IESNA LM-79 TEST REPORT

Applicant's name .....:	Blackjack Lighting
Address .....:	1553 Barclay Blvd. Buffalo Grove, IL 60089
Brand Name.....:	Blackjack Lighting
Report No......:	BTR66.181.17.0011.30
Product Name.....:	Nano 14" Sconce, Satin Nickel or Polished Chrome
Model Number .....:	NAN-14S-SN or PC

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 .....: Nov 24, 2017

Testing Laboratory Name .....:	BEST Test Service Shenzhen Co., Ltd.
Address .....:	1st Floor, 1st Building, Weitai Industrial Park, Yingrenshi, Shiyan, Baoan, Shenzhen, China Tel:+86-755-28236006, Email: 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

description:	
Test date.....:	Nov 20, 2017 to Nov 24, 2017
Sample Quantity .....:	1 unit
SKU.....:	N/A
Rating(s) (V; Hz) .....:	120V 60Hz
Nominal Power.....:	15 W
Nominal Power Factor .....:	N/A
Nominal Lumen Output.....:	740 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℃
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℃ ±1℃ 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.

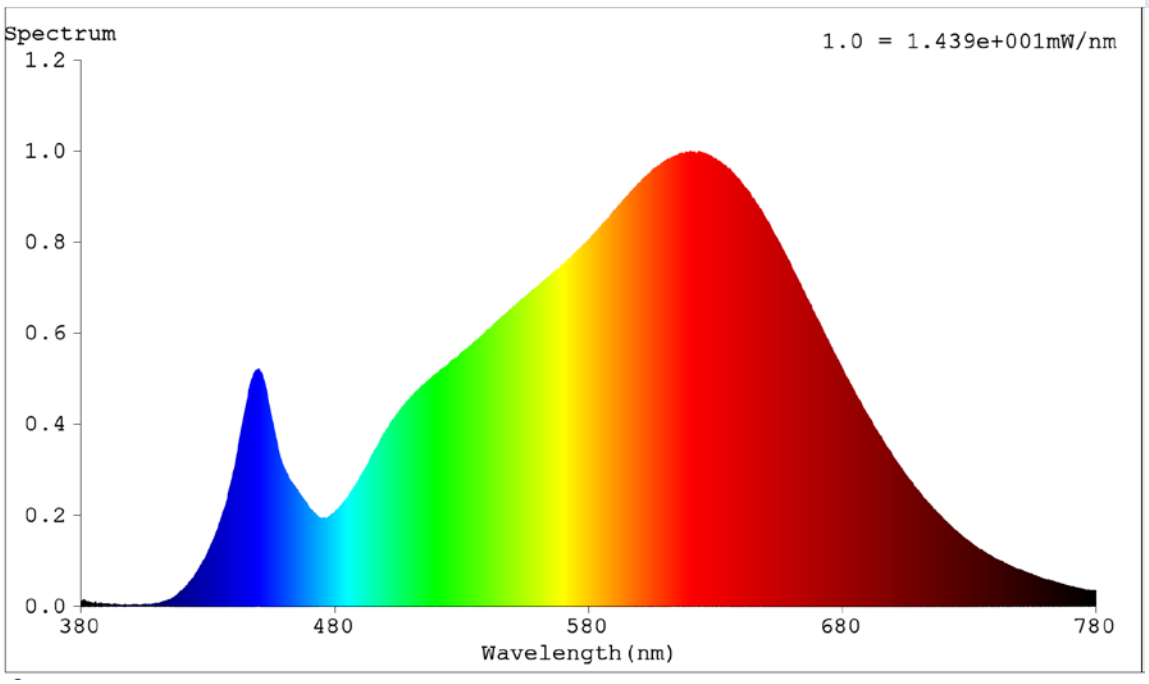
Luminious Intensity

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

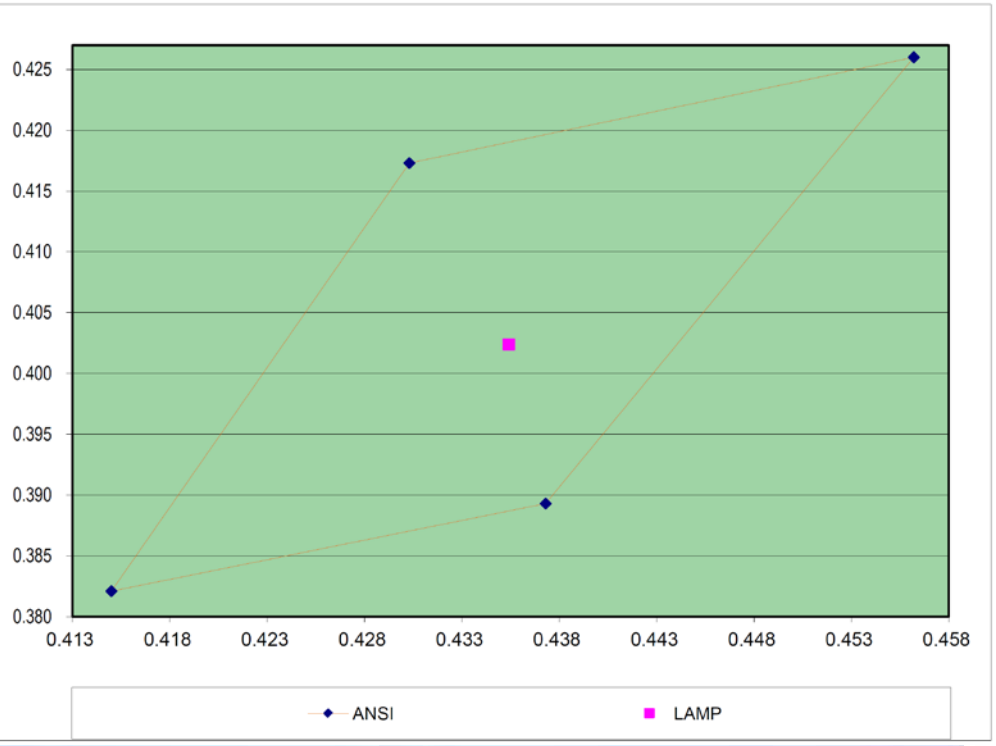
Input Voltage (V)	Frequency (Hz)	Input Current (A)	ITHD	Input Power (W)	Power Factor	Lumen Output (Lumens)	Efficiency Lumen/w
120.0	60.0	0.1180	/	13.97	0.9863	756.79	54.15
CCT (K)	CRI (Ra)	R9	x CIE1931	y CIE1931	u' CIE1976	v' CIE1976	Duv CIE1976
3012	92.1	59	0.4354	0.4024	0.2503	0.5205	-0.0005

Spectrul Plots



7 Step Quadrangle

	3000K quadrangle	
	x	y
ANSI 78.377-2015	0.4562	0.4260
	0.4303	0.4173
	0.4150	0.3821
	0.4373	0.3893
	0.4562	0.4260
Center		
1	0.4354	0.4024
2		
3		
4		
5		
6		
7		
8		
9		
10		



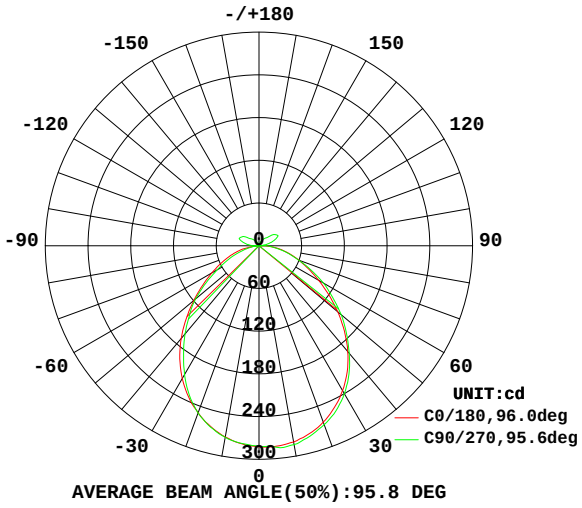
EUT Photo

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.0V I:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	PROTECTION ANGLE:

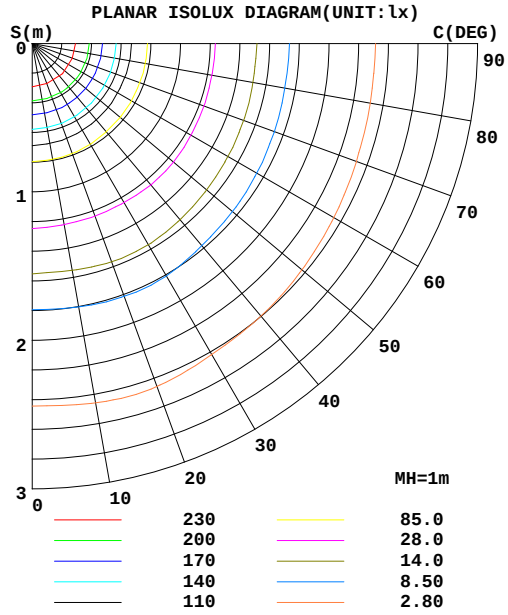
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 54.15 lm/W	
MODEL	NAN-14S-SN or PC	Imax(cd)	286.5	S/MH(C0/180)	1.24
NOMINAL POWER(W)	15	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	120.0	TOTAL FLUX(lm)	756.79	η UP,DN(C0-180)	4.4,41.8
NOMINAL FLUX(lm)	756.79	CIE CLASS	DIRECT	η UP,DN(C180-360)	4.6,49.2
LAMPS INSIDE	1	η up(%)	9.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120.0	η down(%)	91.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):95.8 DEG

PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2017-11-21

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:

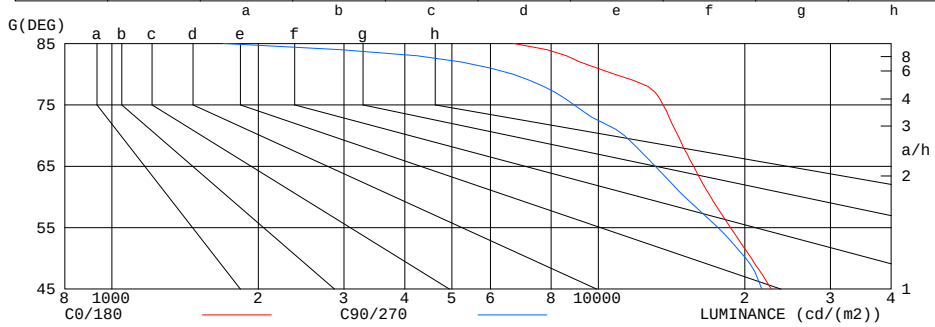
ZONAL FLUX DIAGRAM
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum
10	272.7	272.1	273.3	276.1	279.8	284.8	283.5	279.7	0- 10	26.70	26.70	3.53
20	249.7	248.3	250.0	257.4	263.7	270.2	267.6	260.8	10- 20	76.02	102.7	13.6
30	215.6	210.0	209.3	223.8	234.8	243.7	240.0	230.8	20- 30	112.3	215.0	28.4
40	170.2	161.3	161.6	176.1	193.9	204.4	197.3	188.4	30- 40	128.1	343.1	45.3
50	119.4	118.0	116.4	128.4	144.4	154.8	150.8	140.1	40- 50	121.8	464.9	61.4
60	76.60	73.54	67.73	87.09	96.46	109.1	104.3	98.41	50- 60	99.55	564.5	74.6
70	44.90	40.31	34.86	49.67	59.60	69.82	59.29	56.86	60- 70	69.71	634.2	83.8
80	16.87	12.37	10.43	21.35	31.82	38.26	29.12	27.89	70- 80	39.86	674.0	89.1
90	4.873	10.14	6.838	3.685	6.401	11.85	7.912	4.010	80- 90	14.56	688.6	91
100	4.338	19.31	20.08	15.43	3.645	8.952	8.919	15.08	90-100	9.387	698.0	92.2
110	3.531	21.28	29.69	22.50	3.012	19.01	22.84	24.32	100-110	16.65	714.6	94.4
120	2.898	9.339	26.08	18.20	2.417	21.47	29.83	18.52	110-120	17.73	732.4	96.8
130	0.7677	6.560	15.58	13.01	1.954	15.94	23.15	10.10	120-130	12.20	744.6	98.4
140	0.4605	4.104	10.83	7.871	1.515	11.36	14.21	7.496	130-140	6.846	751.4	99.3
150	0.5564	1.769	6.066	3.157	1.189	6.662	9.663	4.899	140-150	3.565	755.0	99.8
160	0.6528	0.8356	1.763	1.030	0.8442	2.622	4.808	2.399	150-160	1.373	756.3	99.9
170	0.8250	0.8060	0.8219	0.8269	0.8444	0.8159	1.089	0.8846	160-170	0.3617	756.7	100
180	0.8826	0.8639	0.8792	0.8554	0.8826	0.8834	0.8792	0.8459	170-180	0.0810	756.8	100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	6697	1696
80	10796	6677
75	13584	8922
70	14586	11326
65	15697	13092
60	17023	15051
55	18694	17628
50	20644	20113
45	22679	21683

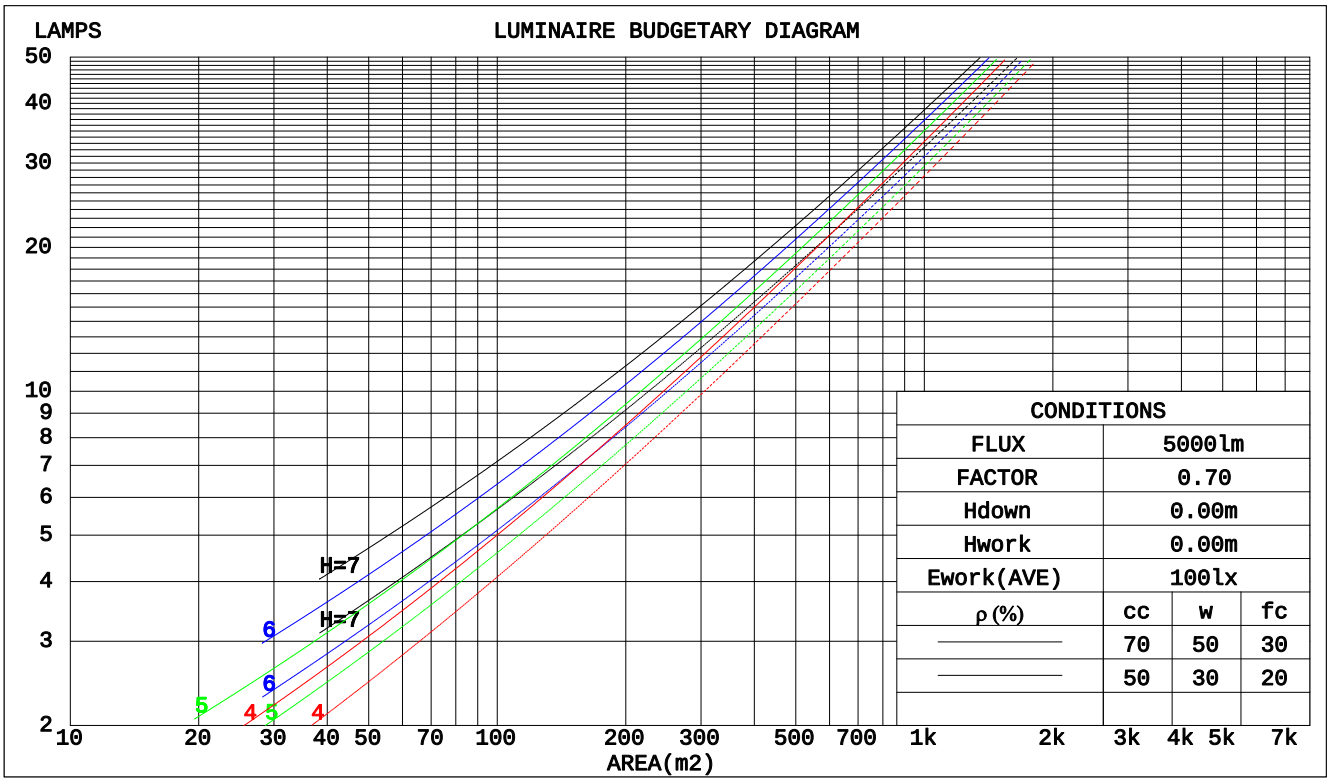
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2017-11-21

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:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	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			Coefficients of Utilization(CU)												
0.0	1.17	1.17	1.17	1.13	1.13	1.13	1.06	1.06	1.06	.00	.00	.00	.94	.94	.94	.91
1.0	1.03	.99	.95	.99	.96	.92	.94	.91	.88	.88	.86	.84	.83	.81	.80	.77
2.0	.90	.84	.78	.87	.82	.77	.82	.78	.73	.78	.74	.70	.74	.70	.68	.65
3.0	.80	.72	.66	.77	.70	.65	.73	.67	.62	.69	.64	.60	.66	.62	.58	.56
4.0	.71	.63	.56	.69	.61	.55	.65	.59	.54	.62	.57	.52	.59	.54	.50	.48
5.0	.64	.55	.49	.62	.54	.48	.59	.52	.47	.56	.50	.45	.53	.48	.44	.42
6.0	.58	.49	.43	.56	.48	.42	.53	.46	.41	.51	.45	.40	.49	.43	.39	.37
7.0	.52	.44	.38	.51	.43	.38	.49	.42	.37	.47	.40	.36	.45	.39	.35	.33
8.0	.48	.40	.34	.47	.39	.34	.45	.38	.33	.43	.37	.32	.41	.36	.32	.30
9.0	.44	.36	.31	.43	.36	.30	.41	.35	.30	.40	.34	.29	.38	.33	.29	.27
10.0	.41	.33	.28	.40	.33	.28	.38	.32	.27	.37	.31	.27	.35	.30	.26	.24



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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:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	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 Coeffcients(WEC)									
0.0																
1.0	.293	.167	.053	.283	.162	.051	.265	.152	.049	.248	.143	.046	.233	.135	.043	
2.0	.274	.150	.046	.266	.146	.045	.249	.139	.043	.234	.131	.041	.220	.125	.039	
3.0	.254	.135	.041	.246	.132	.040	.232	.126	.038	.218	.120	.037	.206	.114	.035	
4.0	.235	.122	.036	.228	.119	.035	.215	.114	.034	.203	.109	.033	.192	.104	.032	
5.0	.218	.111	.032	.212	.109	.032	.200	.104	.031	.189	.100	.030	.179	.096	.029	
6.0	.203	.102	.029	.197	.100	.029	.187	.096	.028	.177	.092	.027	.167	.088	.026	
7.0	.190	.094	.027	.184	.092	.026	.175	.088	.025	.166	.085	.025	.157	.082	.024	
8.0	.178	.087	.024	.173	.085	.024	.164	.082	.023	.156	.079	.023	.148	.076	.022	
9.0	.167	.081	.023	.163	.079	.022	.154	.076	.022	.147	.074	.021	.140	.071	.020	
10.0	.157	.075	.021	.153	.074	.021	.146	.071	.020	.139	.069	.020	.132	.066	.019	

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	.259	.259	.259	.221	.221	.221	.151	.151	.151	.087	.087	.087	.028	.028	.028	
1.0	.248	.226	.205	.213	.194	.176	.145	.133	.122	.084	.077	.071	.027	.025	.023	
2.0	.240	.202	.170	.205	.174	.147	.141	.120	.102	.081	.070	.060	.026	.023	.020	
3.0	.231	.184	.147	.198	.159	.127	.136	.110	.089	.079	.064	.053	.025	.021	.017	
4.0	.224	.171	.131	.192	.148	.114	.132	.103	.080	.076	.060	.047	.025	.020	.016	
5.0	.216	.161	.120	.186	.139	.104	.128	.097	.073	.074	.057	.044	.024	.019	.014	
6.0	.209	.152	.111	.180	.132	.097	.124	.092	.069	.072	.054	.041	.023	.018	.013	
7.0	.203	.146	.105	.175	.126	.092	.121	.088	.065	.070	.052	.039	.023	.017	.013	
8.0	.197	.140	.101	.169	.121	.088	.117	.085	.062	.068	.050	.037	.022	.016	.012	
9.0	.191	.135	.097	.164	.117	.085	.114	.082	.060	.066	.049	.036	.022	.016	.012	
10.0	.185	.131	.094	.160	.114	.082	.111	.080	.059	.065	.047	.035	.021	.016	.012	

C Range: 0 - 360DEG
C Interval: 10.0DEG
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Temperature:25.6DEG
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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:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	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	21.8	23.2	22.2	23.5	23.9	21.3	22.6	21.7	23.0	23.4
3H	23.0	24.2	23.4	24.6	25.0	22.1	23.4	22.6	23.7	24.2
4H	23.5	24.6	23.9	25.0	25.5	22.4	23.5	22.8	23.9	24.4
6H	23.8	24.9	24.2	25.3	25.7	22.5	23.6	22.9	24.0	24.4
8H	23.8	24.9	24.3	25.3	25.8	22.5	23.5	22.9	24.0	24.4
12H	23.8	24.8	24.3	25.3	25.7	22.4	23.4	22.9	23.9	24.4
4H 2H	22.2	23.3	22.6	23.7	24.2	21.7	22.9	22.2	23.3	23.7
3H	23.5	24.5	24.0	25.0	25.5	22.7	23.7	23.2	24.2	24.7
4H	24.1	25.0	24.6	25.5	26.0	23.1	24.0	23.6	24.5	25.0
6H	24.5	25.3	25.0	25.8	26.4	23.2	24.1	23.8	24.6	25.1
8H	24.6	25.3	25.1	25.8	26.4	23.3	24.0	23.8	24.5	25.1
12H	24.6	25.3	25.2	25.8	26.4	23.2	23.9	23.8	24.4	25.0
8H 4H	24.2	24.9	24.7	25.5	26.0	23.2	24.0	23.8	24.5	25.1
6H	24.7	25.3	25.2	25.8	26.4	23.5	24.1	24.1	24.7	25.3
8H	24.8	25.3	25.4	25.9	26.5	23.5	24.1	24.1	24.6	25.3
12H	24.8	25.3	25.4	25.9	26.5	23.5	24.0	24.1	24.5	25.2
12H 4H	24.2	24.8	24.7	25.4	26.0	23.2	23.9	23.8	24.4	25.0
6H	24.6	25.2	25.2	25.8	26.4	23.5	24.0	24.1	24.6	25.2
8H	24.8	25.2	25.4	25.8	26.5	23.5	24.0	24.1	24.6	25.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.4				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.5					+ 0.6 / - 0.6				

CIE Pub.117 Corrected 756.8 lm Total Lamp Luminous Flux.(8log(F/F0) = -1.0)

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2017-11-21

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:

UTILIZATION FACTORS TABLE

Test:U:120.0V I:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	PROTECTION ANGLE:

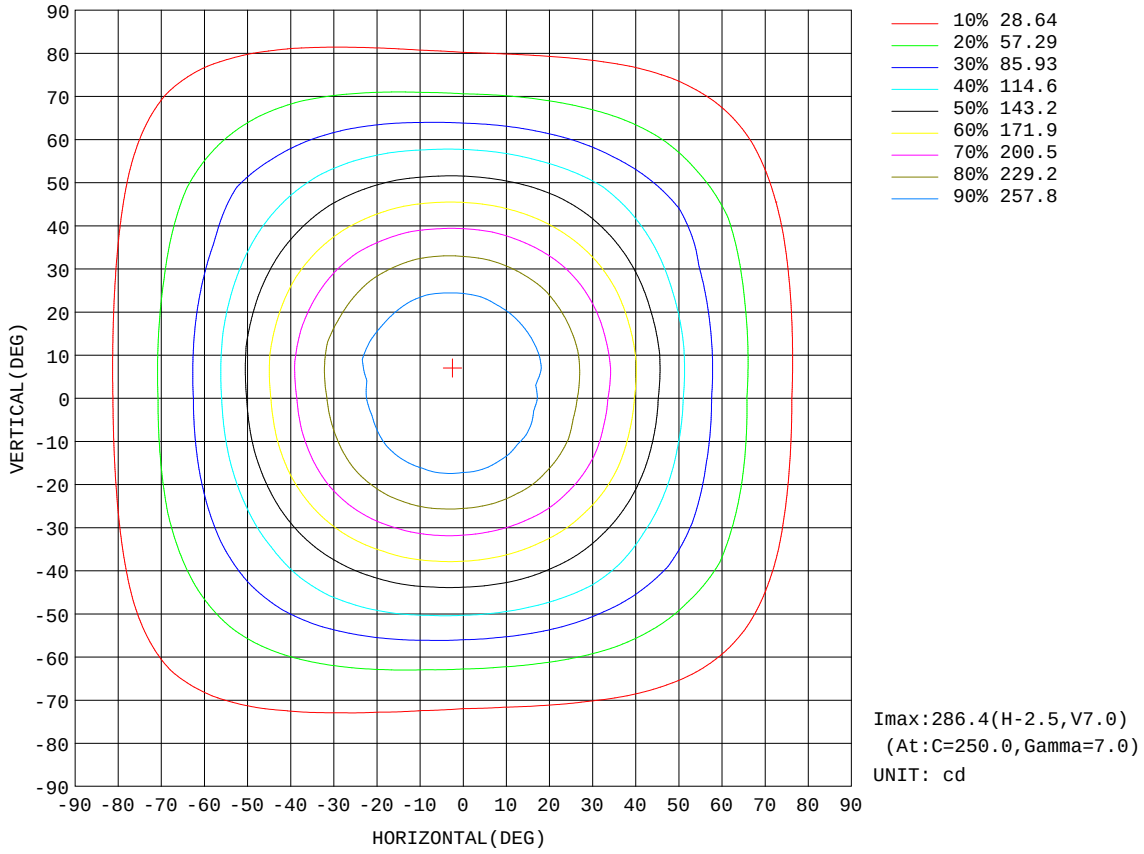
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	58	46	40	57	46	40	55	45	39	33
0.80	67	56	49	66	56	49	64	54	48	41
1.00	75	65	58	74	64	57	71	64	56	49
1.25	82	72	65	80	71	64	77	69	63	55
1.50	87	77	71	85	76	70	81	74	68	60
2.00	94	85	79	91	83	78	87	80	75	66
2.50	97	90	84	95	88	82	90	84	79	69
3.00	100	94	88	98	91	87	92	87	83	73
4.00	104	99	94	101	96	92	96	92	88	77
5.00	107	102	98	103	99	95	97	94	91	79
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:2017-11-21

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:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	PROTECTION ANGLE:



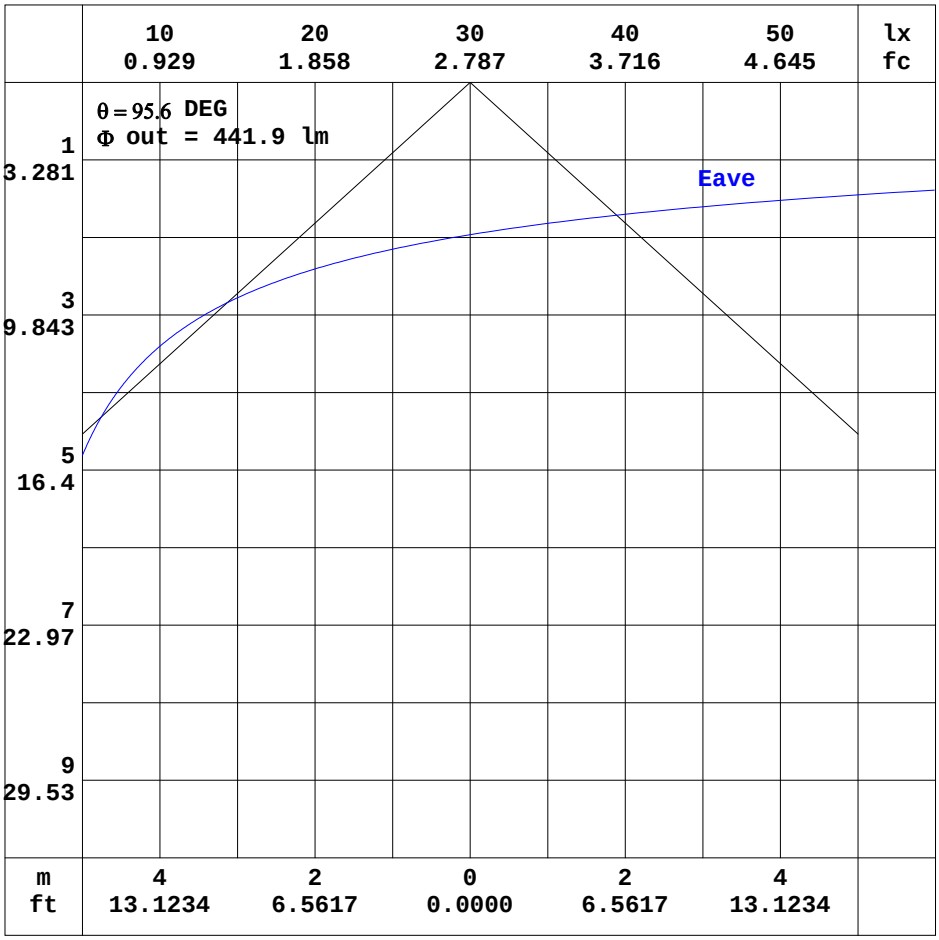
Imax:286.4(H-2.5,V7.0)
(At:C=250.0,Gamma=7.0)
UNIT: cd

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2017-11-21

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 CURVES

Test:U:120.0V I:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	PROTECTION ANGLE:



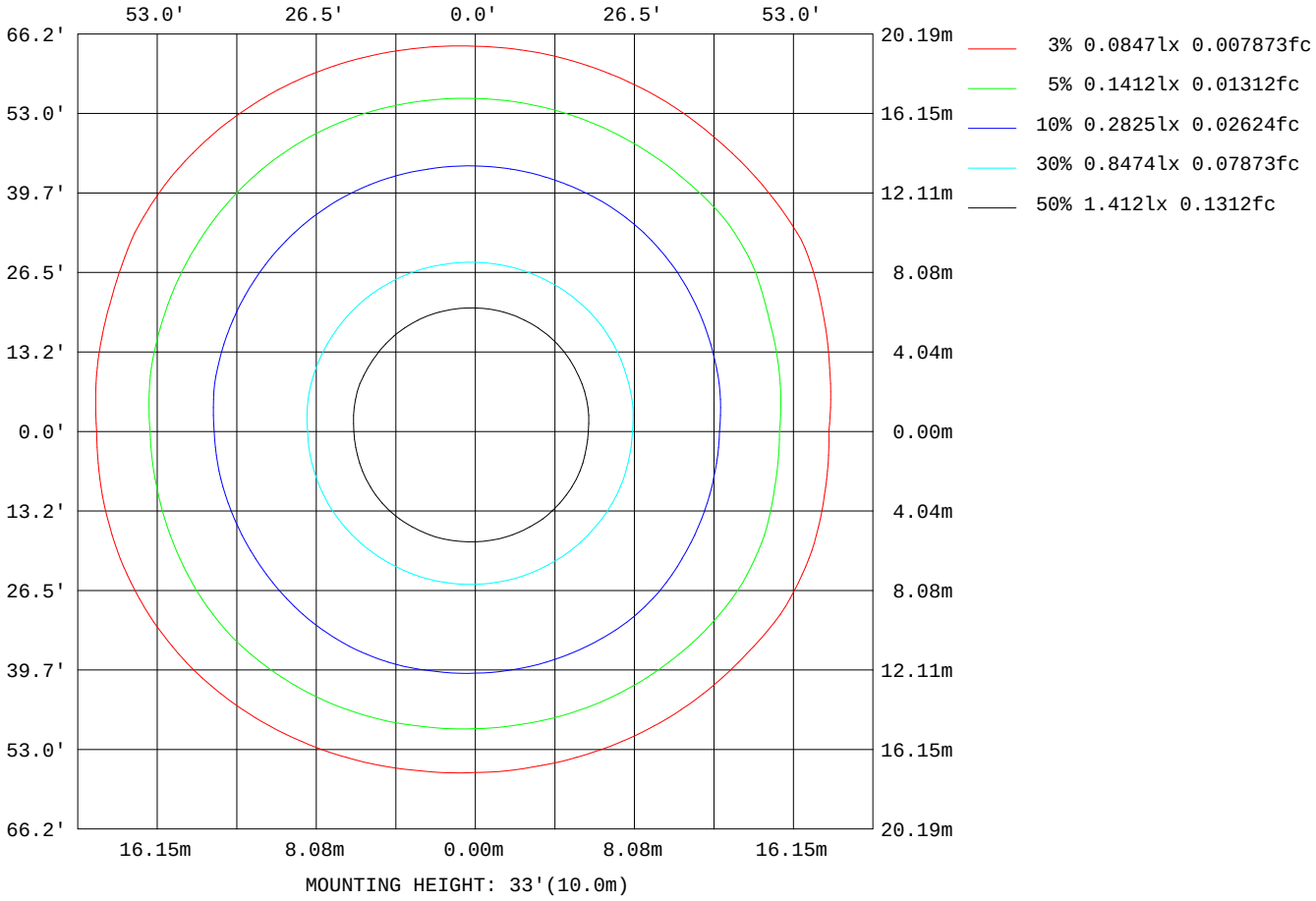
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2017-11-21

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

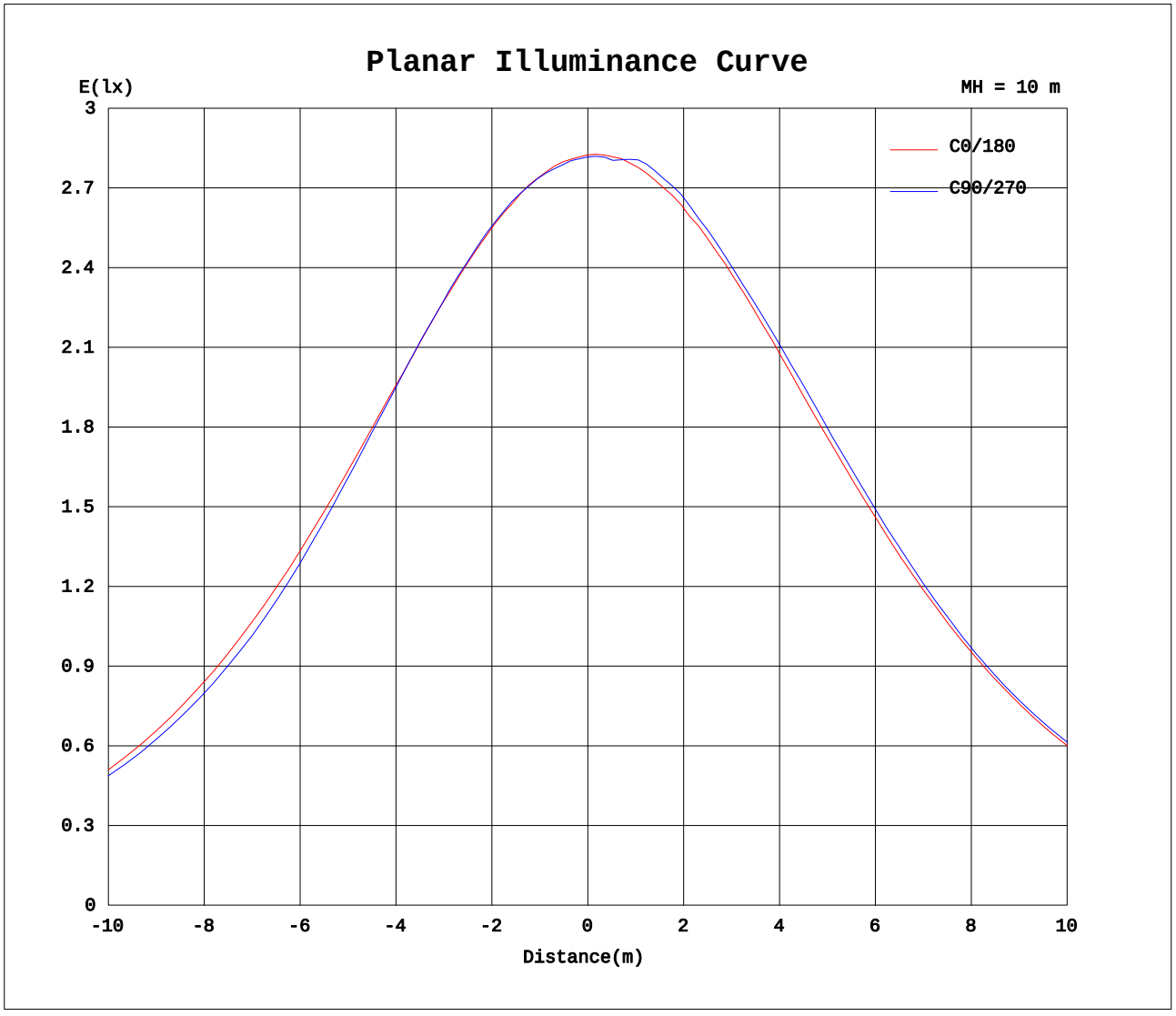
Test:U:120.0V I:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2017-11-21

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:2017-11-21

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:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	PROTECTION ANGLE:

Table--1 UNIT: cd

γ (DEG) \ C(DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	282	282	283	282	282	282	282	282	282	282	282	282	282	281	281	281	281	281	282
5	279	279	279	278	278	278	278	278	279	279	279	279	279	280	280	281	281	281	283
10	273	272	272	271	272	273	272	273	273	273	274	275	275	276	277	277	277	277	280
15	263	261	262	262	262	262	262	262	263	264	264	265	266	268	270	271	270	271	273
20	250	248	249	249	248	248	248	249	249	250	251	253	255	256	258	260	261	261	264
25	234	232	233	232	231	231	230	230	231	232	233	236	238	241	244	246	248	248	251
30	216	214	213	212	210	210	208	208	208	209	211	215	218	222	226	229	231	232	235
35	194	192	191	189	187	185	184	183	184	185	187	190	194	199	203	208	211	214	216
40	170	168	167	164	162	161	160	160	161	162	163	167	169	174	178	184	188	192	194
45	144	142	141	139	138	138	137	137	137	138	140	143	146	149	153	158	163	167	170
50	119	117	117	116	118	118	117	116	116	116	119	122	125	127	130	133	137	141	144
55	96.5	96.0	98.7	98.7	97.9	94.4	92.3	91.0	90.3	91.0	93.4	97.6	102	108	110	111	113	116	119
60	76.6	77.6	79.5	79.3	74.8	72.3	70.0	68.1	67.2	67.7	69.9	74.2	79.2	84.7	89.5	92.8	95.0	95.0	96.5
65	59.7	61.0	62.0	58.4	56.3	54.3	52.2	50.4	49.6	49.8	51.6	55.1	59.4	63.9	68.9	73.2	75.4	77.0	76.6
70	44.9	46.0	45.0	43.2	41.2	39.4	37.4	35.9	34.8	34.9	36.7	39.9	43.7	47.7	51.7	55.0	57.8	60.1	59.6
75	31.6	32.2	30.6	28.6	26.6	24.8	22.9	21.7	20.7	20.8	22.6	25.1	29.0	33.5	37.2	40.3	42.7	44.7	44.9
80	16.9	15.9	14.7	13.6	12.8	11.9	11.0	10.4	10.1	10.4	11.9	14.0	16.7	19.7	23.0	26.0	29.1	30.9	31.8
85	5.25	4.66	3.93	3.65	3.51	3.16	2.71	2.19	1.60	1.33	2.34	4.07	6.06	8.24	10.6	12.5	14.5	16.3	17.7
90	4.87	6.34	8.19	9.43	10.1	10.2	9.77	9.05	7.96	6.84	6.32	5.82	5.26	4.16	3.21	3.23	4.00	5.33	6.40
95	4.74	6.02	9.99	12.8	14.7	15.7	15.9	15.6	14.7	13.7	13.1	12.5	11.7	10.8	9.71	8.49	7.03	5.39	3.70
100	4.34	5.00	9.81	15.3	18.4	20.2	21.2	21.3	20.8	20.1	19.4	18.6	17.6	16.4	14.5	12.2	9.32	6.13	3.65
105	3.93	4.19	6.28	15.4	21.2	24.2	25.6	26.2	26.0	25.5	24.8	24.0	22.7	20.7	18.2	14.7	10.6	6.22	3.39
110	3.53	3.60	5.03	8.62	18.5	24.1	26.5	28.6	29.6	29.7	29.2	28.4	26.6	24.3	20.7	16.3	11.0	5.56	3.01
115	3.19	3.12	4.38	7.08	10.5	18.4	24.1	26.5	27.8	28.4	28.2	27.2	25.6	22.9	19.1	14.7	10.00	4.35	2.71
120	2.90	2.83	3.82	5.53	7.86	10.8	17.3	22.7	25.4	26.1	26.0	25.0	22.9	19.8	16.6	13.0	8.39	3.30	2.42
125	2.15	1.92	2.12	3.65	6.26	9.40	12.2	15.1	18.6	20.4	20.9	19.9	18.2	16.7	14.3	11.0	6.18	2.59	2.19
130	0.77	0.63	0.84	2.80	5.21	7.92	10.4	12.6	14.4	15.6	16.2	16.1	15.5	14.1	11.9	8.71	4.16	2.15	1.95
135	0.46	0.46	0.65	2.00	4.30	6.48	8.62	10.6	12.1	13.2	13.6	13.4	12.8	11.5	9.40	6.00	3.05	1.94	1.77
140	0.46	0.46	0.59	1.40	3.05	5.15	6.90	8.48	9.79	10.8	10.9	10.8	10.1	8.89	6.86	3.95	2.00	1.76	1.52
145	0.56	0.55	0.59	0.98	1.94	3.54	5.29	6.56	7.53	8.42	8.37	8.15	7.53	6.23	4.28	2.56	1.55	1.55	1.48
150	0.56	0.55	0.59	0.83	1.34	2.19	3.34	4.38	5.36	6.07	5.95	5.50	4.63	3.73	2.58	1.58	1.40	1.46	1.19
155	0.56	0.55	0.59	0.79	0.90	1.27	1.90	2.47	3.03	3.40	3.32	3.00	2.55	2.10	1.39	1.19	1.21	1.26	1.05
160	0.65	0.61	0.65	0.79	0.79	0.88	1.02	1.27	1.61	1.76	1.73	1.45	1.18	1.06	1.00	1.00	1.06	1.07	0.84
165	0.65	0.65	0.71	0.79	0.79	0.81	0.82	0.86	0.92	0.90	0.86	0.86	0.83	0.88	0.90	0.92	0.94	0.96	0.81
170	0.83	0.84	0.84	0.84	0.82	0.79	0.79	0.79	0.80	0.82	0.79	0.79	0.77	0.83	0.83	0.81	0.81	0.86	0.84
175	0.88	0.86	0.90	0.86	0.86	0.88	0.86	0.86	0.88	0.88	0.79	0.79	0.77	0.83	0.81	0.79	0.81	0.82	0.90
180	0.88	0.86	0.90	0.86	0.86	0.86	0.90	0.86	0.92	0.88	0.79	0.79	0.77	0.85	0.87	0.81	0.88	0.90	0.88

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2017-11-21

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

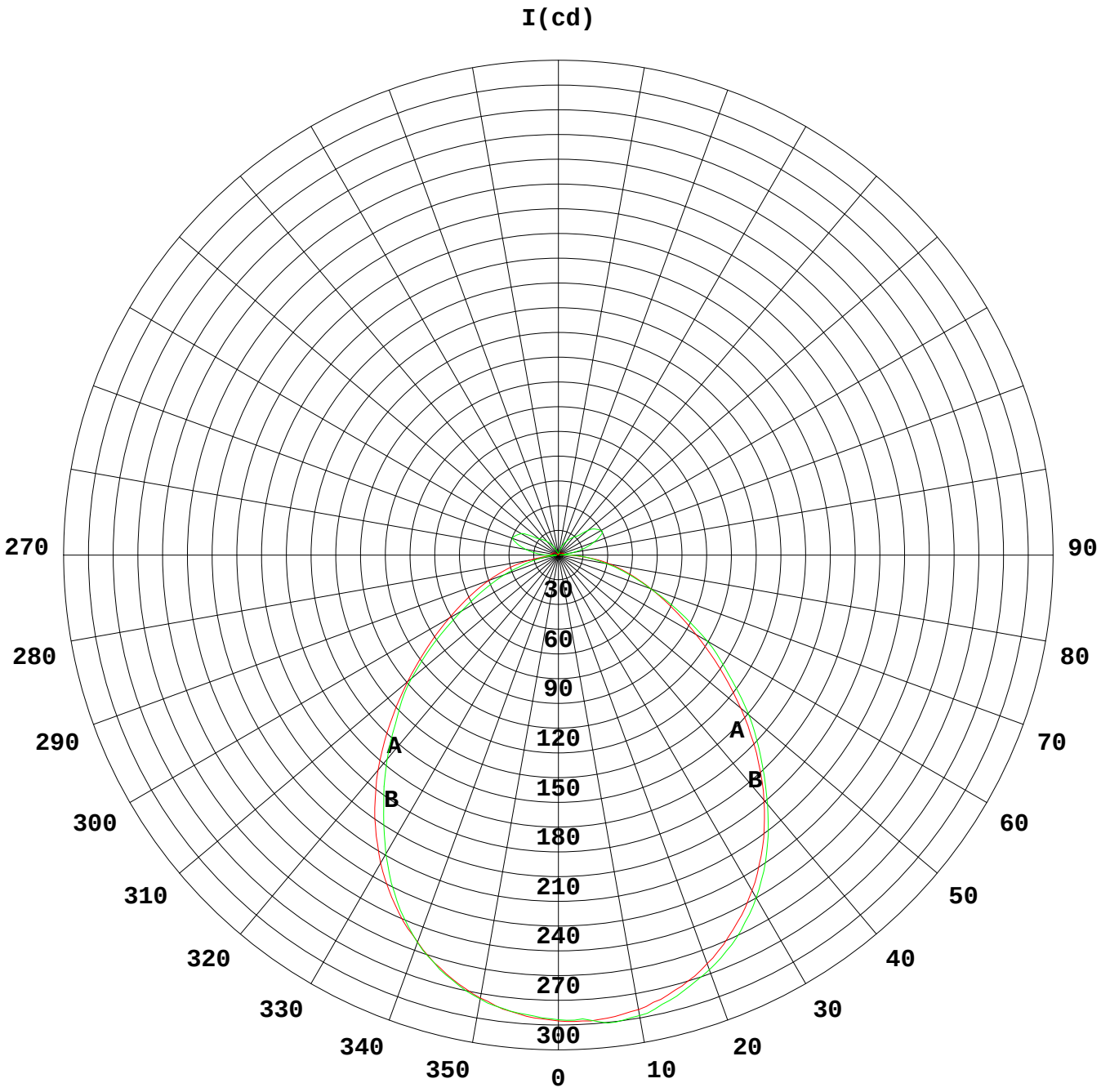
Test:U:120.0V I:0.1180A P:13.97W PF:0.9863 Lamp Flux:756.79x1 lm		
NAME: Nano,14"Sconce,Satin Nicke or Polished Chrom	TYPE:NAN-14S-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.29*0.03	PROTECTION ANGLE:

Table--2 UNIT: cd

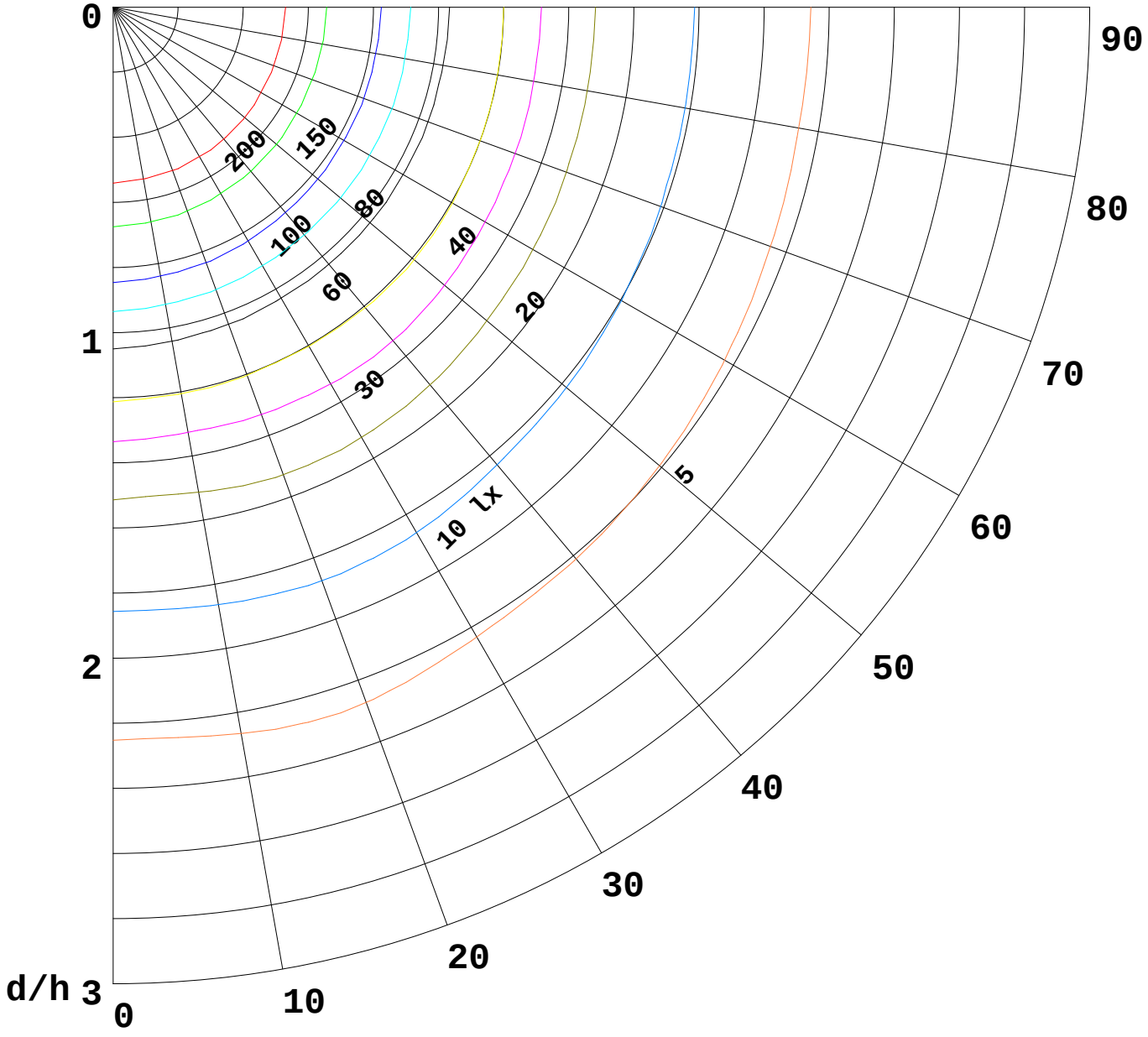
γ (DEG) \ C(DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	282	283	282	282	282	282	282	282	282	282	282	282	281	281	281	281	281		
5	283	283	283	282	284	284	285	285	284	284	283	282	281	280	279	278	278		
10	279	280	282	284	285	285	285	285	284	283	282	281	280	279	277	273	272		
15	273	277	279	279	280	279	279	278	277	277	275	274	273	272	270	267	262		
20	264	270	270	270	270	270	270	269	268	267	265	264	262	260	258	256	251		
25	252	258	258	258	258	259	259	257	256	255	253	251	249	246	243	241	237		
30	238	243	242	243	244	244	243	242	240	239	237	235	232	229	226	224	220		
35	221	224	224	225	226	225	225	222	220	219	217	215	212	210	206	203	199		
40	200	202	203	204	204	203	202	199	197	196	194	192	190	187	183	179	176		
45	175	178	180	180	180	179	177	175	174	172	170	168	165	162	158	154	151		
50	150	152	154	155	155	154	154	152	151	149	147	145	142	138	133	129	125		
55	125	127	129	130	132	131	130	128	126	125	123	122	120	116	111	106	102		
60	101	103	106	108	110	110	109	106	104	103	101	99.7	98.2	98.6	97.0	86.5	81.2		
65	80.2	83.9	91.8	90.5	89.8	88.3	85.9	82.7	80.4	79.4	78.3	77.3	76.0	74.5	74.7	71.2	64.2		
70	62.9	68.9	69.7	70.0	69.7	67.7	64.8	61.5	59.3	58.8	58.2	57.8	57.3	56.4	54.6	54.6	49.5		
75	48.1	51.5	52.3	52.9	52.4	50.3	47.7	45.1	43.3	42.9	42.7	42.6	42.4	41.7	40.3	38.1	36.1		
80	35.0	37.0	38.2	38.6	37.9	36.1	33.6	31.0	29.1	28.5	28.4	28.4	28.3	27.5	25.9	23.9	20.8		
85	20.8	23.1	24.2	24.6	24.2	22.8	21.1	19.3	17.8	17.3	16.9	16.4	15.3	13.7	12.1	9.87	7.81		
90	8.52	10.1	11.5	11.9	11.8	11.3	10.3	9.05	7.91	7.22	6.64	5.70	4.59	3.43	3.67	4.69	5.70		
95	4.08	3.82	3.36	3.04	2.73	2.29	1.81	1.29	1.04	1.46	2.47	5.33	7.51	9.28	10.1	9.64	7.55		
100	5.84	7.76	8.72	8.97	8.93	8.58	8.43	8.38	8.92	10.3	12.0	13.5	14.8	15.3	14.6	12.2	5.82		
105	6.14	9.95	12.6	14.1	14.9	15.4	15.8	16.0	16.5	17.7	19.1	20.1	20.4	19.8	17.8	11.4	4.65		
110	6.06	11.3	15.4	18.2	19.9	20.9	21.7	22.4	22.8	23.9	24.9	25.4	25.0	23.6	18.7	7.50	4.21		
115	5.53	10.9	16.3	21.0	24.1	25.6	26.7	27.6	28.2	29.1	29.8	29.0	26.7	22.7	10.6	6.42	3.94		
120	4.57	10.1	14.8	19.4	23.5	26.3	28.2	29.3	29.8	29.9	29.0	26.8	23.2	13.9	9.09	5.45	3.50		
125	3.67	8.77	13.2	16.8	20.7	24.2	26.1	26.9	27.6	27.6	26.4	22.2	14.6	9.77	6.94	4.47	2.47		
130	2.79	7.19	11.4	14.7	17.2	19.5	21.9	23.1	23.1	22.4	19.4	14.5	11.6	8.56	5.42	2.80	0.80		
135	2.12	5.66	9.47	12.5	14.8	16.3	17.2	17.2	16.5	16.1	14.6	12.6	10.1	7.42	4.85	2.36	0.61		
140	1.68	4.29	7.50	10.3	12.4	13.8	14.6	14.7	14.2	13.9	12.6	10.8	8.63	6.37	4.10	2.03	0.63		
145	1.49	2.93	5.58	8.05	10.00	11.3	12.0	12.3	11.9	11.5	10.3	8.85	7.11	5.29	3.29	1.40	0.69		
150	1.22	1.99	3.95	5.82	7.50	8.69	9.42	9.75	9.66	9.20	8.29	7.10	5.70	4.09	2.57	0.98	0.69		
155	0.96	1.13	2.32	3.87	5.10	6.10	6.82	7.16	7.31	6.90	6.23	5.29	4.17	3.02	1.67	0.88	0.75		
160	0.86	0.86	1.21	2.03	3.22	3.88	4.40	4.64	4.81	4.61	4.20	3.58	2.90	1.90	1.13	0.77	0.79		
165	0.84	0.84	0.84	0.90	1.21	1.68	2.19	2.57	2.68	2.71	2.47	2.01	1.44	1.09	0.89	0.81	0.81		
170	0.84	0.83	0.81	0.82	0.81	0.82	0.86	0.98	1.09	1.13	0.88	0.94	0.86	0.90	0.87	0.86	0.88		
175	0.88	0.88	0.90	0.88	0.90	0.90	0.86	0.84	0.86	0.86	0.86	0.84	0.88	0.89	0.87	0.84	0.86		
180	0.88	0.86	0.90	0.86	0.90	0.90	0.90	0.86	0.88	0.88	0.79	0.79	0.83	0.87	0.87	0.86	0.84		

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.6DEG
Operators:David
Test Date:2017-11-21

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)
90
80
70
60
50
40
30
20
10
0
350
340
330
320
310
300
290
280
270
30
60
90
120
150
180
210
240
270
300
A
B
A
B

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