



### IESNA LM-79 TEST REPORT

**Applicant's name** .....: BlackJack Lighting LLC

**Address** .....: 1547 Barclay Blvd. Buffalo Grove, IL 60089

**Brand Name**.....: Blackjack Lighting

**Report No.**.....: BTR66.181.19.0007.20

**Product Name**.....: 8" glass sphere pendant (BL or PC) -Clear Glass /White Frosted/Smoked Glass

**Model Number** .....: MSSC-08P-PC-12P-30K;MSSC-08P-BL-12P-30K;  
MSSF-08P-PC-12P-30K;MSSF-08P-BL-12P-30K;  
MSSS-08P-PC-12P-30K;MSSS-08P-BL-12P-30K

**Tested by**  
(printed name and signature) .....: David Zhang 

**Title** .....: **Test Engineer** .....

**Approved by**  
(printed name and signature) .....: Steven Huo 

**Title** .....: **Approved Signatory** .....

**Date of issue** .....: Aug 26, 2019

**Testing Laboratory Name** .....: BEST Test Service Shenzhen Co., Ltd.  
1<sup>st</sup> Floor, 1<sup>st</sup> Building, Weitai Industrial Park, Yingrenshi, Shiyao, Baoan,

**Address** .....: Shenzhen, China  
[Tel:+86-755-28236006](tel:+86-755-28236006), Email: [admin@bestcert.cn](mailto:admin@bestcert.cn)

**Accreditation** .....: DLC/Lighting Facts/UL/ETL/ELI/CEC/EPA/DOE  
NVLAP Testing Lab Code: 200770-0

#### Test specification

**Standard** .....: IESNA LM-79

**Test procedure/method** .....: IESNA LM-79 Test Procedure

**Non-standard test method** .....: No

**Test Report Form No.** .....: BEST\_ LM-79

**TRF originator**.....: BEST Test Service Shenzhen Co., Ltd. Mr Tseng

**Master TRF** .....: BEST\_LM-79.doc

#### Note:

The laboratory has not been responsible for the sampling stage (e.g. the sample has been provided by the customer), the results relate only to the items tested.

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<b>Description:</b>	
The date of sampling .....	Aug 13, 2019
The date of receipt of the test sample / requirement /item(s).....	Aug 13, 2019
Test date.....	Aug 13, 2019 to Aug 22, 2019
Description .....	8" glass sphere pendant (BL or PC) -Clear Glass /White Frosted/Smoked Glass
The condition of the item .....	N/A
Sampling method.....	Provided by the customer
Sample Quantity .....	1 unit
SKU.....	N/A
Rating(s) (V; Hz) .....	AC 120V, 60Hz
Nominal Power.....	4.7W
Nominal Power Factor .....	N/A
Nominal Lumen Output.....	133lm
Nominal CCT .....	3000K
Nominal CRI(Ra) .....	90
Number of hours operated prior to measurement.....	0H
Total operating time of the product for measurements including stabilization:	2.5H
Ambient temperature .....	24.7°C
Orientation (burning position) of SSL product during test .....	Lighting Surface Down or Base Up
Stabilization time .....	1.0H
Photometric method .....	Sphere-spectroradiometer+Goniophotometer
Calibration standard lamp used .....	DC 24V 100W Omni-Directional Halogen Calibrated by NIM China(Sphere) DC 120V 500W Omni-Directional Halogen Calibrated by NIM China(Goniophotometer)
Correction factors applied.....	Self absorbing applied
Photometric measurement conditions:	See test method description below

Equipments used .....	EVERFINE HASS-2000 Sphere System CHROMA 61602 AC Source YOKOGAWA WT 310 Power Meter FLUKE 52II EVERFINE GOR-5000 Goniophotometer CALIFORNIA INSTRUMENT 1501I AC Source YOKOGAWA WT 210 Power Meter FLUKE 233 Temperature Meter
Bandwidth of spectroradiometer .....	2nm
Statement of uncertainties .....	3.1%
Deviation .....	None

Note: These models are all the same except for color. Here we choose MSSC-08P-PC-12P-30K to be tested and the other to share the test data.

**Photometric and Electrical Measurement**

Total light output (luminous flux) for the 25°C ±1°C ambient temperature conditions was measured using a ø2.0m 4π geometry integrating sphere. Temperature was measured at a position inside the sphere. Spectral radiant flux were measured using the photo detector built in the integrating sphere. Each lamp was operated at rated voltage in its designated orientation. Each lamp was in a stable state before measurements are done as below:

- Step 1 Take 3 measurements of the lamp light output at 15 minute interval (total time=30mintues.), the pre-burning time is not included in the formal testing time period.
- Step 2 Calculate the difference in percentage between the maximum measured value and the minimum measured value with the three consecutive measurements.
- Step 3 If the value calculated in Step 2 does not exceed 0.5 percent, the lamp is considered stable.

Luminous flux, chromaticity coordinates, correlated color temperature and color rendering index for each lamp were calculated from the spectral radiant flux measurements taken at 2 nm increment over the range of 380 to 780 nm. The calibration of the sphere photometer-spectrometer system can be traced back to the NIST USA. Lamp efficacy (lumens per watt) for each lamp model was computed based on the luminous flux result revised taking the self-absorbing correction factor into consideration. Electrical measurements including voltage, current, power and power factor were measured using the digital power meter.

The total uncertainty of the light output measurements is estimated, at the 95% confidence level, not to exceed ±3.1% over the wavelength range of 380-780 nm.

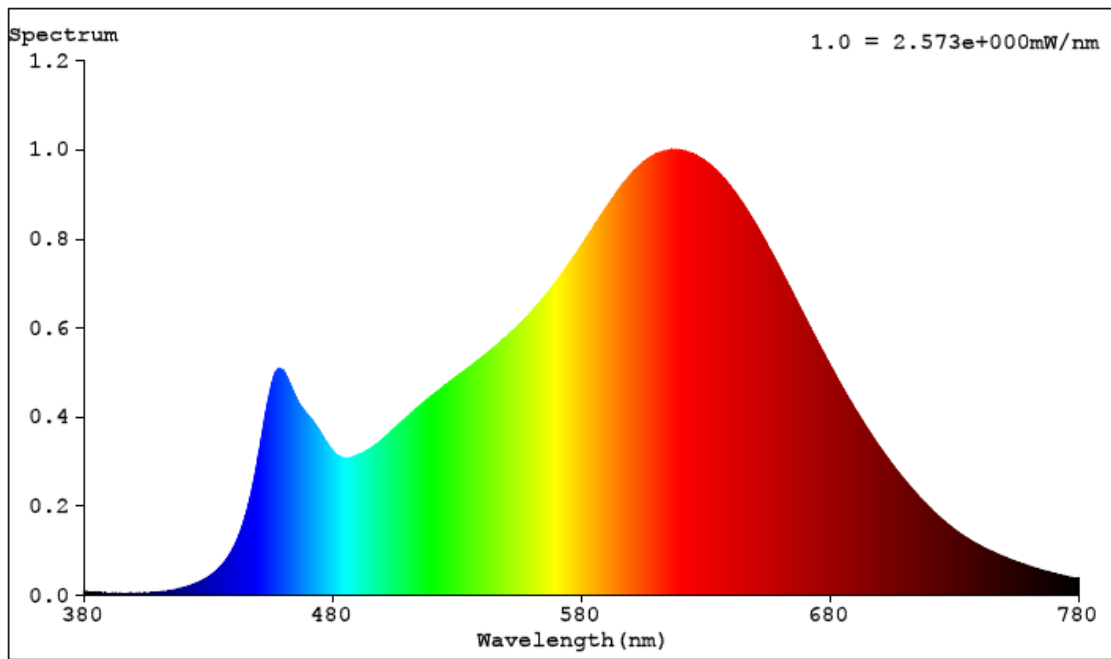
**Luminous Intensity**

An Everfine GOR-5000 Goniophotometer was used to measure the intensity distribution at each angle, Luminous intensity (cd) was measured within each vertical plane at a 5° vertical angle increment (maximum) from 0° to 360°, measurements were repeated in vertical planes about the lamp (polar) axis in an increments of 22.5° from 0° to 180°, and the intensity data were exported to a file in excel format.

**Photometric and Electrical Test Data**

Input Voltage (V)	Frequency (Hz)	Input Current (A)	ITHD	Input Power (W)	Power Factor	Lumen Output (Lumens)	Efficiency (Lumen/W)
120	60.0	0.0524	/	4.70	0.7484	133.37	27.16
CCT (K)	CRI (Ra)	R9	x CIE1931	y CIE1931	u' CIE1976	v' CIE1976	Duv CIE1976
2870	91.6	58	0.4422	0.3988	0.2563	0.5201	-0.0028

**Spectral Plots**



**EUT Photo**



**Annex**

Please see the next page for the luminous intensity test data

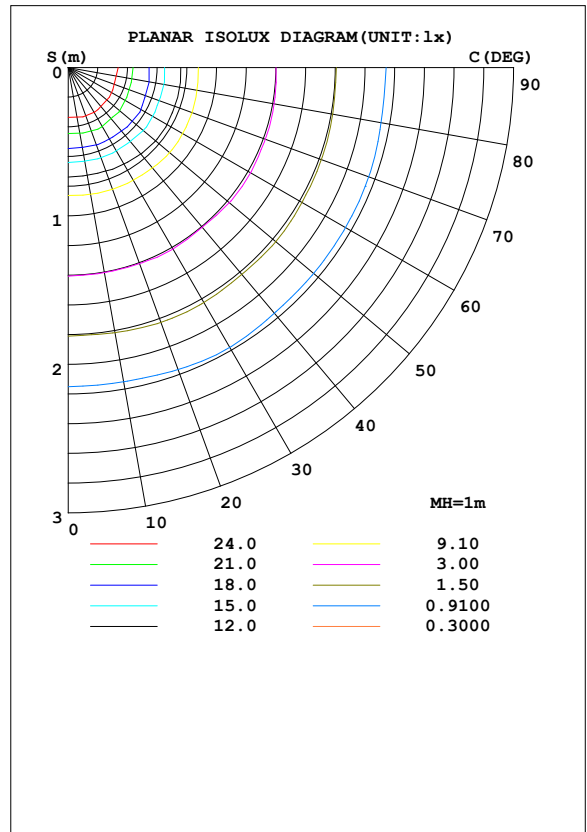
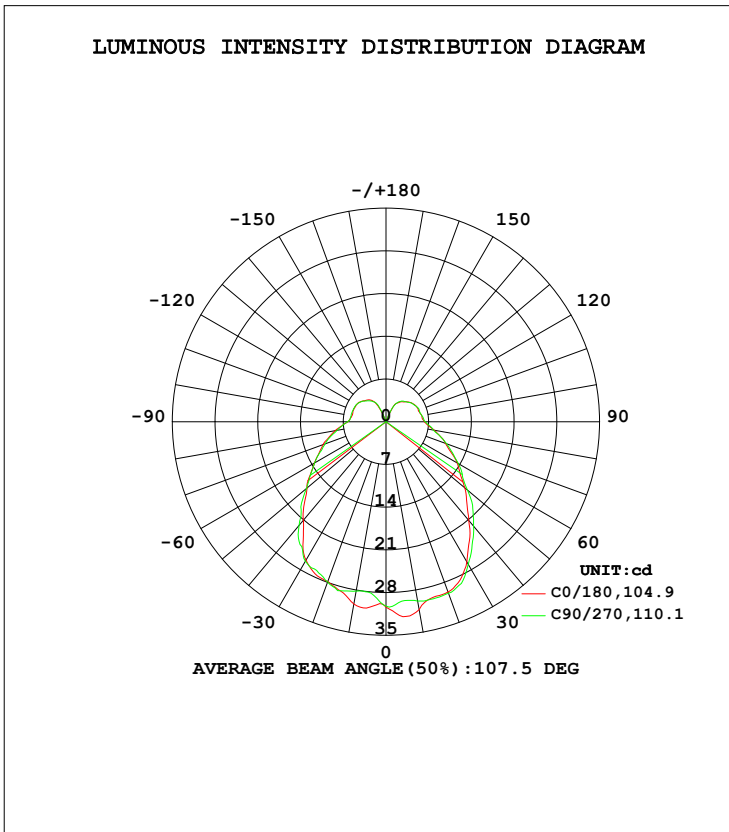
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LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 27.16 lm/W			
MODEL	MSSC-08P-PC-12P-30K	I <sub>max</sub> (cd)	33.10	S/MH (C0/180)	1.26
NOMINAL POWER (W)	4.7	LOR (%)	95.8	S/MH (C90/270)	1.30
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	127.77	η UP, DN (C0-180)	11.4, 36.2
NOMINAL FLUX (lm)	133	CIE CLASS	SEMI-D.	η UP, DN (C180-360)	11.4, 36.7
LAMPS INSIDE	1	η up (%)	22.9	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	120	η down (%)	73.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.1DEG  
 Operators: Mark  
 Test Date: 16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity: 59.2%  
 Test Distance: 2.436m [K=1.0111]  
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	30.33	27.50	28.17	28.64	31.26	31.77	29.83	30.74	0- 10	2.846	2.846	2.23,2.13
20	27.85	28.45	27.95	29.24	29.69	31.94	29.90	29.13	10- 20	8.403	11.25	8.8,8.43
30	26.19	27.02	26.40	26.25	26.49	25.96	26.97	26.51	20- 30	12.88	24.13	18.9,18.1
40	21.07	22.59	22.17	21.45	21.12	21.83	22.34	21.88	30- 40	15.15	39.28	30.7,29.5
50	16.90	17.34	17.00	16.58	16.84	17.44	17.45	17.06	40- 50	14.99	54.27	42.5,40.7
60	13.58	13.78	13.51	12.91	13.50	13.52	13.68	13.59	50- 60	13.56	67.82	53.1,50.9
70	10.96	10.84	10.61	10.18	10.40	10.36	10.60	10.55	60- 70	11.84	79.66	62.3,59.7
80	8.452	8.433	8.137	7.804	8.057	7.769	7.903	8.289	70- 80	9.836	89.50	70,67.1
90	6.281	6.518	6.293	6.173	6.312	6.346	6.447	6.339	80- 90	7.797	97.30	76.1,73
100	5.682	5.882	5.818	5.853	5.937	5.987	5.984	5.801	90-100	6.586	103.9	81.3,77.9
110	5.677	5.716	5.741	5.720	5.652	5.858	5.776	5.631	100-110	6.080	110.0	86.1,82.4
120	5.603	5.664	5.621	5.432	5.498	5.458	5.432	5.512	110-120	5.577	115.5	90.4,86.6
130	5.223	5.266	5.214	5.055	5.009	5.088	4.961	5.104	120-130	4.782	120.3	94.2,90.2
140	4.686	4.573	4.512	4.419	4.279	4.297	4.423	4.562	130-140	3.708	124.0	97.1,93
150	3.694	3.814	3.704	3.503	3.522	3.418	3.537	3.790	140-150	2.566	126.6	99.1,94.9
160	0.3044	0.4677	0.5776	0.6675	0.5736	0.5381	0.5380	0.6511	150-160	1.094	127.7	99.9,95.7
170	0.0764	0.0908	0.1101	0.1293	0.1293	0.1302	0.1295	0.1080	160-170	0.0786	127.8	100,95.8
180	0	0	0	0	0	0	0	0	170-180	0.0074	127.8	100,95.8
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 46.897 lm

%lum = 36.7%  
 %lamp = 35.2%

Conical surface Flux(120deg): 67.825 lm

%lum = 53.1%  
 %lamp = 50.9%

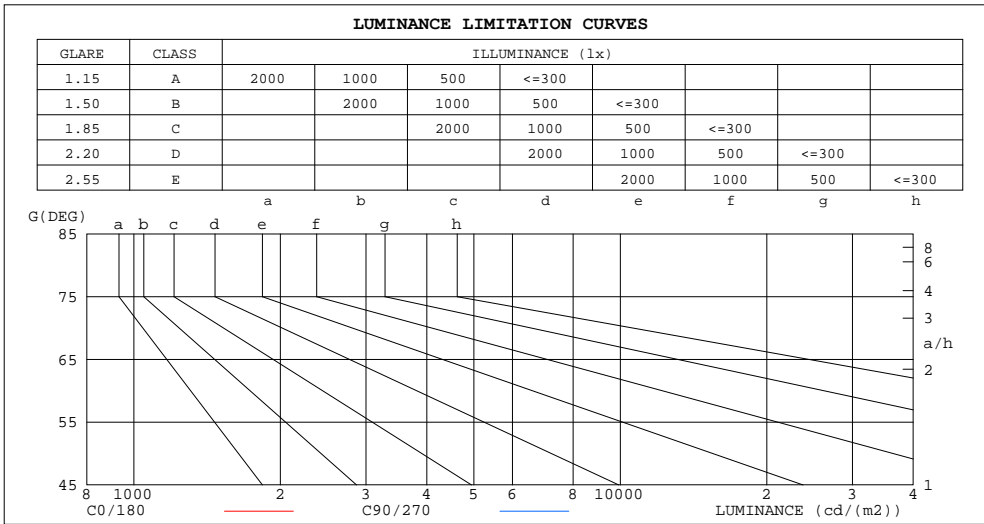
C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:



LUMINANCE LIMITATION CURVES

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	83	82
80	49	47
75	37	36
70	32	31
65	29	28
60	27	27
55	26	26
50	26	26
45	27	28

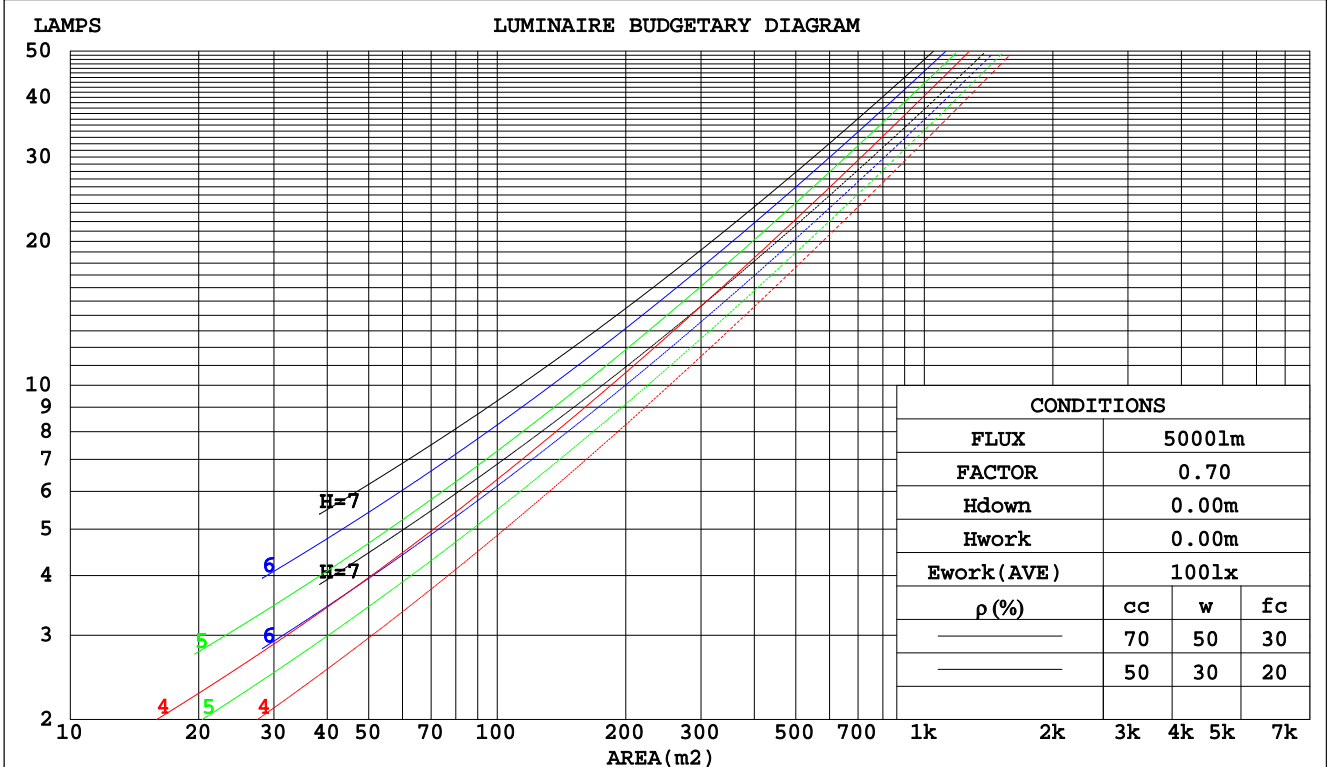
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 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.09	1.09	1.09	1.03	1.03	1.03	.94	.94	.94	.85	.85	.85	.77	.77	.77	.73
1.0	.92	.87	.83	.87	.83	.79	.79	.76	.73	.71	.69	.66	.64	.62	.60	.57
2.0	.79	.72	.66	.75	.69	.64	.68	.63	.59	.62	.58	.54	.56	.52	.50	.46
3.0	.69	.61	.55	.66	.59	.53	.60	.54	.49	.54	.49	.45	.49	.45	.42	.38
4.0	.61	.52	.46	.58	.50	.44	.53	.46	.41	.48	.43	.38	.43	.39	.35	.33
5.0	.54	.46	.39	.52	.44	.38	.47	.41	.36	.43	.38	.33	.39	.34	.31	.28
6.0	.49	.40	.34	.47	.39	.33	.43	.36	.31	.39	.33	.29	.35	.31	.27	.25
7.0	.44	.36	.30	.42	.35	.29	.39	.32	.27	.36	.30	.26	.32	.28	.24	.22
8.0	.40	.32	.27	.39	.31	.26	.35	.29	.24	.33	.27	.23	.30	.25	.21	.19
9.0	.37	.29	.24	.35	.28	.23	.33	.26	.22	.30	.25	.21	.28	.23	.19	.17
10.0	.34	.26	.22	.33	.26	.21	.30	.24	.20	.28	.22	.19	.26	.21	.18	.16



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

WEC AND CCEC

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.341	.194	.061	.327	.187	.059	.301	.173	.055	.278	.160	.051	.256	.148	.048	
2.0	.298	.164	.050	.286	.157	.049	.263	.146	.045	.241	.135	.042	.221	.125	.039	
3.0	.267	.142	.043	.256	.137	.041	.235	.127	.039	.215	.118	.036	.197	.109	.034	
4.0	.242	.126	.037	.232	.121	.036	.212	.113	.034	.194	.104	.032	.178	.097	.029	
5.0	.221	.113	.033	.212	.109	.032	.194	.101	.030	.178	.094	.028	.162	.087	.026	
6.0	.203	.102	.029	.195	.098	.028	.179	.092	.027	.164	.085	.025	.150	.079	.023	
7.0	.188	.093	.026	.180	.090	.026	.166	.084	.024	.152	.078	.023	.139	.072	.021	
8.0	.175	.086	.024	.168	.083	.023	.154	.077	.022	.141	.072	.021	.129	.066	.019	
9.0	.164	.079	.022	.157	.076	.021	.144	.071	.020	.133	.066	.019	.121	.062	.018	
10.0	.153	.074	.020	.147	.071	.020	.136	.066	.019	.125	.062	.018	.114	.057	.016	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.357	.357	.357	.305	.305	.305	.208	.208	.208	.119	.119	.119	.038	.038	.038	
1.0	.351	.325	.301	.301	.279	.259	.206	.192	.179	.118	.111	.104	.038	.036	.034	
2.0	.344	.303	.268	.295	.261	.232	.202	.180	.162	.117	.105	.095	.037	.034	.031	
3.0	.337	.287	.248	.289	.248	.215	.198	.172	.151	.115	.101	.089	.037	.033	.029	
4.0	.329	.275	.234	.283	.238	.203	.194	.166	.143	.112	.097	.085	.036	.032	.028	
5.0	.322	.266	.224	.277	.230	.195	.191	.161	.138	.110	.094	.082	.036	.031	.027	
6.0	.315	.258	.217	.271	.224	.189	.187	.157	.134	.109	.092	.080	.035	.030	.026	
7.0	.309	.252	.212	.266	.218	.185	.184	.153	.131	.107	.090	.078	.034	.030	.026	
8.0	.303	.247	.208	.261	.214	.182	.180	.150	.129	.105	.089	.077	.034	.029	.025	
9.0	.297	.242	.205	.256	.210	.179	.177	.148	.127	.103	.087	.076	.033	.029	.025	
10.0	.292	.238	.203	.251	.207	.177	.174	.146	.126	.102	.086	.075	.033	.028	.025	

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
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γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm										
NAME: 8"glass sphere pendant(BL or PC)					TYPE:MSSC-08P-PC-12P-30K			WEIGHT:1KG		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: BlackJack Lighting LLC					SUR.:			Shielding Angle:		
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	-1.4	-0.1	-0.8	0.5	1.1	-1.3	-0.1	-0.8	0.5	1.1
3H	0.8	1.9	1.4	2.5	3.2	0.7	1.9	1.3	2.5	3.2
4H	2.0	3.0	2.6	3.7	4.4	1.8	2.9	2.5	3.6	4.3
6H	3.2	4.3	3.9	4.9	5.7	3.1	4.1	3.7	4.7	5.5
8H	3.9	4.9	4.6	5.6	6.3	3.8	4.8	4.4	5.4	6.2
12H	4.7	5.7	5.4	6.3	7.1	4.6	5.5	5.3	6.2	7.0
4H 2H	-0.7	0.4	-0.0	1.0	1.8	-0.7	0.4	-0.0	1.1	1.8
3H	1.7	2.7	2.4	3.3	4.1	1.6	2.6	2.3	3.2	4.0
4H	3.1	3.9	3.8	4.6	5.4	2.9	3.8	3.6	4.5	5.3
6H	4.5	5.3	5.2	6.0	6.9	4.4	5.1	5.1	5.9	6.7
8H	5.3	6.1	6.1	6.8	7.6	5.2	5.9	5.9	6.6	7.5
12H	6.2	6.9	7.0	7.7	8.5	6.1	6.8	6.9	7.5	8.4
8H 4H	3.6	4.3	4.3	5.0	5.9	3.5	4.2	4.2	4.9	5.8
6H	5.3	5.9	6.1	6.7	7.6	5.2	5.8	5.9	6.5	7.4
8H	6.3	6.8	7.1	7.6	8.5	6.2	6.7	7.0	7.5	8.4
12H	7.4	7.9	8.2	8.7	9.6	7.3	7.8	8.1	8.6	9.5
12H 4H	3.7	4.3	4.4	5.1	6.0	3.6	4.2	4.3	5.0	5.9
6H	5.5	6.1	6.3	6.8	7.8	5.4	5.9	6.2	6.7	7.6
8H	6.6	7.1	7.4	7.9	8.8	6.5	7.0	7.3	7.8	8.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 133.4 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -7.0)

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

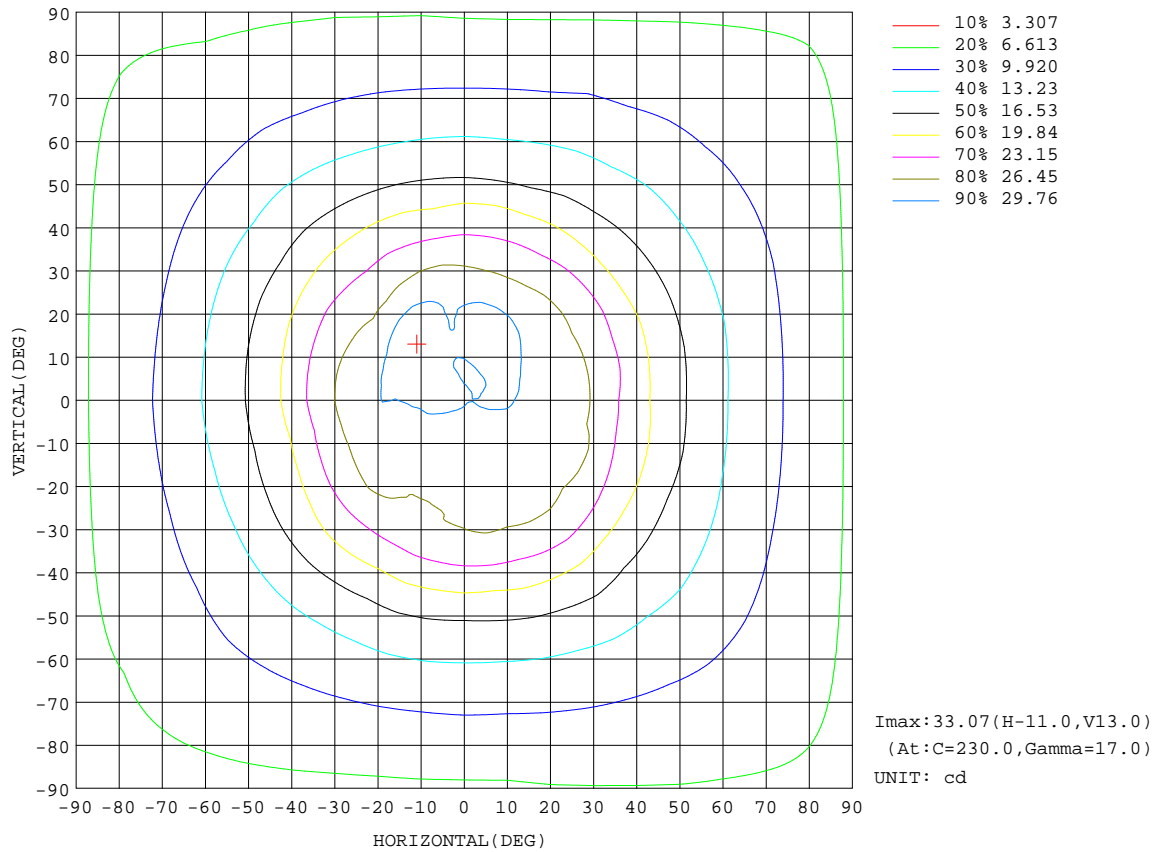
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	47	35	29	46	35	28	43	34	28	22
0.80	56	44	36	54	43	36	51	41	35	27
1.00	63	51	43	61	50	43	57	49	41	32
1.25	69	58	50	67	56	49	62	53	47	37
1.50	74	63	55	71	61	54	66	57	51	41
2.00	81	71	63	77	68	61	71	64	58	46
2.50	85	76	68	81	73	66	74	68	62	49
3.00	88	80	73	84	77	71	77	71	66	52
4.00	93	85	79	88	82	77	81	76	71	56
5.00	95	89	84	91	85	81	83	78	75	58
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

ISOCANDELA DIAGRAM

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

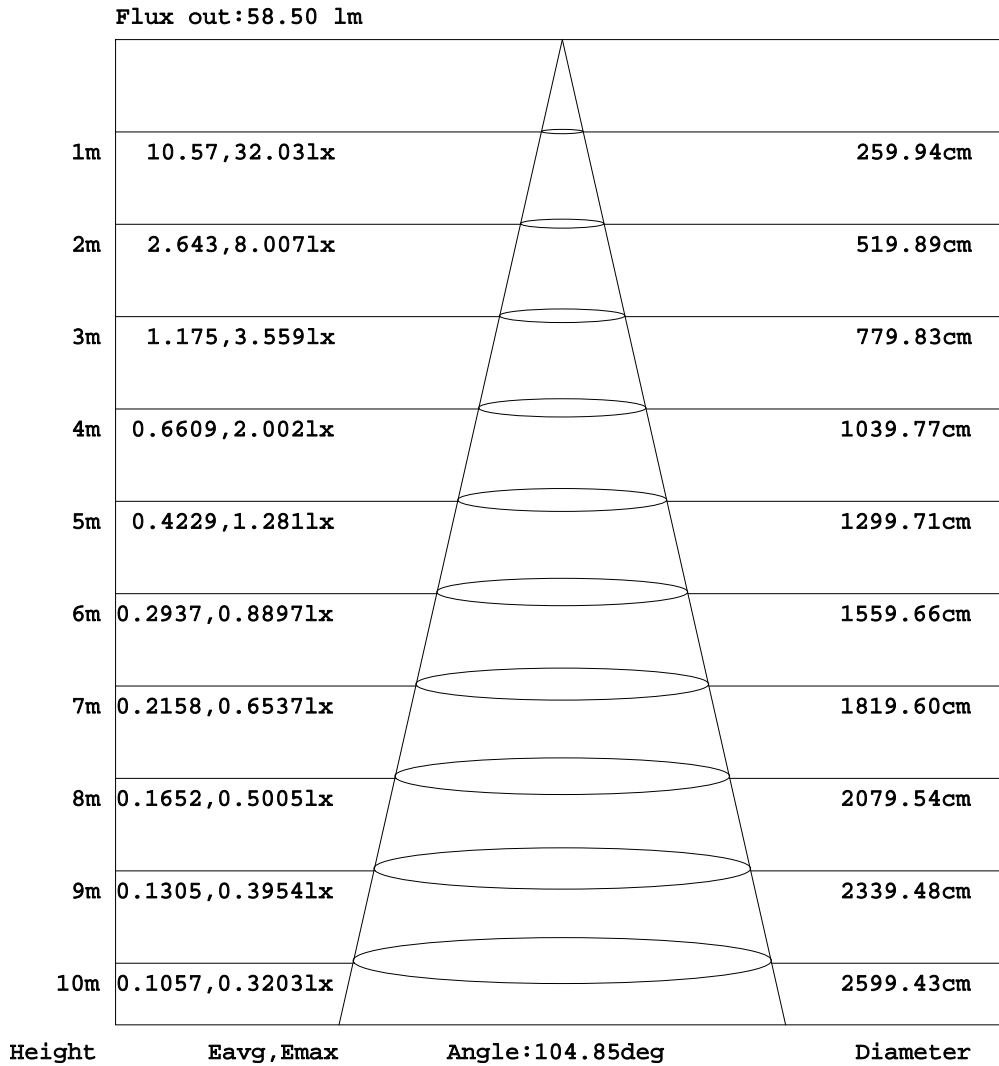


C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.1DEG  
 Operators: Mark  
 Test Date: 16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity: 59.2%  
 Test Distance: 2.436m [K=1.0111]  
 Remarks:

AAI Figure

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:



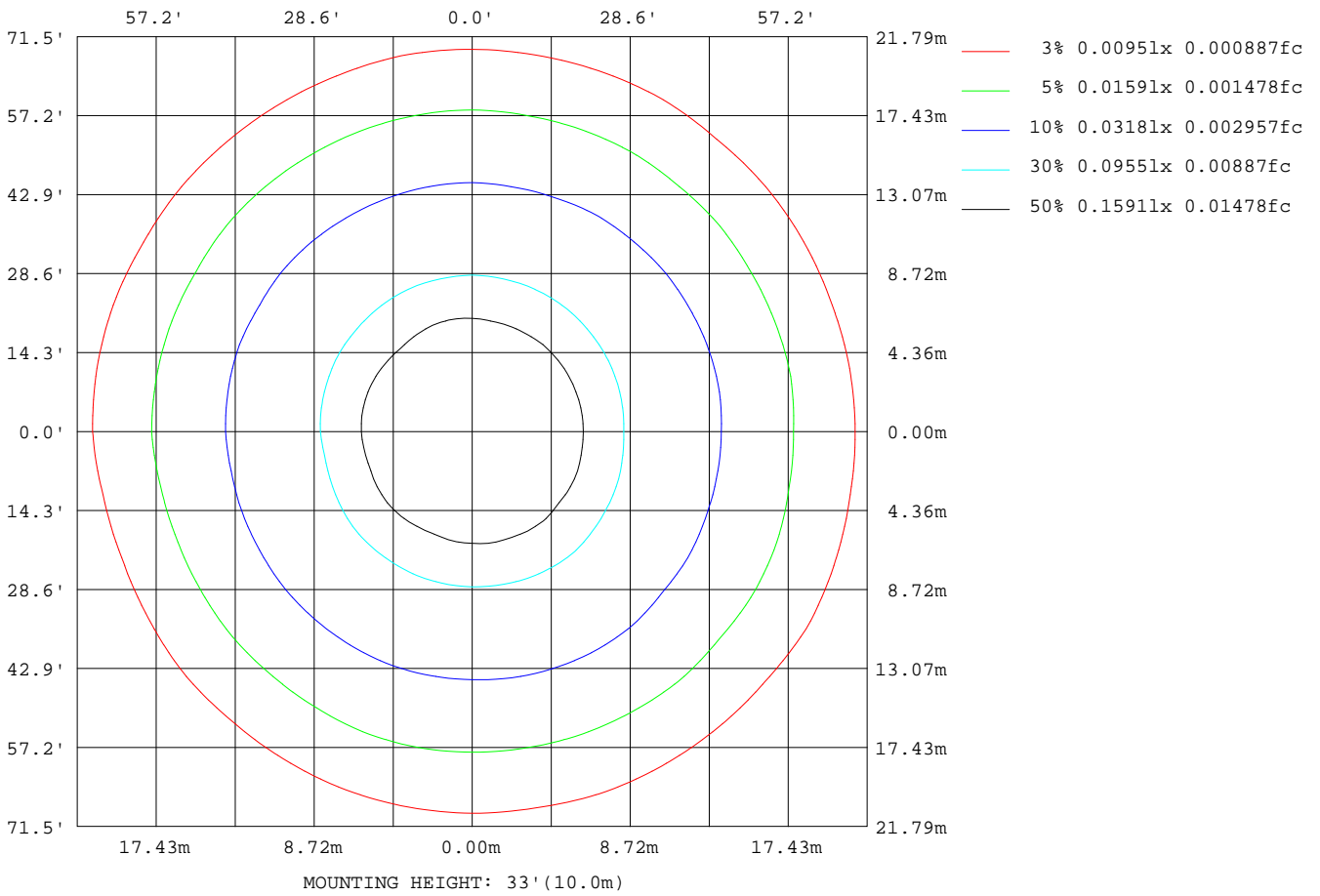
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

ISOLUX DIAGRAM

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:



## LED Avg.L Report

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

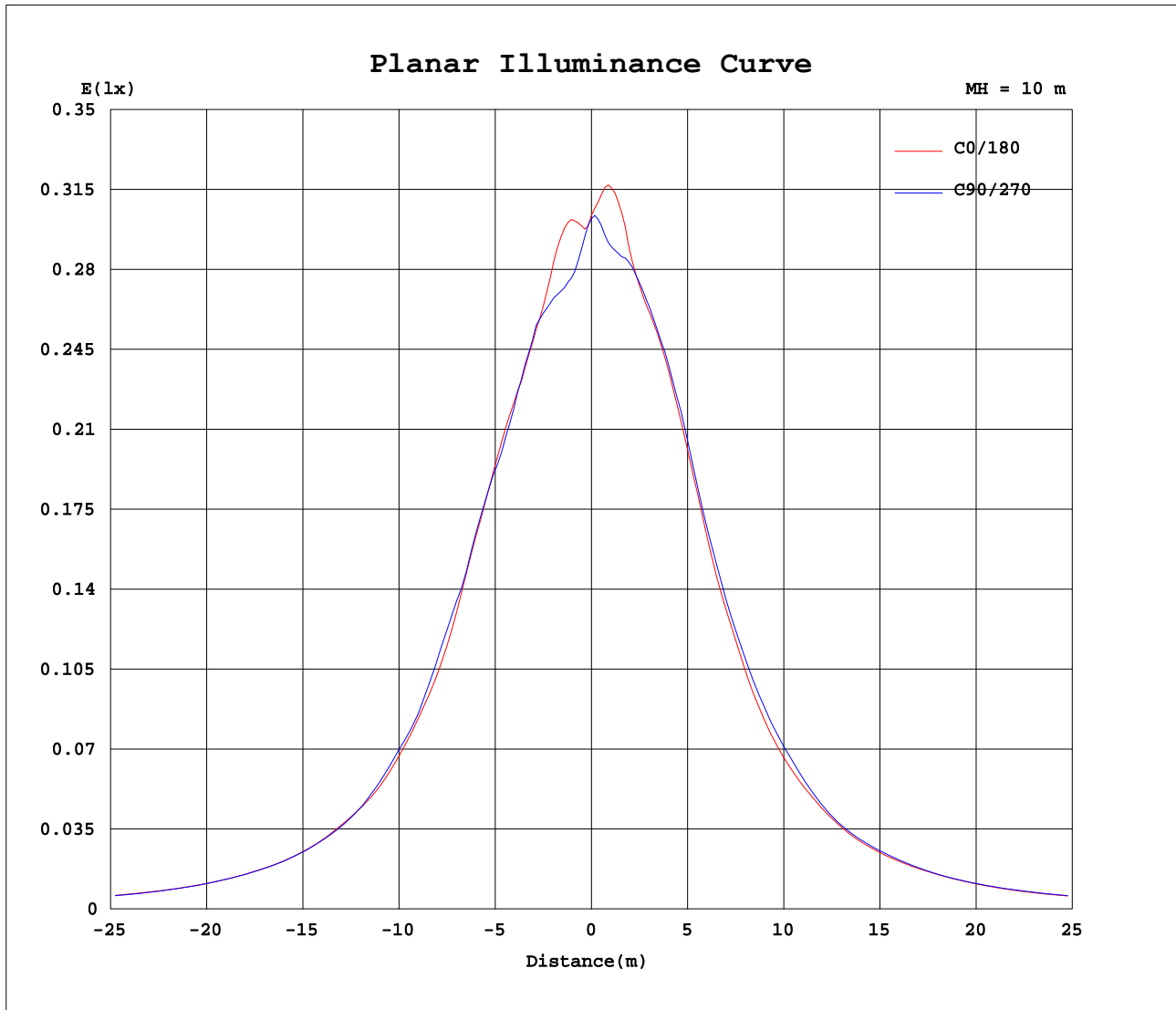
AvgL	cd/m2
L_0~180 (65) av	28
L_0~180 (75) av	36
L_0~180 (85) av	81
L_90~270 (65) av	28
L_90~270 (75) av	36
L_90~270 (85) av	82
L_45 (65) av	28
L_45 (75) av	36
L_45 (85) av	82

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.1DEG  
Operators:Mark  
Test Date:16 August 2019

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
Humidity:59.2%  
Test Distance:2.436m [K=1.0111]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	30.4	30.4	30.3	30.3	30.3	30.3	30.3	30.2	30.3	30.2	30.2	30.2	30.2	30.3	30.3	30.3	30.4	30.4	30.4
5	30.5	30.3	29.8	29.3	28.9	28.6	28.5	28.4	28.3	28.2	28.3	28.3	28.5	28.9	29.4	30.1	30.7	31.3	32.1
10	30.3	29.9	29.2	28.4	27.7	27.3	27.4	27.7	27.9	28.2	28.3	28.3	28.5	28.5	28.7	29.1	29.4	29.9	31.3
15	28.7	28.8	28.6	28.3	28.2	28.2	28.2	28.2	28.5	28.7	28.8	28.9	29.1	29.2	29.2	29.2	29.1	29.3	29.8
20	27.8	28.2	28.7	28.7	28.4	28.5	28.3	27.9	27.9	27.9	28.1	28.2	28.6	29.0	29.5	29.6	29.5	29.6	29.7
25	27.5	27.5	28.1	28.0	27.4	28.0	27.9	27.3	27.1	26.9	26.8	26.4	26.4	27.2	28.1	28.1	28.2	28.6	28.7
30	26.2	26.2	26.7	26.9	26.6	27.5	27.3	26.8	26.9	26.4	26.0	25.5	25.6	26.1	26.4	26.0	25.7	25.9	26.5
35	23.7	23.7	24.0	24.5	24.7	25.4	25.3	25.0	24.8	24.6	24.3	23.8	24.1	24.0	24.1	23.7	23.5	23.3	23.8
40	21.1	21.3	21.7	22.0	22.4	22.8	22.7	22.5	22.3	22.2	22.0	21.9	21.6	21.5	21.4	21.0	20.6	20.5	21.1
45	18.9	19.1	19.2	19.3	19.5	20.0	20.0	20.0	19.7	19.8	19.6	19.5	19.0	19.0	19.1	19.1	18.6	18.4	18.7
50	16.9	17.1	17.0	16.9	17.0	17.6	17.4	17.3	17.1	17.0	17.0	16.9	16.6	16.6	16.6	16.5	16.4	16.4	16.8
55	15.2	15.1	15.3	15.4	15.1	15.6	15.5	15.4	15.3	15.1	15.1	14.9	14.7	14.5	14.5	14.4	14.5	14.5	14.8
60	13.6	13.6	13.8	14.0	13.7	13.9	13.7	13.6	13.5	13.5	13.5	13.4	13.1	12.9	12.9	12.8	12.8	13.0	13.5
65	12.1	12.1	12.4	12.6	12.3	12.3	12.2	12.2	12.0	12.0	11.9	11.8	11.6	11.5	11.5	11.3	11.1	11.3	11.7
70	11.0	10.9	11.2	11.2	10.8	10.8	10.8	10.8	10.7	10.6	10.5	10.4	10.3	10.2	10.2	10.2	9.94	10.0	10.4
75	9.61	9.71	9.82	9.80	9.64	9.59	9.63	9.52	9.38	9.41	9.29	9.19	9.11	9.01	9.01	8.98	8.82	8.85	9.23
80	8.45	8.42	8.48	8.55	8.46	8.40	8.43	8.35	8.19	8.14	8.02	7.93	7.84	7.82	7.79	7.76	7.65	7.63	8.06
85	7.22	7.27	7.35	7.39	7.44	7.42	7.41	7.37	7.21	7.17	7.15	7.04	6.96	6.93	6.87	6.76	6.67	6.61	6.91
90	6.28	6.37	6.41	6.45	6.50	6.53	6.51	6.47	6.33	6.29	6.27	6.24	6.19	6.21	6.14	6.11	6.11	6.08	6.31
95	5.90	5.92	5.92	6.00	6.06	6.09	6.10	6.10	5.97	5.89	5.90	5.93	5.90	5.92	5.91	5.91	5.91	5.85	5.98
100	5.68	5.75	5.78	5.84	5.85	5.91	5.93	5.95	5.87	5.82	5.84	5.86	5.84	5.86	5.85	5.77	5.76	5.74	5.94
105	5.63	5.70	5.69	5.71	5.72	5.75	5.76	5.76	5.77	5.78	5.77	5.75	5.72	5.75	5.75	5.69	5.66	5.61	5.74
110	5.68	5.72	5.69	5.73	5.68	5.76	5.77	5.79	5.75	5.74	5.74	5.71	5.70	5.72	5.72	5.67	5.61	5.51	5.65
115	5.64	5.68	5.64	5.68	5.70	5.75	5.75	5.71	5.69	5.71	5.67	5.62	5.61	5.55	5.55	5.55	5.54	5.50	5.62
120	5.60	5.63	5.60	5.66	5.67	5.66	5.60	5.54	5.60	5.62	5.53	5.43	5.42	5.43	5.44	5.41	5.35	5.36	5.50
125	5.49	5.55	5.51	5.56	5.54	5.55	5.48	5.40	5.44	5.44	5.39	5.31	5.28	5.27	5.26	5.22	5.13	5.13	5.29
130	5.22	5.28	5.30	5.29	5.27	5.26	5.22	5.16	5.18	5.21	5.19	5.16	5.11	5.07	5.04	5.00	4.94	4.92	5.01
135	4.92	4.95	4.94	4.94	4.89	4.85	4.77	4.81	4.87	4.83	4.87	4.86	4.80	4.76	4.74	4.68	4.61	4.55	4.64
140	4.69	4.66	4.63	4.62	4.60	4.54	4.50	4.55	4.52	4.51	4.54	4.53	4.46	4.44	4.39	4.33	4.23	4.21	4.28
145	4.35	4.30	4.29	4.34	4.32	4.34	4.30	4.24	4.18	4.15	4.13	4.11	4.06	4.07	4.03	4.00	3.93	3.86	3.95
150	3.69	3.72	3.72	3.77	3.80	3.83	3.84	3.80	3.72	3.70	3.69	3.65	3.56	3.53	3.48	3.48	3.45	3.44	3.52
155	2.04	2.01	2.38	2.54	2.59	2.63	2.67	2.67	2.60	2.58	2.53	2.46	2.39	2.36	2.30	2.20	2.11	2.01	2.52
160	0.30	0.33	0.37	0.40	0.44	0.50	0.52	0.52	0.55	0.58	0.59	0.59	0.64	0.67	0.67	0.63	0.57	0.54	0.57
165	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.18	0.19	0.21	0.23	0.22	0.34
170	0.08	0.08	0.08	0.08	0.09	0.09	0.11	0.13	0.11	0.11	0.12	0.13	0.12	0.13	0.13	0.13	0.13	0.13	0.13
175	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.11
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	0.00	0.00	0.00

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:119.95V I:0.0524A P:4.7045W PF:0.7484 Freq:60.00Hz Lamp Flux:133.373x1 lm		
NAME: 8"glass sphere pendant(BL or PC)	TYPE:MSSC-08P-PC-12P-30K	WEIGHT:1KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

Table--2

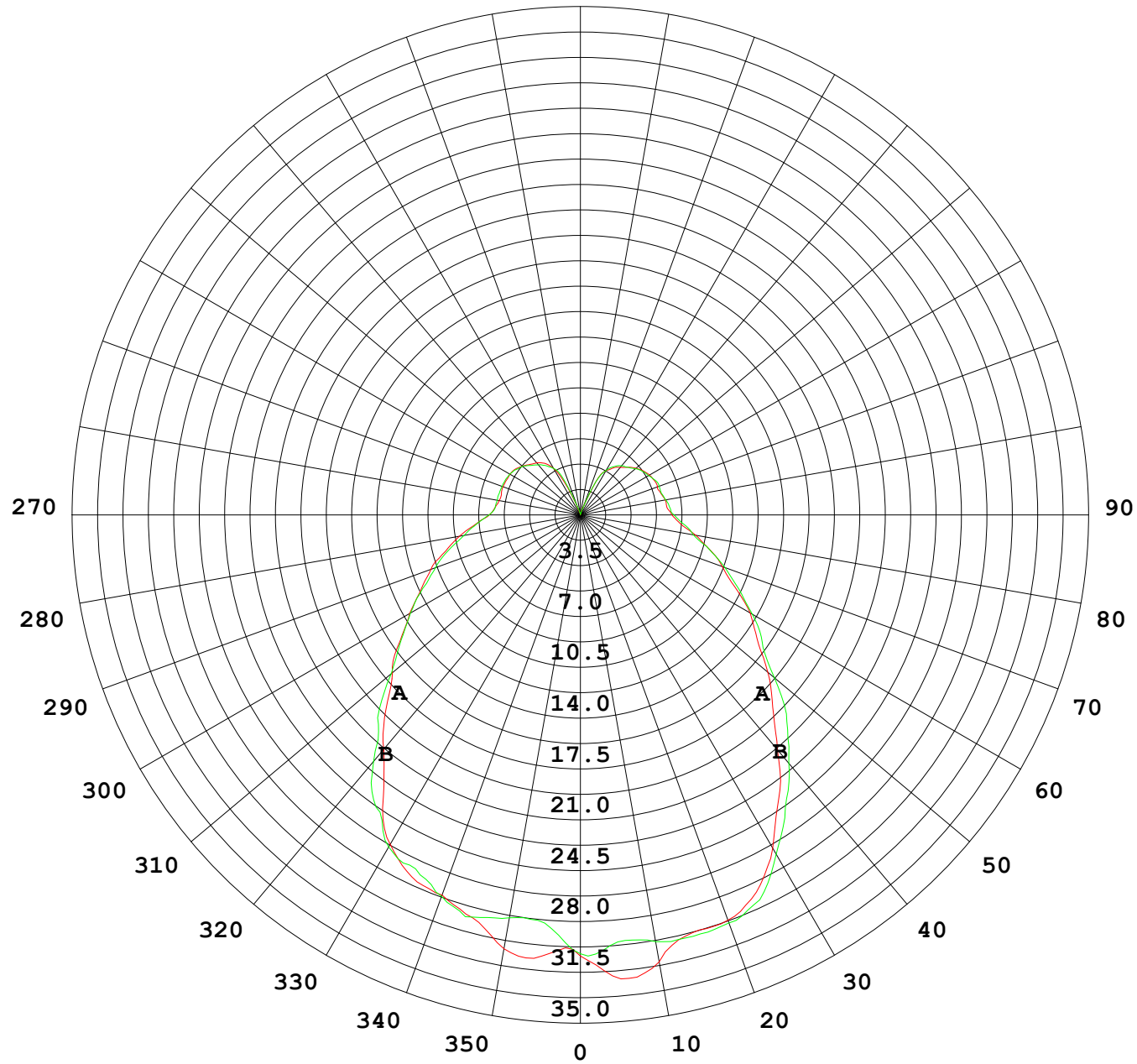
UNIT: cd

C (DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	30.4	30.3	30.3	30.3	30.3	30.3	30.2	30.3	30.2	30.2	30.2	30.2	30.3	30.3	30.3	30.4	30.4		
5	32.2	32.2	32.0	31.6	31.1	30.7	30.3	29.8	29.5	29.4	29.4	29.5	29.6	29.6	29.7	29.8	30.0		
10	31.8	32.2	32.4	32.1	31.4	30.6	29.9	29.8	29.8	30.2	30.5	30.7	30.7	30.7	30.6	30.5	30.5		
15	30.0	30.7	31.7	32.7	32.6	31.4	30.4	29.8	30.0	30.6	31.4	31.9	31.6	30.7	29.8	29.2	28.8		
20	29.7	29.8	30.3	31.5	32.4	31.7	30.2	29.6	29.9	30.5	30.8	30.6	29.7	28.5	27.8	27.7	27.8		
25	28.1	27.8	27.6	28.0	28.9	29.6	29.5	29.3	29.2	29.1	28.7	28.2	28.0	27.5	27.2	27.3	27.5		
30	26.5	26.4	26.2	26.0	25.9	26.8	27.3	27.3	27.0	26.7	26.5	26.4	26.6	26.5	26.2	26.2	26.2		
35	24.0	24.1	24.3	24.2	24.0	24.3	24.6	24.7	24.6	24.5	24.4	24.4	24.5	24.4	24.6	24.5	24.3		
40	21.4	21.5	21.9	21.8	21.9	22.2	22.3	22.2	22.3	22.2	22.2	22.1	22.0	21.8	21.7	21.5	21.3		
45	18.9	19.2	19.4	19.6	19.7	19.9	20.0	19.8	20.1	20.2	19.8	19.7	19.4	19.3	19.2	19.4	19.3		
50	16.9	17.0	17.0	17.4	17.5	17.5	17.6	17.4	17.5	17.2	17.1	17.2	17.0	17.1	17.1	17.1	17.2		
55	14.9	15.1	14.9	15.1	15.1	15.0	15.0	15.2	15.3	15.1	15.2	15.3	15.3	15.4	15.3	15.4	15.5		
60	13.5	13.4	13.3	13.5	13.5	13.5	13.6	13.6	13.7	13.5	13.6	13.6	13.5	13.7	13.5	13.6	13.8		
65	11.8	11.8	11.7	11.8	11.8	11.8	11.9	12.1	12.0	12.0	12.0	12.1	11.9	12.0	12.0	11.9	12.0		
70	10.3	10.3	10.2	10.4	10.4	10.4	10.6	10.6	10.6	10.6	10.6	10.5	10.6	10.5	10.5	10.6	10.9		
75	9.12	9.01	8.86	8.97	8.97	9.07	9.15	9.18	9.20	9.26	9.43	9.52	9.38	9.46	9.41	9.53	9.73		
80	8.00	7.92	7.74	7.80	7.74	7.78	7.84	7.90	7.90	8.07	8.15	8.20	8.24	8.34	8.32	8.40	8.58		
85	6.92	6.87	6.82	6.90	7.00	7.10	7.23	7.27	7.12	7.11	7.18	7.21	7.28	7.25	7.24	7.28	7.43		
90	6.38	6.31	6.25	6.29	6.40	6.51	6.51	6.51	6.45	6.41	6.36	6.32	6.33	6.34	6.32	6.29	6.32		
95	6.00	5.98	5.96	6.04	6.15	6.29	6.31	6.27	6.17	6.13	6.04	6.00	5.99	5.98	5.97	5.86	5.88		
100	6.00	5.97	5.94	5.96	6.01	6.11	6.02	5.95	5.98	5.93	5.83	5.82	5.81	5.79	5.72	5.63	5.63		
105	5.80	5.75	5.75	5.76	5.78	5.80	5.71	5.68	5.78	5.78	5.72	5.72	5.70	5.68	5.65	5.56	5.56		
110	5.74	5.77	5.81	5.85	5.87	5.79	5.72	5.70	5.78	5.77	5.72	5.67	5.64	5.62	5.61	5.58	5.59		
115	5.65	5.61	5.60	5.61	5.62	5.57	5.58	5.62	5.67	5.62	5.58	5.60	5.58	5.58	5.60	5.58	5.63		
120	5.48	5.45	5.43	5.46	5.45	5.39	5.40	5.45	5.43	5.40	5.41	5.48	5.51	5.51	5.50	5.52	5.57		
125	5.29	5.26	5.26	5.29	5.26	5.24	5.24	5.28	5.24	5.17	5.23	5.32	5.37	5.35	5.37	5.42	5.45		
130	5.02	5.03	5.08	5.09	5.09	5.07	4.99	4.95	4.96	4.93	4.97	5.07	5.11	5.10	5.13	5.19	5.24		
135	4.64	4.64	4.67	4.70	4.67	4.64	4.60	4.62	4.64	4.70	4.75	4.82	4.84	4.82	4.86	4.90	4.91		
140	4.32	4.32	4.34	4.32	4.27	4.28	4.32	4.34	4.42	4.46	4.52	4.53	4.55	4.58	4.63	4.65	4.67		
145	3.93	3.92	3.93	3.89	3.87	3.93	3.92	3.99	4.06	4.05	4.05	4.06	4.10	4.21	3.57	4.21	4.39		
150	3.46	3.39	3.41	3.41	3.43	3.51	3.52	3.51	3.54	3.59	3.58	3.69	3.77	3.81	3.40	3.07	3.72		
155	2.48	2.43	2.37	2.35	2.41	2.50	2.50	2.50	2.52	2.56	2.63	2.77	2.87	2.91	2.73	2.61	2.36		
160	0.58	0.59	0.56	0.54	0.54	0.58	0.55	0.54	0.54	0.56	0.60	0.67	0.65	0.65	0.64	0.57	0.59		
165	0.34	0.35	0.33	0.31	0.28	0.25	0.23	0.19	0.19	0.18	0.18	0.18	0.17	0.16	0.16	0.15	0.15		
170	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.13	0.13	0.13	0.12	0.11	0.10	0.10	0.09	0.08		
175	0.11	0.11	0.11	0.11	0.11	0.10	0.09	0.08	0.08	0.08	0.07	0.06	0.05	0.04	0.03	0.03	0.02		
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	0.00		

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.1DEG  
 Operators:Mark  
 Test Date:16 August 2019

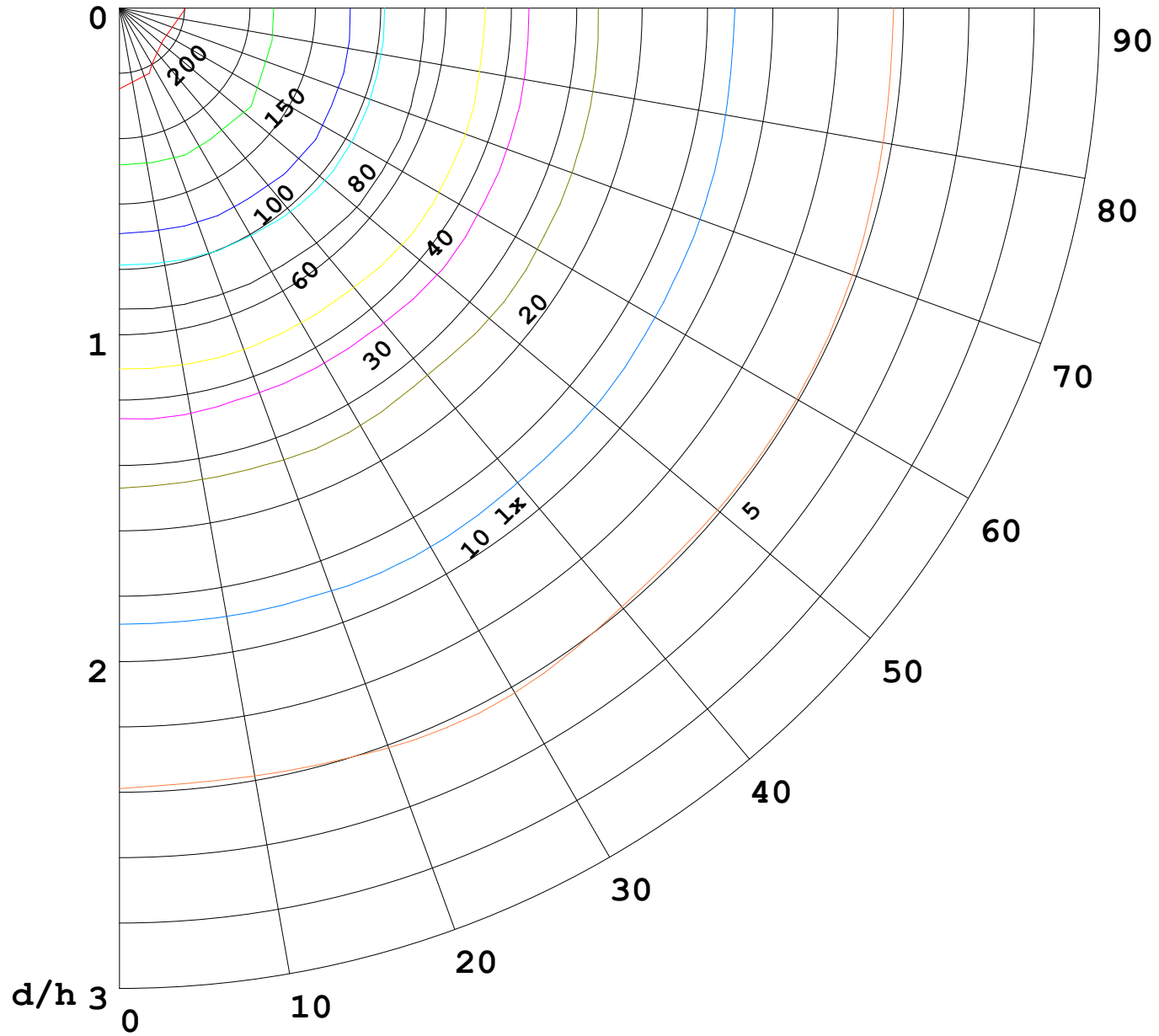
γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:59.2%  
 Test Distance:2.436m [K=1.0111]  
 Remarks:

I (cd)



1000 lm

$\kappa = 1$



**F** = 5000 lm  
**K** = 0.7  
**Hcc** = 0.0 m  
**Hfc** = 0.0 m  
**Eave** = 100 lx

	<b>Pcc</b>	<b>Pw</b>	<b>Pfc</b>
—————	70	50	30
—————	50	30	20

