.2	0.2	0.2	0.2	0.2
130	0.3	0.2	0.2	0.4	0.2
135	0.4	0.2	0.2	0.2	0.2
140	0.8	0.3	0.3	0.2	0.2
145	0.9	0.3	0.3	0.3	0.3
150	1.0	0.3	0.3	0.3	0.3
155	0.4	0.3	0.3	0.3	0.3
160	1.3	0.3	0.3	0.3	0.3
165	0.5	0.3	0.3	0.3	0.3
170	1.3	0.4	0.3	0.3	0.3
175	1.3	0.7	0.3	0.3	0.3
180	0.3	0.3	0.3	0.3	0.3

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMCST17XX-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700FMCST17XX-LED927		
0-30	150.5	22.0
0-40	253.6	37.1
0-60	478.9	70.0
0-90	679.3	99.3
60-90	200.4	29.3
0-180	684.3	100

Beam Angle

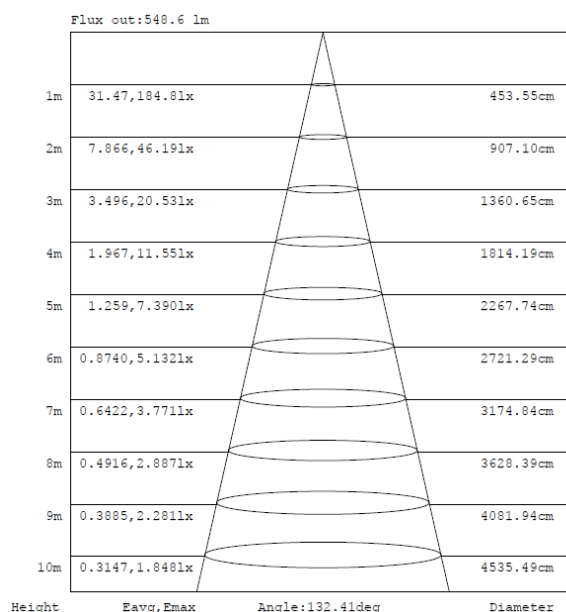
Total Beam Angle(°)
133.2

Illumination Plots

Model No.: 700FMCST17XX-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

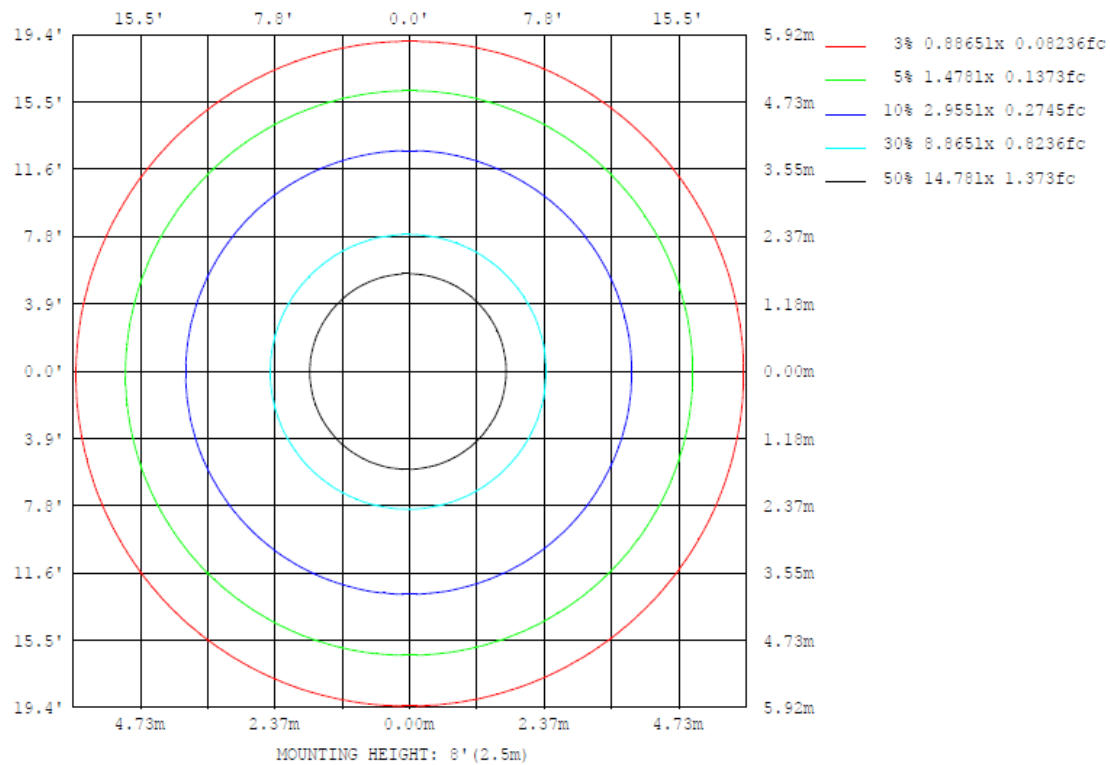
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMCST17XX-LED927

Model No.: 700FMCST17XX-LED927

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMCST17XX-LED927

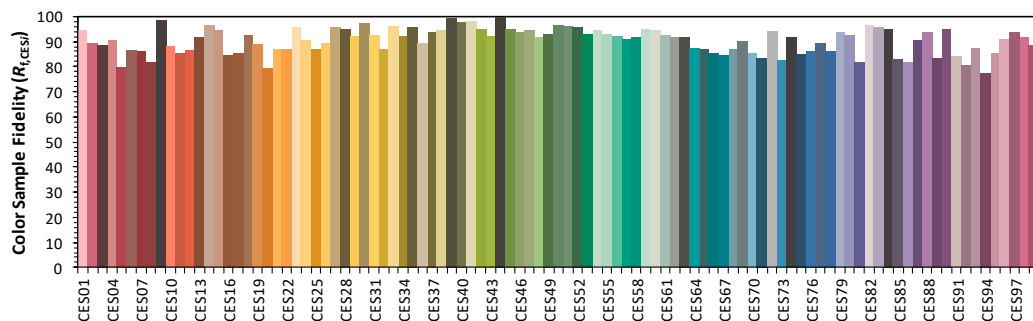
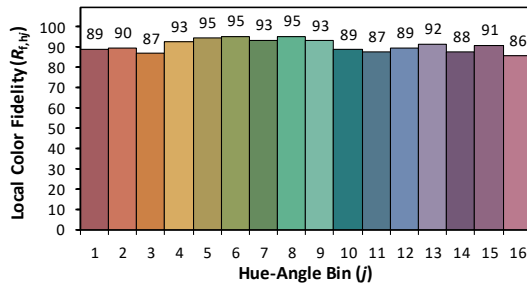
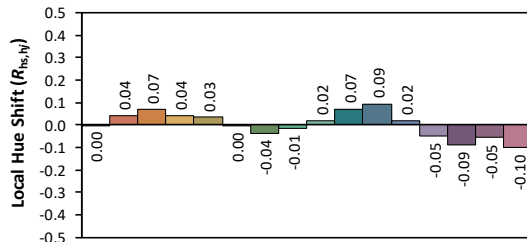
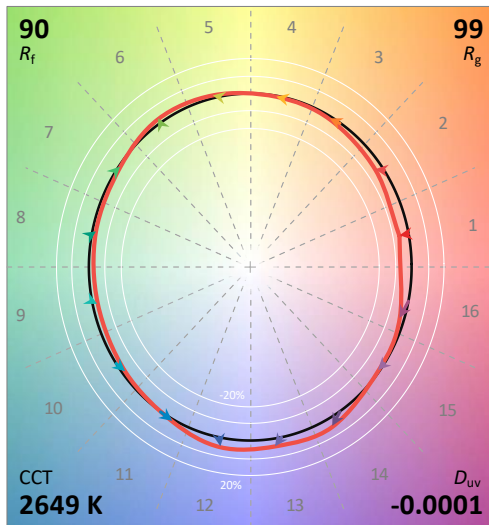
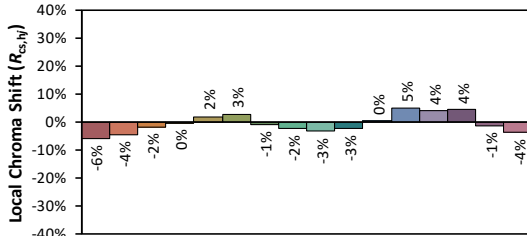
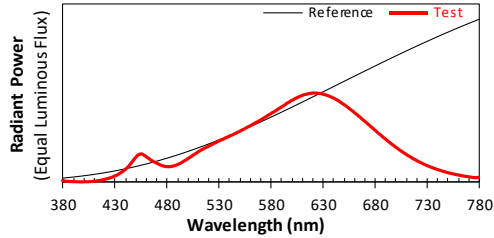
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: VC BRANDS LLC

Date: 2021/12/29

Model: 700FMCST17XX-LED927



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

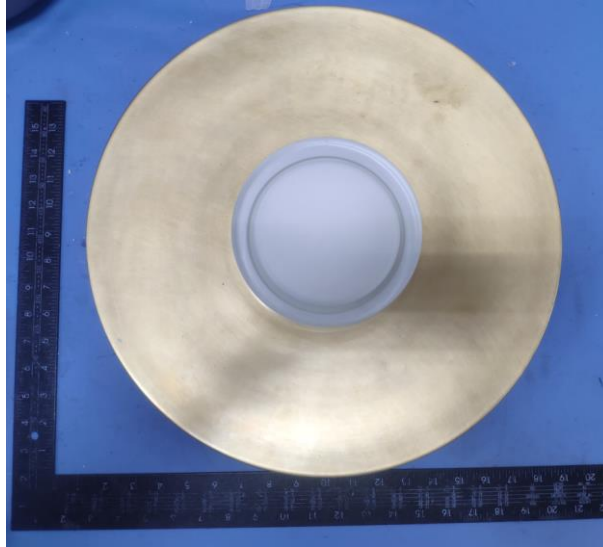
x 0.4640
 y 0.4113
 u' 0.2648
 v' 0.5282

CIE 13.3-1995
(CRI)
 R_a 90
 R_g 51

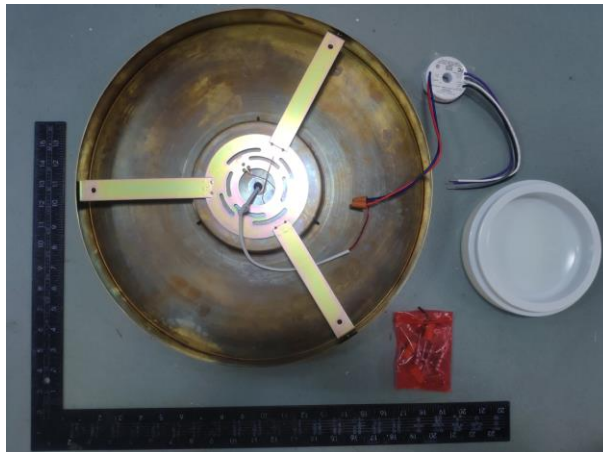
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700FMCST17XX-LED927



External view of 700FMCST17XX-LED927

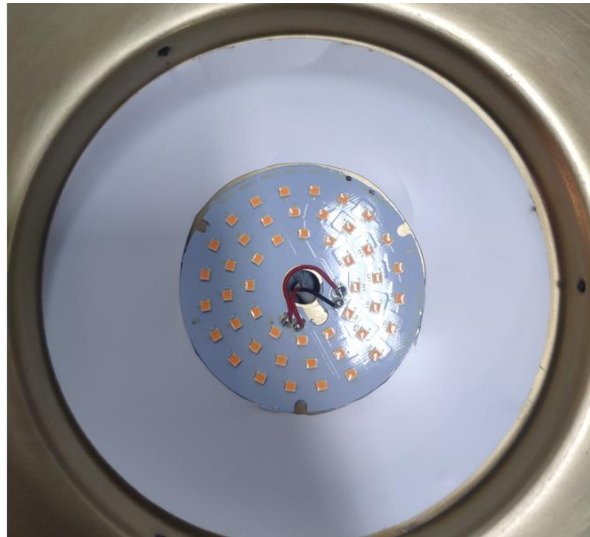
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver ISDU-D56-20W



View of LED

In Charge Of Tests:

Done Ye

Done Ye
Engineer

Report Reviewed By

Shelley Ying

Shelley Ying
Reviewer

Attachment: None

***** End of Report *****