



IESNA LM-79 TEST REPORT

Applicant's name	: Blackjack lighting
Address	: 1553 Barclay Blvd. Buffalo Grove, IL 60089
Brand Name	: Blackjack lighting
Report No.	: BTR66.181.15.0035.04
Product Name	: Wall Mounted fixture
Model Number	: EQS-15S-PC
Tested by (printed name and signature)	: David Zhang 
Title	: Test Engineer
Approved by (printed name and signature)	: Steven Su 
Title	: Approved Signatory
Date of issue	: Mar 23, 2016
Testing Laboratory Name	: BEST Test Service Shenzhen Co., Ltd.
Address	: 1 st Floor, 1 st Building, Weitai Industrial Park, Yingrenshi, Shiyao, Baoan, Shenzhen, China
Accreditation	: DLC/Lighting Facts/UL/ETL/ELI/NVLAP/EPA/DOE
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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Product description:	
Test date	Mar 15, 2016 to Mar 22, 2016
Sample Quantity	1 unit
SKU.....	N/A
Rating(s) (V; Hz)	120V 60HZ
Nominal Power	13W
Nominal Power Factor	N/A
Nominal Lumen Output.....	750lm
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	25°C
Orientation (burning position) of SSL product during test	Lighting Surface Down
Stabilization time	1.5 H
Photometric method	Sphere-spectroradiometer+Goniophotometer
reference standard used	DC 24V 100W Omni-Directional Halogen Calibrated by NIM China
Correction factors applied	Self absorbing applied
Photometric measurement conditions	See test method description below
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 4Π 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.

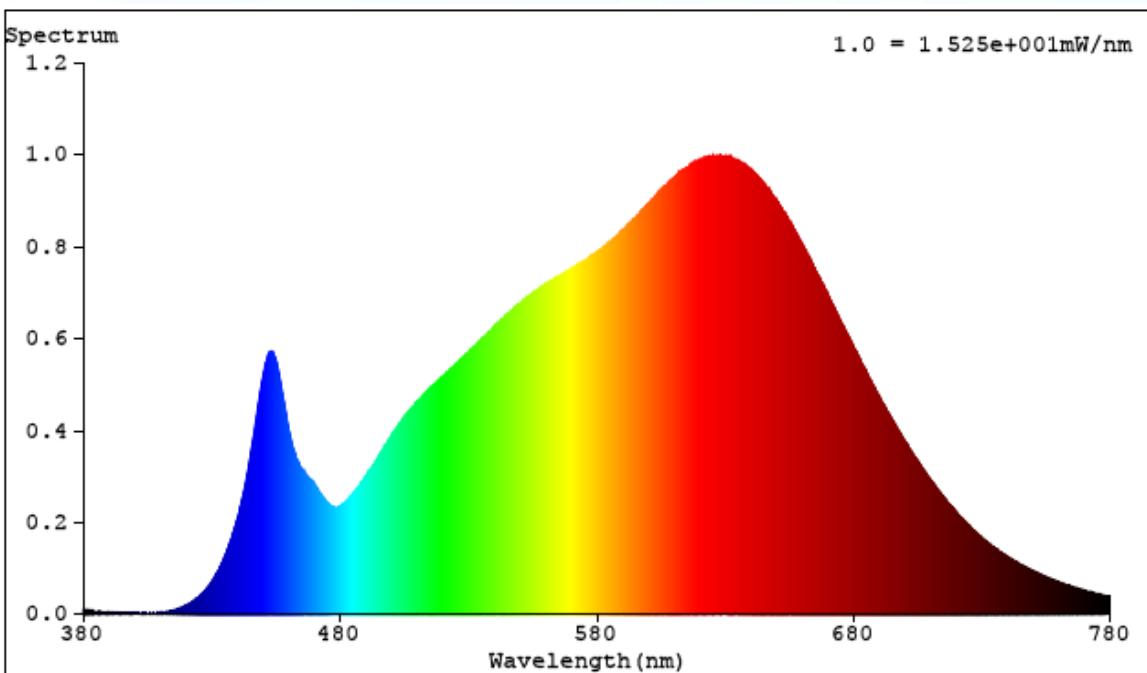
Luminous Intensity

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

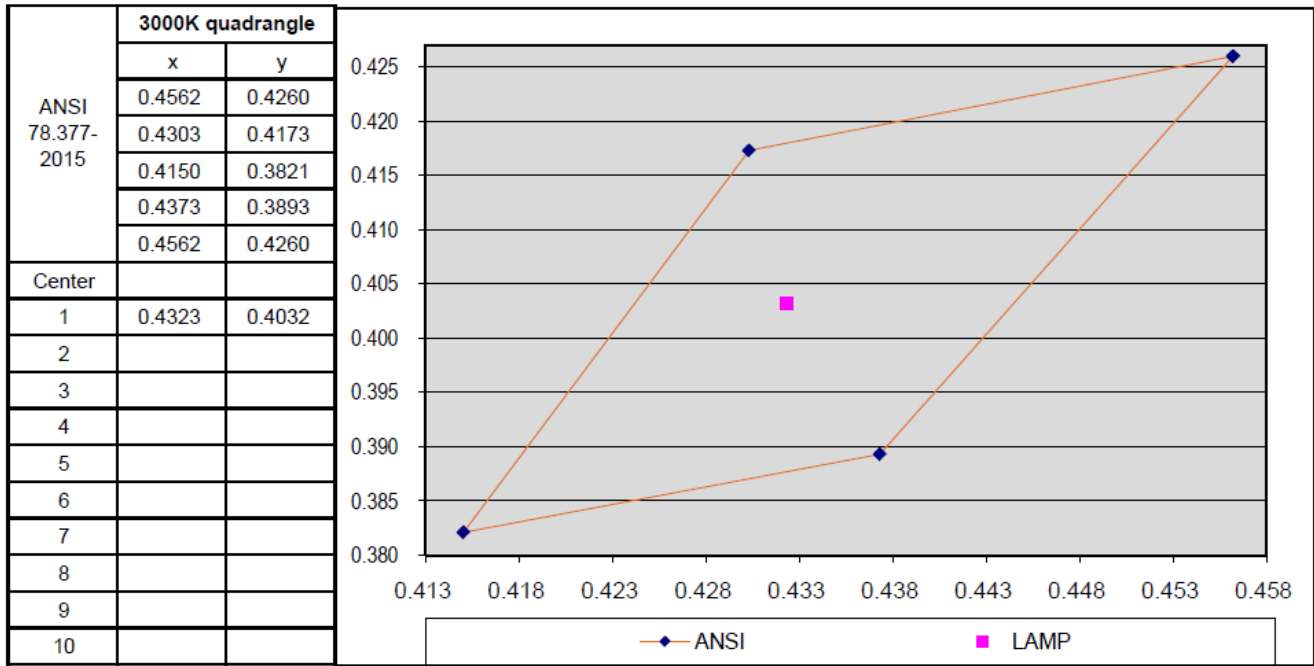
Photometric and Electrical Test Data

Input Voltage (V)	Frequency (Hz)	Input Current (A)	ITHD	Input Power (W)	Power Factor	Lumen Output (Lumens)	Efficiency Lumen/w
120.0	60.0	0.1121	/	13.31	0.9895	751.34	56.43
CCT (K)	CRI (Ra)	R9	x CIE1931	y CIE1931	u' CIE1976	v' CIE1976	Duv CIE1976
3073	94.0	71	0.4323	0.4032	0.2479	0.5204	0.0003

Spectrul Plots



7 Step Quadrangle



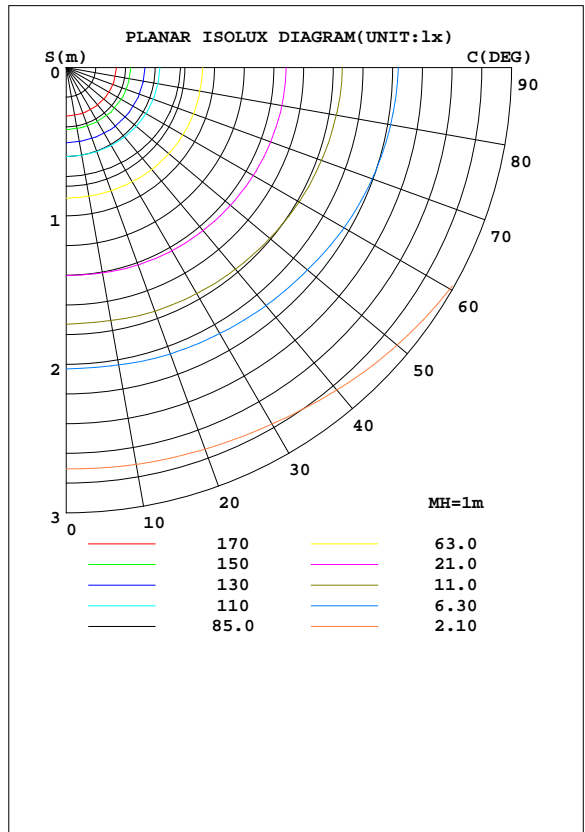
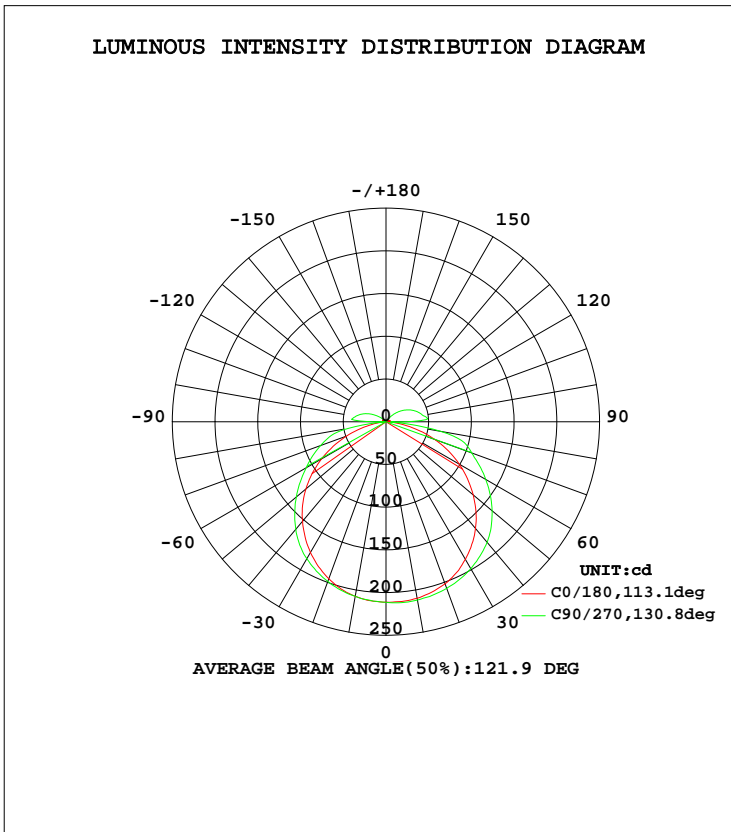
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LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.0V I:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm		
NAME:	TYPE:EQS-15S-PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.32*0.1	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 56.43 lm/W			
MODEL	EQS-15S-PC	I _{max} (cd)	212.6	S/MH(C0/180)	1.30
NOMINAL POWER(W)	13	LOR(%)	100.0	S/MH(C90/270)	1.40
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	751.34	η UP, DN(C0-180)	3.9,42.4
NOMINAL FLUX(lm)	751.342	CIE CLASS	DIRECT	η UP, DN(C180-360)	5.9,47.7
LAMPS INSIDE	1	η up(%)	9.8	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	120	η down(%)	90.2	CIBSE SHR MAX	1.50



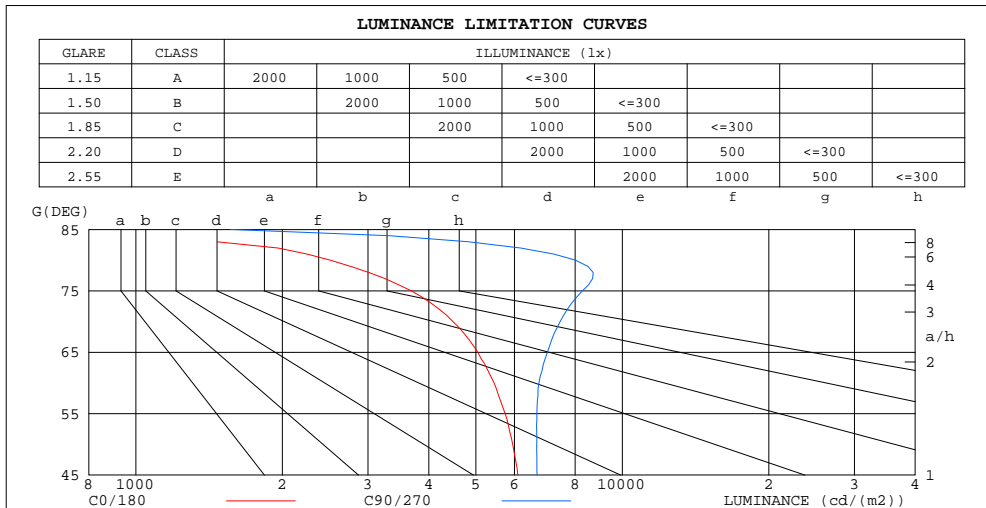
C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.6DEG
 Operators:David
 Test Date:2016-03-17

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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	$\#lum, lamp$
10	207.5	207.2	207.3	207.9	209.8	211.6	211.9	210.5	0- 10	20.07	20.07	2.67,2.67
20	195.6	196.9	199.1	199.6	201.9	206.5	207.5	202.8	10- 20	58.19	78.26	10.4,10.4
30	176.9	180.8	185.2	185.5	186.0	196.1	198.7	189.0	20- 30	89.94	168.2	22.4,22.4
40	152.0	158.5	164.3	165.1	162.9	179.1	184.3	169.8	30- 40	111.3	279.5	37.2,37.2
50	122.4	129.8	137.1	138.2	133.3	156.4	162.2	145.5	40- 50	119.3	398.8	53.1,53.1
60	87.21	96.23	107.8	104.8	98.89	125.4	134.9	114.7	50- 60	112.1	510.9	68,68
70	49.10	61.70	81.50	69.62	60.93	89.46	106.7	78.09	60- 70	91.22	602.1	80.1,80.1
80	13.95	26.70	44.53	35.18	21.19	48.29	65.14	38.26	70- 80	60.44	662.5	88.2,88.2
90	2.608	9.044	15.86	7.095	2.682	13.49	24.56	16.44	80- 90	14.86	677.4	90.2,90.2
100	3.705	23.74	36.20	22.76	4.968	32.72	43.77	28.25	90-100	25.12	702.5	93.5,93.5
110	4.399	16.76	27.57	14.11	4.856	26.43	36.87	22.94	100-110	23.10	725.6	96.6,96.6
120	4.601	7.150	16.65	4.013	1.891	16.25	27.87	15.01	110-120	14.99	740.6	98.6,98.6
130	2.976	1.488	5.465	0.6481	0.5842	6.759	17.46	5.793	120-130	7.220	747.8	99.5,99.5
140	1.973	0.6975	0.6784	0.6116	0.5842	0.5961	6.259	0.8261	130-140	2.443	750.3	99.9,99.9
150	0.5114	0.5965	0.6784	0.5750	0.5842	0.6145	0.5317	0.4928	140-150	0.5736	750.8	99.9,99.9
160	0.5115	0.7159	0.6050	0.5475	0.5845	0.6692	0.4584	0.5111	150-160	0.2773	751.1	100,100
170	0.5660	0.7962	0.6050	0.5659	0.5842	0.6237	0.5684	0.5385	160-170	0.1602	751.3	100,100
180	0.5660	0.7243	0.6050	0.5389	0.5842	0.7064	0.5500	0.5109	170-180	0.0553	751.3	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	335	1568
80	2511	8014
75	3686	8274
70	4486	7446
65	5044	7013
60	5451	6739
55	5743	6673
50	5952	6666
45	6099	6680

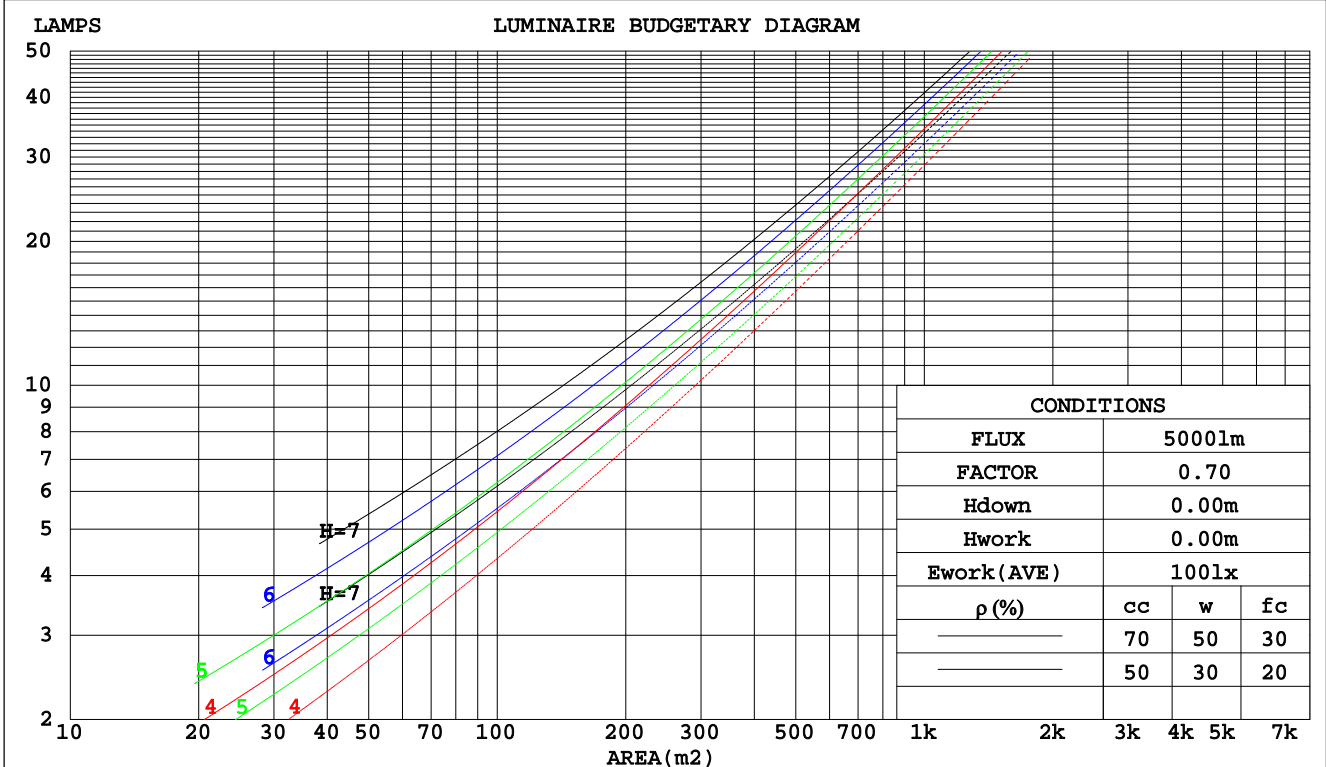
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2016-03-17

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.0V I:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm		
NAME:	TYPE:EQS-15S-PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.32*0.1	PROTECTION 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	1.17	1.17	1.17	1.13	1.13	1.13	1.06	1.06	1.06	.99	.99	.99	.93	.93	.93	.90
1.0	1.01	.97	.93	.98	.94	.90	.92	.88	.85	.86	.83	.81	.81	.79	.77	.74
2.0	.87	.80	.74	.85	.78	.73	.79	.74	.70	.75	.70	.66	.70	.67	.64	.61
3.0	.76	.68	.61	.74	.66	.60	.69	.63	.58	.65	.60	.55	.62	.57	.53	.51
4.0	.67	.58	.51	.65	.57	.50	.61	.54	.49	.58	.52	.47	.55	.50	.45	.43
5.0	.60	.51	.44	.58	.50	.43	.55	.47	.42	.52	.45	.40	.49	.43	.39	.37
6.0	.54	.45	.38	.52	.44	.37	.49	.42	.36	.47	.40	.35	.44	.39	.34	.32
7.0	.48	.40	.33	.47	.39	.33	.45	.37	.32	.42	.36	.31	.40	.35	.30	.28
8.0	.44	.35	.30	.43	.35	.29	.41	.34	.28	.39	.32	.28	.37	.31	.27	.25
9.0	.40	.32	.26	.39	.31	.26	.37	.30	.25	.36	.29	.25	.34	.28	.24	.22
10.0	.37	.29	.24	.36	.29	.24	.35	.28	.23	.33	.27	.22	.32	.26	.22	.20



C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.6DEG
 Operators:David
 Test Date:2016-03-17

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:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm					
NAME:		TYPE:EQS-15S-PC		WEIGHT:	
SPEC.:		DIM.:		SERIAL No.:	
MFR.: Blackjack Lighting		SUR.:0.32*0.1		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	.320	.182	.058	.310	.177	.056	.291	.167	.053	.274	.158	.051	.258	.149	.048	
2.0	.299	.164	.050	.290	.160	.049	.273	.152	.047	.257	.144	.045	.243	.137	.043	
3.0	.275	.146	.044	.267	.143	.043	.252	.136	.041	.238	.130	.040	.224	.124	.038	
4.0	.253	.131	.039	.245	.128	.038	.232	.123	.037	.219	.118	.035	.207	.112	.034	
5.0	.233	.119	.034	.226	.116	.034	.214	.111	.033	.202	.107	.032	.191	.102	.031	
6.0	.215	.108	.031	.209	.106	.030	.198	.101	.030	.187	.097	.029	.178	.094	.028	
7.0	.200	.099	.028	.194	.097	.028	.184	.093	.027	.175	.090	.026	.166	.086	.025	
8.0	.186	.091	.026	.181	.089	.025	.172	.086	.025	.163	.083	.024	.155	.080	.023	
9.0	.174	.084	.024	.170	.083	.023	.161	.080	.023	.153	.077	.022	.146	.074	.021	
10.0	.164	.078	.022	.160	.077	.021	.152	.074	.021	.144	.072	.020	.137	.069	.020	

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	.265	.265	.265	.227	.227	.227	.155	.155	.155	.089	.089	.089	.028	.028	.028	
1.0	.257	.232	.209	.220	.199	.180	.150	.137	.124	.086	.079	.072	.028	.025	.023	
2.0	.249	.208	.173	.214	.179	.150	.146	.124	.104	.084	.072	.061	.027	.023	.020	
3.0	.242	.191	.150	.207	.165	.130	.142	.114	.091	.082	.067	.054	.026	.022	.018	
4.0	.235	.178	.135	.201	.154	.117	.138	.107	.082	.080	.063	.049	.026	.020	.016	
5.0	.227	.168	.124	.195	.145	.108	.134	.101	.076	.078	.060	.045	.025	.019	.015	
6.0	.220	.160	.116	.189	.138	.101	.131	.097	.072	.076	.057	.043	.024	.019	.014	
7.0	.213	.153	.111	.183	.133	.096	.127	.093	.068	.074	.055	.041	.024	.018	.013	
8.0	.207	.147	.106	.178	.128	.093	.123	.090	.066	.072	.053	.039	.023	.017	.013	
9.0	.201	.142	.103	.173	.124	.090	.120	.087	.064	.070	.051	.038	.023	.017	.013	
10.0	.195	.138	.100	.168	.120	.088	.117	.084	.062	.068	.050	.037	.022	.016	.012	

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.6DEG
 Operators:David
 Test Date:2016-03-17

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:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm										
NAME:			TYPE:EQS-15S-PC				WEIGHT:			
SPEC.:			DIM.:				SERIAL No.:			
MFR.: Blackjack Lighting			SUR.:0.32*0.1				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	18.0	19.4	18.4	19.8	20.2	18.8	20.2	19.2	20.6	21.0
3H	19.2	20.5	19.7	20.9	21.4	20.8	22.1	21.2	22.5	23.0
4H	19.6	20.8	20.1	21.3	21.7	21.8	23.1	22.3	23.5	24.0
6H	19.8	20.9	20.2	21.4	21.8	22.7	23.9	23.2	24.3	24.8
8H	19.7	20.9	20.2	21.3	21.8	22.9	24.0	23.4	24.5	25.0
12H	19.7	20.8	20.2	21.2	21.7	22.9	24.0	23.4	24.4	24.9
4H 2H	18.6	19.9	19.1	20.3	20.8	19.3	20.5	19.8	21.0	21.4
3H	20.1	21.1	20.5	21.6	22.1	21.5	22.6	22.0	23.0	23.5
4H	20.5	21.5	21.1	22.0	22.5	22.7	23.6	23.2	24.1	24.7
6H	20.8	21.6	21.3	22.1	22.7	23.7	24.6	24.2	25.1	25.7
8H	20.8	21.6	21.3	22.1	22.7	23.9	24.7	24.5	25.3	25.8
12H	20.7	21.5	21.3	22.0	22.6	23.9	24.6	24.5	25.2	25.8
8H 4H	20.9	21.7	21.5	22.3	22.9	22.8	23.6	23.4	24.2	24.7
6H	21.3	21.9	21.9	22.5	23.1	24.0	24.7	24.6	25.2	25.9
8H	21.3	21.9	21.9	22.5	23.2	24.3	24.9	24.9	25.4	26.1
12H	21.3	21.8	21.9	22.4	23.1	24.3	24.8	24.9	25.4	26.1
12H 4H	21.0	21.7	21.6	22.3	22.9	22.8	23.5	23.4	24.1	24.7
6H	21.4	22.0	22.0	22.6	23.2	24.0	24.6	24.6	25.2	25.8
8H	21.4	21.9	22.1	22.6	23.2	24.3	24.8	24.9	25.4	26.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.4					+ 0.1 / - 0.2				
2.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.2				

CIE Pub.117 Corrected 751.3 lm Total Lamp Luminous Flux.(8log(F/F0) = -1.0)

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UTILIZATION FACTORS TABLE

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NAME:	TYPE:EQS-15S-PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.32*0.1	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	53	41	34	52	40	34	50	40	33	27
0.80	62	50	43	61	50	42	59	49	42	35
1.00	71	59	51	69	58	51	66	59	50	42
1.25	78	66	59	76	65	58	73	63	57	49
1.50	83	72	65	81	71	64	77	68	62	53
2.00	90	81	73	88	79	72	83	76	70	61
2.50	94	86	79	92	84	78	87	80	75	65
3.00	98	90	84	95	88	82	90	84	79	69
4.00	102	96	91	99	93	89	94	89	85	73
5.00	105	100	95	102	97	93	96	92	88	76
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:25.6DEG
 Operators:David
 Test Date:2016-03-17

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:

ISOCANDELA DIAGRAM

Test:U:120.0V I:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm		
NAME:	TYPE:EQS-15S-PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.32*0.1	PROTECTION ANGLE:

Conical surface Flux(90deg):

339.12 lm

%lum = 45.1%

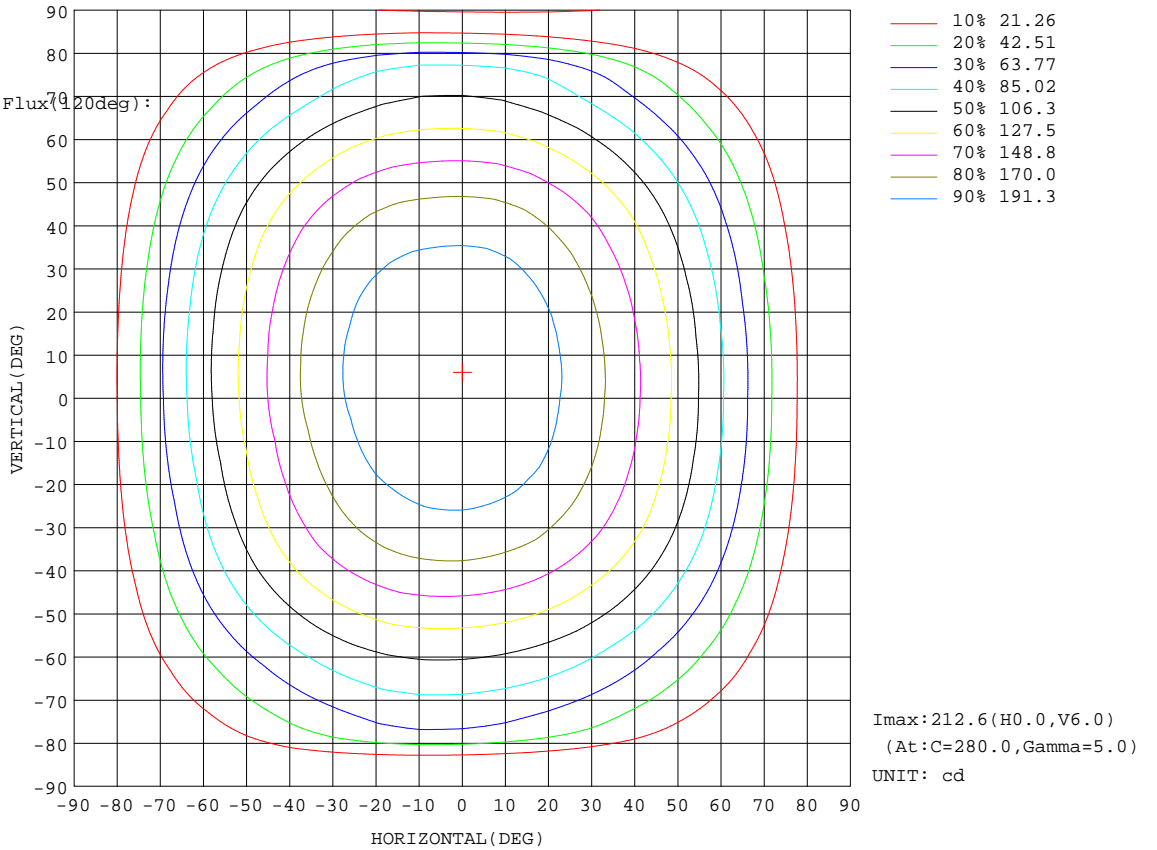
%lamp = 45.1%

Conical surface Flux(70deg):

510.89 lm

%lum = 68.0%

%lamp = 68.0%

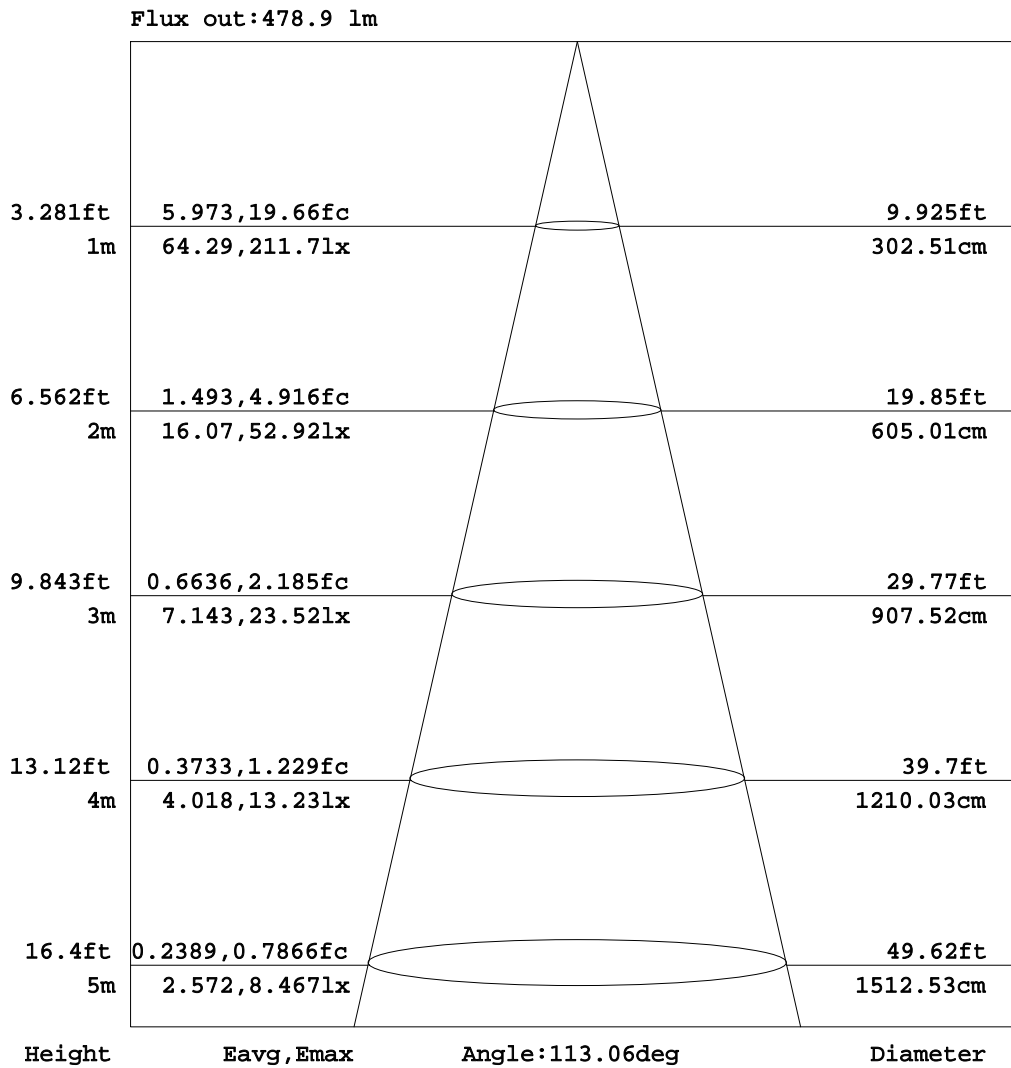


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.6DEG
 Operators: David
 Test Date: 2016-03-17

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:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm		
NAME:	TYPE:EQS-15S-PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.32*0.1	PROTECTION ANGLE:



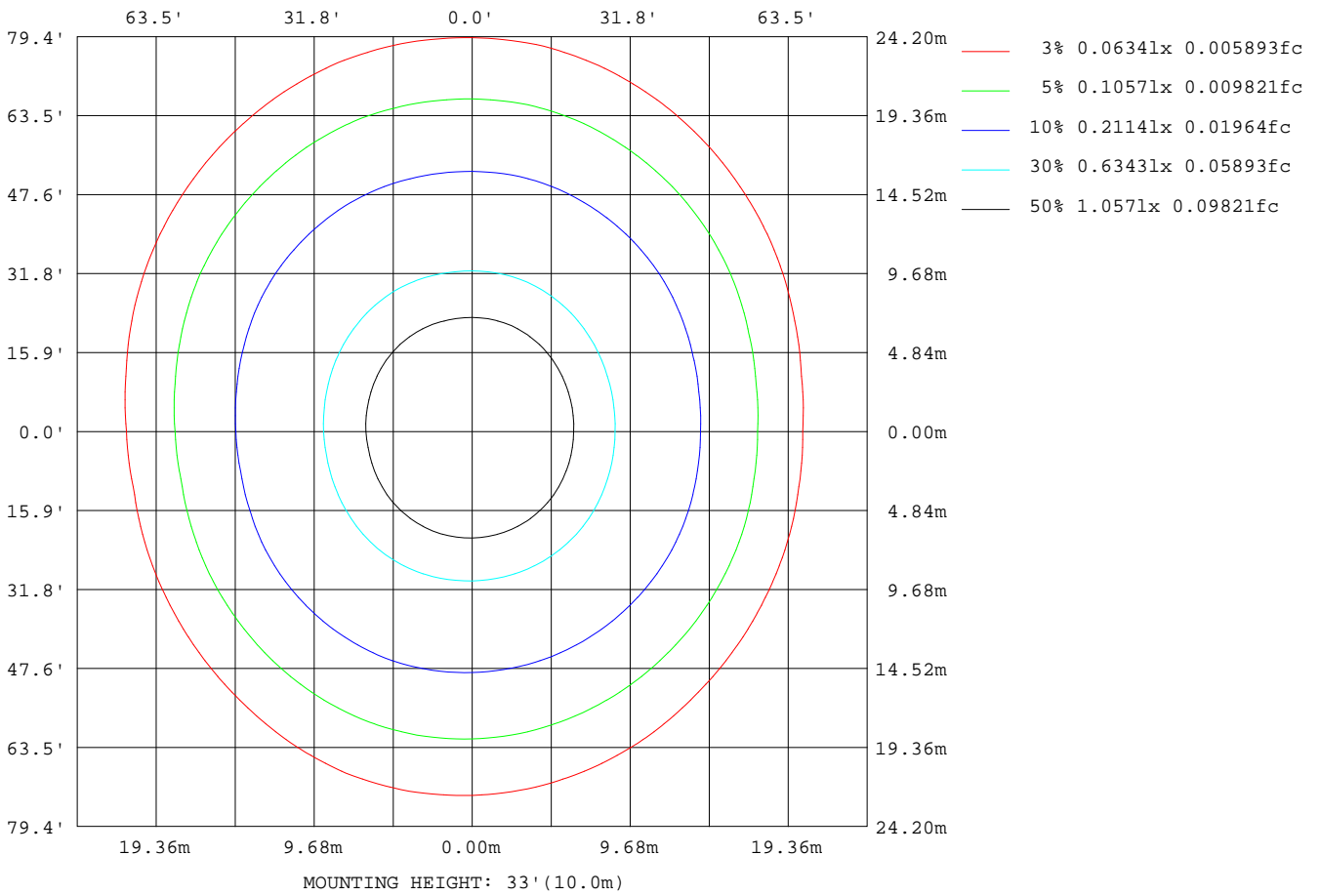
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.6DEG
 Operators:David
 Test Date:2016-03-17

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

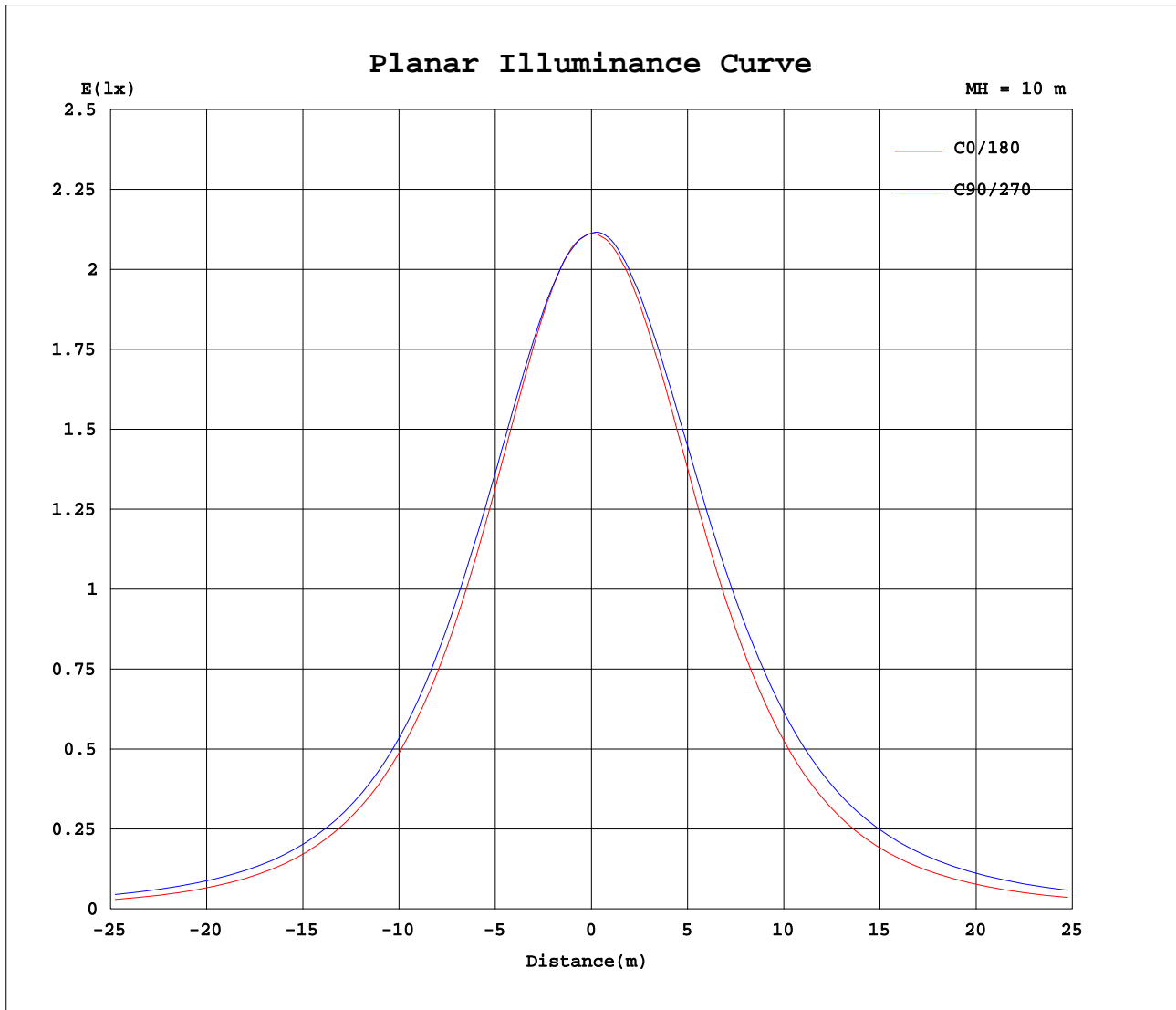
Test:U:120.0V I:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm		
NAME:	TYPE:EQS-15S-PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.32*0.1	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.6DEG
 Operators:David
 Test Date:2016-03-17

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:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2016-03-17

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:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm		
NAME:	TYPE:EQS-15S-PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.32*0.1	PROTECTION 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	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211
5	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	211
10	207	207	207	207	207	207	207	207	207	207	208	208	207	208	208	208	208	209	210
15	203	202	202	203	203	203	203	203	204	204	204	204	204	204	205	205	205	205	207
20	196	195	196	196	197	197	198	198	198	199	199	199	199	199	200	200	200	200	202
25	187	187	187	188	189	190	191	191	192	193	193	193	193	193	194	193	193	193	195
30	177	177	177	179	180	181	183	184	184	185	186	186	186	186	185	185	184	184	186
35	165	165	166	167	169	171	173	174	175	176	177	178	177	177	176	174	173	173	175
40	152	152	153	155	157	160	161	162	163	164	165	166	167	166	164	162	161	161	163
45	138	138	140	142	144	146	147	149	150	151	152	154	154	153	152	150	148	147	149
50	122	123	125	127	129	131	133	134	136	137	138	140	139	139	138	135	133	131	133
55	105	106	108	110	112	115	117	119	121	122	124	125	124	123	121	119	116	114	116
60	87.2	87.6	90.2	92.3	94.9	97.6	101	104	106	108	109	110	108	106	103	101	98.6	96.9	98.9
65	68.2	68.7	71.1	73.3	76.6	80.4	85.4	89.5	92.6	94.8	95.8	95.2	92.3	88.5	85.4	82.7	80.7	78.5	80.4
70	49.1	49.8	51.5	54.4	58.9	64.5	70.1	75.0	78.9	81.5	82.5	81.4	77.2	72.1	67.2	63.7	61.3	59.3	60.9
75	30.5	30.7	32.5	36.5	41.9	47.7	54.0	60.1	65.2	68.5	69.6	67.2	61.8	55.9	50.0	44.4	41.1	39.3	40.7
80	14.0	13.9	15.5	18.8	23.7	29.7	34.7	38.5	41.7	44.5	46.5	46.3	43.6	38.6	31.8	26.0	21.6	20.1	21.2
85	0.93	0.85	1.12	1.95	3.18	4.14	4.12	3.87	3.95	4.37	5.17	6.55	7.97	9.30	9.15	6.61	5.12	4.38	4.74
90	2.61	2.92	4.18	6.52	7.96	10.1	12.4	14.1	15.4	15.9	15.6	13.8	11.2	8.43	5.76	4.26	3.51	2.18	2.68
95	3.16	3.76	9.02	15.4	20.8	25.8	30.7	35.0	38.6	39.9	39.7	37.5	32.4	26.4	20.1	14.2	8.64	3.54	4.38
100	3.71	4.05	8.23	15.6	21.2	26.3	30.6	33.8	35.9	36.2	35.9	34.2	30.7	25.7	19.9	13.8	8.00	3.54	4.97
105	4.16	4.04	5.43	12.7	18.4	23.3	27.3	30.3	32.2	32.3	31.6	29.6	26.3	21.8	16.3	10.6	5.28	3.70	5.22
110	4.40	4.11	2.54	8.99	14.4	19.1	22.8	25.5	27.3	27.6	26.8	24.6	21.1	16.6	11.6	6.39	3.89	3.69	4.86
115	4.58	4.31	2.18	5.25	9.88	14.2	17.6	20.2	21.8	22.3	21.5	19.3	15.8	11.2	6.23	2.00	2.84	2.98	3.98
120	4.60	4.31	2.03	3.21	5.36	8.94	12.0	14.7	16.3	16.7	16.0	13.7	10.4	6.23	1.79	0.67	1.27	1.54	1.89
125	3.91	2.94	0.95	2.92	2.28	4.01	6.55	8.96	10.6	11.1	10.2	8.20	5.30	1.96	0.66	0.51	0.51	0.45	0.57
130	2.98	3.78	2.21	1.99	1.87	1.10	1.94	3.86	5.13	5.46	4.84	3.25	1.22	0.71	0.58	0.49	0.51	0.45	0.58
135	2.65	3.20	2.49	1.19	1.38	0.83	0.68	0.68	0.93	1.07	0.92	0.77	0.70	0.69	0.57	0.47	0.49	0.45	0.58
140	1.97	2.21	2.05	1.01	0.68	0.72	0.66	0.64	0.71	0.68	0.73	0.70	0.68	0.66	0.57	0.47	0.47	0.45	0.58
145	1.19	1.32	1.30	0.95	0.50	0.55	0.66	0.64	0.71	0.68	0.66	0.62	0.64	0.62	0.57	0.47	0.45	0.53	0.58
150	0.51	0.68	0.79	0.79	0.70	0.50	0.59	0.66	0.71	0.68	0.66	0.62	0.64	0.60	0.55	0.51	0.45	0.54	0.58
155	0.51	0.73	0.79	0.81	0.77	0.61	0.57	0.57	0.62	0.66	0.64	0.62	0.60	0.57	0.53	0.53	0.53	0.56	0.58
160	0.51	0.71	0.79	0.84	0.84	0.59	0.55	0.49	0.60	0.61	0.62	0.59	0.57	0.55	0.55	0.53	0.55	0.56	0.58
165	0.57	0.68	0.75	0.61	0.55	0.55	0.53	0.44	0.53	0.61	0.62	0.55	0.49	0.55	0.57	0.53	0.53	0.53	0.60
170	0.57	0.58	0.59	0.59	0.80	0.79	0.53	0.44	0.53	0.61	0.62	0.57	0.49	0.57	0.57	0.53	0.51	0.51	0.58
175	0.57	0.58	0.59	0.77	0.81	0.77	0.53	0.44	0.55	0.61	0.61	0.57	0.49	0.58	0.57	0.56	0.53	0.53	0.58
180	0.57	0.60	0.59	0.72	0.77	0.68	0.53	0.48	0.55	0.61	0.59	0.57	0.49	0.51	0.57	0.56	0.53	0.56	0.58

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.6DEG
 Operators:David
 Test Date:2016-03-17

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:0.1121A P:13.31W PF:0.9895 Lamp Flux:751.342x1 lm		
NAME:	TYPE:EQS-15S-PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.32*0.1	PROTECTION ANGLE:

Table--2

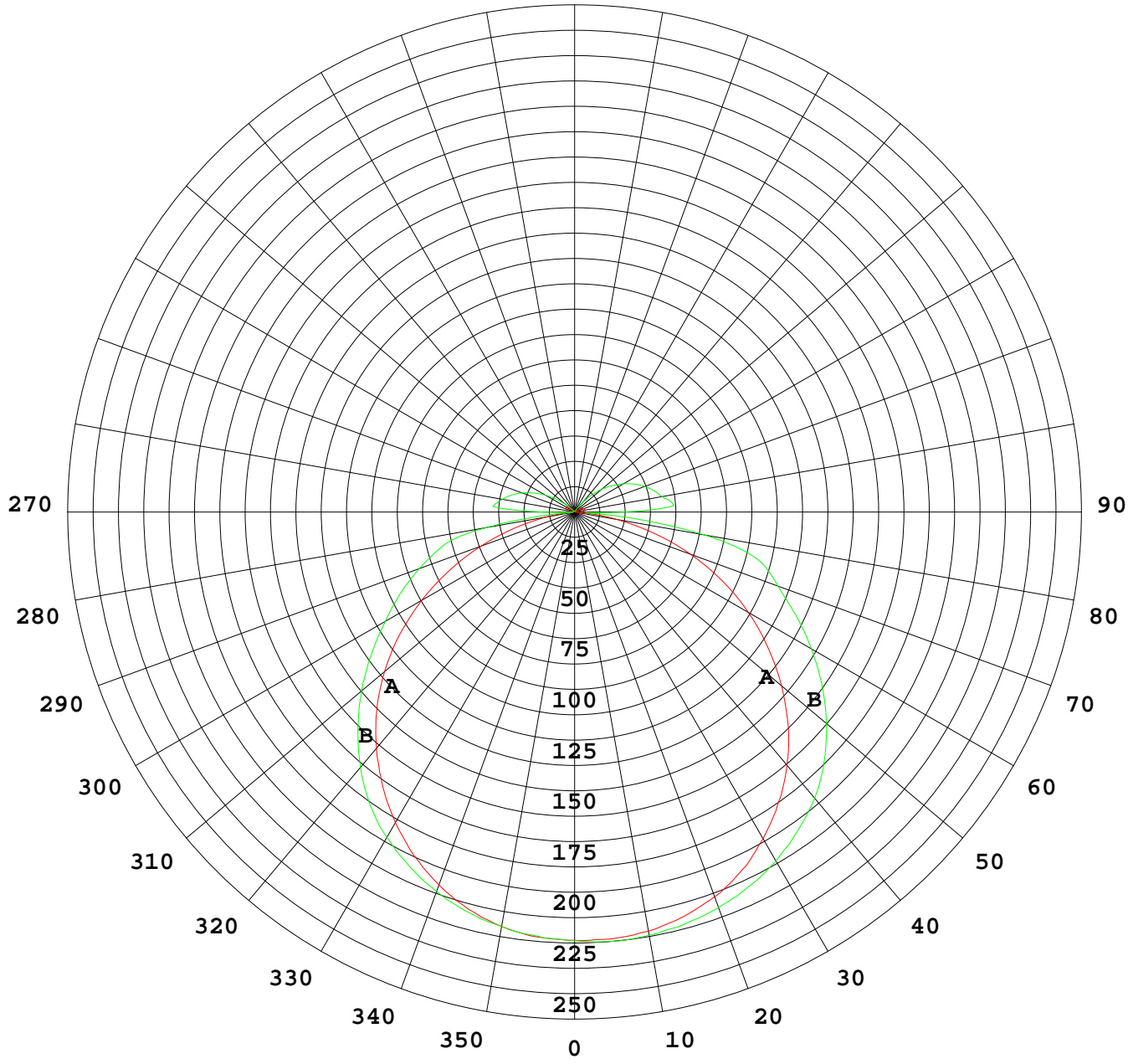
UNIT: cd

C(DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211	211		
5	211	211	212	212	212	213	212	212	212	213	212	212	212	211	211	211	210		
10	210	211	211	212	212	212	212	212	212	212	212	211	211	210	209	208	208		
15	208	208	209	210	210	210	210	210	210	210	210	209	208	207	205	205	203		
20	203	205	205	206	207	208	208	208	208	207	207	205	204	202	200	198	197		
25	196	198	200	201	203	204	204	204	204	203	203	201	198	195	192	190	188		
30	188	190	192	195	197	198	198	198	199	198	197	194	191	187	183	181	178		
35	177	180	184	187	190	192	192	192	192	191	190	186	183	178	174	170	167		
40	166	169	173	178	181	184	184	185	184	184	181	177	172	167	162	157	154		
45	152	156	161	166	171	174	175	175	174	174	171	167	161	155	149	144	140		
50	136	142	148	154	159	162	163	163	162	162	159	154	149	142	135	129	125		
55	120	126	133	139	144	148	150	149	149	148	145	140	134	128	120	113	108		
60	103	110	117	123	128	133	135	135	135	134	130	124	118	111	104	95.8	89.9		
65	85.0	92.0	98.9	105	111	116	120	121	120	119	114	108	101	93.0	85.2	77.2	71.0		
70	65.8	72.5	79.2	86.1	92.8	99.0	104	107	107	105	99.0	91.3	82.5	73.7	65.7	58.3	52.0		
75	45.2	50.9	57.6	65.4	74.7	83.7	90.9	95.2	95.1	92.8	85.8	75.4	64.0	53.6	45.2	38.4	33.2		
80	24.4	28.3	35.0	43.8	52.8	60.0	65.0	67.0	65.1	63.1	58.1	51.2	43.0	33.6	24.8	19.6	16.1		
85	5.69	8.08	9.99	13.1	16.2	18.1	19.4	19.7	18.2	16.7	14.7	12.4	9.76	6.72	3.76	2.02	1.34		
90	3.34	5.70	8.68	11.8	15.1	18.3	21.1	23.3	24.6	25.2	24.2	21.9	18.5	14.4	10.9	6.52	2.58		
95	6.10	14.7	22.7	29.8	36.2	42.2	46.5	48.7	48.5	48.1	44.6	39.2	32.9	25.6	18.4	10.2	3.36		
100	6.35	14.4	22.9	29.8	35.6	40.4	43.3	43.9	43.8	43.6	41.2	36.9	31.5	25.0	17.7	9.16	3.87		
105	5.68	12.2	20.6	27.4	33.0	37.4	39.8	40.6	40.6	40.2	38.4	34.4	29.2	22.8	15.7	7.14	4.23		
110	4.55	9.00	17.2	23.8	29.0	33.3	35.9	36.9	36.9	36.3	34.7	31.2	26.1	19.8	12.9	4.83	4.50		
115	3.68	5.32	12.5	18.7	24.1	28.5	31.3	32.5	32.7	31.9	30.1	27.0	22.2	16.3	9.58	3.40	4.57		
120	1.76	1.40	7.48	13.5	19.0	23.4	26.3	27.7	27.9	27.0	25.0	22.1	17.8	12.2	6.33	3.40	4.55		
125	0.53	0.59	3.12	8.82	14.0	18.2	21.1	22.6	22.7	21.9	19.5	16.6	12.8	8.02	4.00	3.06	2.71		
130	0.60	0.60	0.62	4.45	9.06	13.0	15.6	17.1	17.5	16.4	14.0	11.0	7.59	4.00	3.51	1.92	3.90		
135	0.60	0.59	0.61	0.92	4.39	7.73	10.1	11.6	11.8	10.9	8.69	5.77	2.88	2.18	2.05	1.89	3.39		
140	0.60	0.60	0.61	0.53	0.66	2.97	4.82	6.05	6.26	5.44	3.71	1.39	0.60	1.05	1.07	1.96	2.50		
145	0.60	0.62	0.62	0.62	0.53	0.57	0.66	1.46	1.61	1.12	0.62	0.55	0.48	0.53	0.64	1.33	1.42		
150	0.66	0.62	0.64	0.70	0.53	0.57	0.55	0.57	0.53	0.55	0.61	0.55	0.48	0.51	0.55	0.54	0.42		
155	0.79	0.77	0.75	0.72	0.62	0.57	0.53	0.57	0.48	0.51	0.53	0.46	0.48	0.55	0.56	0.53	0.56		
160	0.58	0.64	0.75	0.72	0.62	0.57	0.53	0.53	0.46	0.48	0.44	0.46	0.48	0.55	0.56	0.53	0.53		
165	0.57	0.57	0.59	0.62	0.62	0.57	0.48	0.46	0.50	0.51	0.48	0.48	0.49	0.58	0.56	0.53	0.53		
170	0.57	0.62	0.59	0.62	0.62	0.55	0.48	0.48	0.57	0.61	0.59	0.57	0.53	0.55	0.56	0.56	0.56		
175	0.57	0.60	0.59	0.70	0.66	0.59	0.51	0.48	0.57	0.61	0.59	0.57	0.53	0.55	0.56	0.56	0.53		
180	0.57	0.60	0.59	0.72	0.70	0.66	0.51	0.49	0.55	0.61	0.59	0.57	0.47	0.55	0.56	0.56	0.53		

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.6DEG
 Operators:David
 Test Date:2016-03-17

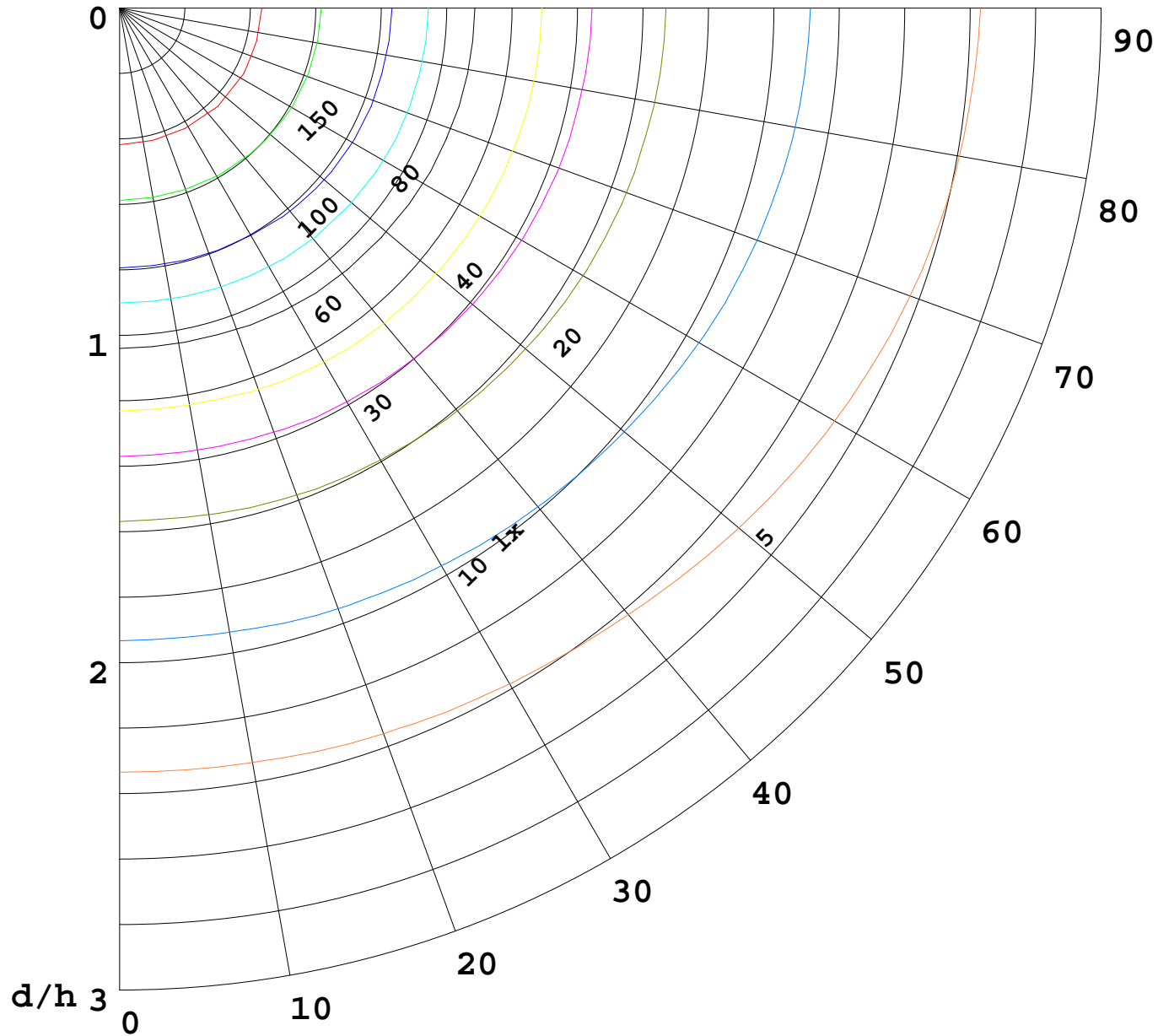
γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.287
 Humidity:67.1%
 Test Distance:26.000m [K=1.0000]
 Remarks:

I(cd)



1000 lm

$K = 1$



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

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

