

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230301038GZU-008

ISSUE DATE

03-April-2023

REVISION DATE

None

NUMBER OF PAGES

12

DOCUMENT CONTROL NUMBER

Report format for LM-79:2008_F

© 2021 INTERTEK



Report No.: 230301038GZU-008

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. MDBA18527X

(Remark: "X" denote other appearance colors for the characters that change)

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

7400 LINDER AVE. SKOKIE, IL, 60077

Email: Tgallagher@visualcomfortco.com
Phone No.: 8474104774

<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>STATEMENT OF LIMITATION:</u>	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.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ230224053.
<u>STANDARDS USED:</u>	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
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model MDBA18527X. The sample was received, in undamaged condition. The sample designation was S230301038-008.
<u>DATES OF TESTS:</u>	13 March 2023
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	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

***** End of Page *****

TEST REPORT

SUMMARY

Model Number:	MDBA18527X
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For MDBA18527X

Criteria	Result
Total Lumen Output	1236.9 lm
Total Power	35.1 W
Luminaire Efficacy	35.3 lm/W
S/MH(C0/180)	1.19
S/MH(C90/270)	1.01
Correlated Color Temperature (CCT)	2582 K
Color Rendering Index (CRI)	93
R9	63
Chromaticity Coordinate (x)	0.4675
Chromaticity Coordinate (y)	0.4086
Chromaticity Coordinate (u')	0.2683
Chromaticity Coordinate (v')	0.5277

Remark:

Measurement uncertainty for applicable tests has been established.

***** End of Page *****

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	RC-HT601A	SA047-62

GENERAL REMARK

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

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

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

***** End of Page *****

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 EVERFINE - Digital Power Meter., model PLM3000.

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: 110V/100W

Current: 0.8851A

***** End of Page *****

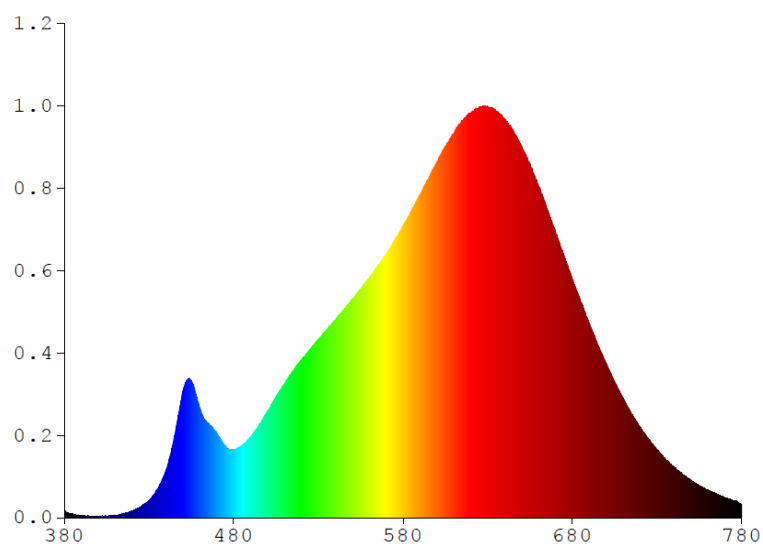
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For MDBA18527X

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0895	480	1.0290	580	4.4317	680	3.6182	780	0.1997
385	0.0471	485	1.1042	585	4.6677	685	3.2701		
390	0.0282	490	1.2283	590	4.9077	690	2.9512		
395	0.0276	495	1.4120	595	5.1471	695	2.6219		
400	0.0228	500	1.6190	600	5.4064	700	2.3351		
405	0.0278	505	1.8396	605	5.6389	705	2.0613		
410	0.0419	510	2.0349	610	5.8406	710	1.8071		
415	0.0632	515	2.2293	615	6.0361	715	1.5730		
420	0.1053	520	2.3962	620	6.1466	720	1.3774		
425	0.1648	525	2.5657	625	6.2443	725	1.1878		
430	0.2660	530	2.7139	630	6.2410	730	1.0305		
435	0.4309	535	2.8540	635	6.1784	735	0.8858		
440	0.7190	540	2.9967	640	6.0626	740	0.7652		
445	1.2304	545	3.1532	645	5.8832	745	0.6594		
450	1.9158	550	3.3197	650	5.6462	750	0.5673		
455	2.0730	555	3.4775	655	5.3563	755	0.4881		
460	1.6564	560	3.6386	660	5.0412	760	0.4150		
465	1.4354	565	3.8222	665	4.6926	765	0.3603		
470	1.2797	570	4.0057	670	4.3286	770	0.3078		
475	1.0979	575	4.2162	675	3.8973	775	0.2641		



***** End of Page *****

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For MDBA18527X

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

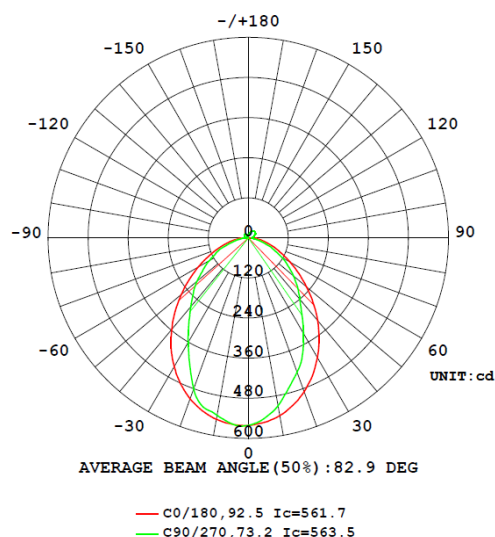
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
MDBA18527X								
S2303010 38-008	--	2582	93	63	0.4675	0.4086	0.2683	0.5277

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)
MDBA18527X							
S2303010 38-008	--	120.2	293.6	35.1	0.994	1236.9	35.3

Intensity (Candlepower) Summary at 25°C – Candelas



***** End of Page *****

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For MDBA18527X

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	568.7	568.7	568.7	568.7	568.7
5	563.2	564.3	563.3	561.9	562.4
10	551.3	550.1	543.7	540.4	541.3
15	531.0	525.6	518.8	524.6	525.8
20	504.2	494.2	496.3	481.2	476.1
25	470.6	459.5	449.7	419.2	412.2
30	431.1	425.4	392.5	363.9	357.2
35	387.0	382.1	336.7	312.4	307.1
40	340.5	330.2	285.7	270.3	266.6
45	291.9	276.8	244.4	233.6	232.2
50	244.2	226.6	208.4	201.0	197.2
55	198.2	183.9	175.5	166.3	163.0
60	155.8	148.0	146.1	134.5	132.6
65	118.7	118.1	114.0	103.9	104.8
70	87.0	90.5	85.9	74.0	73.5
75	60.3	65.3	58.0	50.2	48.1
80	38.3	44.0	39.7	31.6	28.9
85	18.6	26.1	24.0	17.8	15.0
90	7.7	13.7	12.5	8.8	6.5
95	8.6	13.6	10.5	7.1	5.7
100	1.0	14.4	11.1	8.2	7.7
105	0.8	14.1	12.6	10.1	9.9
110	0.7	13.3	14.2	11.8	11.7
115	0.5	12.6	14.4	13.5	13.4
120	0.5	11.9	13.9	14.3	14.8
125	0.5	11.1	14.5	14.1	14.9
130	0.5	10.2	14.7	14.7	14.7
135	0.6	9.0	14.2	15.5	15.7
140	0.7	8.0	12.8	15.2	16.0
145	0.7	6.8	11.1	13.6	14.7
150	0.8	5.9	9.7	11.8	12.8
155	0.8	5.0	8.3	10.2	10.9
160	0.9	4.2	6.8	8.5	9.1
165	0.9	3.1	5.2	6.5	7.1
170	0.9	1.7	3.7	4.6	4.9
175	0.9	1.5	1.9	2.5	3.1
180	1.2	0.7	0.3	0.6	0.7

***** End of Page *****

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For MDBA18527X

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
MDBA18527X		
0-30	393.9	31.9
0-40	605.2	48.9
0-60	952.0	77.0
0-90	1147.2	92.8
60-90	195.2	15.8
0-180	1236.9	100.0

Beam Angle

Total Beam Angle (°)

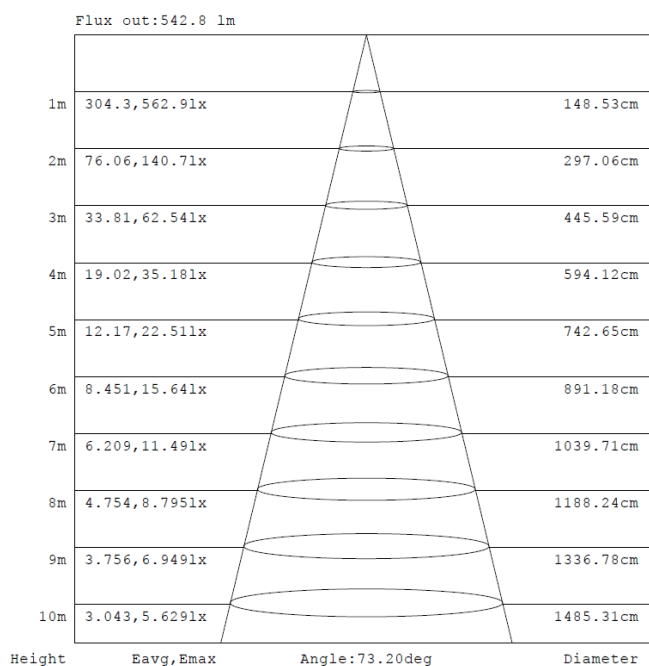
82.9

Illumination Plots

Model No.: MDBA18527X

Mount Height: 2.5 m

Illuminance - Cone of Light



***** End of Page *****

TEST REPORT

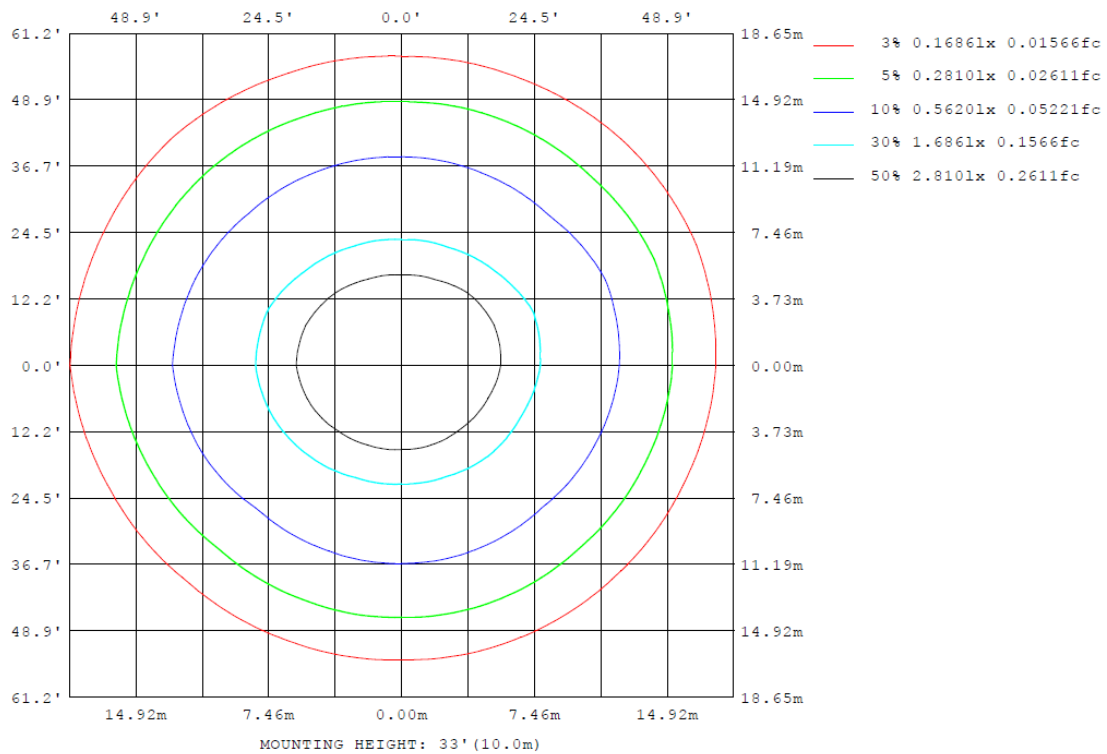
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For MDBA18527X

Model No.: MDBA18527X

Mount Height: 2.5 m

Isoillumination Plot



***** End of Page *****

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For MDBA18527X

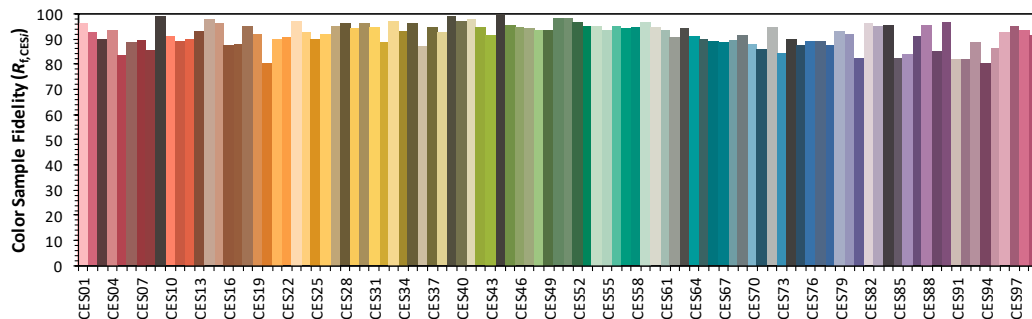
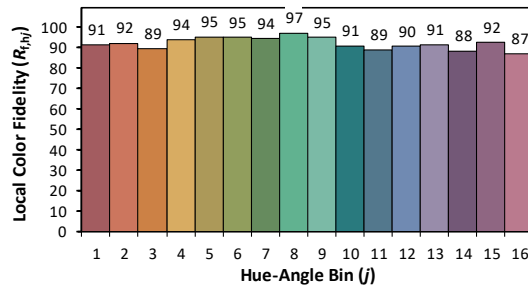
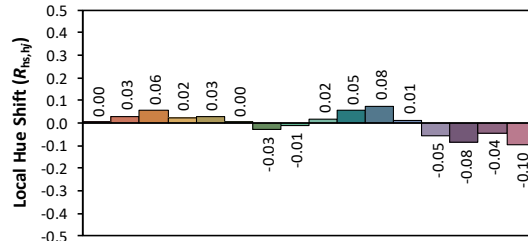
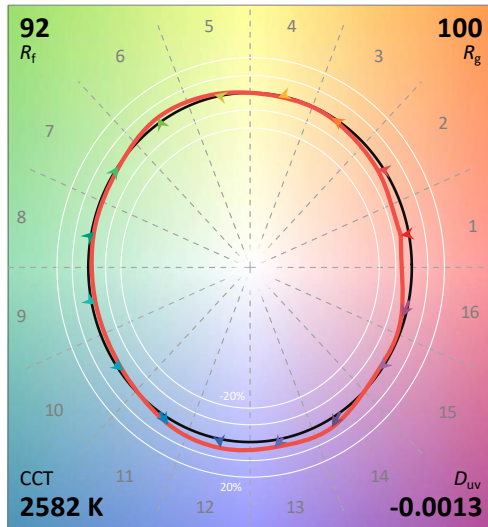
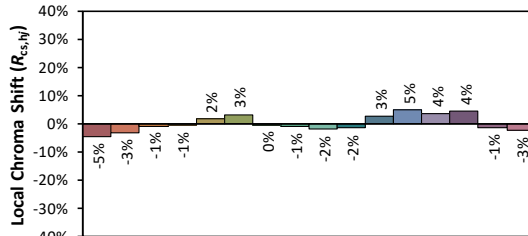
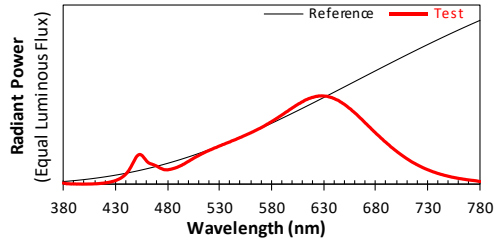
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/3/13

Model: MDBA18527X



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

x 0.4675
 y 0.4086
 u' 0.2683
 v' 0.5277

CIE 13.3-1995
(CRI)

R_a 93

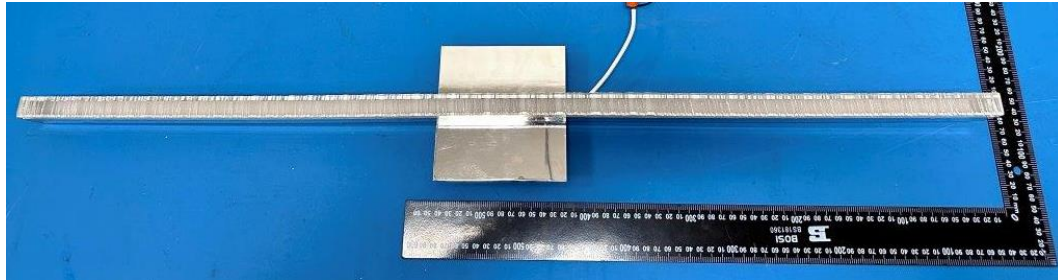
R_g 63

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

***** End of Page *****

TEST REPORT

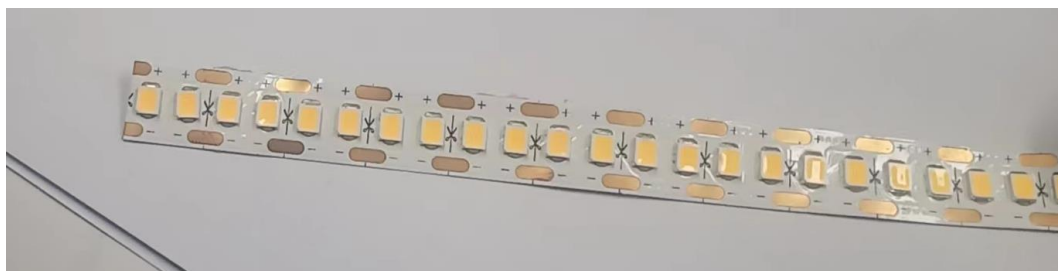
PRODUCT PICTURE (not to scale)



External view of MDBA18527X



View of LED Driver PVD36-C090V40-UNV3-HE-P



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 *****