



### IENNA LM-79 TEST REPORT

**Applicant's name** .....: Blackjack Lighting

**Address** .....: 1553 Barclay Blvd. Buffalo Grove, IL 60089

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

**Report No.**.....: BTR66.181.16.0025.44

**Product Name**.....: Medium 27" Iridium Pendant

**Model Number** .....: IRD-27C-PC or EG

**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** .....: Mar 27, 2017

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

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

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

**Test specification**

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

**Test procedure** .....: 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

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<b>description:</b>	
Test date .....	Mar 15, 2017 to Mar 27, 2017
Sample Quantity .....	1 unit
SKU.....	N/A
Rating(s) (V; Hz) .....	AC 120V 60Hz
Nominal Power.....	37W
Nominal Power Factor .....	N/A
Nominal Lumen Output.....	2000 lm
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	1.5 H
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	1.12%
Deviation from standard operating procedures,	None

**Photometric and Electrical Measurement**

Total light output (luminous flux) for the 25°C ±1°C ambient temperature conditions is measured using a EVERFINE 2.0 m 4 II geometry integrating sphere. Temperature is measured at a position inside the sphere. Spectral radiant flux measurements are made using Integral Sphere to the detector port of the integrating sphere. Each lamp is operated at rated voltage in its designated orientation by a CHROMA 61602 AC SOURCE. Each lamp should be stable before measurements are made as below:

Step 1 Take 3 measurements of the lamp light output at 15 minute interval (total time=30mintues.)This time period is in addition to the recommended pre-burning time.

Step 2 Calculate the percent difference between the maximum measured value and the minimum measured value for 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 are calculated from the spectral radiant flux measurements taken at 2 nm intervals over the range 380 to 780 nm by EVERFINE HASS-2000. The calibration of the sphere photometer-spectrometer system is traceable to the NIM China by a calibrated halogen incandescent lamp. Lamp efficacy (lumens per watts) for each lamp model is computed based on the revised luminous flux result. Electrical measurements including voltage, current, power and power factor are measured using the YOKOGAWA WT310 digital power Meter.

The total uncertainty of the light output measurements is estimated, at the 95% confidence level, not to exceed ±1.12% over the wavelength range 380-780 nm.

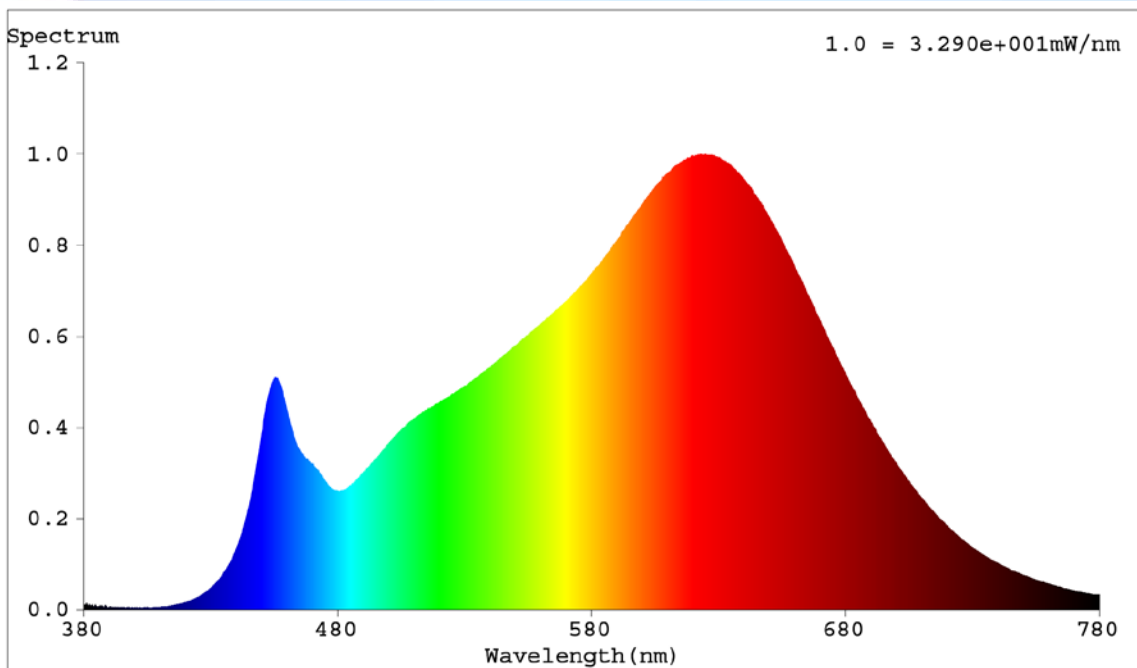
**Luminous Intensity**

A Everfine GOR-5000 Goniophotometer was used to measure the intensity at each angle of distribution, Luminous intensity (cd) is measured within each vertical plane at a 5° vertical angle increment (maximum) from 0° to 180° Luminous intensity (cd), measurements repeated in vertical planes about the lamp (polar) axis in maximum increments of 22.5° from 0° to 180°, and export the intensity (cd) with excel format. The test distance is 25meters from the Goniophotometer to the detector

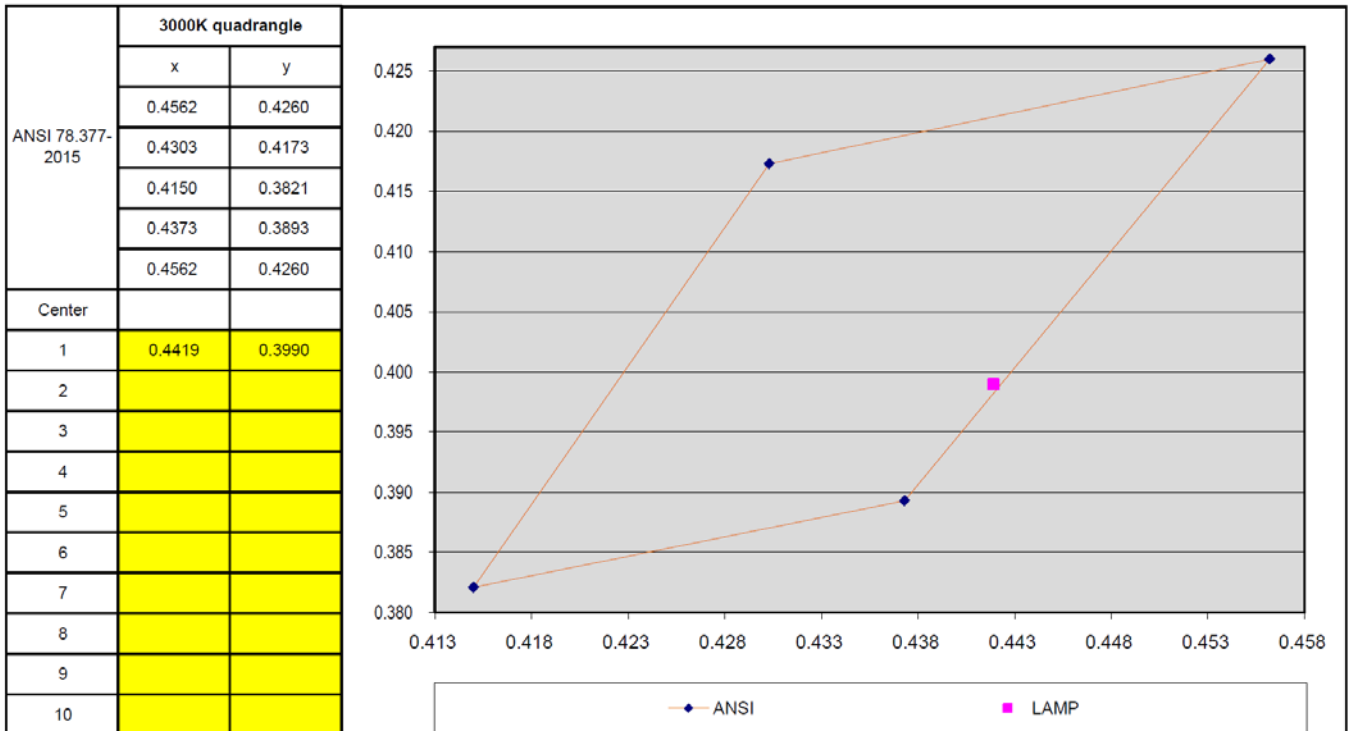
**Photometric and Electrical Test Data**

Input Voltage (V)	Frequency (Hz)	Input Current (A)	ITHD	Input Power (W)	Power Factor	Lumen Output (Lumens)	Efficiency Lumen/w
120.0	60.0	0.352	/	42.11	0.997	2030.91	48.23
CCT (K)	CRI (Ra)	R9	x CIE1931	y CIE1931	u' CIE1976	v' CIE1976	Duv CIE1976
2877	94.5	70	0.4419	0.3990	0.2560	0.5201	-0.0026

**Spectrul Plots**



**7 Step Quadrangle**



**EUT Photo**

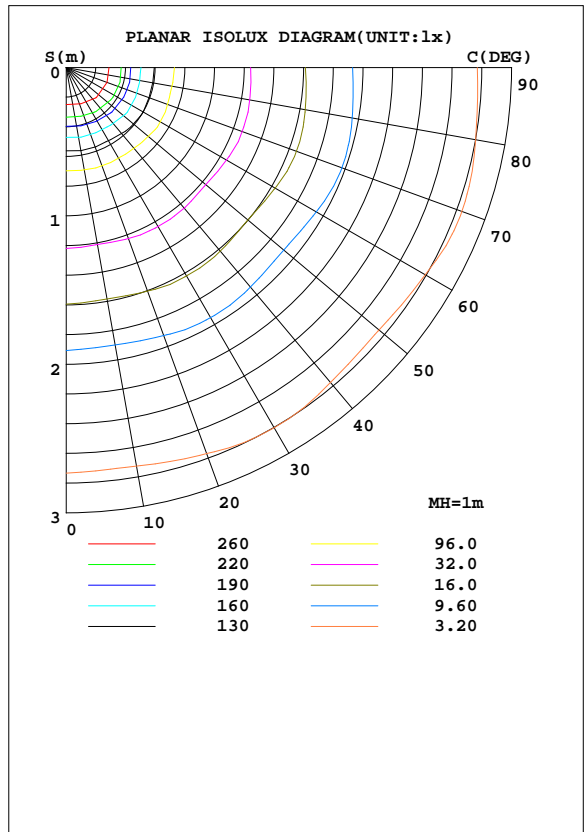
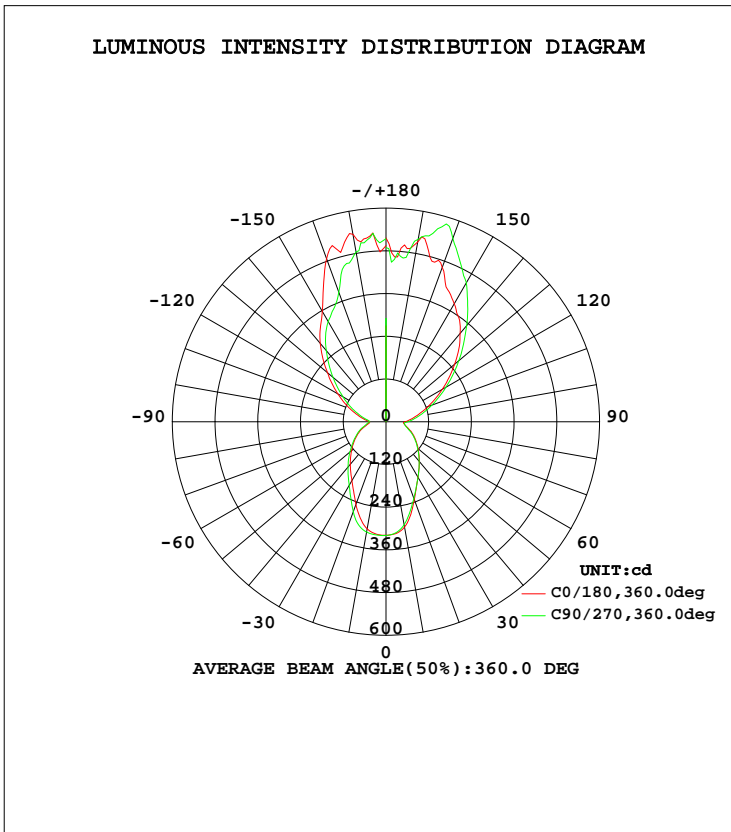


**BEST**

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 48.23 lm/W			
MODEL	IRD-27C-PC or EG	I <sub>max</sub> (cd)	586.9	S/MH(C0/180)	0.89
NOMINAL POWER(W)	37	LOR(%)	100.0	S/MH(C90/270)	0.88
RATED VOLTAGE(V)	120.0	TOTAL FLUX(lm)	2030.9	η UP, DN(C0-180)	29.1,18.8
NOMINAL FLUX(lm)	2030.91	CIE CLASS	SEMI-IND.	η UP, DN(C180-360)	34.9,17.2
LAMPS INSIDE	1	η up(%)	64.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	120.0	η down(%)	36.0	CIBSE SHR MAX	1.15



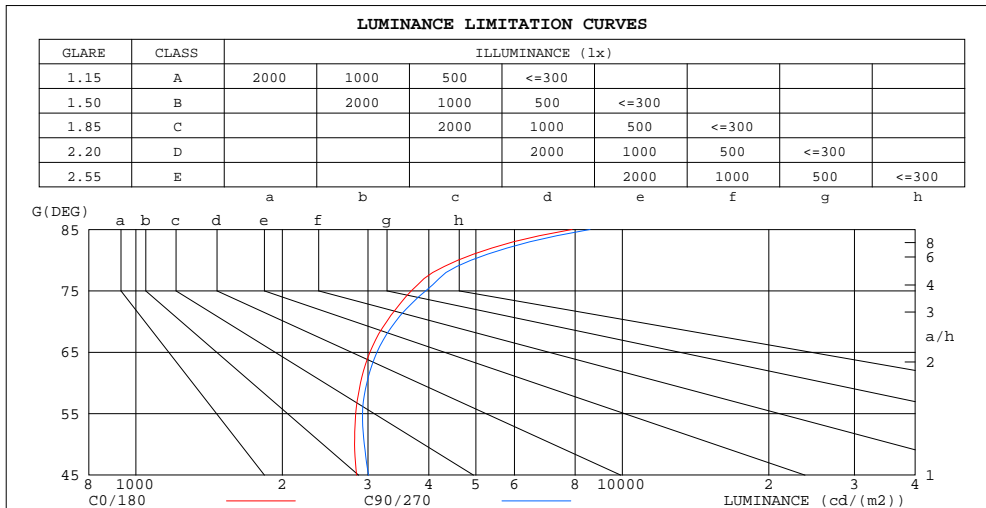
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM  
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\#lum$
10	305.5	314.7	314.5	308.1	300.3	294.8	293.9	295.8	0- 10	29.78	29.78	1.47
20	247.1	267.3	269.1	251.8	232.7	225.0	228.9	232.4	10- 20	77.34	107.1	5.27
30	191.8	205.1	207.0	195.3	180.1	176.9	180.2	183.2	20- 30	99.02	206.1	10.2
40	156.2	162.2	166.2	157.3	145.8	143.8	145.1	148.7	30- 40	107.0	313.2	15.4
50	126.7	129.9	132.7	127.1	118.1	116.3	116.2	120.9	40- 50	106.5	419.7	20.7
60	101.3	102.9	104.4	101.6	94.34	93.36	92.17	97.01	50- 60	98.92	518.6	25.5
70	78.46	80.55	81.80	78.58	72.59	71.70	69.29	73.88	60- 70	86.38	605.0	29.8
80	55.81	57.95	59.41	56.23	54.73	55.76	54.34	55.65	70- 80	69.35	674.3	33.2
90	46.58	46.27	46.34	46.76	53.84	64.66	62.35	55.78	80- 90	57.00	731.3	36
100	71.21	65.42	63.55	67.34	83.35	95.62	93.71	85.67	90-100	69.66	801.0	39.4
110	107.9	96.72	96.50	103.9	125.9	138.5	137.2	126.9	100-110	101.7	902.7	44.4
120	155.8	136.7	139.5	148.4	182.8	194.4	194.6	182.6	110-120	139.1	1042	51.3
130	214.3	185.6	194.6	200.7	252.0	264.2	267.4	251.0	120-130	176.4	1218	60
140	287.4	247.6	261.3	256.0	324.1	342.2	352.4	337.2	130-140	206.5	1425	70.1
150	358.3	327.4	325.1	320.3	383.5	435.8	451.3	441.5	140-150	218.3	1643	80.9
160	487.8	445.8	387.8	410.8	462.0	521.6	549.2	549.7	150-160	199.9	1843	90.7
170	534.8	489.3	484.3	486.0	512.9	521.7	520.3	521.0	160-170	140.9	1984	97.7
180	494.7	469.3	514.5	511.6	516.6	513.9	489.8	486.2	170-180	47.15	2031	100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	7884	8581
80	4591	4888
75	3682	3941
70	3277	3417
65	3028	3130
60	2896	2984
55	2830	2923
50	2816	2949
45	2843	3007

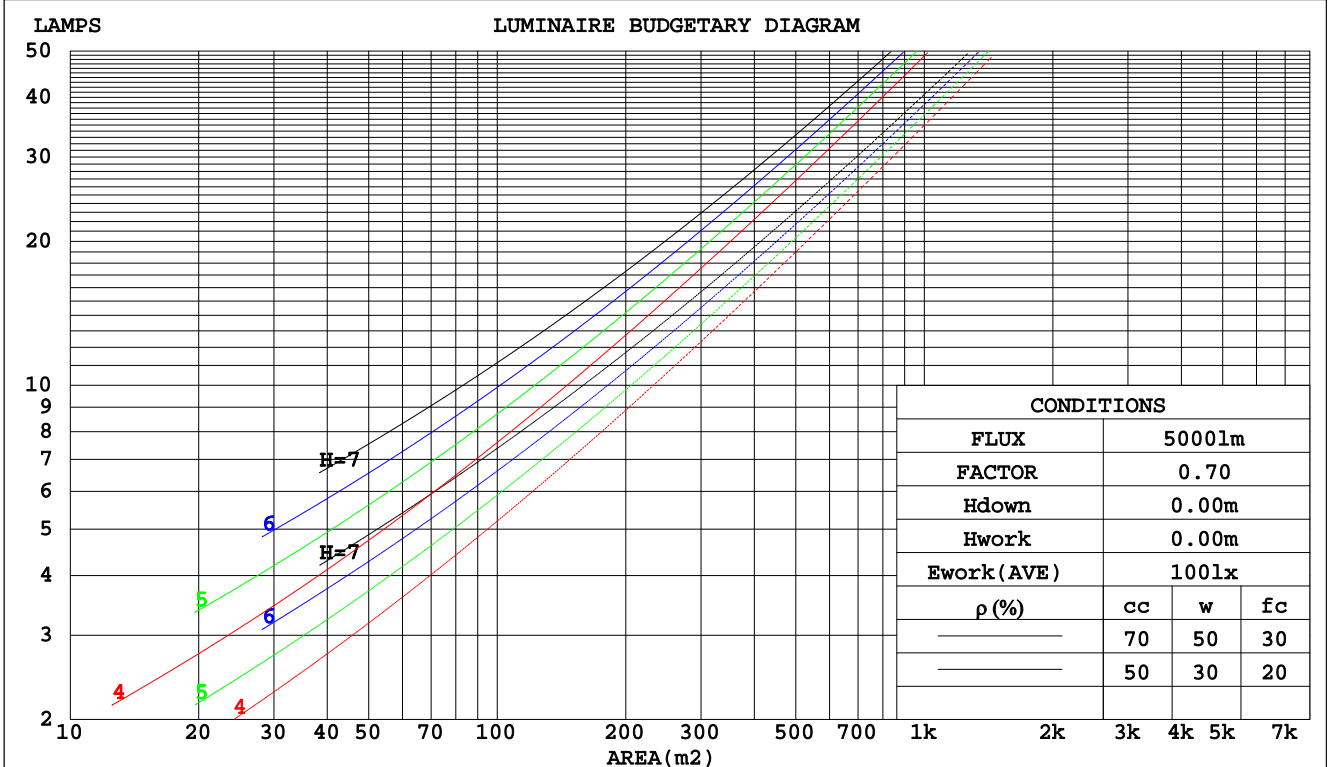
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.6DEG  
Operators:David  
Test Date:2017-03-24

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
Humidity:67.1%  
Test Distance:26.000m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.04	1.04	1.04	.94	.94	.94	.76	.76	.76	.59	.59	.59	.43	.43	.43	.36
1.0	.89	.85	.81	.81	.77	.74	.65	.62	.60	.50	.48	.47	.37	.36	.35	.28
2.0	.77	.71	.66	.70	.65	.60	.56	.52	.49	.44	.41	.39	.32	.30	.29	.23
3.0	.68	.60	.54	.61	.55	.50	.50	.45	.41	.38	.35	.32	.28	.26	.24	.20
4.0	.60	.52	.46	.54	.48	.42	.44	.39	.35	.34	.31	.28	.25	.23	.21	.17
5.0	.53	.45	.39	.49	.41	.36	.39	.34	.30	.31	.27	.24	.23	.20	.18	.15
6.0	.48	.40	.34	.44	.37	.31	.35	.30	.26	.28	.24	.21	.21	.18	.16	.13
7.0	.43	.35	.30	.39	.32	.27	.32	.27	.23	.25	.21	.19	.19	.16	.14	.11
8.0	.39	.31	.26	.36	.29	.24	.29	.24	.20	.23	.19	.17	.17	.15	.13	.10
9.0	.36	.28	.23	.33	.26	.22	.27	.22	.18	.21	.18	.15	.16	.14	.12	.09
10.0	.33	.26	.21	.30	.24	.19	.25	.20	.16	.20	.16	.14	.15	.12	.11	.09



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:



WEC AND CCEC

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm									
NAME:					TYPE:IRD-27C-PC or EG			WEIGHT:	
SPEC.:					DIM.:			SERIAL No.:	
MFR.: Blackjack Lighting					SUR.:			PROTECTION 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	.300	.171	.054	.274	.156	.050	.225	.129	.041	.179	.103	.033	.137	.080	.026	
2.0	.269	.147	.045	.245	.135	.042	.200	.111	.034	.158	.089	.028	.120	.068	.021	
3.0	.244	.130	.039	.222	.119	.036	.181	.098	.030	.143	.078	.024	.107	.059	.018	
4.0	.224	.116	.034	.203	.106	.031	.165	.088	.026	.130	.070	.021	.097	.053	.016	
5.0	.206	.105	.030	.187	.096	.028	.152	.079	.023	.120	.063	.019	.089	.048	.014	
6.0	.191	.096	.027	.174	.088	.025	.141	.072	.021	.111	.058	.017	.082	.043	.013	
7.0	.177	.088	.025	.162	.081	.023	.131	.066	.019	.103	.053	.015	.077	.040	.012	
8.0	.166	.081	.023	.151	.074	.021	.123	.061	.018	.096	.049	.014	.072	.037	.011	
9.0	.155	.075	.021	.142	.069	.019	.115	.057	.016	.090	.045	.013	.067	.034	.010	
10.0	.146	.070	.019	.133	.064	.018	.109	.053	.015	.085	.042	.012	.063	.032	.009	

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	.678	.678	.678	.579	.579	.579	.396	.396	.396	.227	.227	.227	.073	.073	.073	
1.0	.671	.648	.627	.574	.556	.539	.393	.382	.373	.226	.221	.217	.072	.071	.070	
2.0	.664	.627	.596	.569	.540	.515	.390	.373	.359	.225	.217	.211	.072	.070	.069	
3.0	.657	.612	.575	.563	.528	.499	.387	.367	.350	.223	.214	.206	.072	.070	.068	
4.0	.650	.600	.562	.558	.519	.488	.384	.361	.344	.222	.212	.203	.071	.069	.067	
5.0	.644	.591	.552	.553	.511	.480	.381	.357	.339	.221	.210	.201	.071	.068	.066	
6.0	.637	.584	.545	.548	.506	.475	.378	.354	.336	.219	.208	.200	.071	.068	.066	
7.0	.632	.578	.540	.543	.501	.471	.375	.351	.334	.218	.207	.199	.070	.068	.066	
8.0	.626	.573	.536	.539	.497	.468	.373	.349	.332	.217	.206	.198	.070	.067	.065	
9.0	.621	.569	.533	.535	.494	.465	.370	.347	.330	.216	.205	.197	.070	.067	.065	
10.0	.616	.565	.531	.531	.491	.463	.368	.345	.329	.215	.204	.196	.070	.067	.065	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.9lx1 lm										
NAME:					TYPE:IRD-27C-PC or EG			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: Blackjack Lighting					SUR.:			PROTECTION 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	11.6	12.5	12.6	13.5	14.8	12.0	12.9	13.0	13.8	15.2
3H	13.6	14.3	14.6	15.4	16.7	14.0	14.8	15.1	15.8	17.2
4H	14.6	15.3	15.6	16.4	17.7	15.1	15.8	16.1	16.8	18.2
6H	15.7	16.3	16.7	17.4	18.7	16.2	16.8	17.2	17.9	19.2
8H	16.3	16.9	17.3	17.9	19.3	16.8	17.4	17.8	18.4	19.8
12H	17.0	17.6	18.0	18.6	20.0	17.5	18.1	18.5	19.1	20.5
4H 2H	12.2	12.9	13.3	14.0	15.3	12.5	13.2	13.5	14.2	15.6
3H	14.5	15.1	15.5	16.1	17.5	14.8	15.4	15.8	16.4	17.8
4H	15.7	16.2	16.7	17.3	18.7	16.0	16.6	17.1	17.6	19.1
6H	16.9	17.4	18.0	18.4	19.9	17.3	17.8	18.4	18.9	20.3
8H	17.6	18.0	18.7	19.1	20.6	18.0	18.5	19.1	19.6	21.0
12H	18.4	18.8	19.5	19.9	21.3	18.8	19.2	19.9	20.3	21.8
8H 4H	16.1	16.5	17.2	17.6	19.1	16.4	16.8	17.5	17.9	19.4
6H	17.7	18.0	18.8	19.1	20.6	18.0	18.3	19.1	19.4	20.9
8H	18.5	18.9	19.7	20.0	21.5	18.9	19.2	20.0	20.3	21.8
12H	19.6	19.8	20.7	21.0	22.5	20.0	20.3	21.1	21.4	22.9
12H 4H	16.2	16.6	17.3	17.7	19.1	16.5	16.9	17.6	17.9	19.4
6H	17.8	18.1	18.9	19.3	20.8	18.1	18.4	19.2	19.6	21.1
8H	18.8	19.1	20.0	20.2	21.8	19.1	19.4	20.3	20.5	22.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 2031 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.5)

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 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
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 Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION 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	40	29	23	37	27	21	32	24	19	11
0.80	49	37	30	45	34	28	38	30	25	14
1.00	56	44	36	51	41	34	43	36	30	17
1.25	63	51	43	57	47	40	47	40	35	19
1.50	68	57	49	62	52	45	51	44	39	21
2.00	75	65	57	68	59	53	56	49	45	23
2.50	79	70	63	72	64	58	59	53	49	25
3.00	83	75	68	75	68	62	61	56	52	26
4.00	88	80	75	79	73	68	64	60	56	28
5.00	90	84	79	82	77	72	66	63	59	29
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:

Conical surface Flux(90deg):

367 lm

%lum = 18.1%

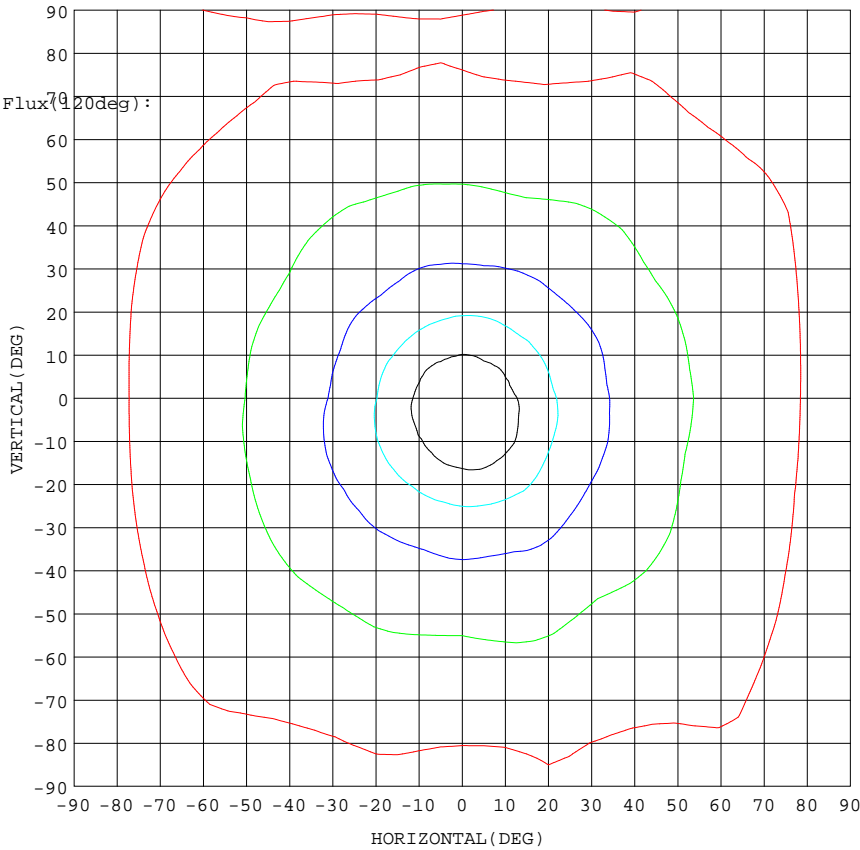
%lamp = 18.1%

Conical surface Flux(70deg):

518.6 lm

%lum = 25.5%

%lamp = 25.5%



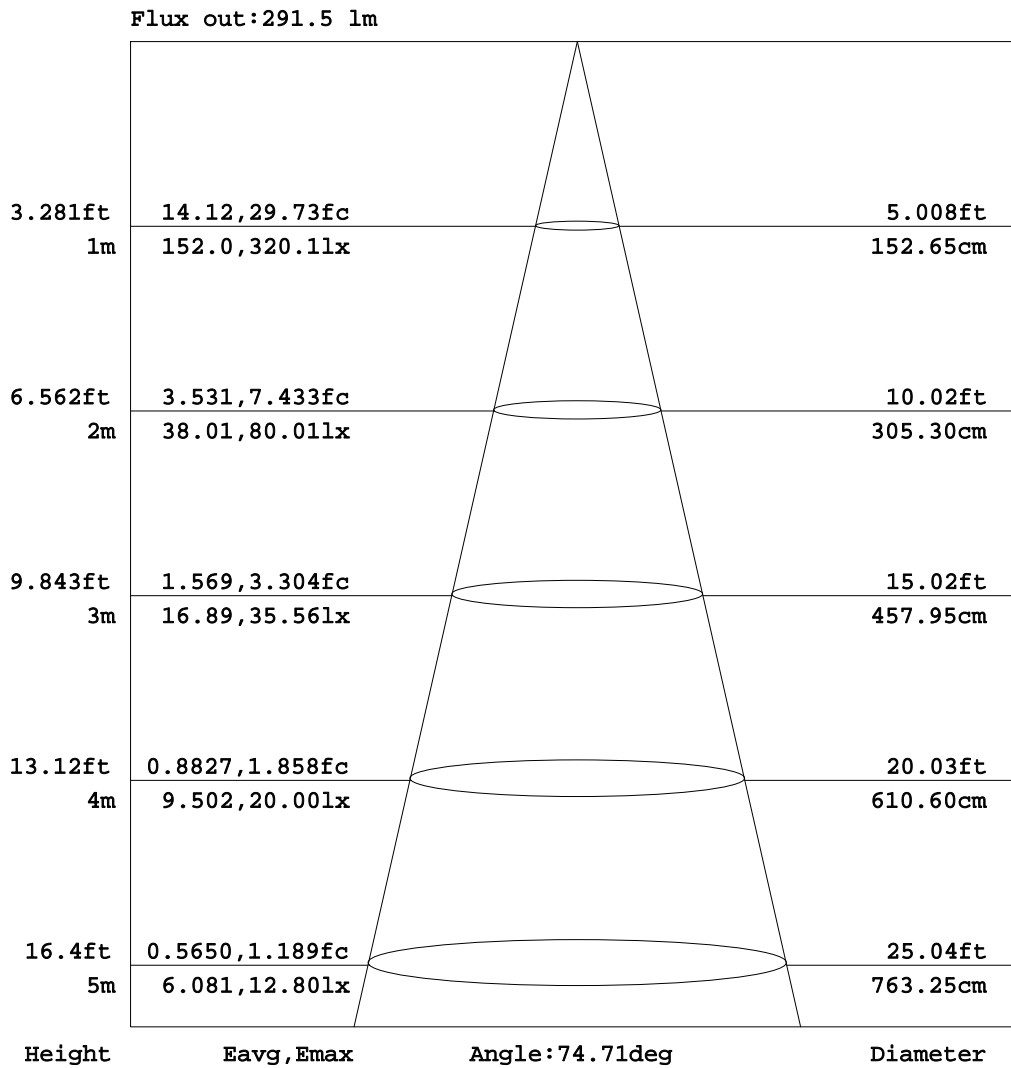
Imax:585.8(H=-1.5,V163.0)  
 (At:C=265.0,Gamma=163.0)  
 UNIT: cd

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

AAI Figure

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:



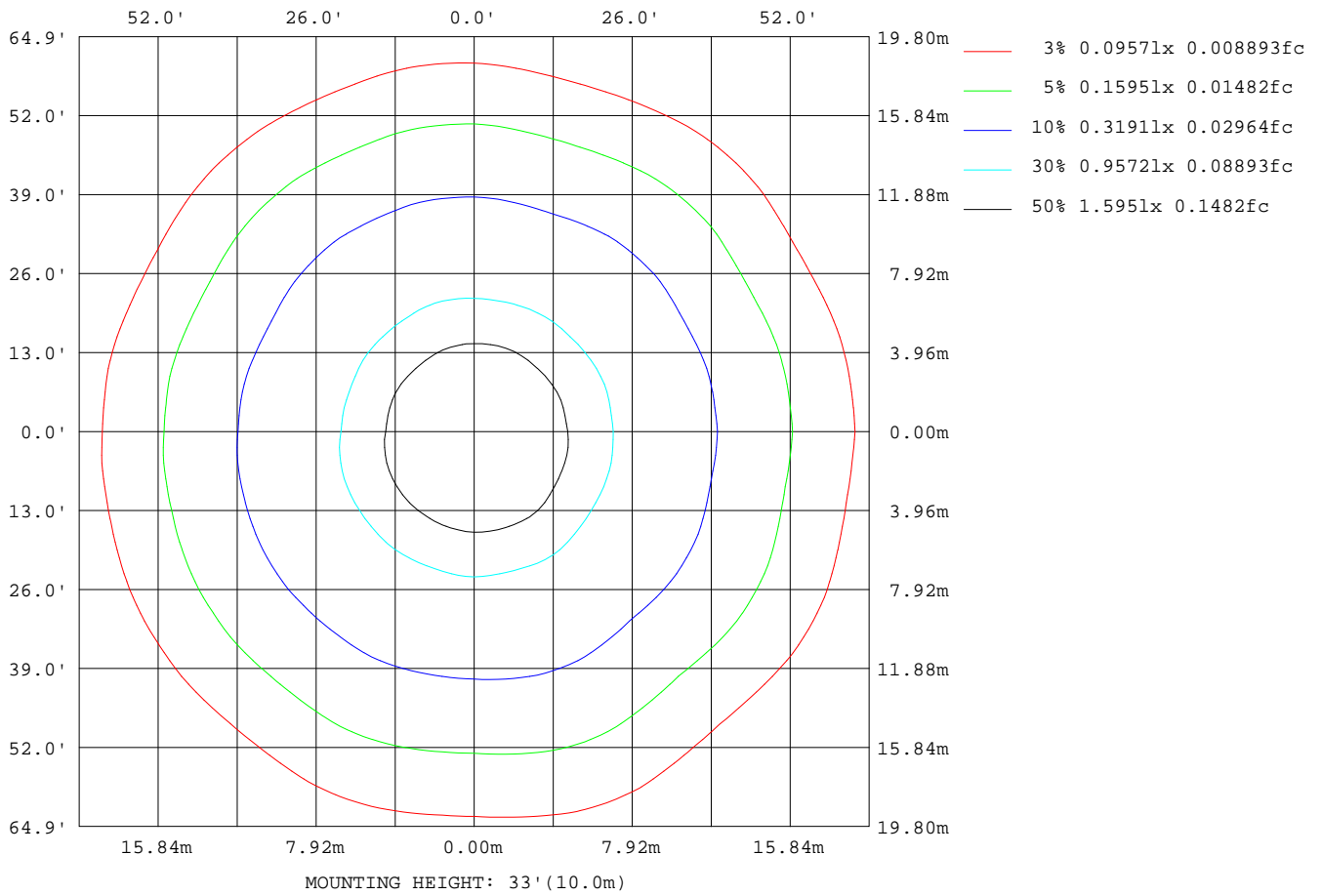
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

ISOLUX DIAGRAM

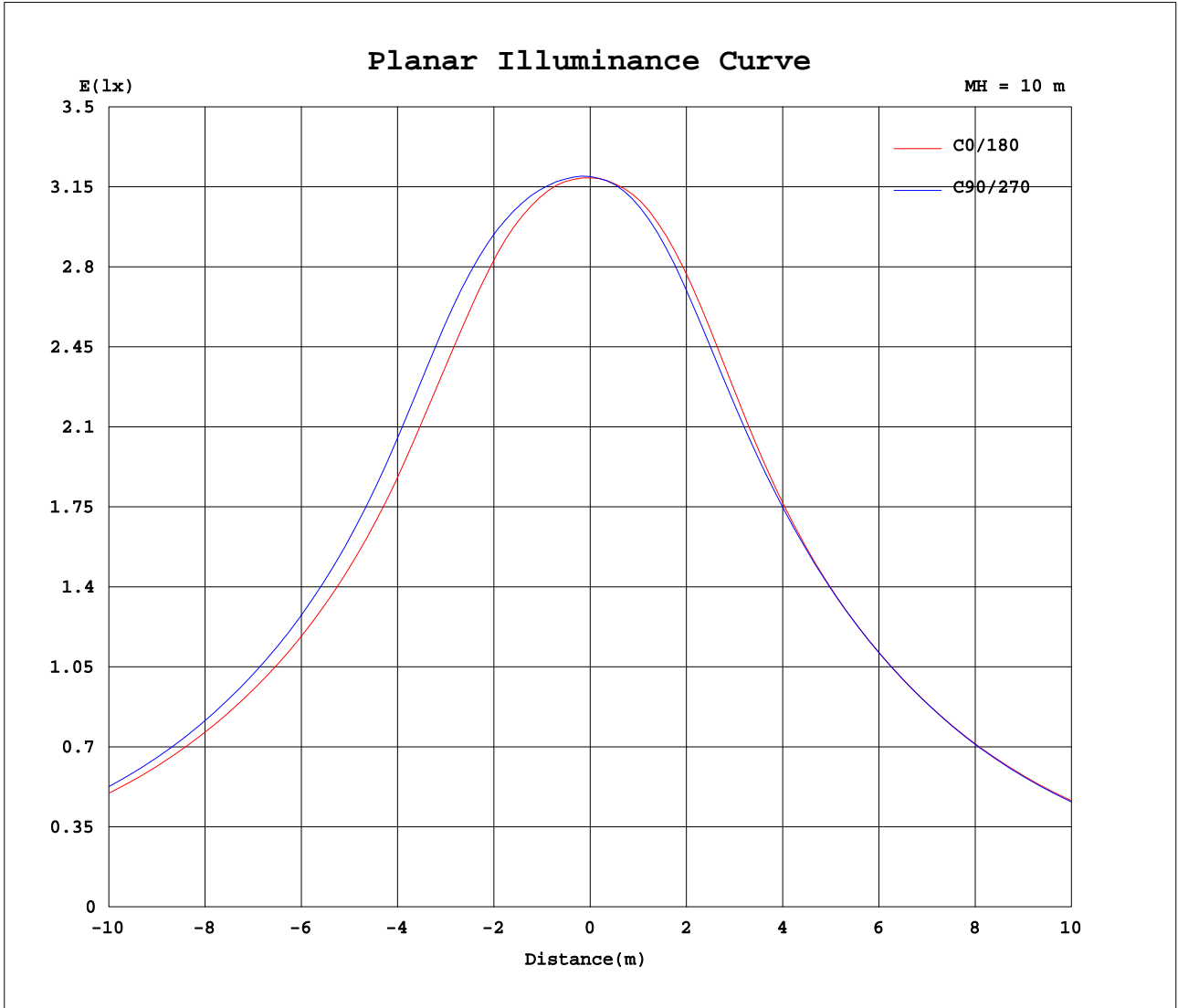
Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91lx1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.6DEG  
Operators:David  
Test Date:2017-03-24

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
Humidity:67.1%  
Test Distance:26.000m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C( DEG) γ (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
0	319	319	319	319	319	319	319	319	319	319	319	319	320	319	319	319	319	319	319	320
5	317	317	318	318	317	319	318	318	319	319	318	319	319	319	320	320	321	320	319	
10	306	307	308	309	309	311	312	314	314	315	314	315	314	316	316	317	316	316	315	
15	280	282	284	285	286	289	292	295	297	298	299	300	300	302	302	303	302	301	300	
20	247	249	251	252	253	256	259	262	265	267	269	271	270	272	273	273	272	272	269	
25	216	218	220	221	221	222	224	226	230	233	236	238	237	237	237	237	236	236	235	
30	192	193	195	196	196	196	196	198	201	205	208	211	210	208	207	206	206	207	207	
35	173	173	175	176	176	176	176	177	179	181	185	188	188	187	184	184	184	185	185	
40	156	156	156	158	158	160	160	160	161	162	164	167	169	169	167	166	166	166	166	
45	141	141	140	141	142	144	145	145	146	145	146	148	151	152	152	151	150	149	149	
50	127	126	125	126	128	131	131	132	131	130	129	131	135	137	138	137	136	134	133	
55	114	113	111	113	115	118	119	119	118	116	114	117	120	123	124	124	122	120	117	
60	101	100.0	99.4	101	103	106	107	107	105	103	102	104	107	111	112	111	109	106	104	
65	89.6	88.4	88.3	89.8	92.1	94.8	95.5	95.1	93.1	91.2	90.7	92.3	95.0	98.7	99.6	99.0	96.4	94.1	92.6	
70	78.5	77.7	78.0	79.6	81.8	84.2	84.9	84.3	82.0	80.6	80.1	81.8	84.0	87.3	88.2	87.2	84.7	82.8	81.8	
75	66.7	66.9	67.4	68.4	70.0	73.0	73.9	72.9	71.0	70.0	70.2	71.4	73.0	76.2	77.4	75.5	73.1	72.1	71.4	
80	55.8	55.3	56.2	57.5	60.2	63.5	64.1	62.1	59.5	58.0	57.8	58.9	60.9	64.9	66.8	63.7	60.6	59.6	59.4	
85	48.1	48.3	49.4	50.0	51.5	55.5	56.0	53.5	51.5	50.9	50.7	51.4	52.7	57.0	59.0	55.1	52.1	51.8	52.4	
90	46.6	47.1	46.7	47.6	48.6	52.2	51.7	48.4	46.3	46.3	45.7	46.2	48.4	52.9	54.5	50.3	46.8	46.1	46.3	
95	57.2	56.0	56.0	56.3	57.0	59.3	57.8	54.2	52.6	53.1	53.2	52.3	51.6	55.3	56.2	52.1	50.5	50.9	50.6	
100	71.2	69.4	69.6	70.5	72.1	74.8	73.4	69.5	66.6	65.4	64.7	64.9	66.9	71.0	71.5	67.1	63.3	63.0	63.5	
105	87.6	84.3	85.4	87.5	89.4	91.1	89.4	85.5	81.7	79.6	78.8	80.3	82.3	85.9	86.0	81.9	78.6	77.4	78.5	
110	108	102	105	108	109	110	108	104	99.9	96.7	96.0	98.8	101	104	103	100	96.6	94.0	96.5	
115	130	122	129	131	133	133	130	126	121	116	115	120	123	125	124	121	117	112	117	
120	156	144	156	160	159	158	156	151	145	137	136	143	147	149	148	146	140	132	139	
125	184	170	187	192	189	188	184	179	170	159	162	171	175	177	176	173	165	152	165	
130	214	199	223	227	223	221	217	209	201	186	191	202	206	208	206	202	193	177	195	
135	251	233	262	265	259	255	250	245	235	215	224	236	240	242	238	235	226	205	227	
140	287	272	302	305	299	293	290	285	274	248	262	275	277	276	274	271	261	235	261	
145	322	317	343	343	340	338	336	330	315	284	302	317	312	315	312	309	299	267	296	
150	358	365	383	379	384	388	383	376	357	327	343	353	348	355	349	339	332	301	325	
155	417	423	426	427	427	425	425	420	399	382	387	390	386	375	377	378	364	342	349	
160	488	483	488	467	455	449	459	462	452	446	434	426	409	398	385	402	406	396	388	
165	493	512	510	505	501	501	496	502	503	472	465	455	449	447	447	447	446	439	453	
170	535	525	523	519	517	518	533	534	503	489	494	501	501	504	499	502	487	485	484	
175	524	529	525	506	493	492	499	505	501	519	527	538	528	504	493	478	499	514	519	
180	495	482	489	560	568	564	542	521	504	469	494	524	545	572	552	505	480	469	515	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:



LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C( DEG) γ (DEG)	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	320	320	320	319	319	319	320	319	319	319	319	319	319	318	318	318	319	319	319
5	319	319	319	319	319	318	319	318	318	318	317	317	317	317	316	316	315	315	315
10	315	314	314	314	314	311	311	310	308	309	307	306	305	305	304	303	301	300	299
15	299	298	297	295	293	290	288	287	284	283	281	279	277	277	275	275	273	269	268
20	267	265	264	263	261	257	256	254	252	251	249	247	245	244	242	239	237	233	232
25	233	231	231	229	227	225	224	223	221	220	219	217	216	214	211	209	207	203	201
30	206	204	203	201	200	199	198	197	195	195	193	193	192	190	188	186	184	180	178
35	185	182	180	180	179	178	179	178	175	174	173	173	172	171	170	168	166	162	161
40	165	163	162	162	162	161	161	159	157	157	156	156	154	154	153	151	149	146	145
45	148	146	146	146	146	146	144	143	142	142	141	139	138	138	137	136	134	131	130
50	132	131	132	132	132	130	129	128	127	127	126	126	124	123	122	121	120	118	117
55	118	118	119	119	119	117	115	114	114	114	113	113	111	110	108	108	108	106	105
60	104	106	107	107	106	104	102	101	102	102	101	101	99.7	98.2	96.5	95.9	95.8	94.3	93.8
65	92.8	94.3	95.6	95.9	94.9	92.2	90.2	89.6	89.5	90.2	89.9	89.6	88.8	87.2	85.7	84.6	84.8	83.6	83.1
70	82.1	83.6	85.0	85.1	83.7	81.2	79.5	78.7	78.6	79.2	79.3	79.0	77.9	76.7	75.3	74.2	73.9	72.6	72.1
75	71.5	72.7	74.2	74.2	72.2	69.9	68.8	68.0	67.1	67.1	67.5	67.3	66.1	64.1	63.0	62.4	62.8	62.6	62.9
80	60.1	61.9	64.0	63.9	61.6	58.6	57.3	56.5	56.2	56.9	58.4	58.9	57.8	56.1	55.2	55.0	54.9	54.7	55.4
85	52.0	53.3	55.4	55.6	53.1	50.4	50.4	49.6	48.5	49.9	52.0	53.0	51.8	49.3	49.6	49.4	48.8	49.9	51.7
90	46.3	47.6	50.2	50.4	47.9	46.8	46.2	46.2	46.8	46.9	49.0	50.7	49.4	49.3	51.4	52.4	52.5	53.8	56.3
95	50.8	51.3	52.8	53.5	52.0	52.4	52.8	53.1	54.0	55.7	59.3	61.7	61.8	60.4	61.2	62.6	64.3	67.4	70.4
100	64.3	65.7	68.6	69.3	67.8	65.9	66.5	66.8	67.3	70.5	73.9	76.3	76.3	75.8	75.4	76.4	79.1	83.3	86.4
105	80.0	82.1	84.6	85.4	84.2	82.3	81.8	81.6	83.9	87.7	91.3	93.5	93.9	93.0	92.8	92.3	97.2	103	105
110	98.7	101	103	104	103	102	101	99.9	104	109	112	114	115	115	115	112	119	126	129
115	120	123	125	126	125	123	122	119	125	132	136	138	138	139	139	134	143	152	155
120	144	147	149	149	149	147	145	141	148	159	162	164	165	167	168	160	170	183	184
125	172	174	176	176	176	172	172	166	174	188	192	193	194	196	199	190	200	216	217
130	202	204	205	205	204	203	203	194	201	221	223	225	225	230	234	225	233	252	253
135	236	237	237	234	237	236	237	226	228	254	257	257	260	266	271	264	265	290	290
140	271	272	268	269	271	272	276	264	256	287	291	292	297	305	308	306	294	324	329
145	306	304	305	305	306	311	314	303	285	317	321	330	336	341	348	348	324	357	363
150	333	338	345	345	349	345	347	340	320	344	347	362	377	373	389	387	358	384	398
155	359	365	373	389	384	385	385	376	355	366	377	392	395	405	424	422	406	410	427
160	398	400	405	396	409	424	427	418	411	424	427	425	426	433	440	455	460	462	462
165	459	447	443	438	441	443	450	444	460	466	470	474	474	474	485	486	471	478	485
170	478	471	469	477	487	491	488	482	486	496	494	497	490	471	478	492	500	513	514
175	516	505	486	477	484	495	470	497	492	482	475	482	492	495	494	474	447	490	489
180	515	531	536	529	534	464	483	471	512	506	505	526	487	491	457	470	501	517	515

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:

Table--3

UNIT: cd

C( DEG) γ (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	319	319	319	319	319	319	319	319	319	319	320	319	319	319	319	319	320	320	320
5	315	314	314	314	314	314	313	314	313	313	312	313	313	313	312	313	313	314	313
10	298	297	296	297	296	296	296	295	294	294	292	292	292	293	292	293	294	294	294
15	266	265	263	263	261	261	261	261	260	260	259	259	259	259	259	261	262	261	262
20	231	230	229	229	227	226	225	225	225	225	225	226	226	227	227	229	229	230	230
25	201	201	201	201	201	200	199	198	197	198	199	201	201	202	202	203	202	203	203
30	178	177	177	178	179	179	178	177	176	177	178	180	181	182	181	181	180	180	180
35	160	159	157	158	159	160	160	159	159	160	160	162	163	164	163	163	162	161	161
40	144	143	141	140	141	143	143	144	144	145	145	146	147	148	147	146	145	144	144
45	130	129	127	125	126	127	129	129	130	131	130	130	131	132	131	130	130	129	128
50	117	116	113	112	112	114	115	116	117	118	116	116	116	118	117	116	116	115	114
55	105	104	102	100	99.9	102	103	104	105	105	104	103	103	104	105	104	104	102	101
60	93.9	92.5	90.6	89.5	89.5	90.8	92.3	93.4	93.3	93.2	92.0	91.2	91.2	92.3	93.0	92.6	92.2	90.7	89.1
65	83.2	82.1	80.4	79.3	79.4	80.7	82.0	82.8	82.7	82.2	80.7	80.4	80.1	81.0	81.8	82.1	81.1	79.6	78.5
70	72.1	71.0	69.8	69.2	69.1	69.5	70.6	71.7	71.4	70.4	68.8	67.6	67.3	68.8	70.1	70.6	69.3	67.2	66.0
75	62.5	60.8	59.3	58.5	58.4	59.0	60.2	62.3	62.1	60.5	58.8	58.7	58.2	59.2	61.4	62.2	60.2	57.9	57.1
80	55.0	53.1	51.5	52.0	52.1	51.6	53.6	55.8	55.8	53.6	51.5	51.7	51.9	52.4	55.5	56.6	54.3	51.5	49.8
85	51.4	49.7	49.4	50.0	50.3	50.7	50.8	52.9	52.9	51.0	49.5	50.1	51.0	51.8	53.1	53.9	51.7	49.1	48.5
90	57.5	57.3	57.1	58.0	58.6	59.9	61.7	64.7	64.9	62.9	60.8	60.6	60.7	61.9	64.6	65.2	62.4	59.4	57.6
95	71.3	70.8	69.9	70.3	71.4	73.1	75.5	78.5	78.6	76.9	74.7	74.0	74.0	76.3	79.1	79.2	76.3	73.3	71.5
100	87.8	87.6	86.8	86.0	86.3	89.5	92.9	95.6	95.8	94.3	91.6	89.8	89.6	93.2	95.9	96.1	93.7	90.5	87.6
105	107	108	107	105	105	110	113	116	116	115	112	109	109	114	116	116	114	111	108
110	130	131	130	127	125	132	136	138	138	137	135	131	130	138	140	139	137	134	130
115	156	157	156	152	147	158	163	165	164	163	161	156	154	166	167	166	164	160	155
120	184	185	186	182	172	186	193	194	193	192	190	183	181	197	199	197	195	191	185
125	216	216	219	215	198	219	226	228	227	225	224	216	212	230	233	232	229	225	218
130	251	251	256	253	229	253	263	264	263	263	262	253	245	268	269	269	267	264	256
135	289	290	296	293	262	292	301	302	303	305	305	295	279	308	309	308	308	307	298
140	331	334	338	335	297	330	344	342	346	351	351	340	317	351	352	352	352	351	345
145	376	381	382	379	337	360	385	390	395	399	396	387	360	394	397	402	400	397	391
150	405	425	425	422	388	396	428	436	436	447	445	437	416	445	451	442	451	451	439
155	426	431	456	473	457	458	481	477	477	486	505	506	496	509	494	491	494	513	508
160	460	458	465	486	503	526	525	522	518	521	529	546	549	547	547	547	549	553	567
165	500	496	500	507	524	531	538	547	547	543	544	549	561	565	570	568	561	557	550
170	511	510	508	504	496	520	519	522	526	525	518	518	512	521	522	524	520	515	512
175	481	474	472	473	469	470	497	490	479	469	460	454	452	460	486	479	467	455	448
180	513	501	489	533	535	544	526	514	505	484	504	534	527	530	514	502	490	470	515

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.0V I:0.3519A P:42.11W PF:0.9974 Lamp Flux:2030.91x1 lm		
NAME:	TYPE:IRD-27C-PC or EG	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:	PROTECTION ANGLE:

Table--4

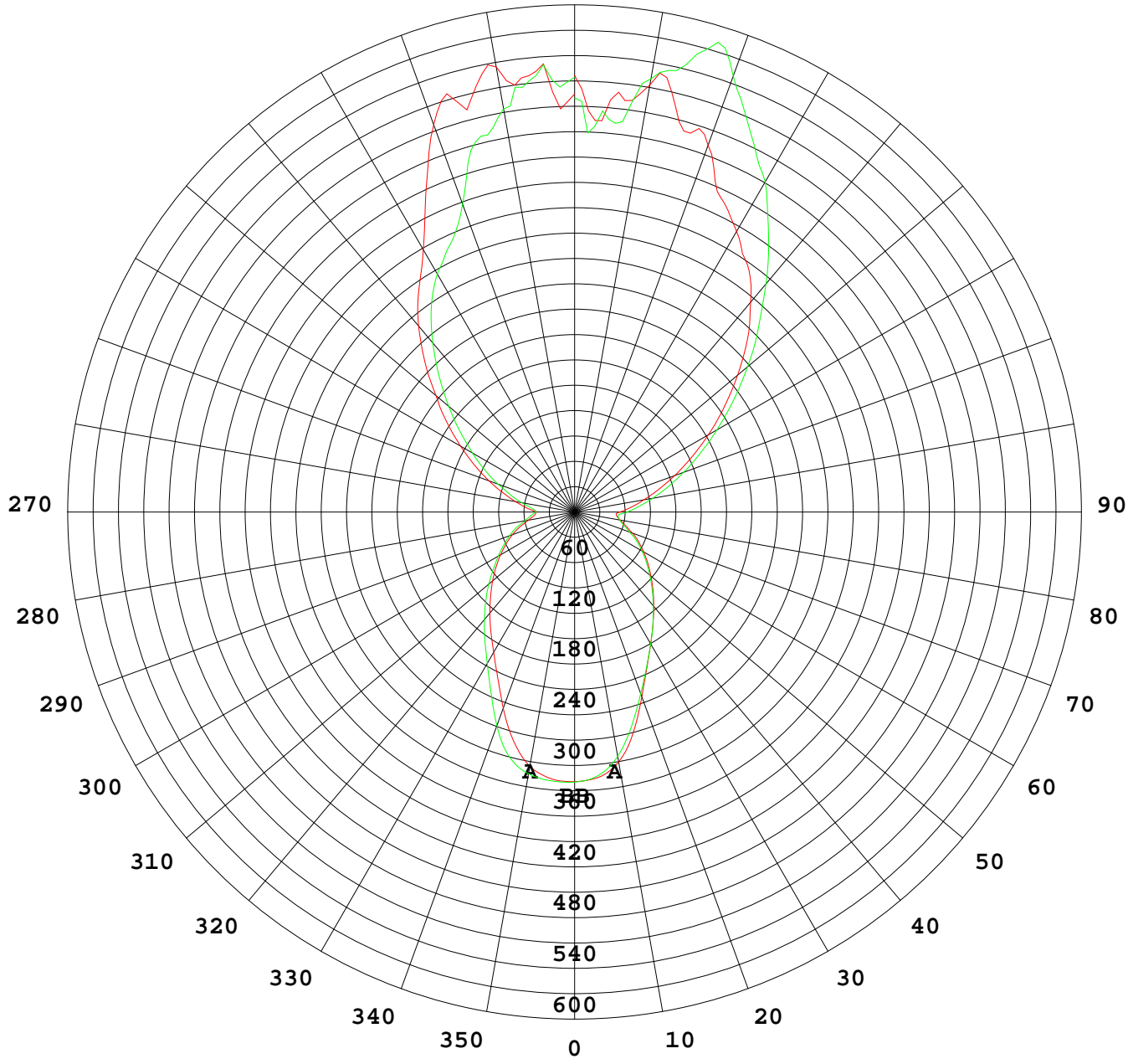
UNIT: cd

C(DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	320	319	319	319	320	319	319	319	319	319	319	318	318	318	319				
5	314	313	313	313	314	315	314	316	314	314	315	316	316	316	316				
10	294	294	293	293	294	296	296	299	299	299	299	301	300	302	302				
15	262	263	263	262	263	263	265	267	268	269	269	270	272	273	276				
20	231	231	232	231	231	231	232	235	235	237	237	239	240	240	242				
25	204	205	206	206	206	205	206	207	208	210	211	212	212	212	212				
30	182	182	184	184	184	183	183	184	186	188	189	191	191	190	190				
35	162	162	164	164	165	165	165	167	167	169	170	172	172	171	171				
40	143	144	145	147	148	149	149	150	151	151	152	154	154	155	154				
45	127	127	129	131	133	134	134	136	135	135	135	137	138	139	139				
50	113	112	114	117	120	121	121	122	120	119	120	122	124	125	125				
55	99.8	99.9	101	104	107	108	108	109	107	106	106	109	111	112	112				
60	88.4	88.7	90.3	92.3	94.9	96.5	97.0	96.8	94.7	93.5	94.2	96.5	98.7	99.7	100				
65	77.9	78.0	79.6	81.5	84.0	85.3	85.6	85.0	83.3	82.5	83.5	85.4	87.5	88.5	88.9				
70	66.4	66.7	67.8	69.5	72.2	73.9	73.9	72.9	71.8	71.8	73.1	74.4	76.8	77.8	78.0				
75	56.8	56.6	57.9	59.5	62.1	64.8	64.9	62.1	60.0	59.5	60.3	62.4	65.4	66.5	66.3				
80	50.0	50.4	50.4	51.8	54.8	57.0	55.7	53.0	51.6	52.2	51.7	53.1	55.6	57.7	56.7				
85	49.3	48.8	48.1	48.0	50.9	53.2	50.5	47.0	45.8	45.5	45.6	46.3	49.8	51.7	50.4				
90	57.1	57.5	57.3	57.4	59.3	59.7	55.8	52.4	50.3	49.2	47.6	46.5	48.5	49.8	47.6				
95	70.0	69.7	70.3	71.1	72.9	73.7	69.8	65.6	62.7	61.3	60.6	61.4	63.2	63.3	60.5				
100	84.8	84.5	86.0	87.4	89.4	89.5	85.7	80.8	76.6	75.0	75.3	76.6	78.6	78.3	75.0				
105	103	103	105	107	109	108	104	99.3	93.7	91.8	93.2	95.3	96.7	96.0	92.4				
110	122	124	128	131	132	130	127	121	113	112	114	117	118	117	113				
115	144	146	154	157	158	157	152	146	134	134	138	142	142	141	137				
120	168	173	183	187	188	187	183	176	157	161	168	169	169	170	165				
125	195	206	218	222	222	220	217	208	184	194	203	202	202	200	197				
130	226	245	257	261	261	257	251	244	214	233	243	242	240	237	231				
135	263	291	300	304	303	298	292	279	249	279	287	285	283	280	272				
140	306	342	348	349	347	343	337	322	287	331	338	337	330	326	317				
145	359	395	396	397	398	393	387	365	340	381	390	391	381	375	360				
150	422	449	447	448	448	448	441	411	407	436	439	438	430	417	395				
155	498	518	515	493	491	512	502	482	482	493	474	463	460	459	427				
160	570	557	552	540	538	540	550	564	532	518	499	485	496	492	493				
165	559	558	566	572	560	547	535	532	535	543	543	532	509	522	508				
170	512	512	506	517	521	522	521	524	527	523	519	510	496	486	487				
175	440	447	474	467	472	463	456	452	453	488	508	504	488	470	460				
180	518	520	511	484	489	494	486	471	512	511	491	479	483	478	484				

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-03-24

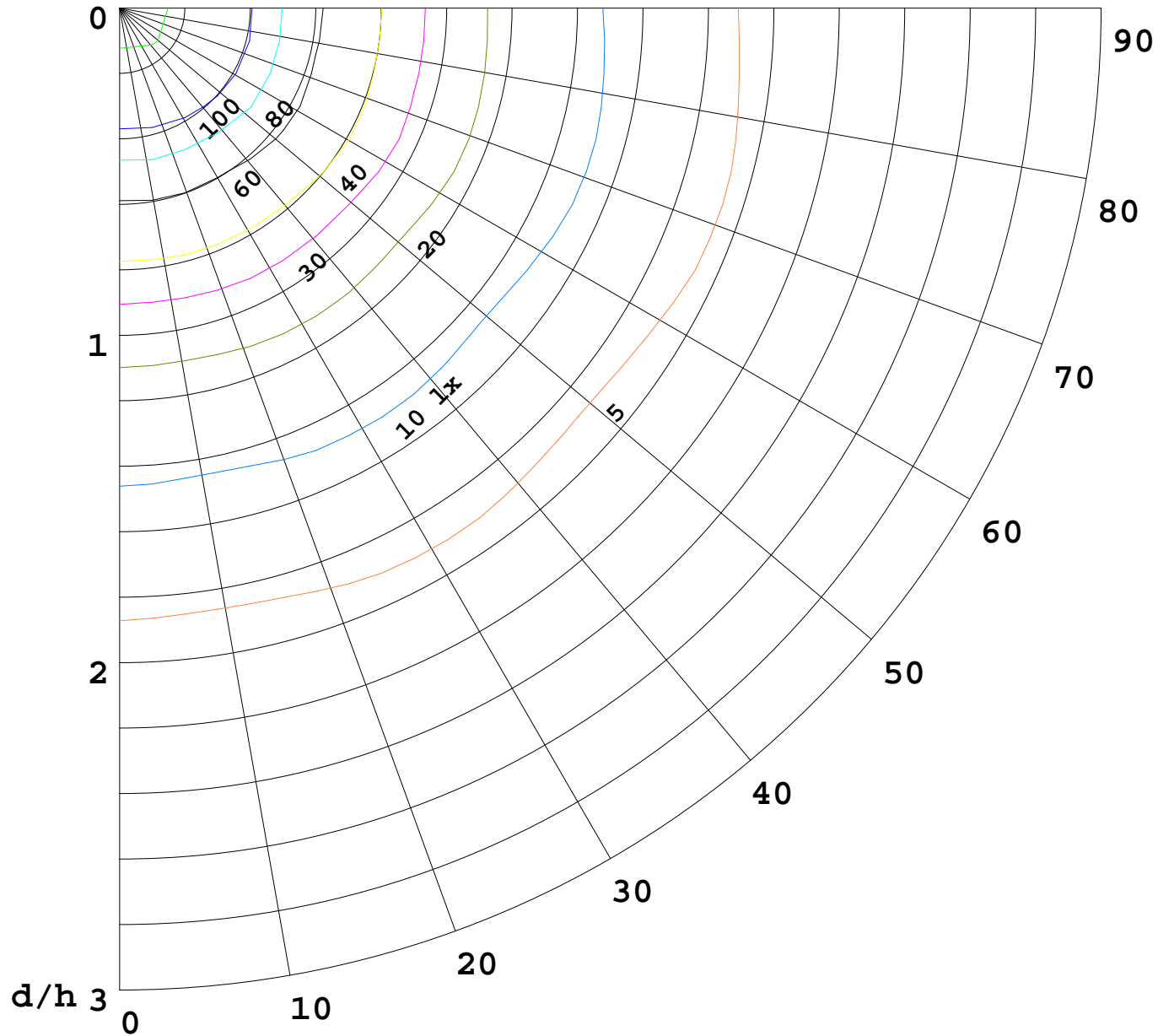
γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

I (cd)



1000 lm

$K = 1$



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

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

