



LM-79-08 Test Report

For

ARTIKA FOR LIVING INC

(Brand Name: ARTIKA)

1756 50th avenue, Lachine, Qu ébec, Canada H8T 2V5

Model name(s):
4FM-BP-XXXXXX

Report Type: Testing and Report According to IES LM-79-2008
Type of Luminaire: LED Luminaire
Report Date: 2021-11-10
Ningbo TengLi Testing Co., Ltd
Prepared By: 2nd floor, Block B, Ningbo Testing and Certification Base,
No. 66 Qingyi Road, Ningbo National Hi-Tech Zone,
Ningbo, Zhejiang

Test & Report By:

Nick Song

Engineer: Nick Song

Review By:

Garman Mo

Manager: Garman Mo

Note: 1. The results contained in this report pertain only to the tested samples
2. This report does not imply product certification, approval, or endorsement by A2LA, or any agency of the Federal Government.



1.1 Product Information:		
Model Number	4FM-BP-XXXXXX	
Remark	"XXXXXX" can be A to Z and/or 0 to 9 and or/blank(commerical code)	
Representative (Tested) Model	4FM-BP-MB	
Model Difference	N/A	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaires	
LED Manufacturer	Lextar Electronics Corp	
LED Model	PC35U27	
Dimming	Dimmable	
Integral Controls	N/A	
Sample Number	STD211036NB-A1(3000K)	
Date of Receipt	Nov.01,2021	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

1.2 Rated Values:	
Rated Voltage / Frequency	120Vac, 50/60Hz
Nominal Power	12W
Rated Initial Lamp Lumen	--
Declared CCT	3000K



1.3 Test Specifications:

Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source

1.4 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.



2.1 Summary of Test Result

Criteria Item	Measured Value		Compliance	Requirement (DLC V5.1)	
				Standard: >=	Premium: >=
Minimum Total Luminous	774.35		Pass	>=1000(-10%)	
Minimum Luminous Efficacy	63.23		Pass	105(-3%)	120(-3%)
Minimum Power Factor	0.9835		Pass	>= 0.9(-3%)	
Maximum THD %	13.97		Pass	<= 20(+5)	
Minimum CRI	93.0		Pass	>= 70(-1)	
Minimum R9	60		Pass	>= -40(-1)	
Minimum Rg	99		Pass	>= 89(-1)	
Minimum Rf	92		Pass	>= 70(-1)	
Rcs, h1	-5		Pass	-18%-23%(-1%)	
CCT	3000K	2910	Pass	<=6500K	



2.2 Electrical, Photometric and Chromaticity Measurements

Test date	2021-11-03	Test Ambient:	25 ± 1 °C
Test Orientation	As intended	Stabilization Time (min)	45
Model Number	4FM-BP-MB	Total Operating Time(min)	60

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD211036 NB-A1	120.1	60.01	0.1037	12.25	0.9835	13.97

Photometric Measurement – Goniophotometer Method(Tset Dstance: 26.00m):

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	774.35
Luminous Efficacy (lm/W)	63.23
Beam Angle (°)	109.9
Center Beam Candle Power (cd)	302



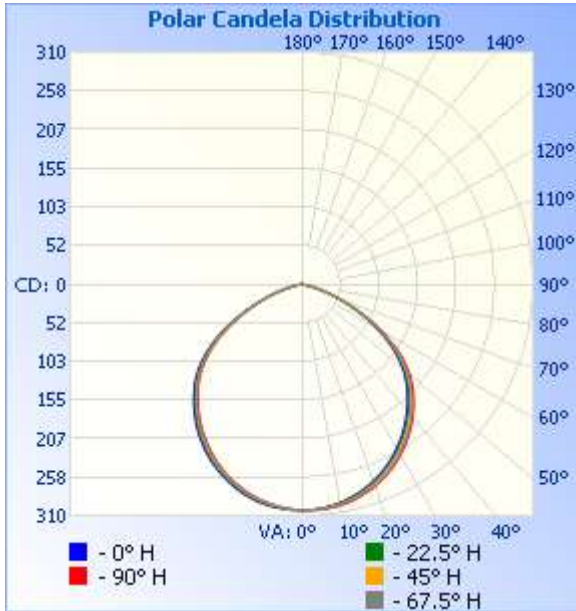
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	235.2	30.4%
0-40	385.5	49.8%
0-60	675.8	87.3%
60-90	98.5	12.7%
70-100	20.4	2.6%
90-120	0	0%
0-90	774.2	100%
90-180	0	0%
0-180	774.2	100%

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-10	28.6	3.7%	90-100	0	0%
10-20	82.1	10.6%	100-110	0	0%
20-30	124.5	16.1%	110-120	0	0%
30-40	150.3	19.4%	120-130	0	0%
40-50	156.2	20.2%	130-140	0	0%
50-60	134.1	17.3%	140-150	0	0%
60-70	78.0	10.1%	150-160	0	0%
70-80	20.2	2.6%	160-170	0	0%
80-90	0.2	0.0%	170-180	0	0%



Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
4.0ft	18.89 fc	11.4 ft	11.4 ft
8.0ft	4.72 fc	22.7 ft	22.8 ft
12.0ft	2.10 fc	34.1 ft	34.2 ft
16.0ft	1.18 fc	45.5 ft	45.6 ft
20.0ft	0.76 fc	56.8 ft	57.0 ft

■ Vert. Spread: 109.7°
■ Horiz. Spread: 109.9°

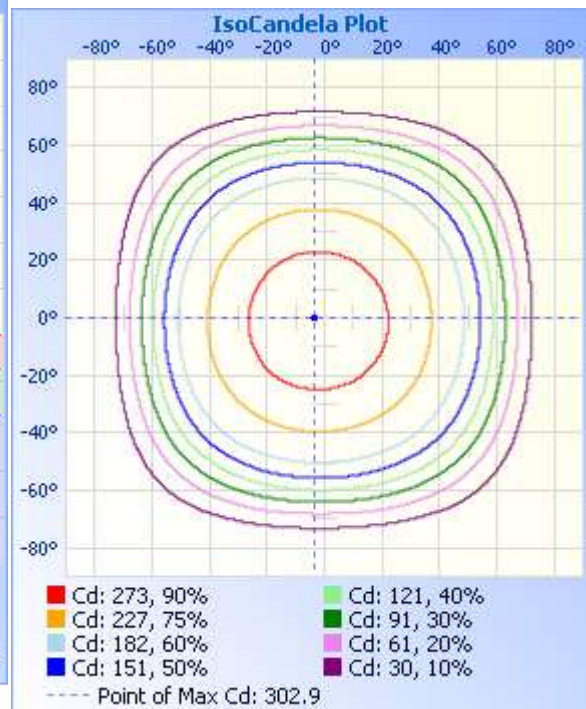
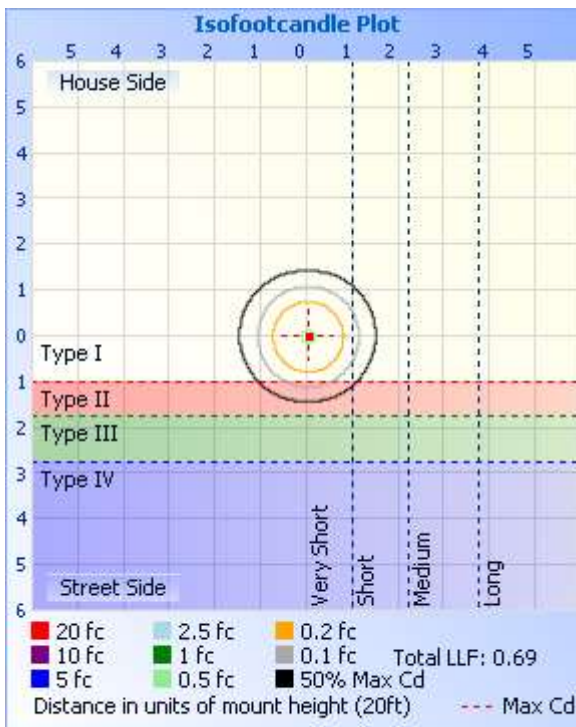




Table--1 UNIT: cd

C (DEG) y (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302			
5	300	300	300	300	301	301	302	302	303	303	302	302	301	301	300	300			
10	294	294	295	295	297	298	298	299	300	300	300	299	298	297	296	295			
15	287	287	287	288	290	291	293	294	295	295	295	293	292	290	289	288			
20	277	276	277	278	280	282	284	286	288	288	286	285	283	281	279	278			
25	264	264	265	266	268	271	273	275	277	277	276	274	271	269	267	266			
30	250	249	250	251	254	257	260	262	264	264	263	260	258	255	253	252			
35	234	233	234	235	238	241	244	247	249	249	247	244	242	239	237	235			
40	215	215	216	217	220	223	226	229	232	231	229	227	224	221	219	217			
45	196	196	196	197	200	203	206	209	212	212	210	207	204	201	199	198			
50	173	173	173	174	177	180	184	186	189	189	187	185	182	179	177	175			
55	144	144	144	146	148	151	154	156	159	160	159	156	153	150	148	147			
60	109	109	110	110	113	116	118	119	123	124	123	121	118	116	114	112			
65	73.1	73.1	73.2	74.0	76.2	78.6	80.1	80.8	83.5	84.4	84.2	82.6	80.5	78.6	76.9	75.4			
70	40.7	40.3	40.6	41.5	43.0	44.7	45.4	46.5	48.5	48.9	48.8	48.1	46.7	45.1	43.6	42.5			
75	14.2	13.5	14.0	14.9	16.0	17.0	17.9	18.8	20.4	20.3	20.2	19.8	19.0	17.9	16.7	16.0			
80	0.36	0.30	0.37	0.53	0.75	1.99	2.24	2.57	2.43	2.24	2.28	2.04	1.77	1.36	0.92	0.76			
85	0.07	0.06	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.11	0.11	0.11	0.10	0.10	0.09	0.08			
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			



2.3 Electrical, Photometric and Chromaticity Measurements

Test date	2021-11-03	Test Ambient:	25 ± 1 °C
Test Orientation	As intended	Stabilization Time (min)	45
Model Number	4FM-BP-MB	Total Operating Time(min)	46

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD211036 NB-A1	120.0	60	0.1043	12.37	0.9886	13.62

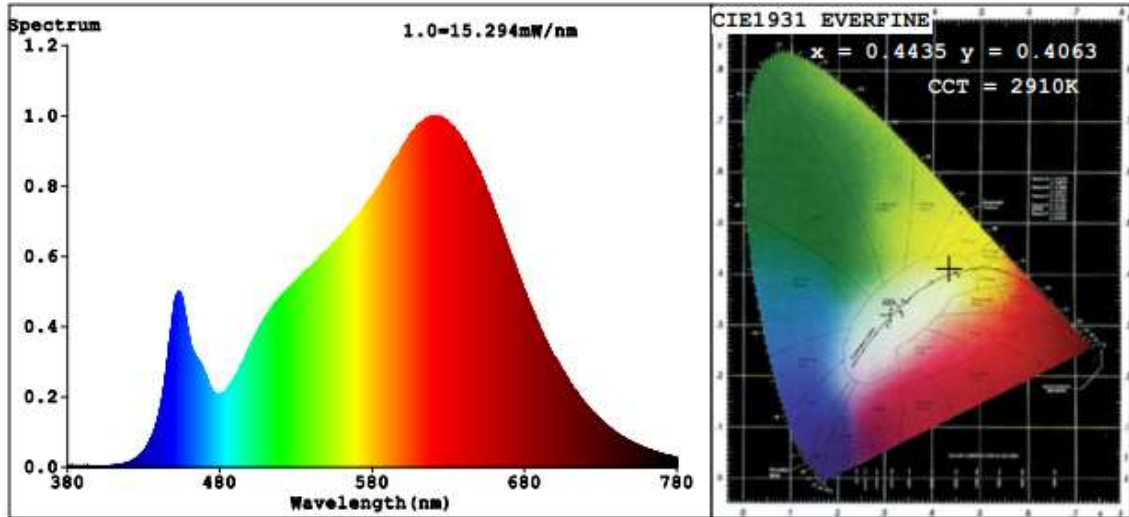
**Chromaticity Measurement - Sphere-Spectroradiometer
 Method(Self-absorption:1.0599)(4π geometry):**

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	2910
Duv	0.0000
Chromaticity (x, y)	x=0.4435 y=0.4063
Chromaticity (u', v')	u'=0.2539 v'=0.5233
Color Rendering Index (CRI)	93.0
R9	60
Rg	99
Rf	92
Rcs,h1(%)	-5

Photometric Measurement –Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	784.0
Luminous Efficacy (lm/W)	63.38

Spectral Power Distribution & Chromaticity Diagram



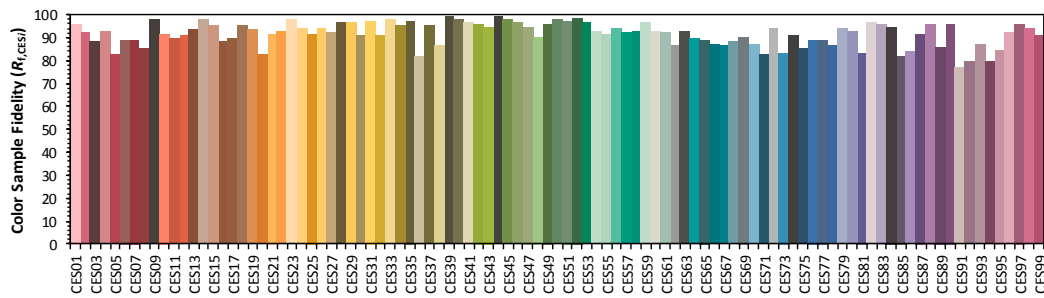
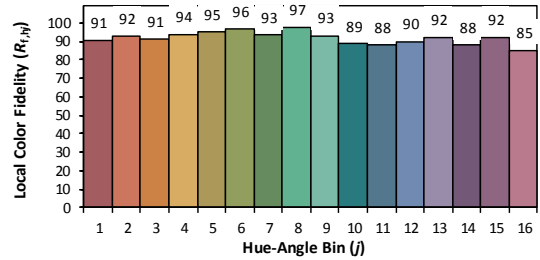
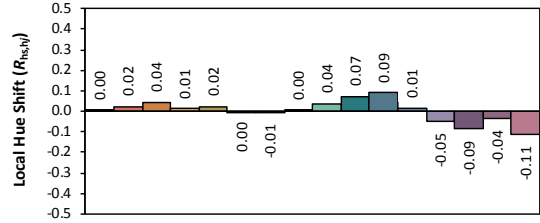
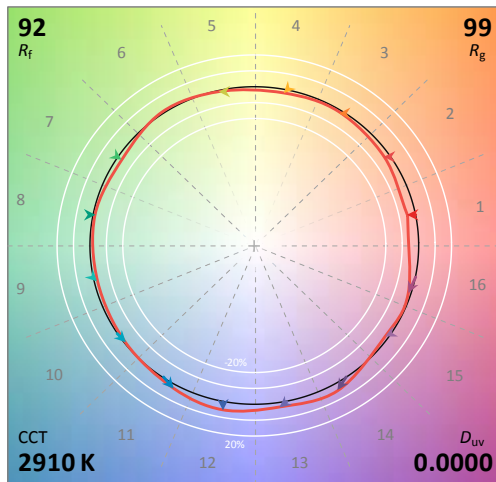
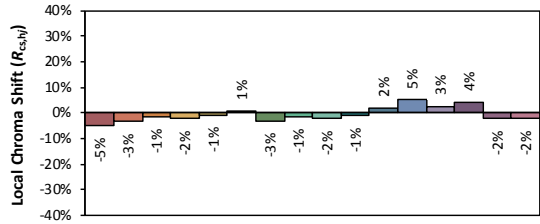
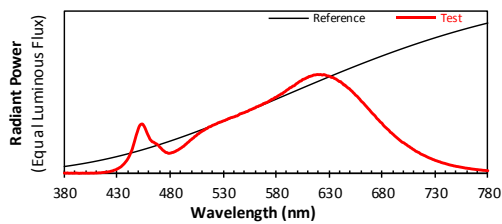
R1 =93	R2 =97	R3 =98	R4 =93	R5 =93	R6 =96	R7 =92		
R8 =82	R9 =60	R10=91	R11=94	R12=80	R13=94	R14=98	R15=89	



TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: PC35U27 Manufacturer: ARTIKA FOR LIVING INC
 Date: 2021-11-03 Model: 4FM-BP-MB



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

x	0.4436	CIE 13.3-1995 (CRI) R_a 93 R_g 61
y	0.4062	
u'	0.2539	
v'	0.5232	

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0



3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-702	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-701	Spectral analysis system HAAS-1200	Verified by D204 standard lamp	
ST-R-703	Standard Lamp D204	2021-02-21	2022-02-20
ST-R-704	Power Meter for Integrating Sphere	2021-01-05	2022-01-04
ST-R-714	Goniophotometer system	Verified by D908S standard lamp	
ST-R-710	Standard Lamp D908S	2021-02-21	2022-02-20
ST-R-711	Power Meter for Goniophotometer	2021-01-05	2022-01-04
Uncertainty(K=2): Photometric Measurement (Sphere):3.94% Chromaticity Measurement(Sphere):48.2K Photometric Measurement(Goniophotometer):3.96%			

4. Product Photo



***** END OF REPORT *****