Photometric Test Report

Relevant Standards

☑IES LM-79-2008

☑ANSI C82.77:2017

Prepared For

RAB Lighting Inc.

170 Ludlow Ave, PO BOX 970, Northvale, NJ 07647-2305 USA

Crystal Wu 13482123342, Crystal.Wu@rabweb.com

Prepared By

Deliver Co.， Ltd.

Block 11, 78 Keling Road, SSTP, Suzhou, China

0512-66801950,kevin.jia@szdeliver.com

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2020/4/4

Prepared By	**Approved By**
Wangzun Zhu	Kevin Jia

1.0 Test Summary

DLC Technical Requirements v5.1

Indoor - Lamps				
Requirement Category	**Test Method**	**Requirements**		**Test value**
2700K				
Luminaire Output (lm) (Goniophotometer - Section 4.2)	IES LM-79-2008	-		863
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	-	-	90.5
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	-		9.5
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	-		28.25%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9		0.956
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	2725±145	2725
		4 step	2725±83	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	⩾70		96
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	⩾0		95.0
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	⩾70		96
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	⩾89		101
IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-12%⩽IES Rcs,h1⩽+23%		0%
3000K				
Luminaire Output (lm) (Goniophotometer - Section 4.2)	IES LM-79-2008	-		821
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	-	-	85.5
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	-		9.6
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	3045±175	2955
		4 step	3045±100	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	⩾70		96
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	⩾0		92.6
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	⩾70		97
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	⩾89		102

IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-12%≤IES Rcs,h1≤+23%		1%
6500K				
Luminaire Output (lm) (Goniophotometer - Section 4.2)	IES LM-79-2008	-		983
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	-	-	103.5
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	-		9.5
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	6532±510	6317
		4 step	6532±320	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥70		97
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥0		97.0
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥70		94
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥89		98
IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-12%≤IES Rcs,h1≤+23%		0%

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2020/4/1	BR30-10-E26-9SS/LC	A1
2	Goniophotometer Test	2020/4/1	BR30-10-E26-9SS/LC	A1
3	THD and PF Test	2020/4/1	BR30-10-E26-9SS/LC	A1

Remark(If any)
1、This report shall not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the US government.
2、The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

3.0 Production Description

Luminaire Description: BR30-10-E26-9SS/LC

Electrical Specification: 120V,60HZ

Photos of Luminaire Characteristics

4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test - 2700K

Model No.	BR30-10-E26-9SS/LC	Sample ID.	A1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	56.0

Test Method
The samples were tested according to the IES LM-79-2008.
Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1º 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 voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Test Result

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.02	60	0.084	9.6	0.956

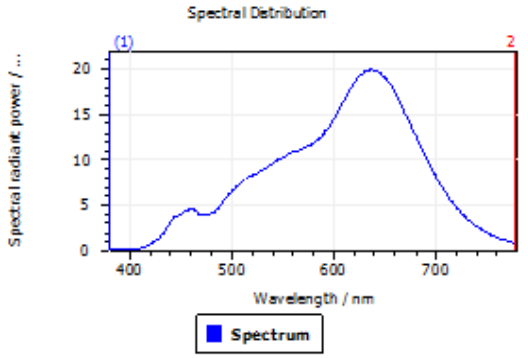
Test Result

CCT (K)	CRI	R9	Duv
2725	96	95	0.00015

Rf	Rg	IES Rcs,h1
96	101	0%

4.1 Integrating Sphere Test

Results



Spectral Distribution

Spectral values

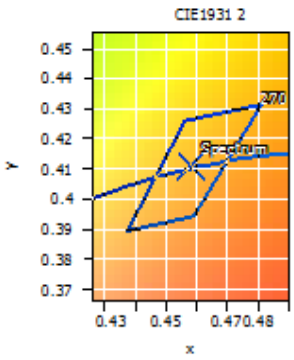
DominantWavelength	584.03 nm
Purity	0.607
PeakWavelength	637.25 nm
Width50%:	146.66 nm

Color Coordinates

Correlated Color Temperatu		2725 K			
x:	0.4580	u:	0.2613	u':	0.2613
y:	0.4106	v:	0.3514	v':	0.5271

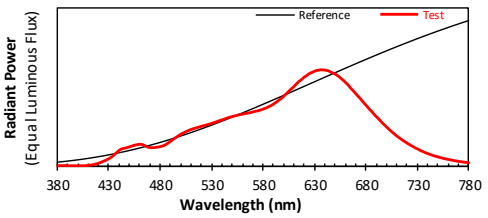
CRI01	95.2	CRI09	95.1
CRI02	98.2	CRI10	97.7
CRI03	95.9	CRI11	90.1
CRI04	93.5	CRI12	94.7
CRI05	95.1	CRI13	95.7
CRI06	95.9	CRI14	96.5
CRI07	98.7	CRI15	96.3
CRI08	96.6	CRI16	95.7

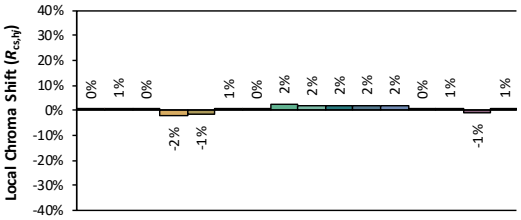
ResultsCRI 96.1

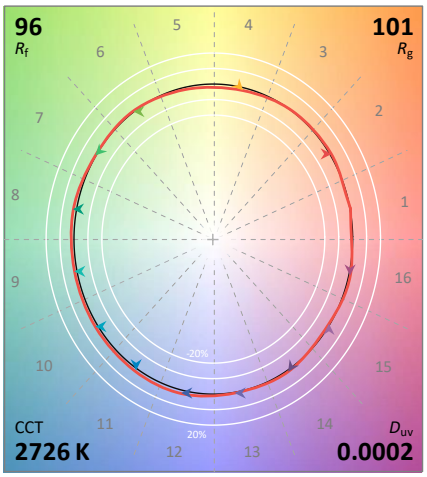


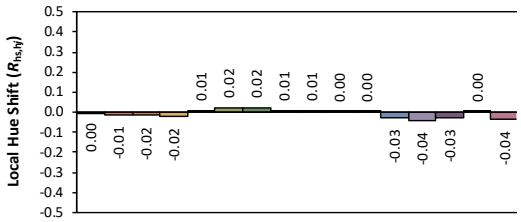
PlanckDistance 1.5E-004

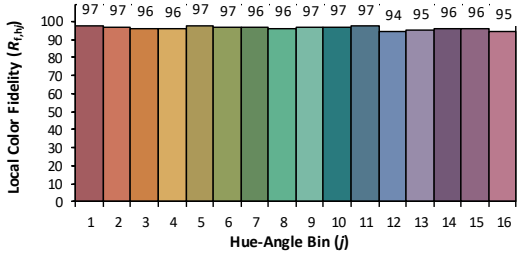
4.1 Integrating Sphere Test

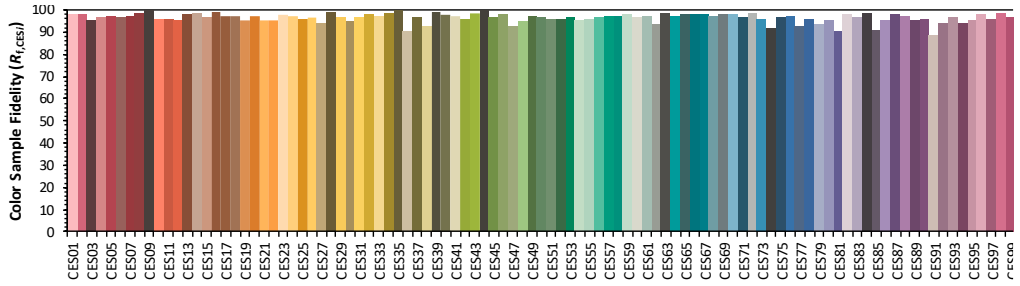












Notes: This is a recommended method for displaying IES TM-30-18 information.

x	0.4580
y	0.4106
u'	0.2613
v'	0.5271

CIE 13.3-1995 (CRI)	
R_a	97
R_9	98

4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test - 3000K

Model No.	BR30-10-E26-9SS/LC	Sample ID.	A1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	56.0

Test Method
The samples were tested according to the IES LM-79-2008.
Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1º 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 voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Test Result

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.00	60	0.082	9.5	0.961

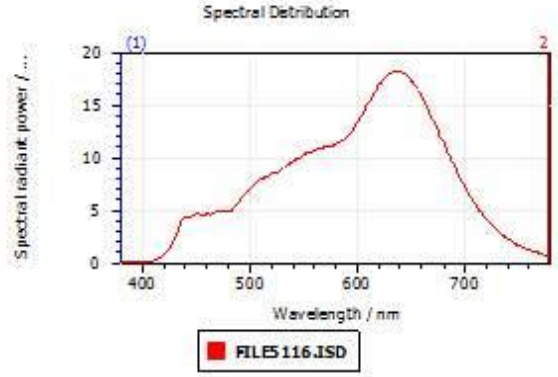
Test Result

CCT (K)	CRI	R9	Duv
2955	96	93	0.00053

Rf	Rg	IES Rcs,h1
97	102	1%

4.1 Integrating Sphere Test

Results



Spectral Distribution

Date: 2020/4/20 12:56:56

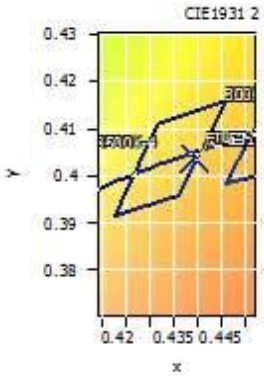
Spectral values

DominantWavelength	583.21 nm
Purity	0.530
PeakWavelength	637.15 nm
Radiant Power	3.071 W
Width50%:	
Luminous Flux	0.7962 klm

Color Coordinates

Correlated Color Temperatu		2955 K			
x:	0.4394	u:	0.2524	u':	0.2524
y:	0.4036	v:	0.3477	v':	0.5216

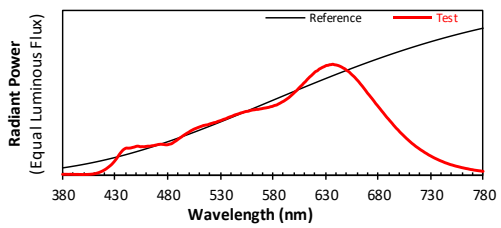
CRI01	95.2	CRI09	92.6
CRI02	97.7	CRI10	96.3
CRI03	97.3	CRI11	91.5
CRI04	94.3	CRI12	94.3
CRI05	95.2	CRI13	95.5
CRI06	95.5	CRI14	97.4
CRI07	99.2	CRI15	96.0
CRI08	98.3	CRI16	95.3
ResultsCRI	98.3		

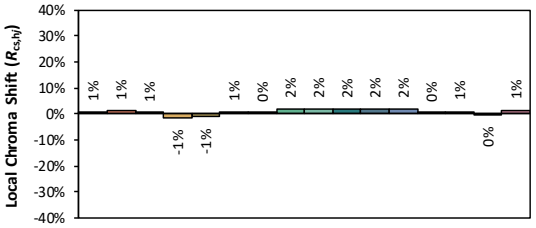


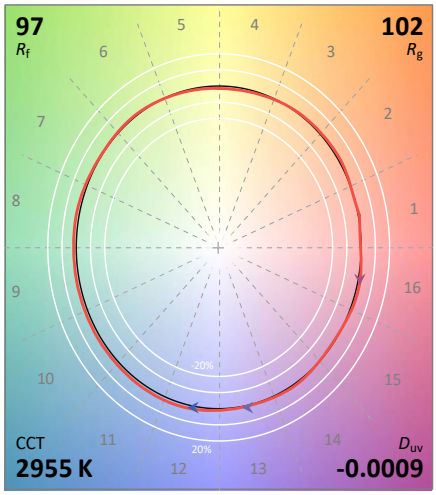
Nominal CCT 5700K

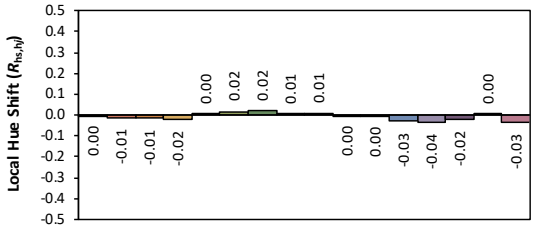
PlanckDistance 5.3E-004

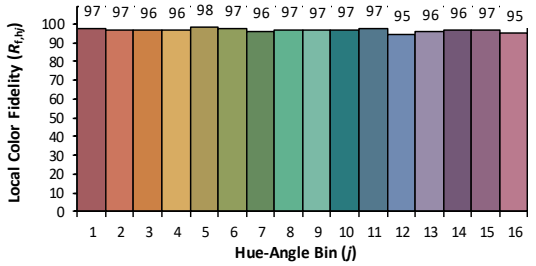
4.1 Integrating Sphere Test

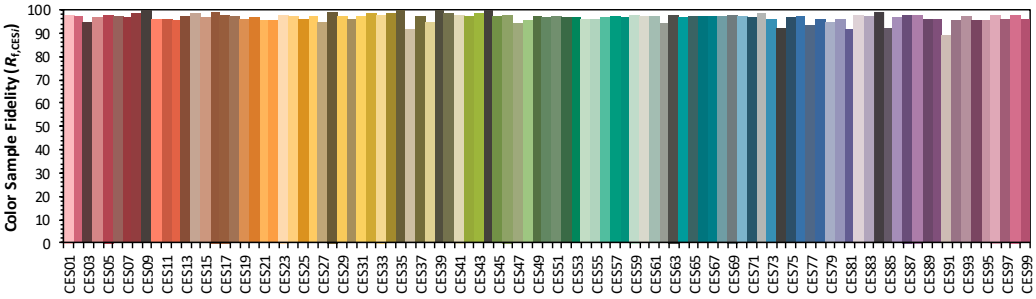












Notes: This is a recommended method for displaying IES TM-30-18 information.

x	0.4388
y	0.4024
u'	0.2525
v'	0.5210

CIE 13.3-1995 (CRI)

R_a	96
R_9	94

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

4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test - 6500K

Model No.	BR30-10-E26-9SS/LC	Sample ID.	A1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	24.9	Humidity (%RH)	58.0

Test Method
The samples were tested according to the IES LM-79-2008.
Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1º 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 voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Test Result

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.01	60	0.083	9.5	0.957

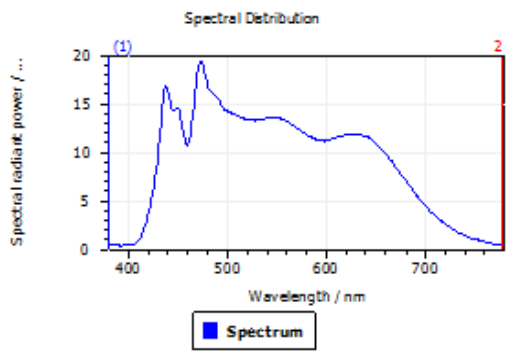
Test Result

CCT (K)	CRI	R9	Duv
6317	97	97	0.0053

Rf	Rg	IES Rcs,h1
94	98	0%

4.1 Integrating Sphere Test

Results



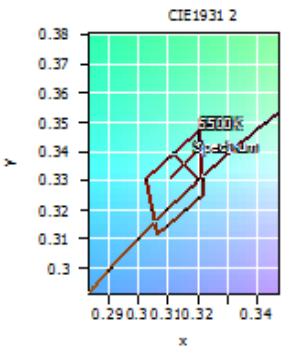
Spectral Distribution

Spectral values

DominantWavelength	493.53 nm
Purity	0.059
PeakWavelength	473.23 nm
Width50%:	231.75 nm

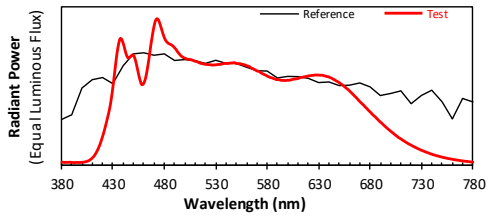
Color Coordinates

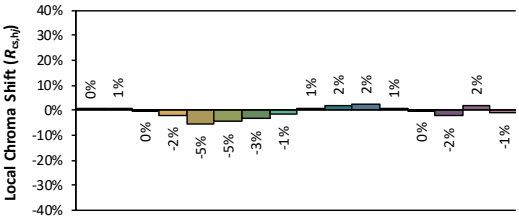
Correlated Color Temperatu		6317 K			
x:	0.3155	u:	0.1972	u':	0.1972
y:	0.3358	v:	0.3149	v':	0.4723
CRI01	99.1	CRI09	97.4		
CRI02	97.1	CRI10	93.6		
CRI03	95.7	CRI11	96.5		
CRI04	95.0	CRI12	95.4		
CRI05	98.6	CRI13	97.7		
CRI06	97.3	CRI14	97.7		
CRI07	95.7	CRI15	97.4		
CRI08	97.4	CRI16	93.9		
ResultsCRI	97.0				

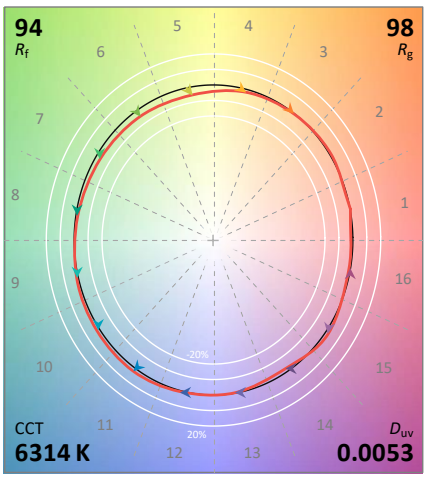


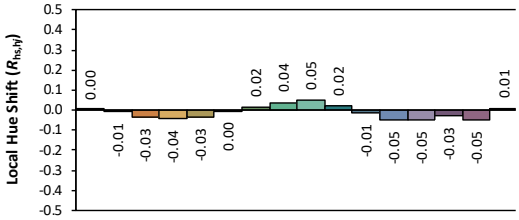
PlanckDistance 5.3E-003

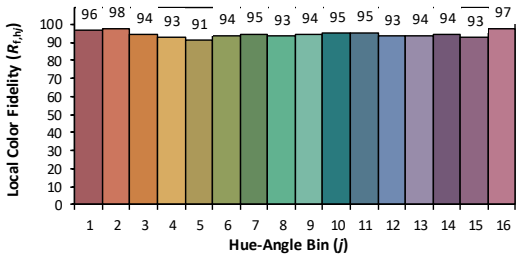
4.1 Integrating Sphere Test

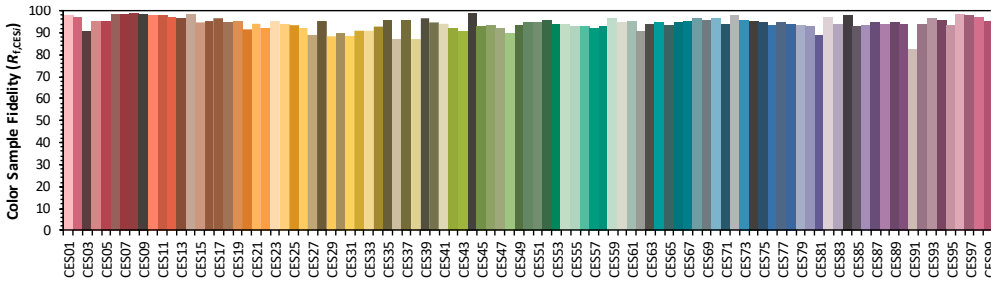












Notes: This is a recommended method for displaying IES TM-30-18 information.

x	0.3155
y	0.3358
u'	0.1972
v'	0.4723

CIE 13.3-1995 (CRI)

R_a	97
R_9	97

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test - 2700K

Model No.	BR30-10-E26-9SS/LC	Sample ID.	A1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	54.0

Test Method
The samples were tested according to the IES LM-79-2008.
Photometric paramters were measured using a type C goniophotometer and software.
The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample.
The voltage of an AC power supply (RMS voltage)or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5^{o} vertical intervals and 10^{o} horizontal intervals.

Test Conditions

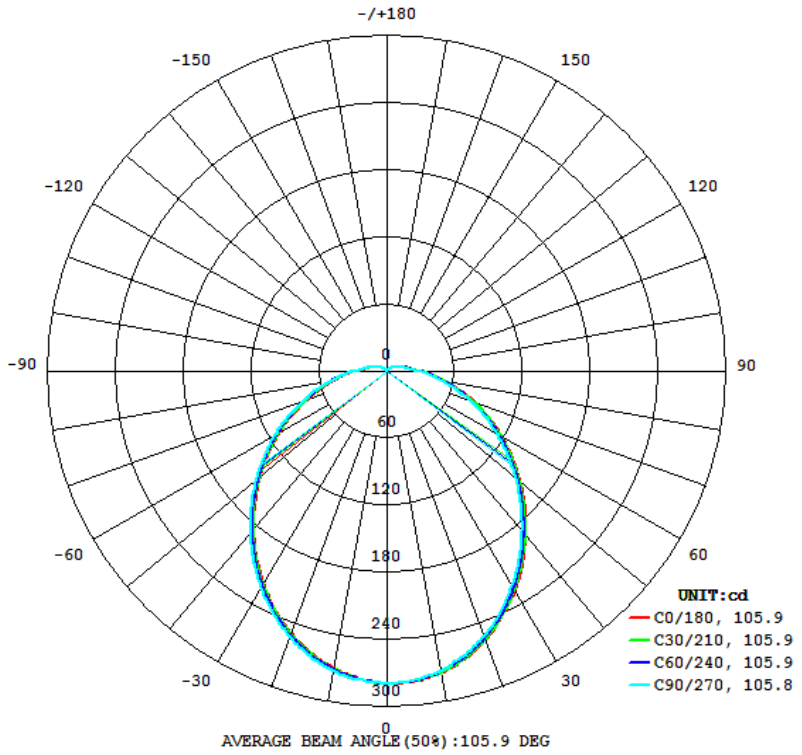
Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WROST CASE	119.97	60	0.083	9.5	0.959

Test Result

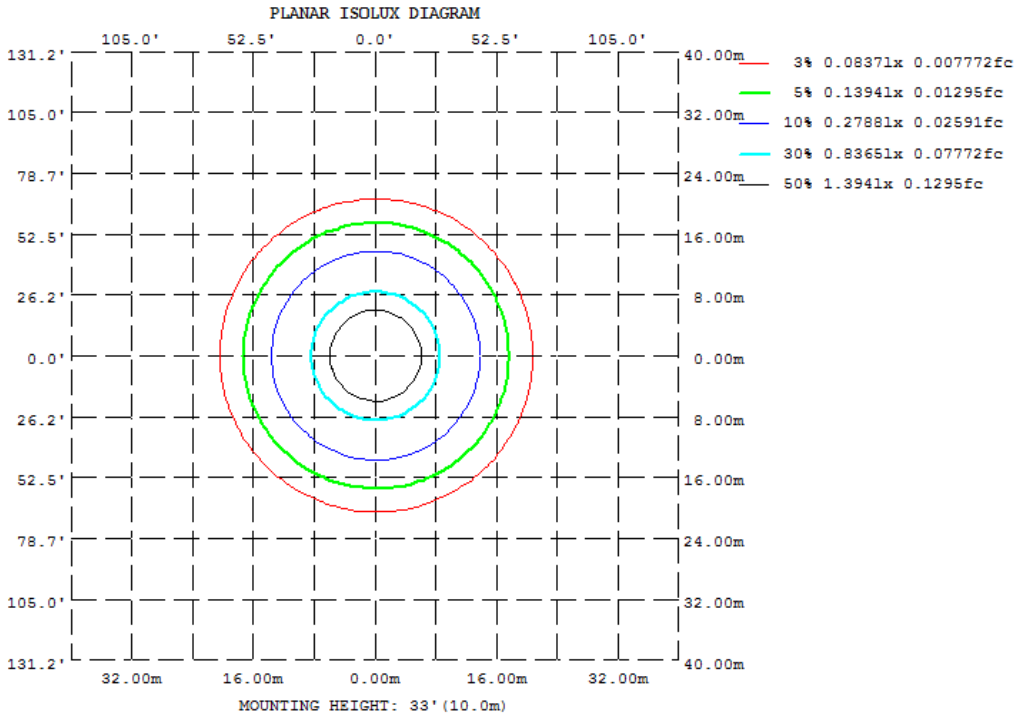
Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
863	182.6	182.2	105.9	105.8	90.5

4.2 Goniophotometer Test

Light Distrubtion Curve



Isolux Plot



4.2 Goniophotometer Test

Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	273.9	273.1	271.7	270.8	270.1	270.6	272.6	273.8
20	255.2	253.7	251.7	250.0	248.9	250.4	252.6	254.5
30	226.8	225.3	221.4	219.5	218.7	220.2	223.1	225.9
40	192.0	189.8	186.4	184.2	183.5	184.7	188.2	191.0
50	154.8	152.5	149.2	147.1	146.5	148.3	151.4	153.9
60	118.2	116.0	112.8	111.1	110.5	112.1	114.7	117.1
70	83.31	81.66	78.79	77.27	76.98	78.44	80.60	82.38
80	52.63	51.55	49.17	47.92	47.91	49.22	50.54	51.97
90	31.18	30.47	28.93	28.31	28.47	29.36	29.92	30.79
100	20.22	19.80	18.90	18.65	18.97	19.41	19.58	20.04
110	14.23	13.93	13.17	13.01	13.34	13.70	13.85	14.14
120	9.695	9.437	8.835	8.721	9.047	9.317	9.443	9.688
130	6.301	6.096	5.627	5.528	5.780	5.986	6.128	6.307
140	3.758	3.602	3.248	3.173	3.402	3.553	3.709	3.827
150	1.999	1.887	1.633	1.580	1.804	1.901	2.057	2.119
160	0.9773	0.9086	0.7500	0.7135	0.9440	1.010	1.145	1.163
170	0.7139	0.6488	0.5162	0.5845	0.7191	0.8028	0.8576	0.8242
180	0.4099	0.4093	0.4098	0.4117	0.4080	0.4089	0.4093	0.4109

DEG	LUMINOUS INTENSITY:cd

ZONAL LUMEN SUMMARY

	Zonal (lm)		Total (lm)	Percent
0-10	26.29	0 - 10	26.29	3.05%
10-20	74.25	0 - 20	100.54	11.65%
20-30	109.81	0 - 30	210.35	24.38%
30-40	128.64	0 - 40	338.99	39.28%
40-50	130.59	0 - 50	469.58	54.42%
50-60	118.34	0 - 60	587.92	68.13%
60-70	95.94	0 - 70	683.86	79.25%
70-80	68.27	0 - 80	752.13	87.16%
80-90	42.73	0 - 90	794.86	92.11%
90-100	26.24	0 - 100	821.10	95.15%
100-110	17.42	0 - 110	838.52	97.17%
110-120	11.33	0 - 120	849.85	98.48%
120-130	6.80	0 - 130	856.65	99.27%
130-140	3.66	0 - 140	860.31	99.70%
140-150	1.69	0 - 150	862.00	99.89%
150-160	0.64	0 - 160	862.64	99.97%
160-170	0.23	0 - 170	862.87	99.99%
170-180	0.06	0 - 180	862.93	100.00%

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test - 3000K

Model No.	BR30-10-E26-9SS/LC	Sample ID.	A1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.5	Humidity (%RH)	56.0

Test Method
The samples were tested according to the IES LM-79-2008.
Photometric paramters were measured using a type C goniophotometer and software.
The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample.
The voltage of an AC power supply (RMS voltage)or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5^{o} vertical intervals and 10^{o} horizontal intervals.

Test Conditions

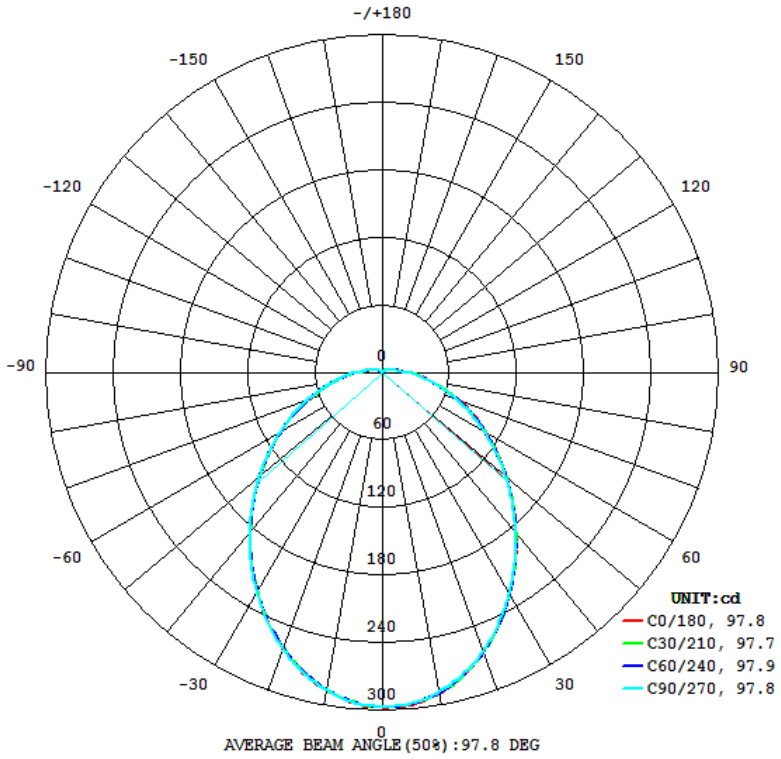
Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WROST CASE	120.01	60	0.083	9.6	0.959

Test Result

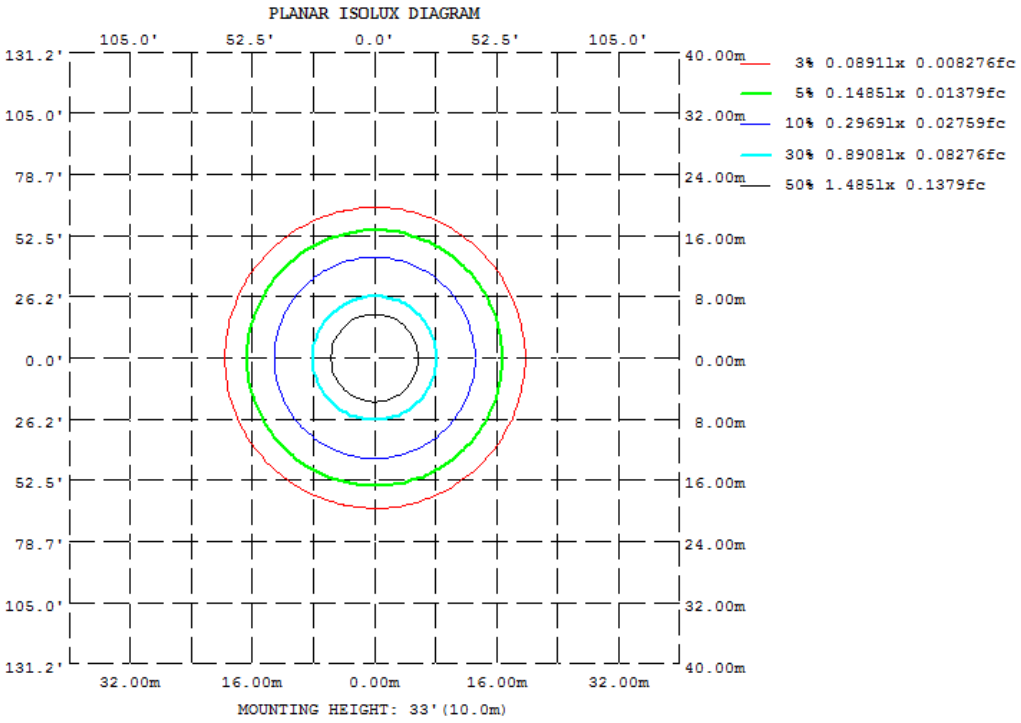
Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
821	172.3	172.3	97.8	97.8	85.5

4.2 Goniophotometer Test

Light Distrubtion Curve



Isolux Plot



4.2 Goniophotometer Test

Zonal Lumen Summary

DEG	LUMINOUS INTENSITY:cd									
γ	C0	C45	C90	C135	C180	C225	C270	C315		
10	289.2	289.6	288.1	287.4	286.5	286.6	286.8	287.7		
20	264.0	264.7	263.3	261.5	261.0	260.8	260.6	261.7		
30	228.0	228.6	227.1	225.4	223.8	224.0	224.9	225.5		
40	186.8	187.1	185.6	184.3	183.3	184.2	184.5	185.4		
50	145.8	145.4	144.5	143.4	142.9	143.2	143.8	145.0		
60	107.4	107.0	105.8	105.4	105.1	105.2	106.0	106.8		
70	73.24	72.56	71.44	70.85	70.63	70.75	71.75	72.83		
80	44.22	43.33	42.50	42.10	41.66	42.10	43.04	43.96		
90	24.52	23.76	23.25	23.09	22.92	23.23	23.98	24.50		
100	15.19	14.57	14.21	14.21	14.22	14.43	14.96	15.36		
110	10.62	10.09	9.670	9.620	9.654	9.846	10.33	10.77		
120	7.314	6.828	6.458	6.338	6.356	6.493	6.948	7.403		
130	4.835	4.484	4.154	3.991	4.012	4.107	4.491	4.866		
140	2.912	2.749	2.538	2.364	2.408	2.457	2.716	2.961		
150	1.551	1.517	1.433	1.291	1.385	1.360	1.489	1.608		
160	0.7588	0.8036	0.8071	0.7105	0.8552	0.7802	0.8271	0.8231		
170	0.5850	0.6875	0.6576	0.6506	0.7313	0.6581	0.6594	0.5754		
180	0.4161	0.4147	0.4151	0.4177	0.4177	0.4161	0.4161	0.4155		

ZONAL LUMEN SUMMARY

	Zonal (lm)		Total (lm)	Percent
0-10	27.90	0 - 10	27.90	3.40%
10-20	77.85	0 - 20	105.75	12.88%
20-30	112.73	0 - 30	218.48	26.62%
30-40	128.70	0 - 40	347.18	42.30%
40-50	127.07	0 - 50	474.25	57.78%
50-60	111.79	0 - 60	586.04	71.40%
60-70	87.83	0 - 70	673.87	82.10%
70-80	60.05	0 - 80	733.92	89.42%
80-90	35.50	0 - 90	769.42	93.74%
90-100	20.34	0 - 100	789.76	96.22%
100-110	12.98	0 - 110	802.74	97.80%
110-120	8.31	0 - 120	811.05	98.82%
120-130	4.97	0 - 130	816.02	99.42%
130-140	2.70	0 - 140	818.72	99.75%
140-150	1.28	0 - 150	820.00	99.91%
150-160	0.51	0 - 160	820.51	99.97%
160-170	0.20	0 - 170	820.71	99.99%
170-180	0.06	0 - 180	820.77	100.00%

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test - 6500K

Model No.	BR30-10-E26-9SS/LC	Sample ID.	A1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.5	Humidity (%RH)	56.0

Test Method
The samples were tested according to the IES LM-79-2008.
Photometric paramters were measured using a type C goniophotometer and software.
The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample.
The voltage of an AC power supply (RMS voltage)or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5^{o} vertical intervals and 10^{o} horizontal intervals.

Test Conditions

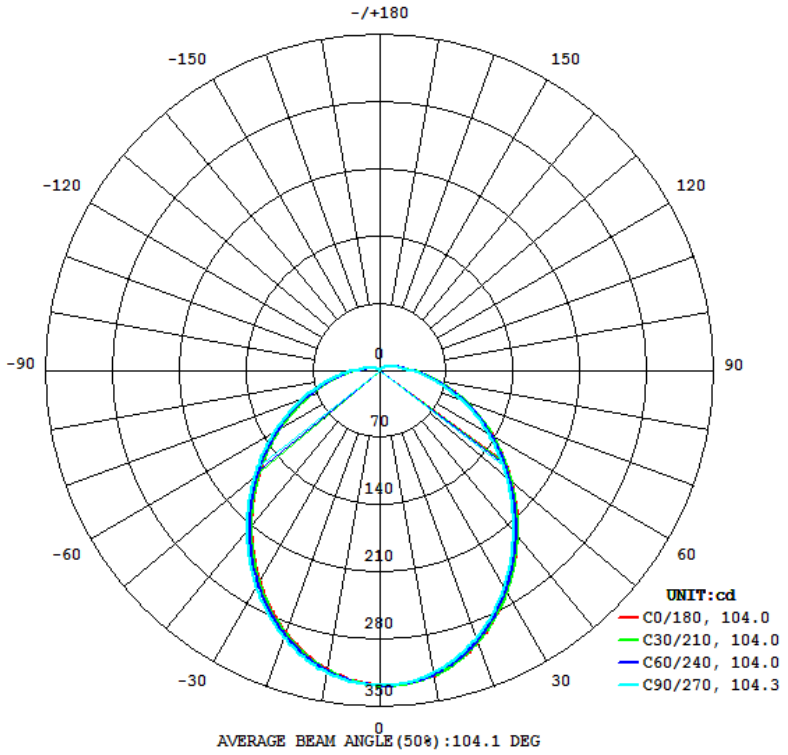
Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WROST CASE	120.00	60	0.082	9.5	0.960

Test Result

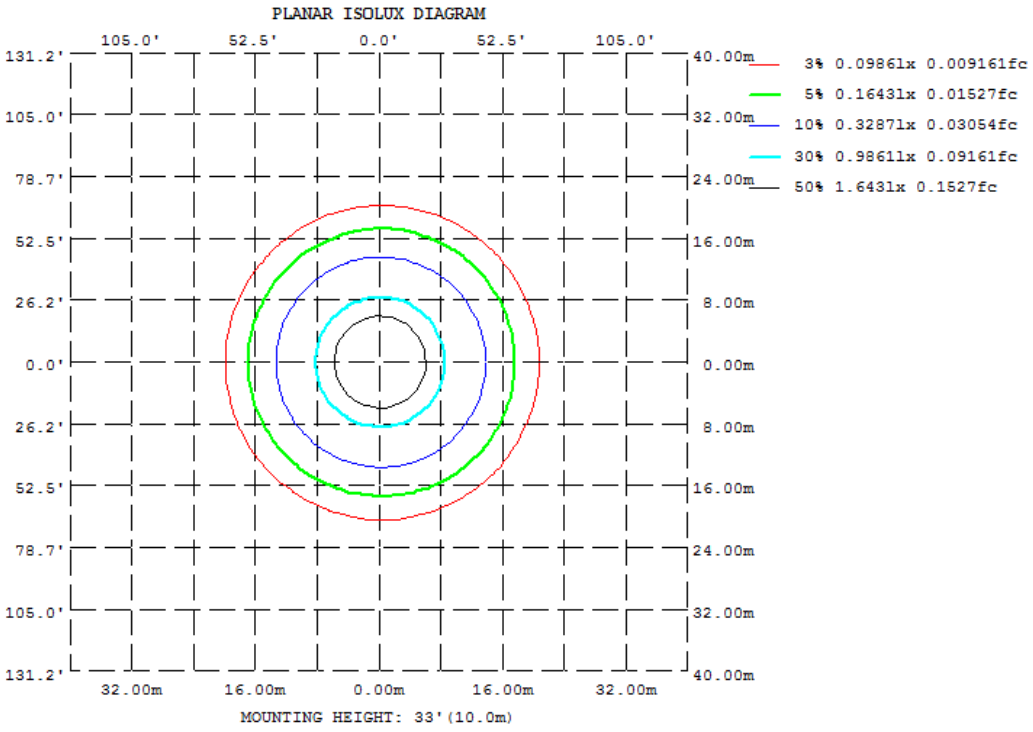
Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
983	177.9	178.4	104.0	104.3	103.5

4.2 Goniophotometer Test

Light Distrubtion Curve



Isolux Plot



4.2 Goniophotometer Test

Zonal Lumen Summary

DEG	LUMINOUS INTENSITY:cd											
γ	C0	C45	C90	C135	C180	C225	C270	C315				
10	323.0	322.5	319.6	317.0	316.0	317.5	319.7	321.3				
20	301.4	300.6	296.6	291.8	289.6	291.8	295.5	298.9				
30	266.8	265.8	260.8	254.9	252.3	254.7	260.1	264.7				
40	226.0	224.1	218.9	212.4	209.4	211.2	217.2	222.7				
50	181.7	179.9	174.6	168.5	164.6	166.4	171.8	178.3				
60	138.0	136.8	132.1	125.5	121.5	122.6	128.4	134.6				
70	97.30	96.11	91.77	86.05	82.11	82.66	87.84	93.69				
80	61.01	60.33	57.12	52.29	48.42	48.66	52.52	57.78				
90	35.38	35.62	33.77	30.24	26.87	26.20	28.81	32.76				
100	22.93	23.51	22.42	19.96	17.23	16.30	17.88	20.67				
110	16.13	16.59	15.83	13.95	11.85	11.04	12.25	14.43				
120	11.01	11.38	10.82	9.440	7.832	7.218	8.145	9.774				
130	7.165	7.397	7.013	6.086	4.913	4.497	5.166	6.318				
140	4.339	4.487	4.211	3.600	2.867	2.621	3.087	3.816				
150	2.364	2.439	2.256	1.901	1.555	1.444	1.726	2.103				
160	1.205	1.231	1.121	0.9364	0.8956	0.8316	0.9963	1.121				
170	0.8523	0.8736	0.7397	0.7485	0.6845	0.6303	0.7125	0.7841				
180	0.4720	0.4731	0.4675	0.4770	0.4723	0.4727	0.4721	0.4743				

ZONAL LUMEN SUMMARY

	Zonal (lm)		Total (lm)	Percent
0-10	30.89	0 - 10	30.89	3.14%
10-20	87.16	0 - 20	118.05	12.01%
20-30	128.49	0 - 30	246.54	25.07%
30-40	149.75	0 - 40	396.29	40.30%
40-50	150.91	0 - 50	547.20	55.65%
50-60	135.54	0 - 60	682.74	69.43%
60-70	108.56	0 - 70	791.30	80.47%
70-80	75.79	0 - 80	867.09	88.18%
80-90	45.92	0 - 90	913.01	92.85%
90-100	27.36	0 - 100	940.37	95.63%
100-110	17.93	0 - 110	958.30	97.46%
110-120	11.58	0 - 120	969.88	98.64%
120-130	6.93	0 - 130	976.81	99.34%
130-140	3.74	0 - 140	980.55	99.72%
140-150	1.75	0 - 150	982.30	99.90%
150-160	0.68	0 - 160	982.98	99.97%
160-170	0.25	0 - 170	983.23	99.99%
170-180	0.07	0 - 180	983.30	100.00%

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	BR30-10-E26-9SS/LC	Sample ID.	A1
Temperature (°C)	25.3	Humidity (%RH)	56.0

Test Method
The samples were tested according to the ANSI C82.77:2002.
The total harmonic distortion shall be measured to the 40th order.
The ambient temperature condition was maintained at 25º C ± 1º C. The sample measurements were made using a digital power meter and power supply. The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated.

Test Results					
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD
120.02	60	0.084	9.6	0.956	28.25%

5.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2019/12/26	2020/12/25
DLF108	Auxiliary Lamp	2019/12/26	2020/12/25
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.4720 A, Tungsten, Omni-derectional	2019/12/26	2020/12/25
DLF116	AC Power Source	2019/12/26	2020/12/25
DLF113	Power Meter	2019/12/26	2020/12/25
DLF112	Temperature Recorder	2019/12/26	2020/12/25
DLF114	Temperature & Humidity Datalogger	2019/12/26	2020/12/25
DLF101	Goniophotometer	2019/12/26	2020/12/25
DLF125	Standard Lamp Standard Lamp Type: 76.58 V, 6.7875 A, Tungsten, Omni-derectional	2019/12/26	2020/12/25
DLF104	AC Power Source	2019/12/26	2020/12/25
DLF507	DC Power Source	2019/12/26	2020/12/25
DLF102	Power Meter	2019/12/26	2020/12/25
DLF111	Temperature & Humidity Datalogger	2019/12/26	2020/12/25
DLF119	Power Meter	2019/12/26	2020/12/25
DLF031	Temperature data logger	2019/12/26	2020/12/25
DLF022	Digital power meter	2019/12/26	2020/12/25
DLF003	Temperature & Humidity Datalogger	2019/12/26	2020/12/25

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