

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241128208GZU-001

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REVISION DATE

None

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13

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Report format for LM-79_G

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Report No.: 241128208GZU-001

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKFM592WDXX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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Phone No.: 847-410-4552

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

AUTHORIZATION: The testing performed was authorized by signed quote number: QGZ241127042.

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-79-19 Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI C78.377-2017 (R2022) Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model AKFM592WDXX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241128208-001.

MANUFACTURER /FACTORY & ADDRESS: Union Star Collection-Dongguan Denghuang HomeFurnishing Co., Ltd.
No.5, Central Road, Yayuan Industrial Zone, Nancheng District,Dongguan City, Guangdong Province, 523000

DATES OF TESTS: 27 December 2024

ISSUED BY: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

TEST LOCATION: Room101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu District, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	AKFM592WDXX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKFM592WDXX

Criteria	Result
Total Lumen Output	1185.6 lm
Total Power	15.4 W
Luminaire Efficacy	76.9 lm/W
S/MH(C0/180)	1.04
S/MH(C90/270)	1.09
Correlated Color Temperature (CCT)	2900 K
Color Rendering Index (CRI)	93
R9	73
Chromaticity Coordinate (x)	0.4453
Chromaticity Coordinate (y)	0.4086
Chromaticity Coordinate (u')	0.2540
Chromaticity Coordinate (v')	0.5244

Remark:

N/A

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TEST REPORT

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Goniophotometer System	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard Lamp	D215S	SA063-16-06
Digital Power Meter	PLM3000	SA063-16-09
AC power source for Goniophotometer	PCR-1000WH	SA063-16-10
Temperature Meter	S500-TH	SA047-182

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 WT310E.

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

Standard lamp used for Goniophotometer method:

Model: D215S

Current: 4.809A DC

Standard lamp used for integrating sphere:

Model: D204

Current: 3.948A DC

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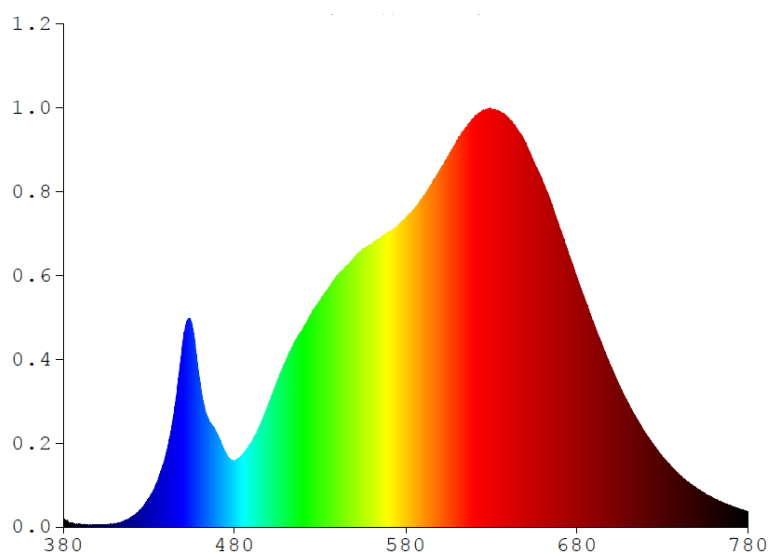
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKFM592WDXX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	2.1480	480	18.7130	580	88.0560	680	70.7580	780	4.3032
385	0.9896	485	20.7370	585	90.7100	685	64.1210		
390	0.6140	490	24.2320	590	93.9900	690	57.5140		
395	0.5211	495	29.0210	595	97.7870	695	51.1950		
400	0.5187	500	35.1110	600	101.870	700	45.4160		
405	0.6430	505	41.5580	605	105.580	705	39.9050		
410	0.9883	510	47.3400	610	110.170	710	35.0200		
415	1.5919	515	52.5940	615	113.880	715	30.6100		
420	2.8981	520	56.4820	620	116.820	720	26.6660		
425	4.8961	525	60.8450	625	118.640	725	23.1520		
430	8.0665	530	64.6280	630	118.910	730	19.9510		
435	12.9260	535	68.2250	635	118.480	735	17.2400		
440	20.7150	540	71.6310	640	116.390	740	14.7090		
445	33.6110	545	74.2510	645	113.320	745	12.6790		
450	52.9860	550	76.8580	650	109.490	750	10.9080		
455	57.6340	555	79.2960	655	103.650	755	9.3573		
460	40.3350	560	80.6640	660	98.2680	760	8.0679		
465	30.3630	565	82.2100	665	92.1200	765	6.8941		
470	26.2990	570	84.1210	670	85.1630	770	5.9543		
475	20.9670	575	85.5160	675	76.5110	775	5.0943		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKFM592WDXX

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

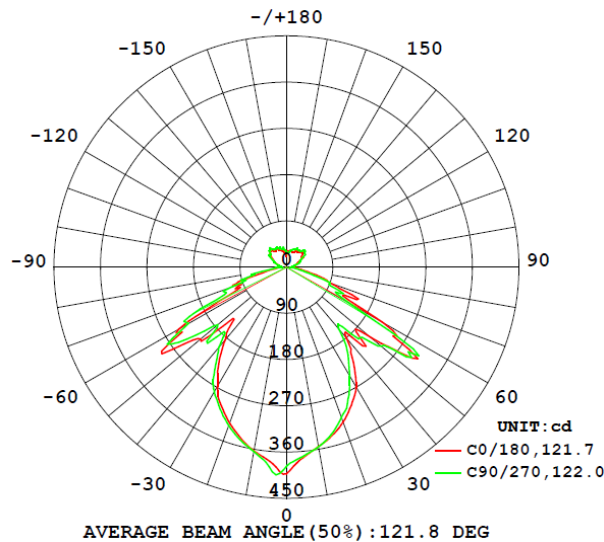
Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
AKFM592WDXX								
S2411282 08-001	base-up	2900	93	73	0.4453	0.4086	0.2540	0.5244

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 Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
AKFM592WDXX							
S2411282 08-001	base-up	120.1	129.9	15.4	0.988	1185.6	76.9

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKFM592WDXX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	402.0	386.2	386.0	386.5	387.6
5	371.9	365.0	366.3	368.1	369.2
10	355.0	351.0	353.2	354.4	355.2
15	339.3	334.6	336.7	337.0	336.4
20	320.8	313.6	314.9	314.0	311.1
25	296.7	288.1	290.1	290.2	282.9
30	269.8	253.4	254.9	252.3	245.3
35	225.6	208.4	210.1	209.9	208.0
40	181.7	163.0	166.5	159.4	157.3
45	217.8	207.3	195.1	179.4	197.9
50	212.9	248.7	246.8	252.5	239.8
55	310.8	271.2	277.2	297.5	288.0
60	213.9	133.8	134.0	136.1	140.7
65	150.0	130.4	132.1	122.1	121.7
70	90.8	80.9	74.9	85.4	89.9
75	58.8	41.4	39.8	39.2	38.6
80	30.5	23.2	21.4	21.3	21.0
85	14.3	9.7	9.9	10.6	11.1
90	7.8	8.5	8.6	8.8	8.4
95	10.7	12.3	11.4	11.5	11.3
100	13.8	15.5	15.2	15.1	15.3
105	18.5	20.7	20.5	21.3	19.9
110	23.7	27.3	26.6	25.7	27.0
115	27.2	32.6	30.9	29.6	29.9
120	36.0	40.7	39.6	38.1	34.8
125	35.8	39.4	42.0	42.0	44.5
130	42.1	43.9	45.5	47.8	48.4
135	42.5	46.7	45.5	46.6	46.7
140	38.6	39.8	41.0	41.6	41.9
145	36.7	39.7	41.4	41.4	41.0
150	35.4	39.5	40.7	42.0	42.7
155	32.5	38.9	39.7	39.1	38.1
160	31.5	36.1	38.0	37.5	37.2
165	32.4	35.5	35.3	35.9	34.5
170	31.1	31.8	31.6	30.8	30.0
175	30.0	29.2	29.5	28.9	28.4
180	29.3	16.7	18.5	25.0	28.4

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKFM592WDXX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKFM592WDXX		
0-30	267.4	22.6
0-40	408.1	34.4
0-60	776.8	65.5
0-90	997.0	84.1
60-90	220.2	18.6
0-180	1185.6	100.0

Beam Angle

Total Beam Angle(°)

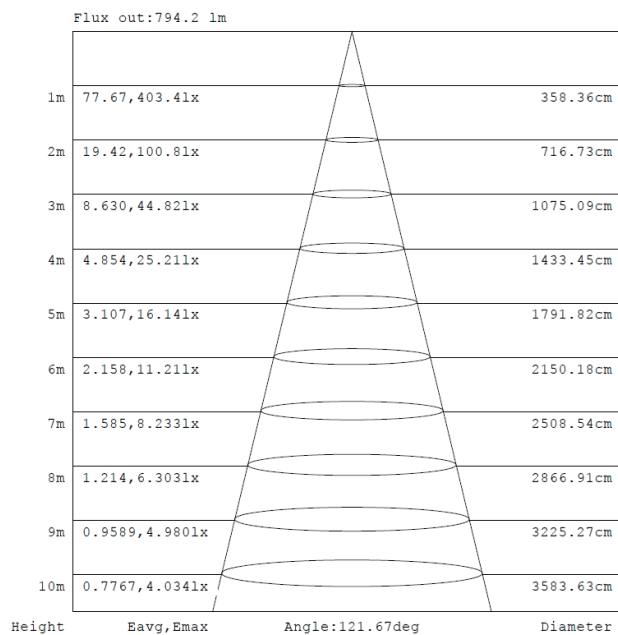
121.8

Illumination Plots

Model No.: AKFM592WDXX

Mount Height: 2.5 m

Illuminance - Cone of Light



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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TEST REPORT

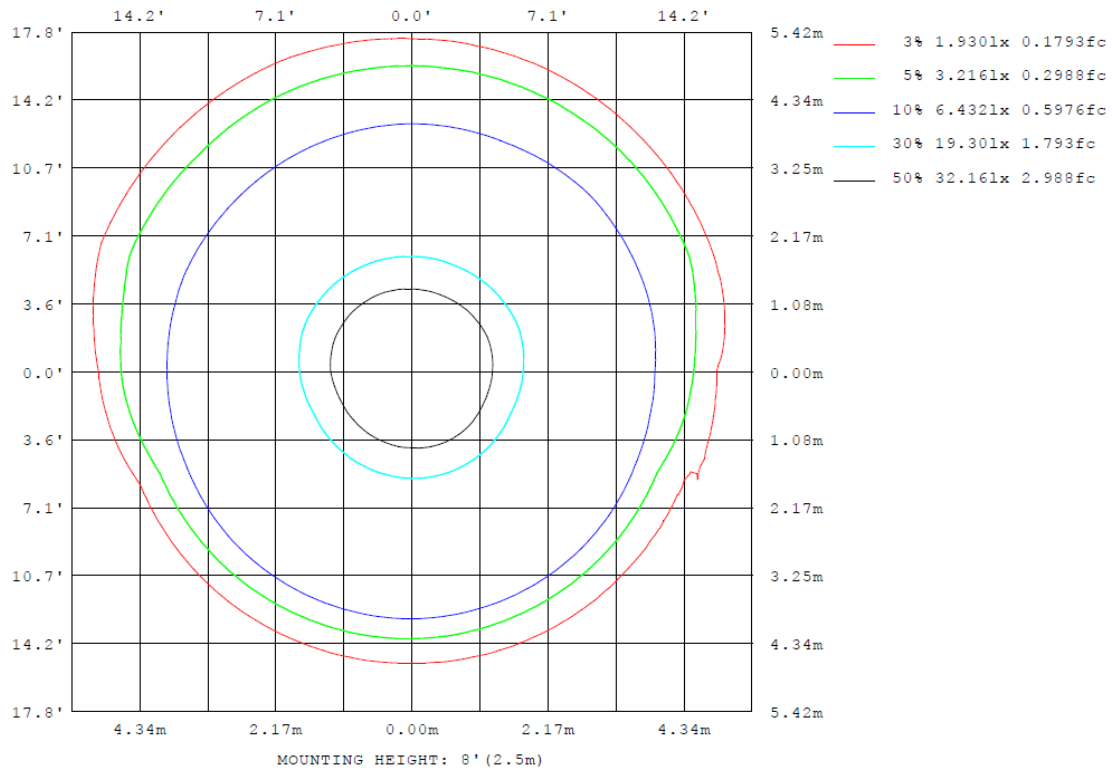
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKFM592WDXX

Model No.: AKFM592WDXX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKFM592WDXX

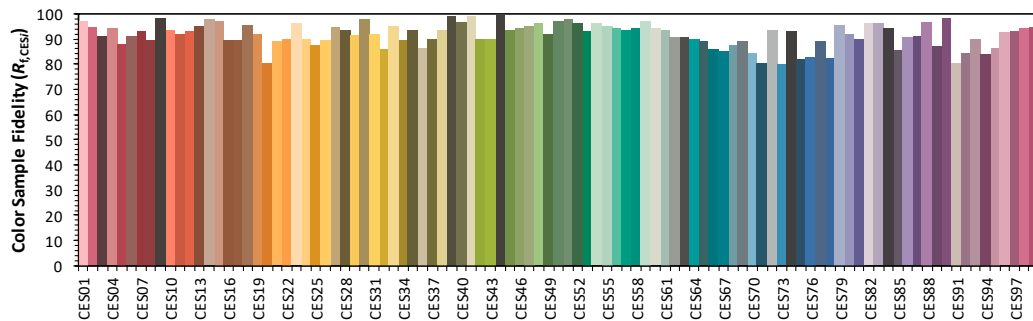
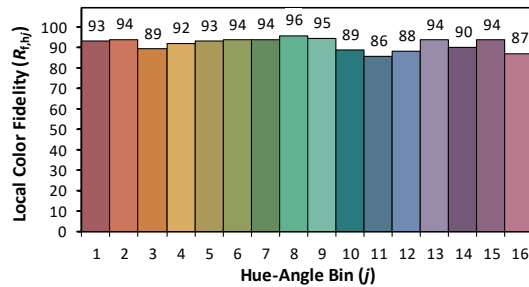
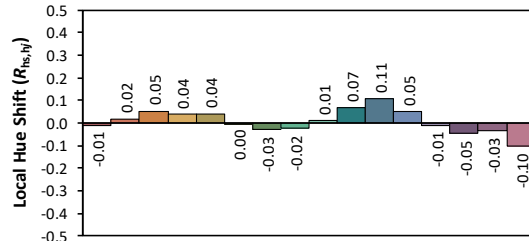
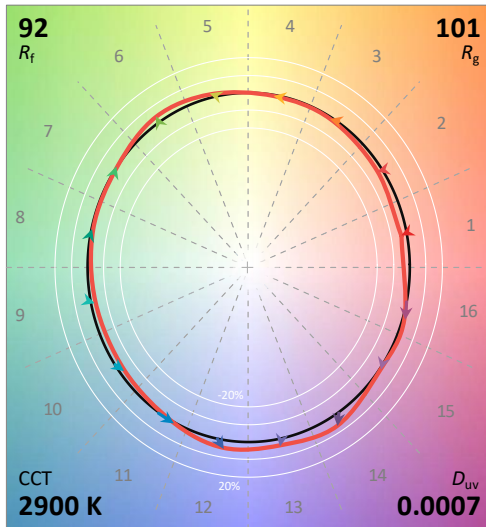
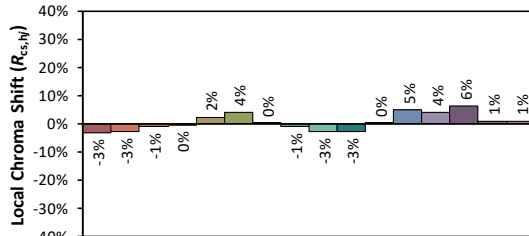
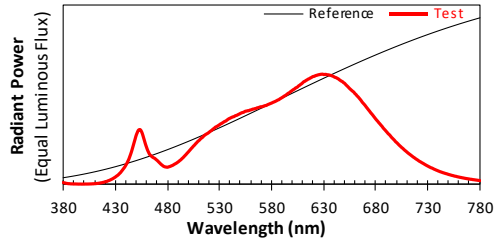
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/12/27

Model: AKFM592WDXX



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

x 0.4453
 y 0.4086
 u' 0.2540
 v' 0.5244

CIE 13.3-1995
(CRI)

R_a 93

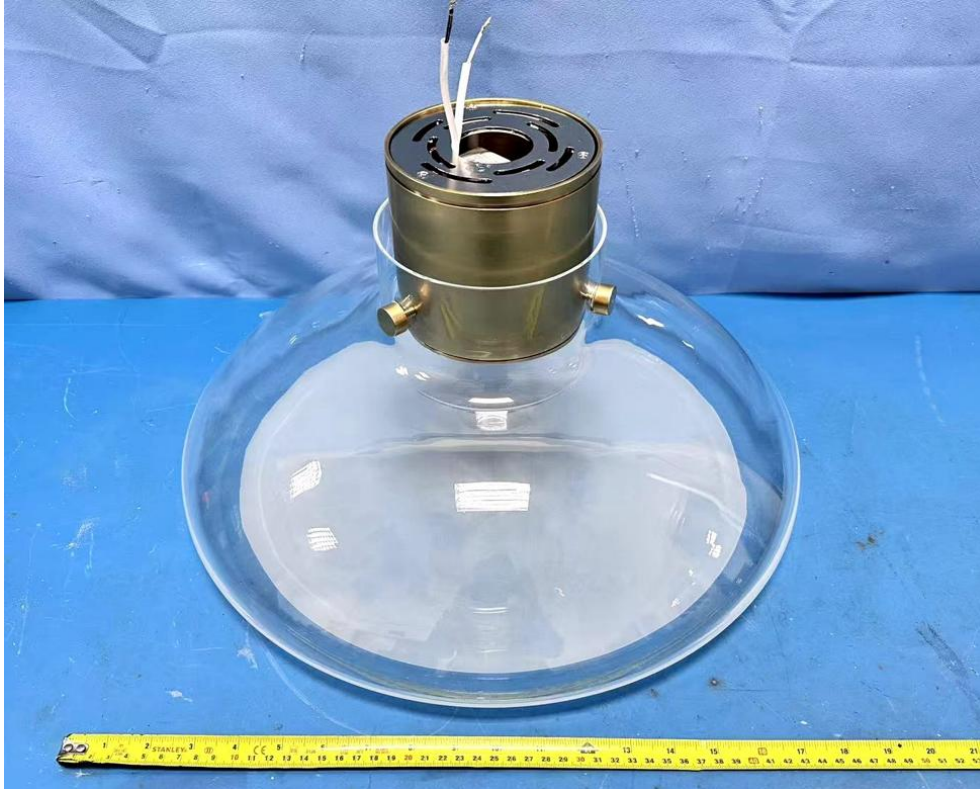
R_g 73

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of AKFM592WDXX



View of LED driver PTB20W-0400-38-VCC1 (AB0258)

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TEST REPORT

PRODUCT PICTURE (not to scale)



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 *****