



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.	BTR66.181.19.0007.05
Product Name	Aero 25" Pendant - Black w/Gold Interio or Satin Nickel w/ White interior
Model Number	ARO-25P-BG-27U-30K; ARO-25P-SW-27U-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 19, 2019	

Testing Laboratory Name	BEST Test Service Shenzhen Co., Ltd.
Address	1 st Floor, 1 st Building, Weitai Industrial Park, Yingrenshi, Shiyao, Baoan, Shenzhen, China Tel:+86-755-28236006 , Email: 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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Description:	
The date of sampling	Aug 15, 2019
The date of receipt of the test sample / requirement /item(s).....	Aug 15, 2019
Test date.....	Aug 15, 2019 to Aug 19, 2019
Description	Aero 25" Pendant - Black w/Gold Interio or Satin Nickel w/ White interior
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.....	27W
Nominal Power Factor	N/A
Nominal Lumen Output.....	2047lm
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:	3.5H
Ambient temperature	24.7°C
Orientation (burning position) of SSL product during test	Lighting Surface Down or Base Up
Stabilization time	1.5H
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 ARO-25P-BG-27U-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.

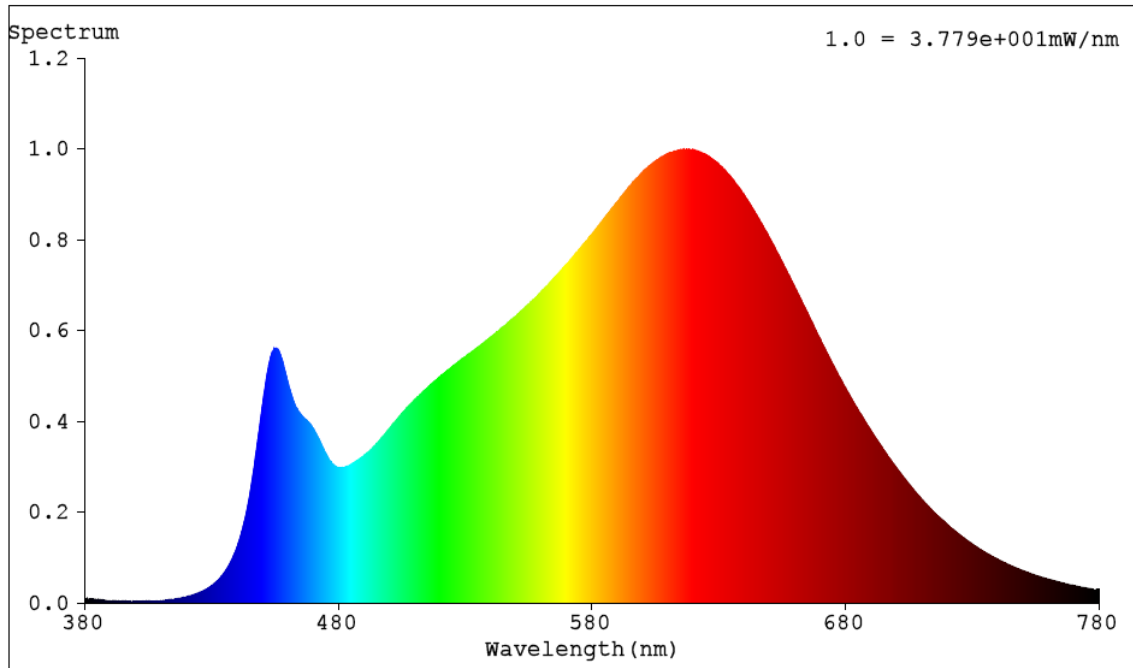
Luminous Intensity

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.

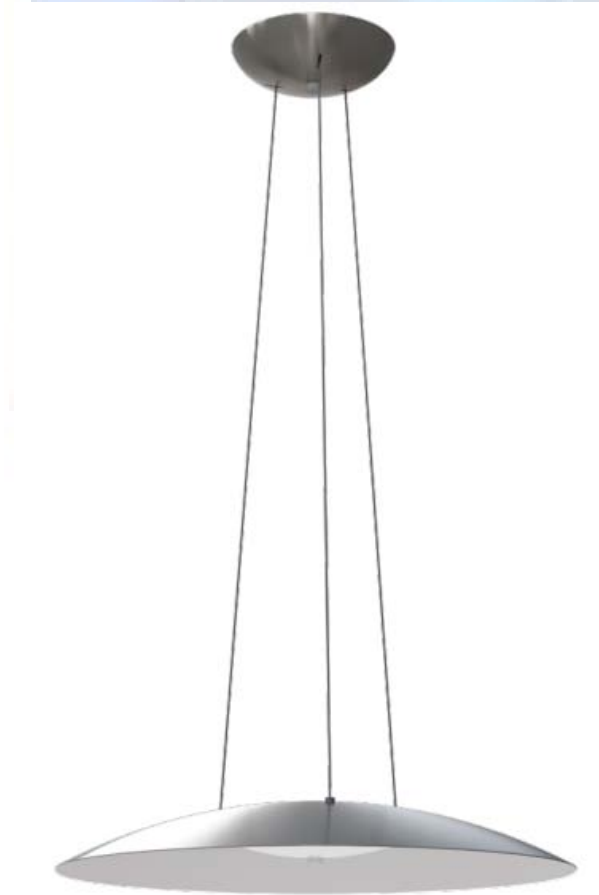
Photometric and Electrical Test Data

Input Voltage (V)	Frequency (Hz)	Input Current (A)	ITHD	Input Power (W)	Power Factor	Lumen Output (Lumens)	Efficiency (Lumen/W)
120	60.0	0.2192	/	26.18	0.9957	2047.37	78.21
CCT (K)	CRI (Ra)	R9	x CIE1931	y CIE1931	u' CIE1976	v' CIE1976	Duv CIE1976
3030	92.0	55	0.4339	0.4014	0.2498	0.5199	-0.0006

Spectral Plots




EUT Photo



Annex

Please see the next page for the luminous intensity test data

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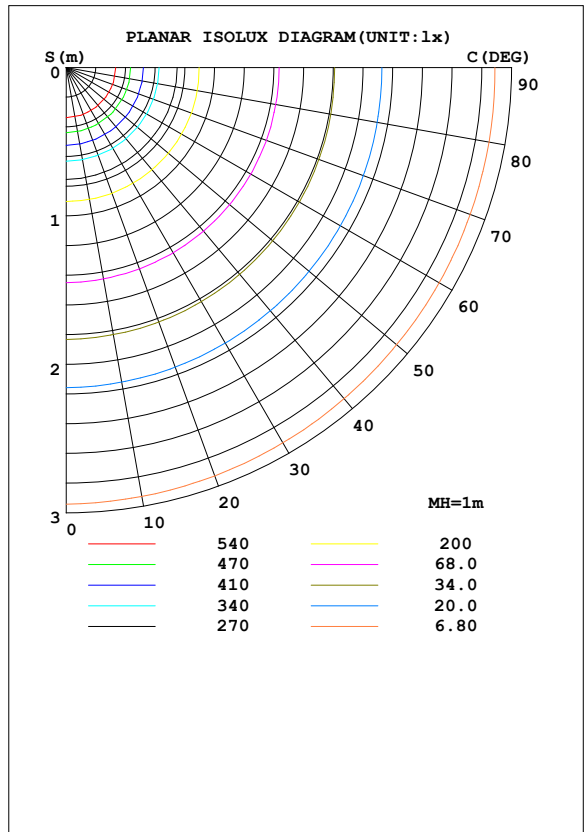
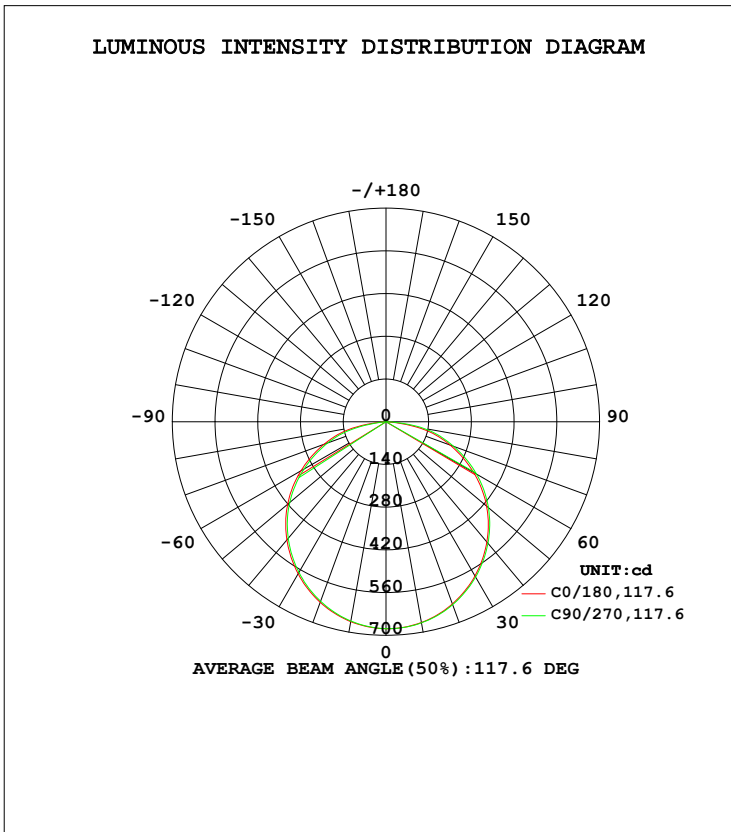


BEST

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 78.21 lm/W			
MODEL	ARO-25P-BG-27U-30K	Imax (cd)	678.3	S/MH (C0/180)	1.28
NOMINAL POWER (W)	27	LOR (%)	100.0	S/MH (C90/270)	1.29
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	2047.4	η UP, DN (C0-180)	0.0,48.3
NOMINAL FLUX (lm)	2047	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0,51.7
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	120	η down (%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Mark
 Test Date:19 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:2.463m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	665.2	663.8	663.2	663.5	668.1	668.9	669.3	668.7	0- 10	64.15	64.15	3.13,3.13
20	630.0	627.5	626.3	627.0	635.6	637.3	638.2	637.5	10- 20	184.0	248.2	12.1,12.1
30	575.6	572.2	570.4	571.5	583.4	586.1	587.4	586.4	20- 30	280.3	528.5	25.8,25.8
40	505.5	500.9	498.5	499.5	514.4	517.7	519.8	519.0	30- 40	341.7	870.2	42.5,42.5
50	420.8	415.1	411.9	412.8	430.5	435.2	438.2	437.4	40- 50	361.8	1232	60.2,60.2
60	322.3	315.2	310.6	311.1	331.3	337.6	342.0	341.6	50- 60	337.2	1569	76.6,76.6
70	215.9	208.5	203.1	203.3	223.3	230.4	236.2	236.0	60- 70	270.3	1840	89.9,89.9
80	97.39	82.63	72.09	70.28	102.0	114.7	124.8	125.5	70- 80	172.5	2012	98.3,98.3
90	0.0003	0	0	0	0	0.0149	0.0444	0.0593	80- 90	34.84	2047	100,100
100	0.0039	0.0055	0.0080	0.0067	0.0045	0.0067	0.0054	0.0052	90-100	0.0020	2047	100,100
110	0.0526	0.0558	0.0586	0.0577	0.0434	0.0414	0.0381	0.0379	100-110	0.0267	2047	100,100
120	0.0696	0.0725	0.0726	0.0731	0.0835	0.0822	0.0804	0.0807	110-120	0.0634	2047	100,100
130	0.0977	0.0977	0.0994	0.0990	0.1166	0.1148	0.1145	0.1151	120-130	0.0807	2047	100,100
140	0.1509	0.1509	0.1506	0.1514	0.1201	0.1197	0.1187	0.1207	130-140	0.0943	2047	100,100
150	0.1853	0.1848	0.1817	0.1825	0.1034	0.1017	0.1040	0.1046	140-150	0.0882	2047	100,100
160	0.2239	0.2213	0.2194	0.2191	0.1148	0.1151	0.1157	0.1173	150-160	0.0710	2047	100,100
170	0.1908	0.1806	0.1857	0.1918	0.1235	0.1202	0.1148	0.1209	160-170	0.0467	2047	100,100
180	0.1778	0.1761	0.2042	0.1846	0.2053	0.2038	0.1885	0.1781	170-180	0.0160	2047	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1051.3 lm

%lum = 51.4%
 %lamp = 51.4%

Conical surface Flux(120deg): 1569.3 lm

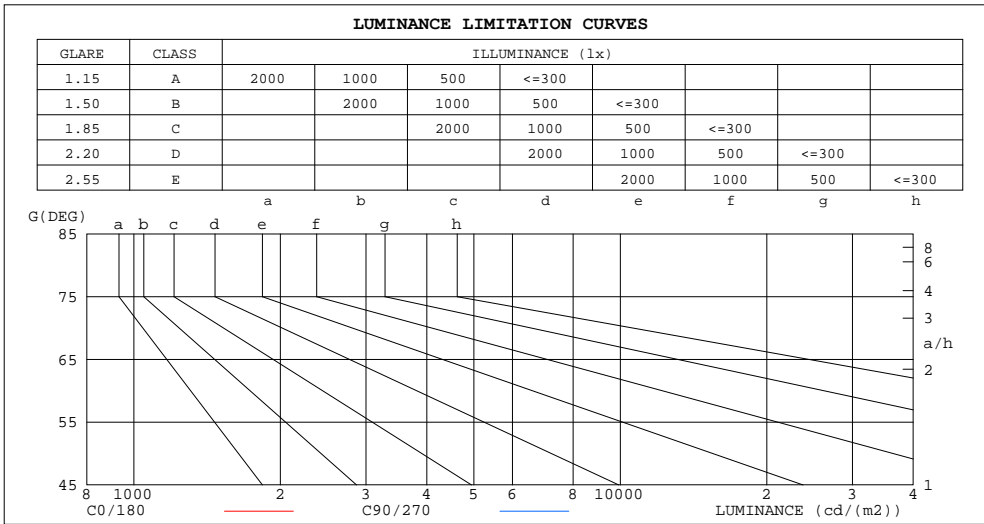
%lum = 76.6%
 %lamp = 76.6%

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Mark
 Test Date:19 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:2.463m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	166	44
80	561	415
75	631	572
70	631	594
65	637	607
60	645	621
55	651	633
50	655	641
45	657	646

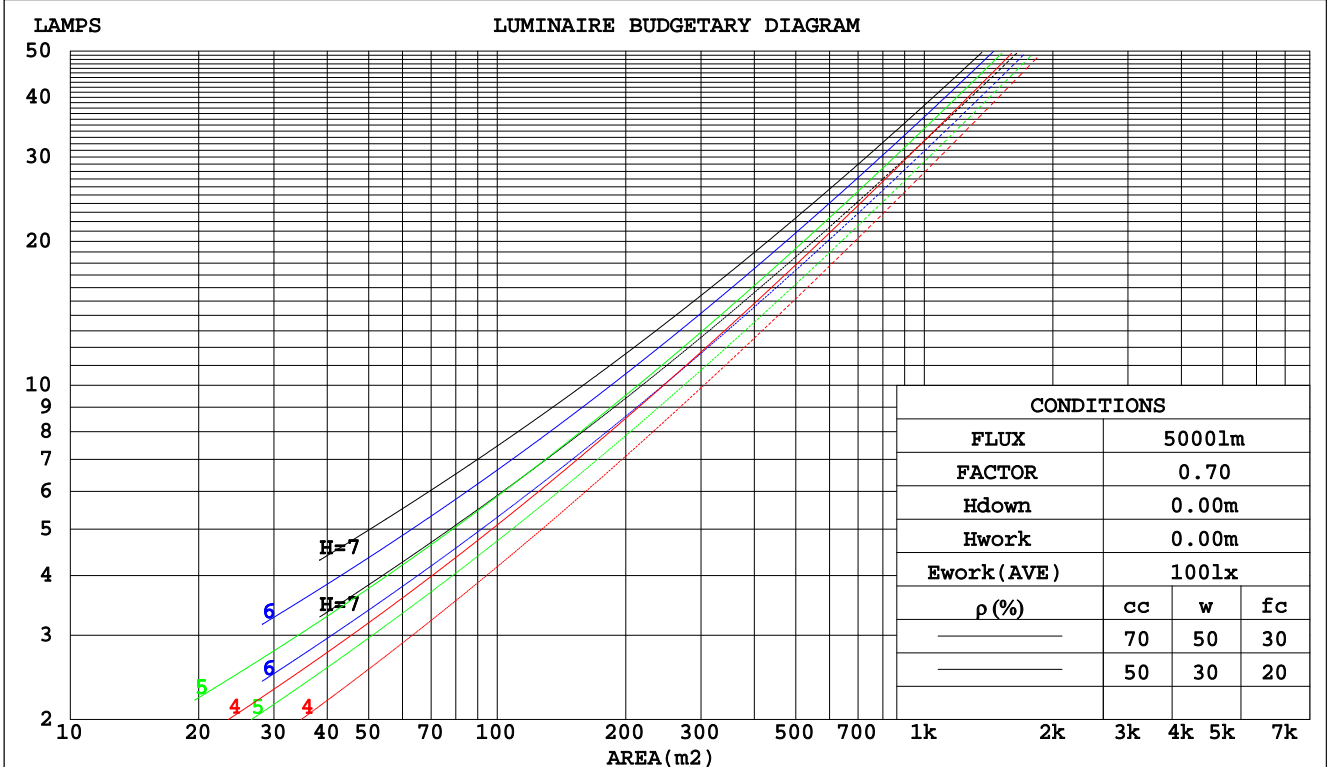
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 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	.00
1.0	1.03	.99	.95	1.01	.97	.93	.97	.94	.90	.93	.90	.88	.89	.87	.85	.83
2.0	.90	.83	.77	.88	.81	.76	.84	.79	.74	.81	.76	.72	.78	.74	.71	.68
3.0	.78	.70	.63	.77	.69	.63	.74	.67	.61	.71	.65	.60	.68	.63	.59	.57
4.0	.69	.60	.53	.68	.59	.53	.65	.58	.52	.63	.56	.51	.61	.55	.51	.48
5.0	.62	.52	.46	.60	.52	.45	.58	.51	.45	.56	.50	.44	.54	.49	.44	.42
6.0	.55	.46	.40	.54	.46	.39	.53	.45	.39	.51	.44	.39	.49	.43	.38	.36
7.0	.50	.41	.35	.49	.41	.35	.48	.40	.34	.46	.39	.34	.45	.39	.34	.32
8.0	.46	.37	.31	.45	.37	.31	.44	.36	.31	.42	.36	.31	.41	.35	.30	.28
9.0	.42	.34	.28	.41	.33	.28	.40	.33	.28	.39	.32	.27	.38	.32	.27	.25
10.0	.39	.31	.25	.38	.30	.25	.37	.30	.25	.36	.30	.25	.35	.29	.25	.23



C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Mark
 Test Date:19 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:2.463m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
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	.318	.181	.057	.311	.177	.056	.298	.171	.055	.285	.165	.053	.274	.159	.051	
2.0	.300	.164	.050	.293	.162	.050	.282	.157	.049	.271	.152	.048	.261	.147	.046	
3.0	.277	.147	.044	.271	.145	.044	.261	.141	.043	.251	.138	.042	.242	.134	.041	
4.0	.255	.132	.039	.250	.131	.039	.240	.127	.038	.232	.124	.038	.224	.122	.037	
5.0	.235	.120	.035	.230	.118	.034	.222	.116	.034	.214	.113	.034	.207	.111	.033	
6.0	.217	.109	.031	.213	.108	.031	.206	.106	.031	.199	.104	.030	.193	.101	.030	
7.0	.202	.100	.028	.198	.099	.028	.192	.097	.028	.186	.095	.028	.180	.093	.027	
8.0	.188	.092	.026	.185	.091	.026	.179	.090	.026	.174	.088	.025	.169	.087	.025	
9.0	.176	.085	.024	.173	.085	.024	.168	.083	.024	.163	.082	.023	.159	.081	.023	
10.0	.165	.079	.022	.163	.079	.022	.158	.078	.022	.154	.076	.022	.150	.075	.022	

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	.191	.191	.191	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.181	.156	.134	.155	.134	.115	.106	.092	.080	.061	.053	.046	.020	.017	.015	
2.0	.173	.132	.097	.149	.114	.084	.102	.079	.059	.059	.046	.034	.019	.015	.011	
3.0	.166	.115	.074	.142	.099	.064	.098	.069	.045	.056	.040	.026	.018	.013	.009	
4.0	.158	.101	.058	.136	.088	.050	.093	.061	.035	.054	.036	.021	.017	.012	.007	
5.0	.151	.091	.047	.130	.079	.041	.089	.055	.029	.052	.032	.017	.017	.011	.006	
6.0	.144	.083	.039	.123	.072	.034	.085	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.137	.076	.033	.118	.066	.029	.081	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.130	.070	.029	.112	.061	.025	.078	.043	.018	.045	.025	.011	.015	.008	.003	
9.0	.124	.065	.025	.107	.056	.022	.074	.040	.016	.043	.023	.009	.014	.008	.003	
10.0	.118	.061	.022	.102	.053	.020	.071	.037	.014	.041	.022	.008	.013	.007	.003	

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:2.463m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm										
NAME: Aero 25"Pendant					TYPE:ARO-25P-BG-27U-30K			WEIGHT:3.9KG		
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	11.4	12.9	11.6	13.1	13.3	11.2	12.8	11.5	13.0	13.2
3H	13.1	14.5	13.4	14.8	15.0	12.9	14.3	13.2	14.6	14.8
4H	13.9	15.2	14.2	15.5	15.7	13.6	15.0	13.9	15.2	15.5
6H	14.4	15.7	14.8	16.0	16.3	14.0	15.3	14.3	15.6	15.8
8H	14.5	15.8	14.9	16.1	16.4	14.0	15.3	14.4	15.6	15.8
12H	14.5	15.7	14.9	16.0	16.3	14.0	15.2	14.3	15.5	15.8
4H 2H	12.0	13.4	12.3	13.6	13.9	11.9	13.3	12.2	13.5	13.8
3H	13.9	15.1	14.3	15.4	15.7	13.7	15.0	14.1	15.2	15.6
4H	14.8	15.9	15.2	16.3	16.6	14.6	15.7	15.0	16.0	16.3
6H	15.5	16.5	15.9	16.8	17.2	15.1	16.1	15.5	16.4	16.8
8H	15.7	16.6	16.1	16.9	17.3	15.2	16.1	15.6	16.4	16.8
12H	15.7	16.5	16.1	16.9	17.3	15.1	16.0	15.5	16.3	16.7
8H 4H	15.1	16.0	15.5	16.4	16.8	14.9	15.8	15.3	16.2	16.6
6H	15.9	16.7	16.4	17.1	17.5	15.5	16.3	16.0	16.7	17.1
8H	16.1	16.8	16.6	17.2	17.7	15.6	16.3	16.1	16.7	17.2
12H	16.2	16.7	16.6	17.2	17.7	15.6	16.2	16.1	16.6	17.1
12H 4H	15.1	16.0	15.6	16.4	16.8	14.9	15.8	15.4	16.2	16.6
6H	16.0	16.6	16.4	17.1	17.5	15.6	16.3	16.0	16.7	17.1
8H	16.2	16.7	16.6	17.2	17.7	15.7	16.3	16.2	16.7	17.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.1 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 2047 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 2.5$)

C Range: 0 - 360DEG

C Interval: 10.0DEG

Test Speed: HIGH

Temperature:25.1DEG

Operators:Mark

Test Date:19 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:2.463m [K=1.0000]

Remarks:

UTILIZATION FACTORS TABLE

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

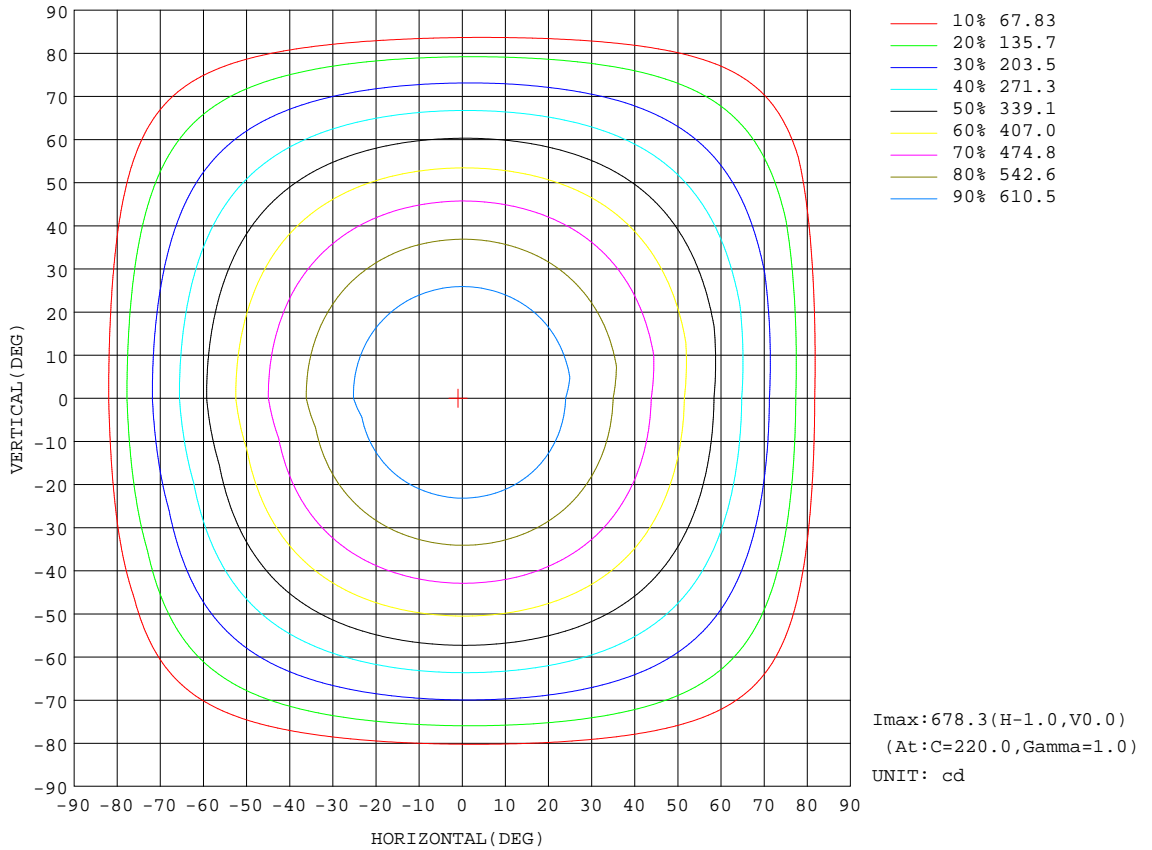
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	45	37	56	44	37	54	44	37	31
0.80	66	54	47	65	54	47	64	53	46	39
1.00	75	63	56	74	63	56	71	64	55	48
1.25	82	71	64	80	70	63	78	69	63	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	94	85	79	92	84	78	89	82	76	68
2.50	98	90	84	96	89	83	92	86	81	73
3.00	102	95	89	99	93	88	95	90	86	77
4.00	106	100	95	103	98	94	99	95	91	82
5.00	108	103	99	106	101	98	101	98	95	85
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:19 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:2.463m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

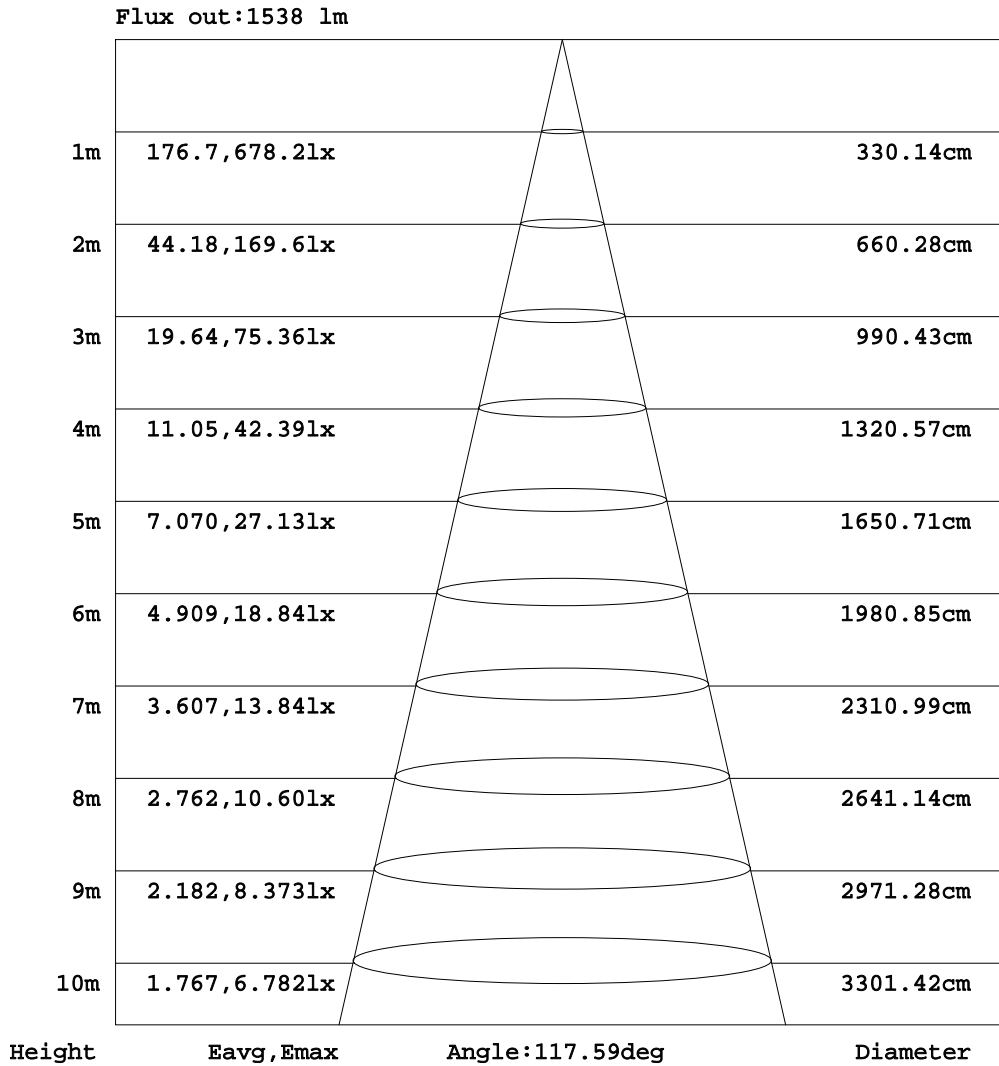


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.1DEG
 Operators: Mark
 Test Date: 19 August 2019

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity: 59.2%
 Test Distance: 2.463m [K=1.0000]
 Remarks:

AAI Figure

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:



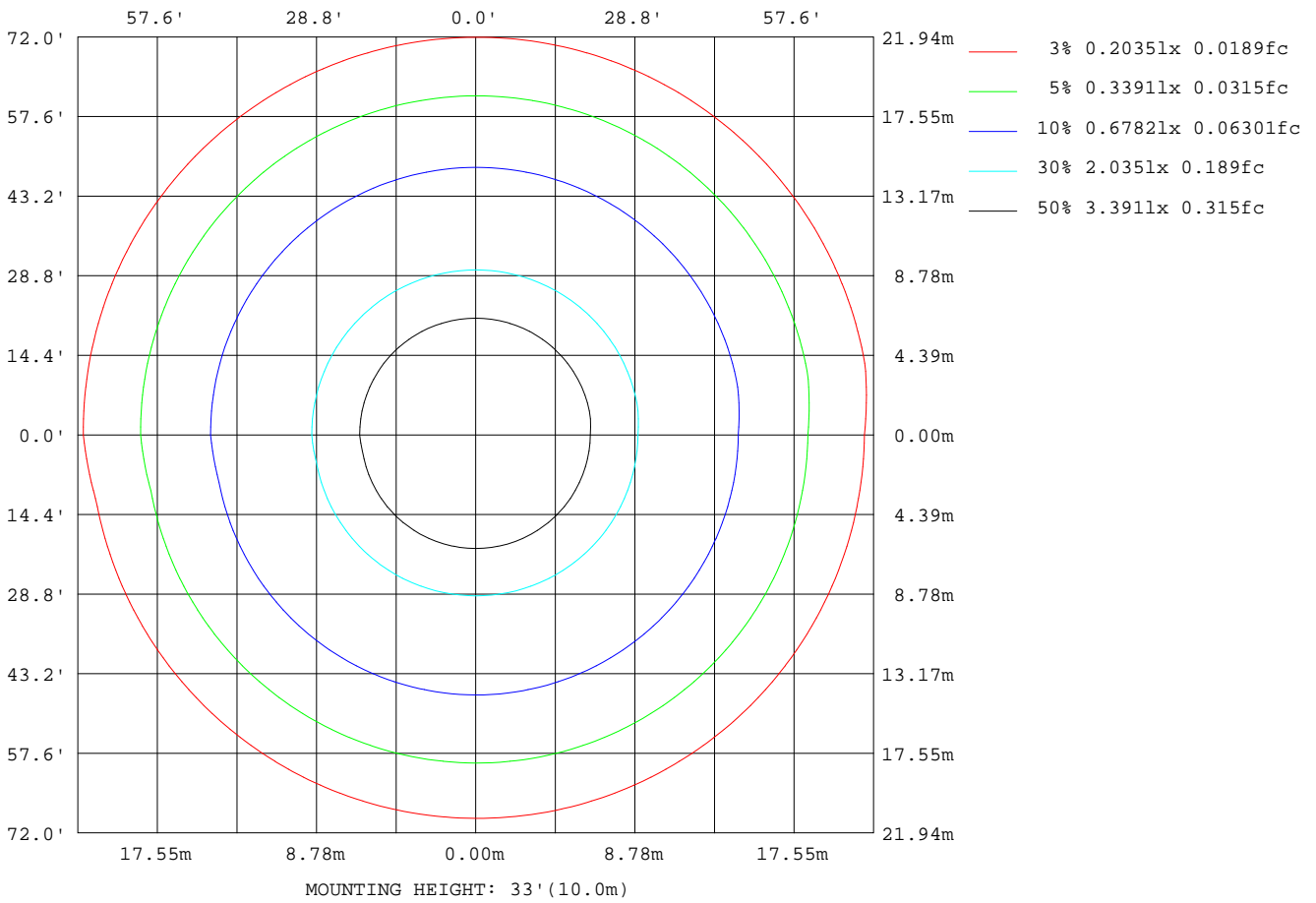
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Mark
 Test Date:19 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:2.463m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
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:19 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:2.463m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

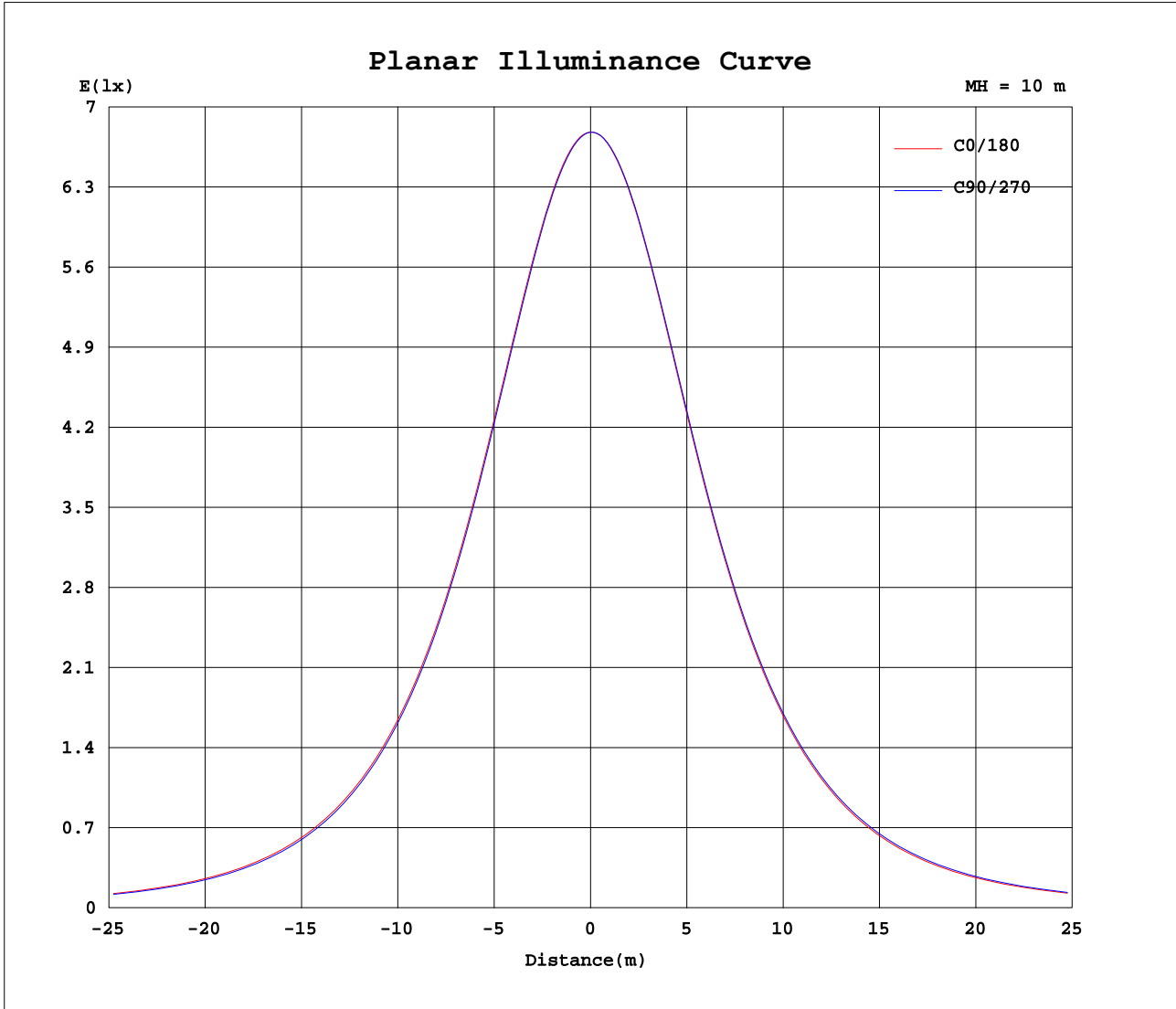
AvgL	cd/m2
L_0~180 (65) av	647
L_0~180 (75) av	643
L_0~180 (85) av	194
L_90~270 (65) av	646
L_90~270 (75) av	641
L_90~270 (85) av	275
L_45 (65) av	646
L_45 (75) av	640
L_45 (85) av	269

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.1DEG
Operators:Mark
Test Date:19 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:2.463m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.1DEG
Operators:Mark
Test Date:19 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:2.463m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
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	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678
5	674	674	674	674	674	674	674	673	673	673	673	673	673	673	674	674	674	674	676
10	665	665	665	664	664	664	663	663	663	663	663	663	663	663	664	664	664	664	668
15	650	650	649	649	648	648	648	648	647	647	647	647	648	648	648	648	649	649	655
20	630	629	629	628	628	627	627	627	627	626	626	626	627	627	627	628	628	629	636
25	605	604	604	603	602	602	601	601	601	601	600	600	601	601	602	602	603	603	612
30	576	575	574	573	573	572	571	571	571	570	570	570	571	571	572	572	573	574	583
35	542	541	540	540	539	538	537	537	536	536	536	536	537	537	538	538	539	540	551
40	505	504	503	502	501	500	500	499	499	498	498	498	499	499	500	501	501	502	514
45	465	464	463	461	460	459	459	458	457	457	457	457	457	458	458	459	460	461	474
50	421	419	418	417	416	415	414	413	412	412	412	412	412	412	413	414	415	416	430
55	373	372	370	369	367	366	365	364	363	363	363	362	363	363	364	365	366	367	382
60	322	321	319	317	316	315	313	312	311	311	310	310	310	311	312	312	314	315	331
65	269	267	266	264	263	261	260	258	257	257	256	256	256	257	257	258	259	261	278
70	216	214	213	211	209	208	206	205	204	203	203	202	202	203	204	205	206	207	223
75	163	162	160	157	156	154	152	150	149	148	147	147	147	147	148	149	150	151	169
80	97.4	94.4	91.3	88.0	84.3	80.9	78.0	75.7	73.7	72.1	70.9	70.1	69.6	69.8	70.7	71.9	73.6	75.5	102
85	14.5	12.2	9.76	7.38	11.3	9.53	7.88	5.17	4.43	3.87	3.46	3.15	6.12	6.21	3.28	3.60	4.09	4.77	19.4
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	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	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00
105	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02
110	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.04
115	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06
120	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08
125	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.10
130	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.12
135	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
140	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.12
145	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.11
150	0.19	0.18	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.10
155	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
160	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.11
165	0.22	0.22	0.22	0.21	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.12
170	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.12
175	0.18	0.19	0.19	0.19	0.19	0.19	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.18
180	0.18	0.18	0.18	0.14	0.15	0.20	0.20	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.17	0.16	0.22	0.16	0.21

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Mark
 Test Date:19 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:2.463m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:119.96V I:0.2192A P:26.179W PF:0.9957 Freq:60.00Hz Lamp Flux:2047.37x1 lm		
NAME: Aero 25"Pendant	TYPE:ARO-25P-BG-27U-30K	WEIGHT:3.9KG
SPEC.:	DIM.:	SERIAL No.:
MFR.: BlackJack Lighting LLC	SUR.:	Shielding Angle:

Table--2

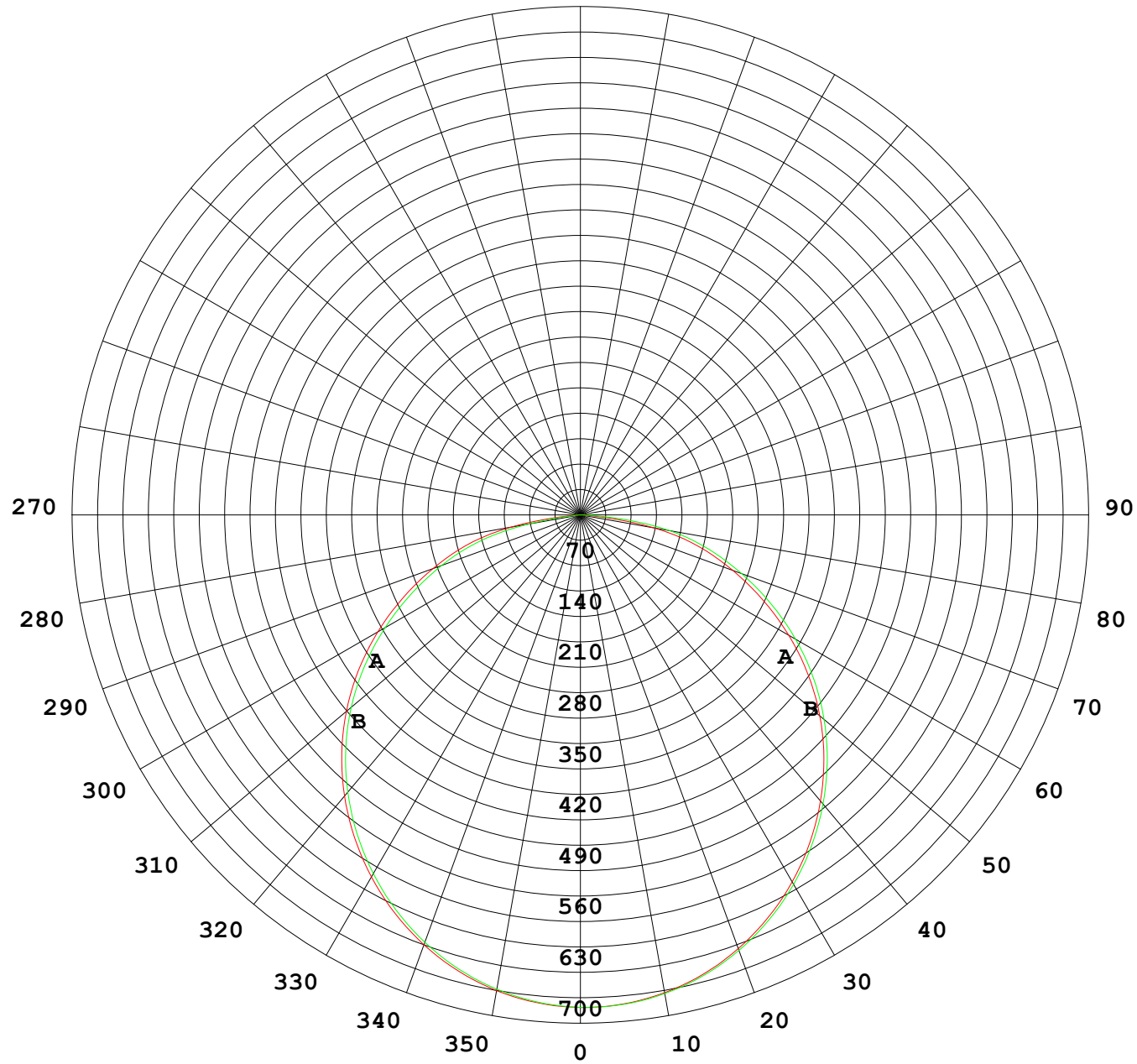
UNIT: cd

C (DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678	678		
5	676	676	676	676	676	677	677	676	677	676	676	676	676	676	676	676	676		
10	668	669	669	669	669	669	669	669	669	669	669	669	669	669	668	668	668		
15	655	655	655	655	656	656	656	657	656	656	656	656	656	656	655	655	654		
20	636	636	637	637	637	638	638	638	638	638	638	638	638	637	637	636	636		
25	612	613	613	614	614	615	615	615	615	615	615	615	614	614	613	613	612		
30	584	585	585	586	586	587	587	587	587	587	587	587	587	586	586	585	584		
35	551	552	553	554	554	555	555	555	555	556	555	555	555	554	554	553	552		
40	515	516	517	517	518	519	519	520	520	520	520	520	519	519	518	517	516		
45	475	476	477	478	479	480	480	480	481	481	481	481	480	480	479	478	477		
50	432	433	434	435	436	437	437	438	438	438	438	438	438	437	436	435	434		
55	384	385	386	388	389	390	391	391	392	392	392	392	392	391	390	389	388		
60	333	334	335	337	338	340	341	341	342	343	343	342	342	341	340	339	337		
65	279	281	282	284	285	287	288	289	290	290	290	290	290	289	288	286	285		
70	225	226	228	230	231	233	234	235	236	237	237	237	236	236	234	233	232		
75	171	173	175	176	178	180	181	182	184	184	185	185	184	183	182	181	179		
80	105	108	110	113	116	119	121	123	125	126	127	127	126	125	124	122	120		
85	21.6	25.6	28.0	31.0	34.2	37.3	38.8	41.7	44.1	45.9	47.0	47.1	46.4	44.9	42.9	40.3	37.8		
90	0.00	0.00	0.00	0.01	0.02	0.02	0.03	0.04	0.04	0.06	0.07	0.07	0.07	0.05	0.04	0.04	0.03		
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	0.00		
100	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00		
105	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02		
110	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04		
115	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06		
120	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08		
125	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		
130	0.12	0.12	0.12	0.11	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12		
135	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12		
140	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12		
145	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11		
150	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		
155	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11		
160	0.12	0.12	0.12	0.11	0.12	0.11	0.12	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12		
165	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12		
170	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.12	0.11	0.12	0.12	0.12	0.12	0.12	0.12		
175	0.18	0.18	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.16	0.15	0.15	0.14	0.14	0.15		
180	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18		

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Mark
 Test Date:19 August 2019

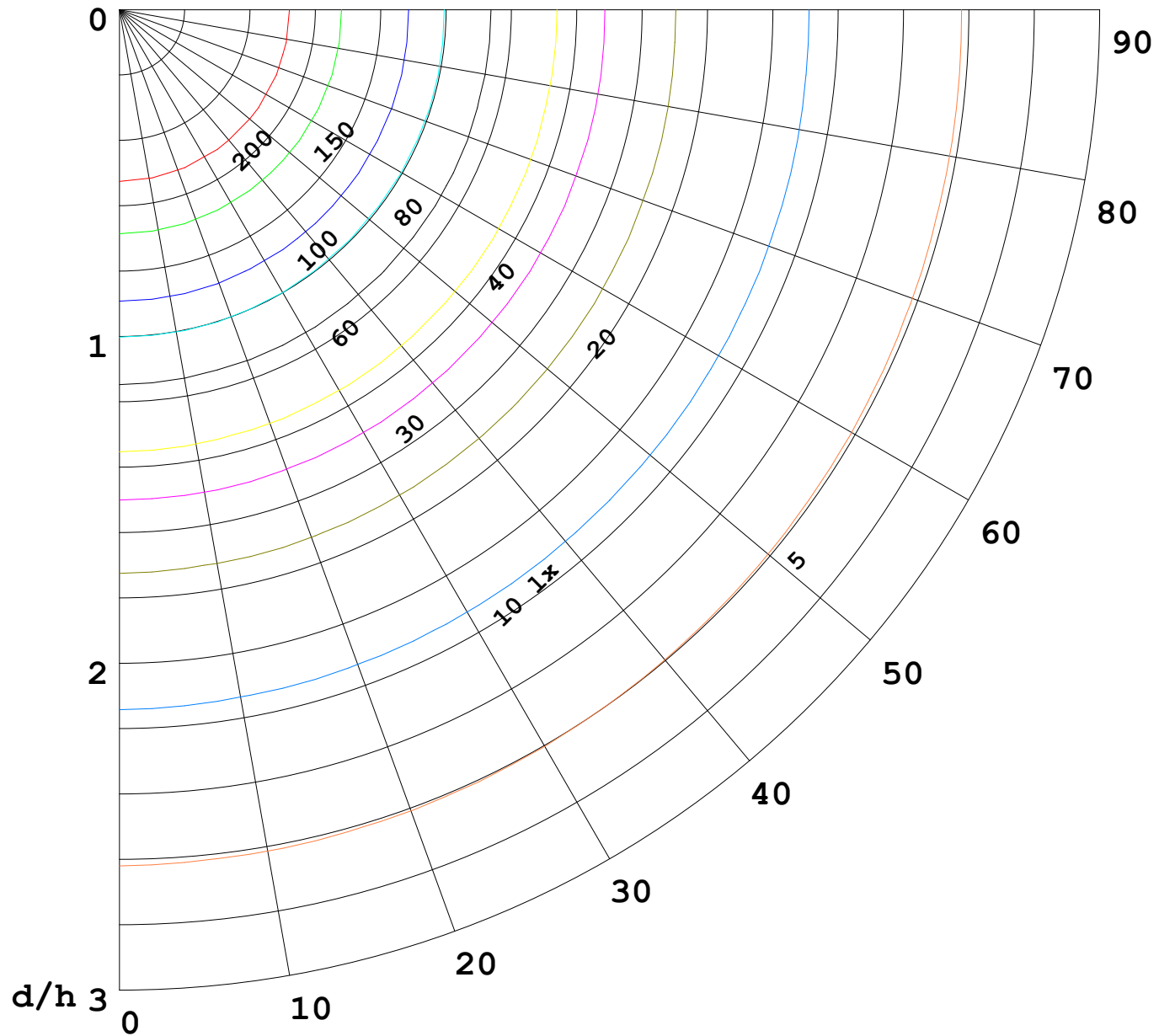
γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:59.2%
 Test Distance:2.463m [K=1.0000]
 Remarks:

I (cd)



1000 lm

$K = 1$



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

	Pcc	Pw	Pfc
—————	70	50	30
—————	50	30	20

