



### IESNA LM-79 TEST REPORT

Applicant's name .....	Blackjack Lighting
Address .....	1553 Barclay Blvd. Buffalo Grove, IL 60089
Brand Name .....	Blackjack Lighting
Report No.....	BTR66.181.17.0011.31
Product Name .....	Nano 25" Vanity, Satin Nickel or Polished Chrome
Model Number .....	NAN-25V-SN or PC

Tested by (printed name and signature) .....	David Zhang	
Title .....	<b>Test Engineer</b>	.....
Approved by (printed name and signature) .....	Steven Huo	
Title .....	<b>Approved Signatory</b>	.....
Date of issue .....	Nov 24, 2017	

Testing Laboratory Name .....	BEST Test Service Shenzhen Co., Ltd.
Address .....	1 <sup>st</sup> Floor, 1 <sup>st</sup> Building, Weitai Industrial Park, Yingrenshi, Shiyao, Baoan, Shenzhen, China
Accreditation .....	DLC/Lighting Facts/UL/ETL/ELI/CEC/EPA/DOE NVLAP Testing Lab Code: 200770-0
	<a href="tel:+86-755-28236006">Tel:+86-755-28236006</a> , Email: <a href="mailto:certification@bestcert.cn">certification@bestcert.cn</a>

<b>Test specification</b>	
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 .....	Nov 20, 2017 to Nov 24, 2017
Sample Quantity .....	1 unit
SKU.....	N/A
Rating(s) (V; Hz) .....	120V 60Hz
Nominal Power.....	22 W
Nominal Power Factor .....	N/A
Nominal Lumen Output.....	980 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 Π 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.

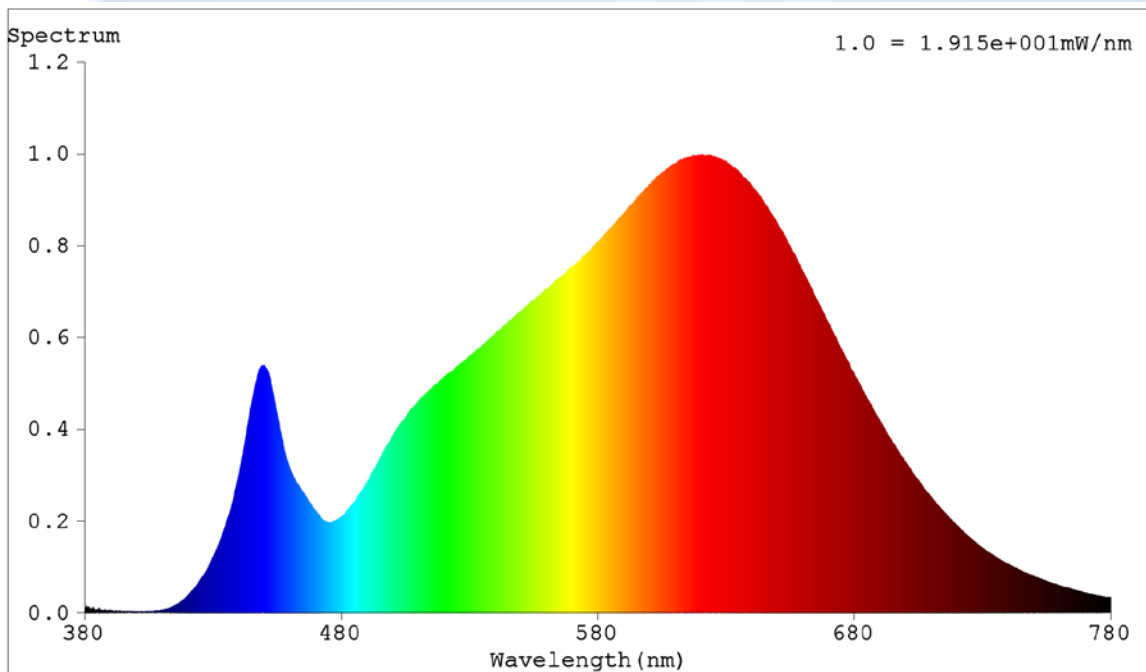
### Luminous Intensity

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

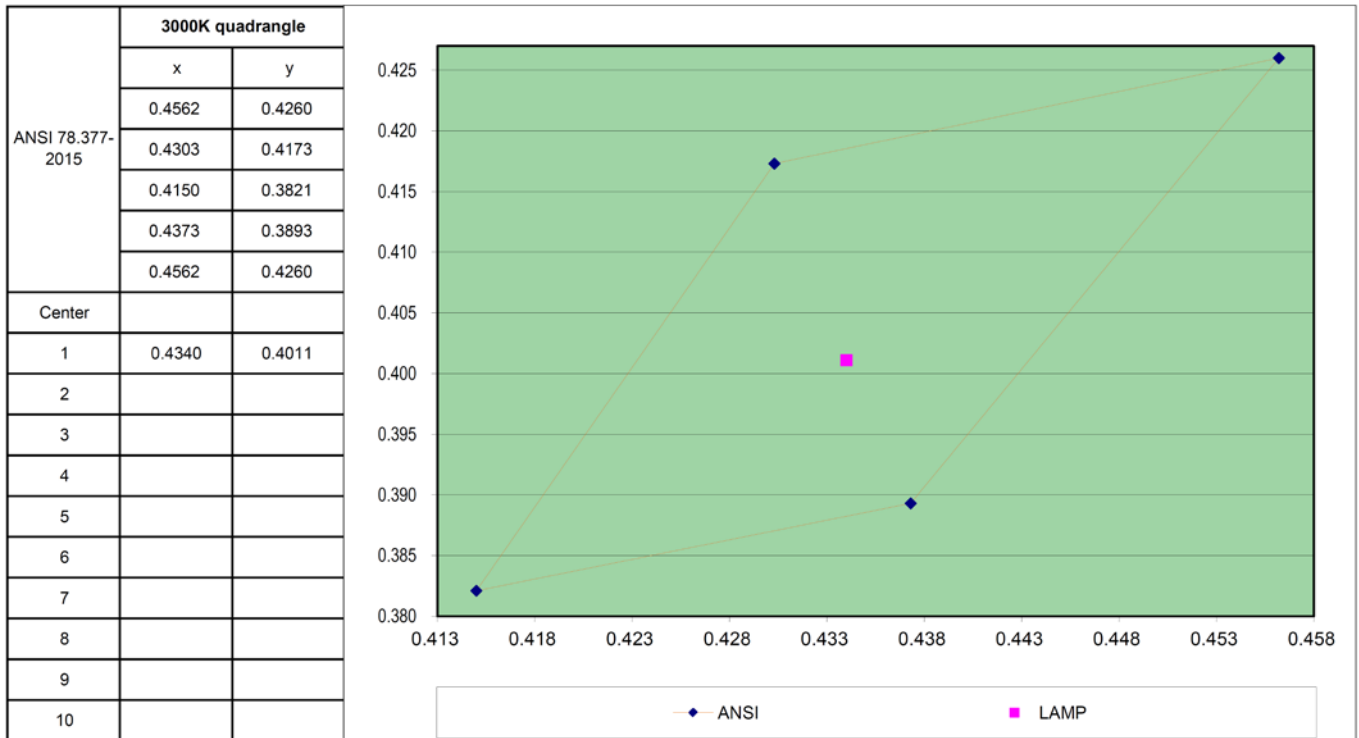
### Photometric and Electrical Test Data

Input Voltage (V)	Frequency (Hz)	Input Current (A)	ITHD	Input Power (W)	Power Factor	Lumen Output (Lumens)	Efficiency Lumen/w
120.0	60.0	0.1828	/	21.86	0.9960	1040.75	47.62
CCT (K)	CRI (Ra)	R9	x CIE1931	y CIE1931	u' CIE1976	v' CIE1976	Duv CIE1976
3025	92.0	59	0.4340	0.4011	0.2500	0.5198	-0.0008

### Spectrul Plots



### 7 Step Quadrangle



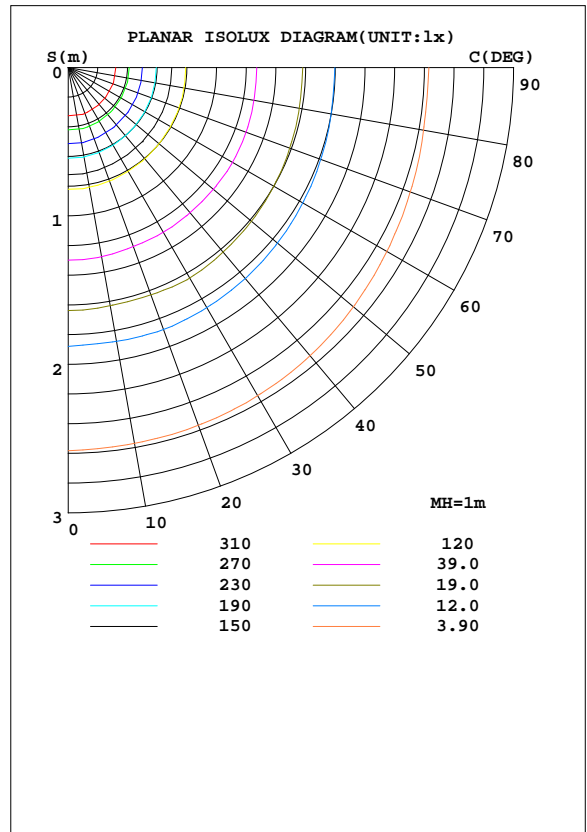
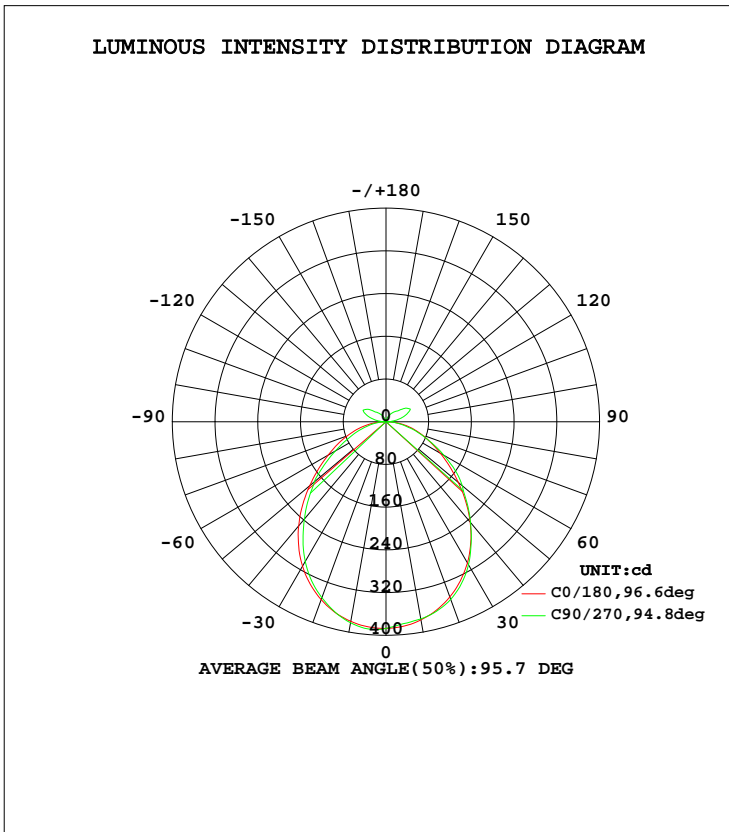
### EUT Photo



LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.0V I:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*0.03	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 47.62 lm/W			
MODEL	NAN-25V-SN or PC	Imax(cd)	389.8	S/MH(C0/180)	1.18
NOMINAL POWER(W)	22	LOR(%)	100.0	S/MH(C90/270)	1.19
RATED VOLTAGE(V)	120.0	TOTAL FLUX(lm)	1040.8	$\eta$ UP, DN(C0-180)	4.8,44.5
NOMINAL FLUX(lm)	1040.75	CIE CLASS	SEMI-D.	$\eta$ UP, DN(C180-360)	5.3,45.3
LAMPS INSIDE	1	$\eta$ up(%)	10.1	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120.0	$\eta$ down(%)	89.9	CIBSE SHR MAX	1.30



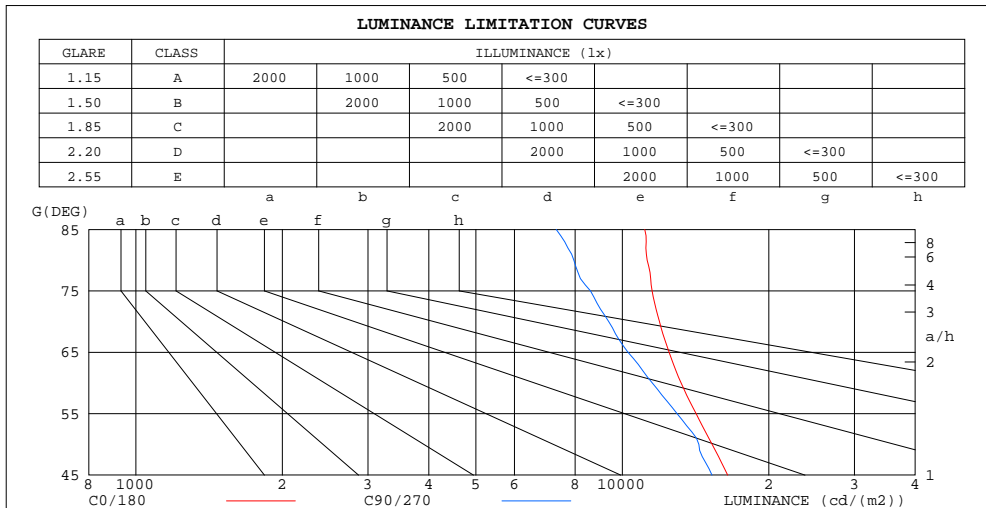
C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
 Test Date:2017-11-21

$\gamma$  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:

ZONAL FLUX DIAGRAM  
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum
10	379.6	383.0	382.3	383.0	376.8	373.5	374.9	373.3	0- 10	36.51	36.51	3.51
20	354.6	353.4	350.8	354.7	349.4	351.6	354.1	350.5	10- 20	103.6	140.1	13.5
30	312.6	306.2	302.5	307.9	305.1	309.5	309.1	309.2	20- 30	152.8	292.9	28.1
40	254.5	243.4	237.5	245.5	245.3	248.1	246.3	248.8	30- 40	173.8	466.7	44.8
50	186.8	177.7	175.5	178.2	177.1	183.1	186.6	182.3	40- 50	164.3	631.0	60.6
60	125.5	120.1	109.5	121.2	117.1	130.7	124.8	130.0	50- 60	135.5	766.5	73.6
70	77.48	70.78	60.92	72.06	72.11	77.42	69.96	78.16	60- 70	95.67	862.1	82.8
80	37.10	32.62	26.23	33.40	35.26	34.24	29.14	35.34	70- 80	55.24	917.4	88.1
90	3.787	2.149	1.128	2.295	3.704	2.172	1.216	2.329	80- 90	17.80	935.2	89.9
100	3.406	19.18	20.50	18.02	3.405	19.10	20.43	17.72	90-100	9.117	944.3	90.7
110	2.489	34.58	39.72	31.34	2.768	35.66	40.93	32.78	100-110	23.64	967.9	93
120	2.131	32.19	45.71	24.76	2.171	34.65	49.45	27.37	110-120	29.09	997.0	95.8
130	1.813	20.97	31.99	16.99	1.951	23.82	34.97	20.05	120-130	21.12	1018	97.8
140	1.653	14.11	21.28	11.04	1.871	17.36	24.55	14.34	130-140	12.35	1030	99
150	1.593	7.746	12.94	5.665	1.653	10.71	16.37	9.113	140-150	6.726	1037	99.7
160	1.394	2.291	5.167	1.504	1.434	4.912	8.493	4.591	150-160	2.747	1040	99.9
170	1.195	0.9987	1.157	1.048	1.593	1.249	2.209	1.355	160-170	0.6746	1041	100
180	1.514	1.198	1.177	1.268	1.573	1.208	1.137	1.108	170-180	0.1207	1041	100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	11122	7314
80	11245	7950
75	11518	8603
70	11922	9375
65	12480	10268
60	13211	11524
55	14178	12961
50	15293	14368
45	16459	15291

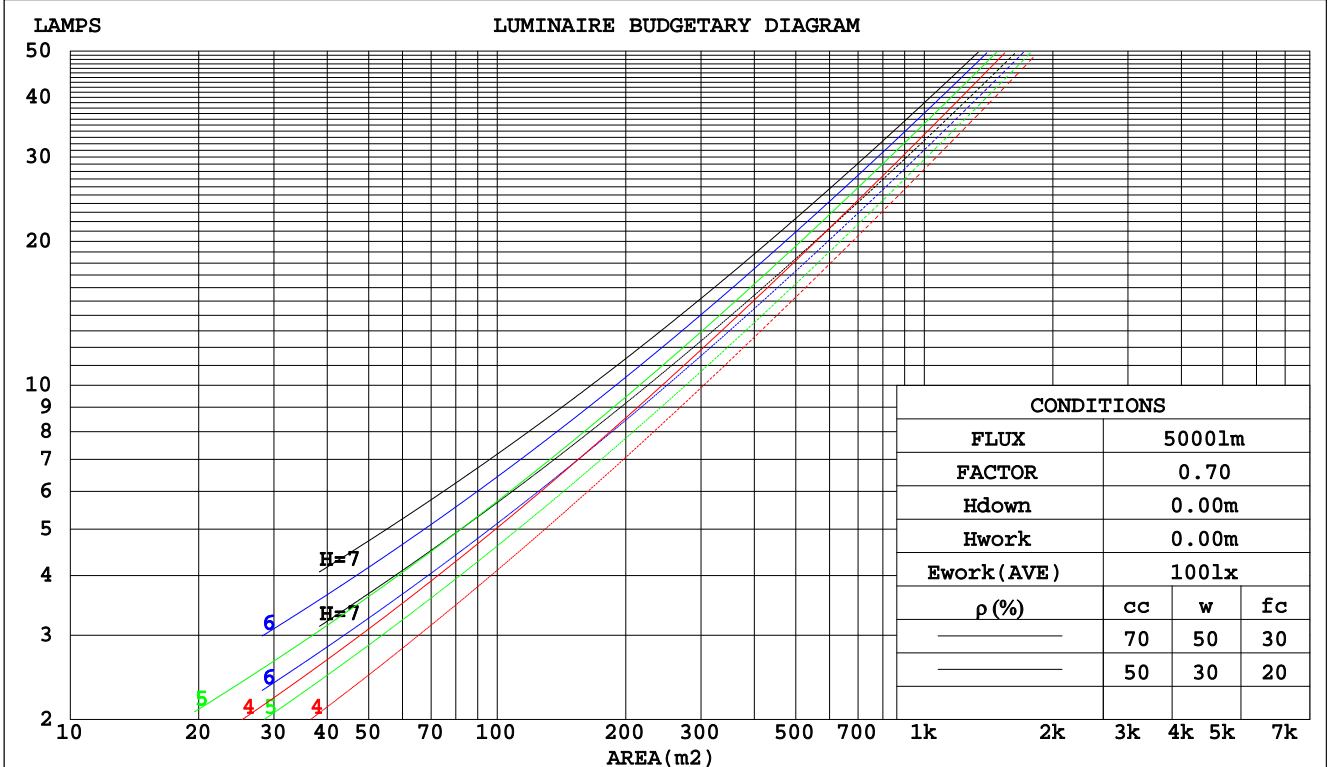
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.6DEG  
Operators:David  
Test Date:2017-11-21

$\gamma$  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:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*0.03	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	1.05	1.05	1.05	.99	.99	.99	.93	.93	.93	.90
1.0	1.02	.98	.95	.99	.96	.92	.93	.90	.87	.88	.85	.83	.82	.81	.79	.76
2.0	.90	.83	.78	.87	.81	.76	.82	.77	.73	.77	.73	.70	.73	.70	.67	.64
3.0	.79	.72	.66	.77	.70	.64	.73	.67	.62	.69	.64	.60	.65	.61	.57	.55
4.0	.71	.62	.56	.69	.61	.55	.65	.59	.53	.62	.56	.52	.58	.54	.50	.47
5.0	.64	.55	.49	.62	.54	.48	.59	.52	.46	.56	.50	.45	.53	.48	.44	.41
6.0	.57	.49	.43	.56	.48	.42	.53	.46	.41	.51	.44	.40	.48	.43	.39	.37
7.0	.52	.44	.38	.51	.43	.37	.48	.42	.36	.46	.40	.36	.44	.39	.35	.33
8.0	.48	.40	.34	.47	.39	.34	.44	.38	.33	.42	.36	.32	.41	.35	.31	.29
9.0	.44	.36	.31	.43	.35	.30	.41	.34	.30	.39	.33	.29	.38	.32	.28	.26
10.0	.41	.33	.28	.40	.32	.28	.38	.31	.27	.36	.31	.26	.35	.30	.26	.24



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:



WEC AND CCEC

Test:U:120.0V I:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*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 Coefficients(WEC)									
0.0																
1.0	.291	.166	.052	.281	.160	.051	.262	.150	.048	.245	.141	.045	.229	.133	.043	
2.0	.273	.150	.046	.264	.146	.045	.247	.138	.043	.232	.130	.041	.218	.123	.039	
3.0	.253	.135	.040	.245	.131	.040	.230	.125	.038	.216	.119	.036	.203	.113	.035	
4.0	.235	.122	.036	.228	.119	.035	.214	.113	.034	.201	.108	.033	.190	.103	.031	
5.0	.218	.111	.032	.211	.108	.032	.199	.104	.031	.188	.099	.029	.177	.095	.028	
6.0	.203	.102	.029	.197	.099	.029	.186	.095	.028	.175	.091	.027	.165	.087	.026	
7.0	.189	.094	.027	.184	.092	.026	.174	.088	.025	.164	.084	.024	.155	.081	.024	
8.0	.177	.087	.024	.172	.085	.024	.163	.081	.023	.154	.078	.023	.146	.075	.022	
9.0	.166	.081	.022	.162	.079	.022	.154	.076	.022	.146	.073	.021	.138	.070	.020	
10.0	.157	.075	.021	.153	.074	.021	.145	.071	.020	.138	.068	.019	.131	.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	.268	.268	.268	.229	.229	.229	.156	.156	.156	.090	.090	.090	.029	.029	.029	
1.0	.257	.234	.214	.220	.201	.184	.150	.138	.127	.087	.080	.074	.028	.026	.024	
2.0	.248	.210	.179	.213	.181	.154	.146	.125	.108	.084	.073	.063	.027	.024	.021	
3.0	.240	.193	.156	.206	.167	.135	.141	.116	.095	.082	.068	.056	.026	.022	.018	
4.0	.233	.180	.140	.200	.155	.121	.137	.108	.085	.079	.063	.051	.026	.021	.017	
5.0	.225	.170	.129	.193	.147	.112	.133	.103	.079	.077	.060	.047	.025	.020	.015	
6.0	.218	.161	.120	.188	.140	.105	.129	.098	.074	.075	.058	.044	.024	.019	.015	
7.0	.212	.155	.114	.182	.134	.100	.126	.094	.071	.073	.055	.042	.024	.018	.014	
8.0	.206	.149	.110	.177	.129	.096	.122	.091	.068	.071	.053	.040	.023	.018	.013	
9.0	.200	.144	.106	.172	.125	.093	.119	.088	.066	.069	.052	.039	.022	.017	.013	
10.0	.194	.140	.104	.168	.121	.090	.116	.085	.064	.068	.050	.038	.022	.017	.013	

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.6DEG  
 Operators:David  
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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:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm										
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome						TYPE:NAN-25V-SN or PC			WEIGHT:	
SPEC.:						DIM.:			SERIAL No.:	
MFR.: Blackjack Lighting						SUR.:0.64*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	21.2	22.5	21.6	22.9	23.3	20.7	22.0	21.1	22.4	22.8
3H	22.5	23.7	23.0	24.1	24.6	21.7	22.9	22.2	23.3	23.8
4H	23.1	24.3	23.6	24.7	25.1	22.1	23.3	22.6	23.7	24.2
6H	23.6	24.7	24.1	25.1	25.6	22.5	23.5	22.9	24.0	24.4
8H	23.8	24.8	24.3	25.3	25.8	22.6	23.6	23.0	24.0	24.5
12H	23.9	24.9	24.4	25.4	25.9	22.6	23.6	23.1	24.1	24.6
4H 2H	21.6	22.8	22.1	23.2	23.6	21.2	22.4	21.7	22.8	23.2
3H	23.1	24.1	23.6	24.6	25.1	22.4	23.4	22.9	23.9	24.4
4H	23.9	24.8	24.4	25.3	25.8	23.0	23.9	23.5	24.4	24.9
6H	24.5	25.3	25.1	25.8	26.4	23.4	24.2	24.0	24.7	25.3
8H	24.8	25.5	25.3	26.0	26.6	23.6	24.3	24.1	24.8	25.4
12H	25.0	25.6	25.5	26.2	26.8	23.7	24.4	24.2	24.9	25.5
8H 4H	24.1	24.8	24.6	25.3	25.9	23.3	24.0	23.8	24.5	25.1
6H	24.9	25.5	25.4	26.0	26.7	23.8	24.5	24.4	25.0	25.7
8H	25.2	25.7	25.8	26.3	27.0	24.1	24.6	24.7	25.2	25.9
12H	25.5	26.0	26.1	26.6	27.3	24.3	24.7	24.9	25.3	26.0
12H 4H	24.0	24.7	24.6	25.3	25.9	23.3	24.0	23.9	24.5	25.1
6H	24.9	25.4	25.5	26.0	26.7	23.9	24.5	24.5	25.1	25.7
8H	25.3	25.7	25.9	26.4	27.0	24.2	24.7	24.8	25.3	26.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
1.5H	+ 0.1 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.3					+ 0.4 / - 0.4				

CIE Pub.117 Corrected 1041 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.1)

C Range: 0 - 360DEG  
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γ Range: 0 - 180DEG  
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 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:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*0.03	PROTECTION ANGLE:

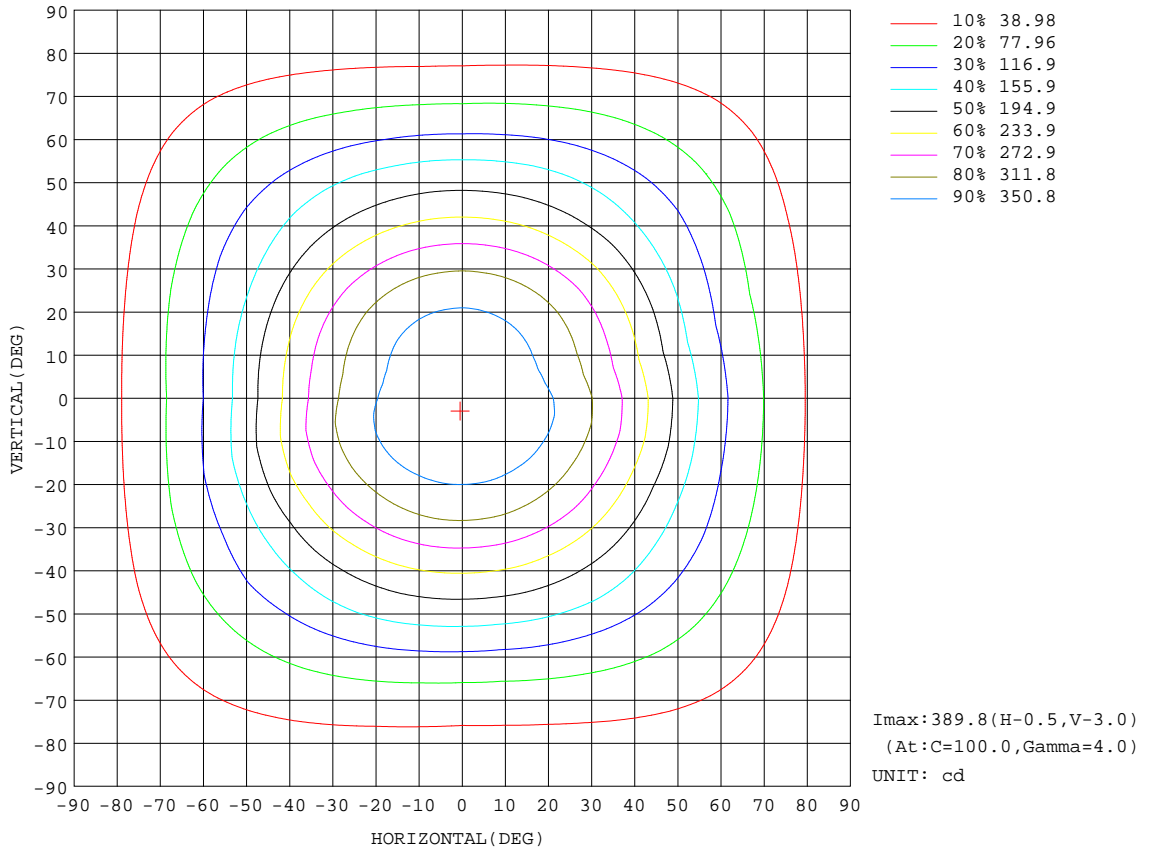
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	57	46	40	56	46	39	55	45	39	33
0.80	67	56	49	66	55	49	63	54	48	41
1.00	75	64	57	73	63	57	70	64	56	48
1.25	82	72	65	80	71	64	76	68	63	55
1.50	87	77	70	85	76	69	80	73	68	59
2.00	93	85	79	91	83	77	86	80	75	65
2.50	97	89	83	94	87	82	89	83	79	69
3.00	100	93	88	97	91	86	92	87	83	72
4.00	104	98	94	101	96	92	95	91	88	76
5.00	106	102	98	103	99	95	97	94	91	78
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:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*0.03	PROTECTION ANGLE:

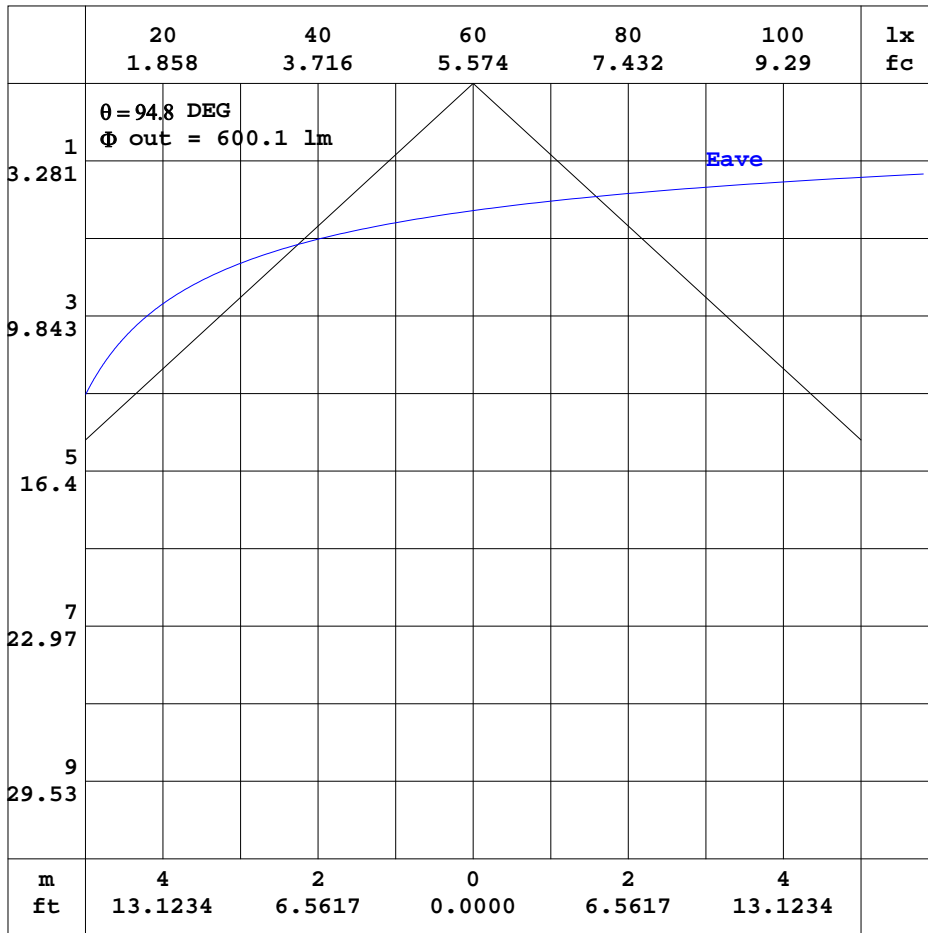


C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.6DEG  
 Operators: David  
 Test Date: 2017-11-21

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:

AAI CURVES

Test:U:120.0V I:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*0.03	PROTECTION ANGLE:



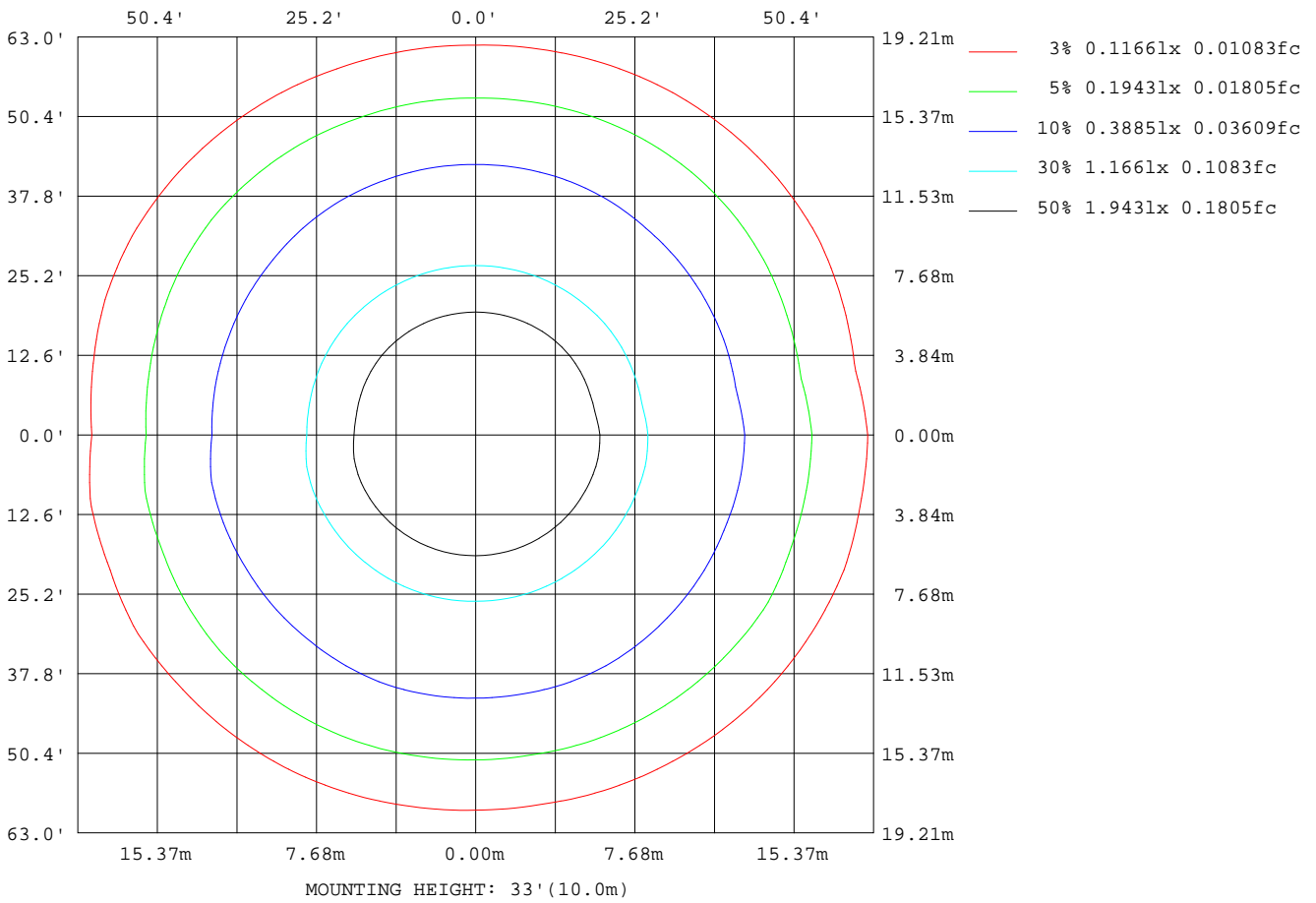
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

$\gamma$  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:

ISOLUX DIAGRAM

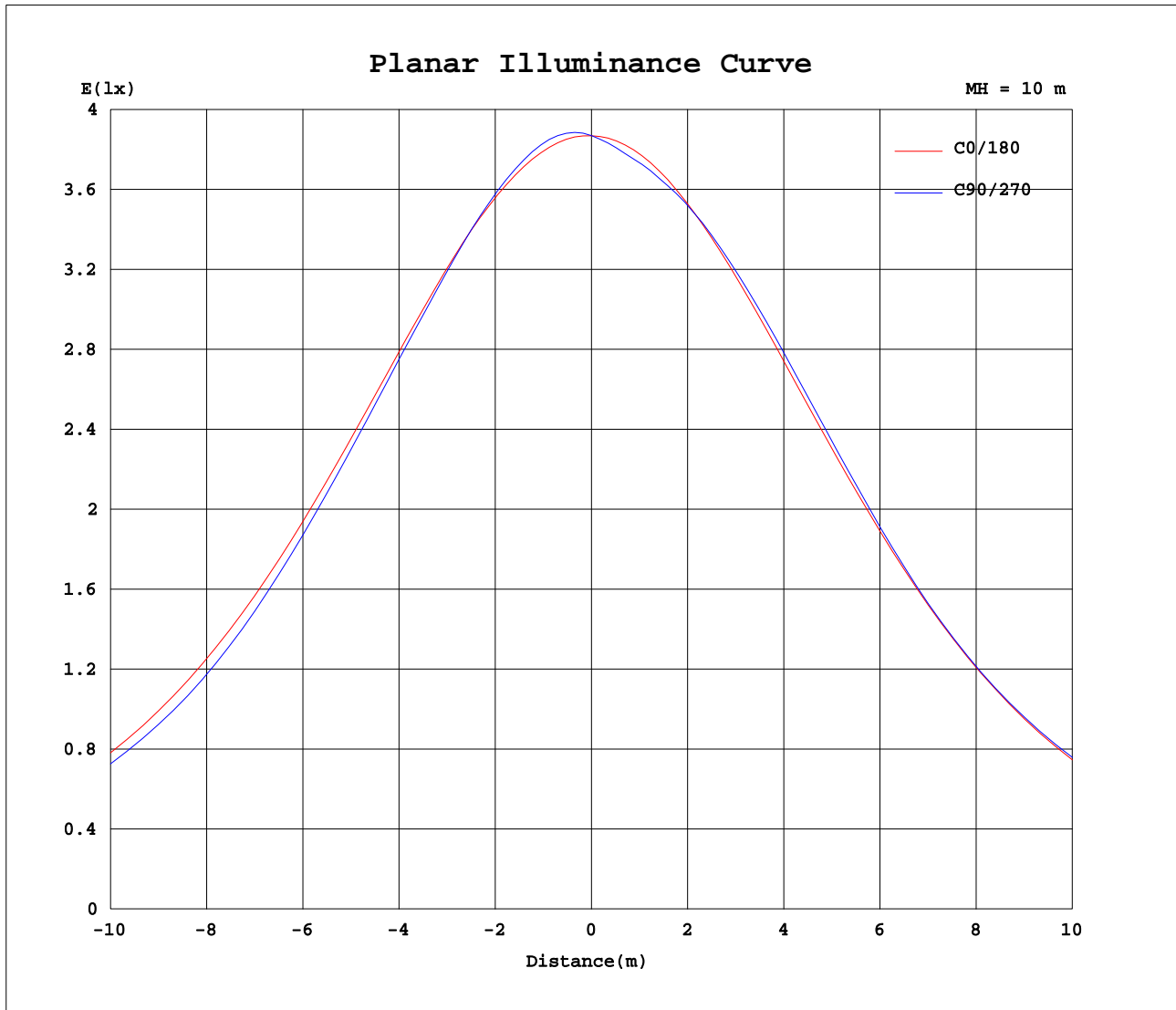
Test:U:120.0V I:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*0.03	PROTECTION ANGLE:



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

$\gamma$  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:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*0.03	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	387	387	387	387	387	387	387	387	387	387	387	387	387	387	387	387	387	387	387
5	386	387	388	388	389	389	389	390	390	389	390	389	389	389	388	388	387	385	384
10	380	382	383	383	383	383	383	383	382	382	383	383	383	383	383	383	381	379	377
15	370	372	372	372	371	370	370	370	369	369	370	370	371	371	372	372	371	369	365
20	355	357	357	355	354	353	352	351	351	351	351	352	353	354	355	356	356	354	349
25	336	338	336	334	333	331	330	330	329	329	330	330	331	332	334	336	337	335	329
30	313	314	312	309	307	305	304	303	302	303	303	304	305	307	309	311	313	312	305
35	285	286	283	280	278	276	274	272	271	271	272	274	276	277	280	282	285	284	277
40	255	255	251	247	245	242	240	239	238	238	239	240	242	244	247	250	254	253	245
45	221	221	215	212	210	209	208	207	206	205	207	208	208	209	212	215	219	220	211
50	187	186	181	180	179	177	176	176	175	175	176	176	176	177	179	180	183	186	177
55	155	153	150	150	152	150	146	144	141	141	143	146	148	150	150	149	151	153	145
60	126	124	124	124	122	119	115	112	109	109	111	114	117	120	122	125	123	125	117
65	100	98.8	99.8	97.4	95.2	92.2	88.6	85.4	82.5	82.5	84.4	87.8	91.3	93.8	95.9	97.5	97.8	99.2	92.9
70	77.5	76.8	75.5	74.1	72.2	69.4	66.2	63.5	61.3	60.9	62.7	65.5	68.5	71.2	73.0	74.4	76.3	76.5	72.1
75	56.6	56.0	55.2	54.2	52.4	49.9	47.1	44.5	42.9	42.3	44.1	46.3	48.9	51.3	53.2	54.3	55.0	55.8	53.1
80	37.1	36.8	35.9	35.0	33.6	31.7	29.5	27.9	26.6	26.2	27.5	29.0	30.9	32.7	34.1	34.9	35.6	36.5	35.3
85	18.4	18.3	17.8	17.3	16.2	14.8	13.9	12.9	12.2	12.1	12.6	13.4	14.3	15.2	16.3	16.9	17.3	17.6	17.5
90	3.79	4.16	2.90	2.27	2.21	2.09	1.77	1.45	1.15	1.13	1.43	1.71	1.97	2.16	2.42	3.29	4.05	3.91	3.70
95	3.64	5.62	7.41	8.71	9.37	9.66	9.70	9.42	9.19	9.23	9.57	9.82	9.73	9.49	8.99	7.70	5.98	3.80	3.52
100	3.41	8.65	13.2	16.4	18.6	19.8	20.3	20.7	20.3	20.5	20.7	20.5	20.1	19.0	17.0	14.0	9.65	3.96	3.41
105	2.83	8.05	17.3	22.8	26.6	28.9	30.3	31.0	30.8	31.0	31.0	30.7	29.3	27.1	23.7	18.5	9.47	3.35	3.09
110	2.49	7.32	16.5	27.8	32.9	36.2	38.2	39.2	39.6	39.7	39.6	38.8	36.8	33.7	29.0	19.2	8.84	2.75	2.77
115	2.29	6.42	14.0	23.7	34.8	40.9	44.5	46.2	46.9	46.9	46.6	45.1	41.8	35.8	25.9	15.4	7.52	2.23	2.47
120	2.13	5.27	11.9	19.1	27.7	36.7	41.4	44.2	45.6	45.7	44.9	42.1	38.0	29.3	20.2	13.1	6.25	2.05	2.17
125	1.97	4.09	9.94	16.3	22.1	28.1	34.7	39.0	41.1	41.2	39.8	35.8	29.4	22.9	17.4	10.9	4.99	1.87	2.03
130	1.81	2.99	8.02	13.6	18.8	23.1	26.3	29.7	31.9	32.0	30.4	26.8	23.7	19.5	14.4	8.90	3.69	1.75	1.95
135	1.73	2.05	6.24	11.0	15.5	19.4	22.4	24.3	25.4	25.5	24.7	22.8	19.9	16.2	11.7	6.98	2.55	1.69	1.85
140	1.65	1.67	4.47	8.54	12.4	15.8	18.4	20.2	21.2	21.3	20.6	18.8	16.2	12.9	9.16	5.09	1.74	1.61	1.87
145	1.65	1.63	2.90	6.17	9.43	12.3	14.5	16.1	17.0	17.1	16.4	14.8	12.6	9.84	6.68	3.40	1.54	1.59	1.83
150	1.59	1.56	1.74	3.97	6.57	8.92	10.8	12.1	12.9	12.9	12.4	11.1	9.20	6.94	4.39	2.10	1.49	1.55	1.65
155	1.47	1.36	1.36	2.08	3.88	5.67	7.21	8.25	8.86	8.88	8.48	7.41	5.93	4.16	2.36	1.32	1.34	1.39	1.55
160	1.39	1.28	1.28	1.18	1.77	2.81	3.89	4.73	5.17	5.17	4.86	4.06	3.00	1.89	1.12	1.18	1.22	1.31	1.43
165	1.16	1.14	1.12	1.06	1.06	1.04	1.41	1.85	2.08	2.11	1.89	1.45	1.01	0.96	1.04	1.10	1.10	1.10	1.47
170	1.19	1.18	1.02	1.00	1.00	1.00	1.08	1.16	1.15	1.16	1.14	1.02	0.94	0.94	1.16	1.18	1.18	1.17	1.59
175	1.47	1.24	1.22	1.20	1.06	1.06	1.08	1.16	1.13	1.16	1.14	1.04	0.98	1.11	1.24	1.45	1.49	1.51	1.57
180	1.51	1.51	1.28	1.18	1.24	1.16	1.08	1.16	1.13	1.18	1.20	1.08	1.02	1.22	1.32	1.52	1.55	1.61	1.57

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:0.1828A P:21.86W PF:0.9960 Lamp Flux:1040.75x1 lm		
NAME: Nano,25"Vanity,Satin Nicke or Polished Chrome	TYPE:NAN-25V-SN or PC	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Blackjack Lighting	SUR.:0.64*0.03	PROTECTION ANGLE:

Table--2

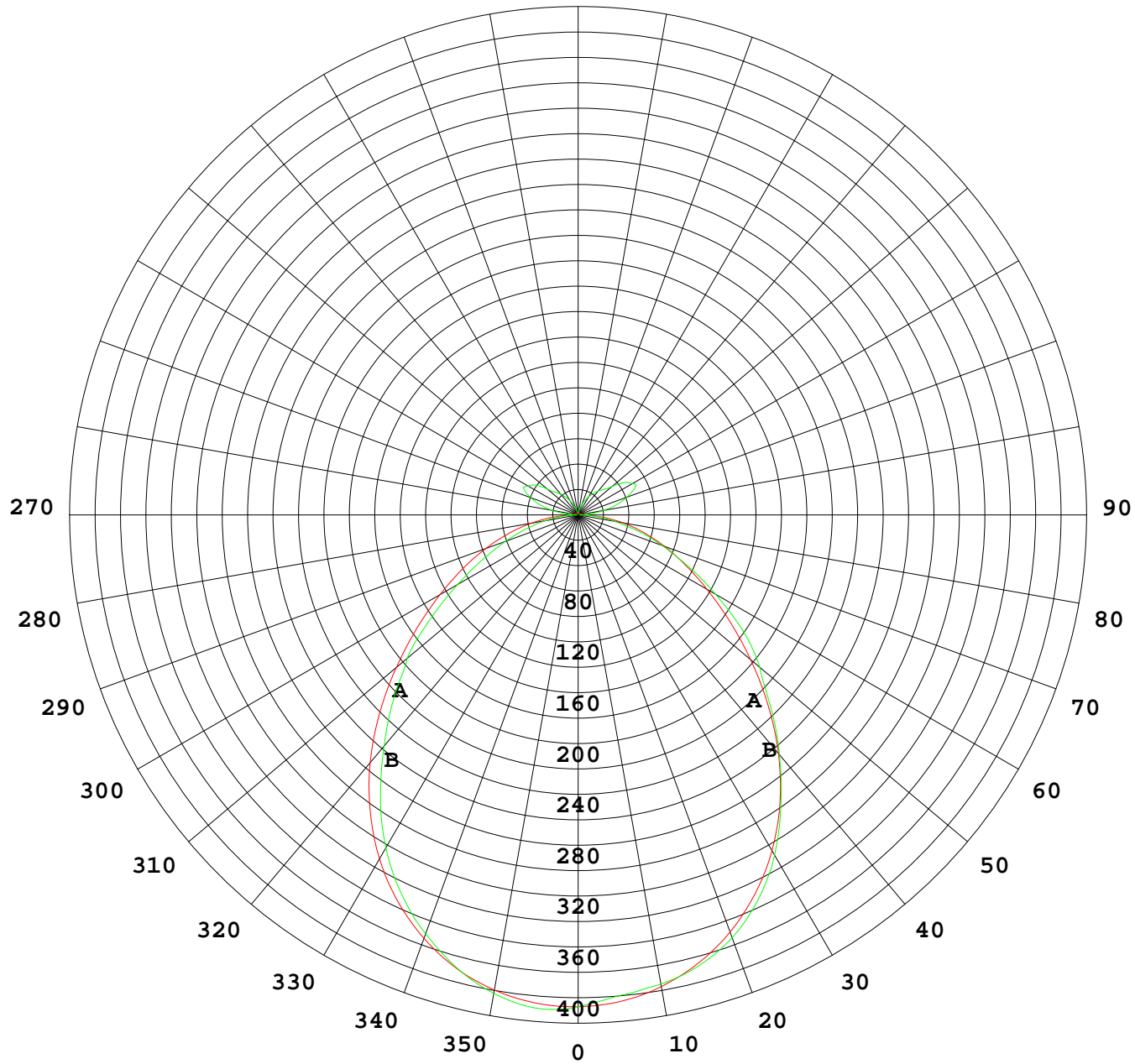
UNIT: cd

C( DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	387	387	387	387	387	387	387	387	387	387	387	387	387	387	387	387	387		
5	383	382	381	381	380	380	380	379	380	380	379	380	380	381	382	383	384		
10	375	373	373	373	374	374	374	375	375	374	374	374	373	373	373	374	376		
15	362	362	362	364	365	366	367	367	367	367	366	365	364	363	362	362	365		
20	346	346	349	351	352	353	354	354	354	354	353	352	351	350	348	347	349		
25	327	328	330	333	334	334	335	334	335	334	334	334	333	332	329	327	329		
30	303	305	307	309	310	310	310	309	309	309	309	310	310	309	307	304	305		
35	276	278	280	281	280	279	279	278	278	278	279	280	280	281	280	277	277		
40	246	247	248	248	248	247	247	247	246	246	247	247	248	249	249	247	246		
45	212	214	215	215	215	215	215	215	215	215	215	215	214	216	215	214	212		
50	179	180	182	183	184	184	186	187	187	186	185	183	182	182	181	180	178		
55	148	150	154	157	159	160	159	158	158	159	159	159	157	154	151	149	146		
60	121	127	130	131	130	129	126	125	125	126	128	130	130	130	127	122	118		
65	98.7	103	104	104	102	99.7	97.3	95.9	95.3	97.0	99.2	101	103	103	103	99.6	94.1		
70	77.1	79.0	79.3	78.3	76.5	74.0	72.2	70.4	70.0	71.9	73.7	76.0	77.6	78.7	78.9	77.5	73.2		
75	56.6	57.3	57.4	56.5	54.4	52.1	50.3	48.4	48.2	49.8	51.6	54.1	56.0	57.2	57.4	56.9	54.1		
80	36.5	36.4	36.0	35.0	33.5	32.0	30.5	29.1	29.1	30.0	31.7	33.2	34.8	35.9	36.6	36.7	36.1		
85	18.2	18.2	18.1	17.4	16.4	15.5	14.7	14.1	14.1	14.6	15.5	16.5	17.5	18.3	18.7	18.8	18.2		
90	4.05	3.00	2.49	2.26	2.08	1.84	1.56	1.23	1.22	1.54	1.86	2.14	2.32	2.34	2.72	4.01	3.77		
95	6.01	7.80	9.01	9.73	9.98	10.0	9.80	9.48	9.42	9.64	9.90	9.97	9.66	9.01	7.85	6.30	4.02		
100	9.07	13.5	16.5	18.5	19.7	20.5	20.5	20.5	20.4	20.6	20.6	20.0	18.6	16.8	14.1	9.94	4.04		
105	8.73	18.1	23.5	27.1	29.3	30.5	31.6	31.6	31.6	31.6	31.0	29.8	27.7	24.4	19.3	10.1	3.74		
110	8.60	17.5	29.1	34.1	37.3	39.3	40.4	40.8	40.9	40.9	39.8	38.1	35.1	30.5	20.5	10.1	3.40		
115	7.91	15.8	25.7	37.6	43.6	46.5	47.9	48.5	48.7	48.4	47.2	44.8	39.3	28.6	17.3	9.11	3.05		
120	7.19	14.1	21.3	29.9	39.4	44.5	47.7	49.2	49.4	48.3	45.8	41.2	32.3	22.5	15.4	8.39	2.71		
125	6.33	12.5	19.0	24.6	30.6	37.6	42.2	44.5	44.6	42.8	39.0	32.4	25.5	20.1	13.6	7.37	2.47		
130	5.31	11.0	16.5	21.8	25.9	29.1	32.6	34.9	35.0	33.3	29.9	26.9	22.6	17.4	11.9	6.31	2.15		
135	4.40	9.10	14.2	18.7	22.5	25.4	27.5	28.6	28.6	27.8	26.2	23.3	19.3	14.9	10.1	5.28	2.15		
140	3.52	7.51	11.8	15.7	19.0	21.6	23.4	24.5	24.5	23.8	22.2	19.5	16.2	12.5	8.31	4.28	1.97		
145	2.76	5.91	9.34	12.8	15.6	17.8	19.4	20.4	20.5	19.7	18.3	16.1	13.3	10.1	6.63	3.40	1.89		
150	1.99	4.38	7.16	9.13	12.3	14.1	15.5	16.4	16.4	15.7	14.6	12.7	10.4	7.82	5.10	2.57	1.85		
155	1.39	2.80	4.94	6.77	7.99	10.4	11.5	12.3	12.2	11.8	10.9	9.42	7.63	5.68	3.68	1.89	1.61		
160	1.37	1.50	2.86	4.30	5.53	6.46	7.80	8.36	8.49	8.19	7.55	6.48	5.24	3.95	2.61	1.51	1.59		
165	1.41	1.16	1.34	2.02	2.83	3.65	4.21	4.81	5.02	4.84	4.48	3.80	2.99	2.26	1.65	1.52	1.59		
170	1.57	1.48	1.34	1.26	1.24	1.59	1.95	2.14	2.21	2.27	2.14	1.82	1.47	1.24	1.40	1.53	1.59		
175	1.57	1.55	1.36	1.22	1.24	1.16	1.12	1.15	1.14	1.16	1.20	1.08	1.02	1.24	1.40	1.55	1.59		
180	1.51	1.52	1.28	1.18	1.24	1.16	1.08	1.15	1.14	1.18	1.20	1.08	1.02	1.20	1.32	1.51	1.57		

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

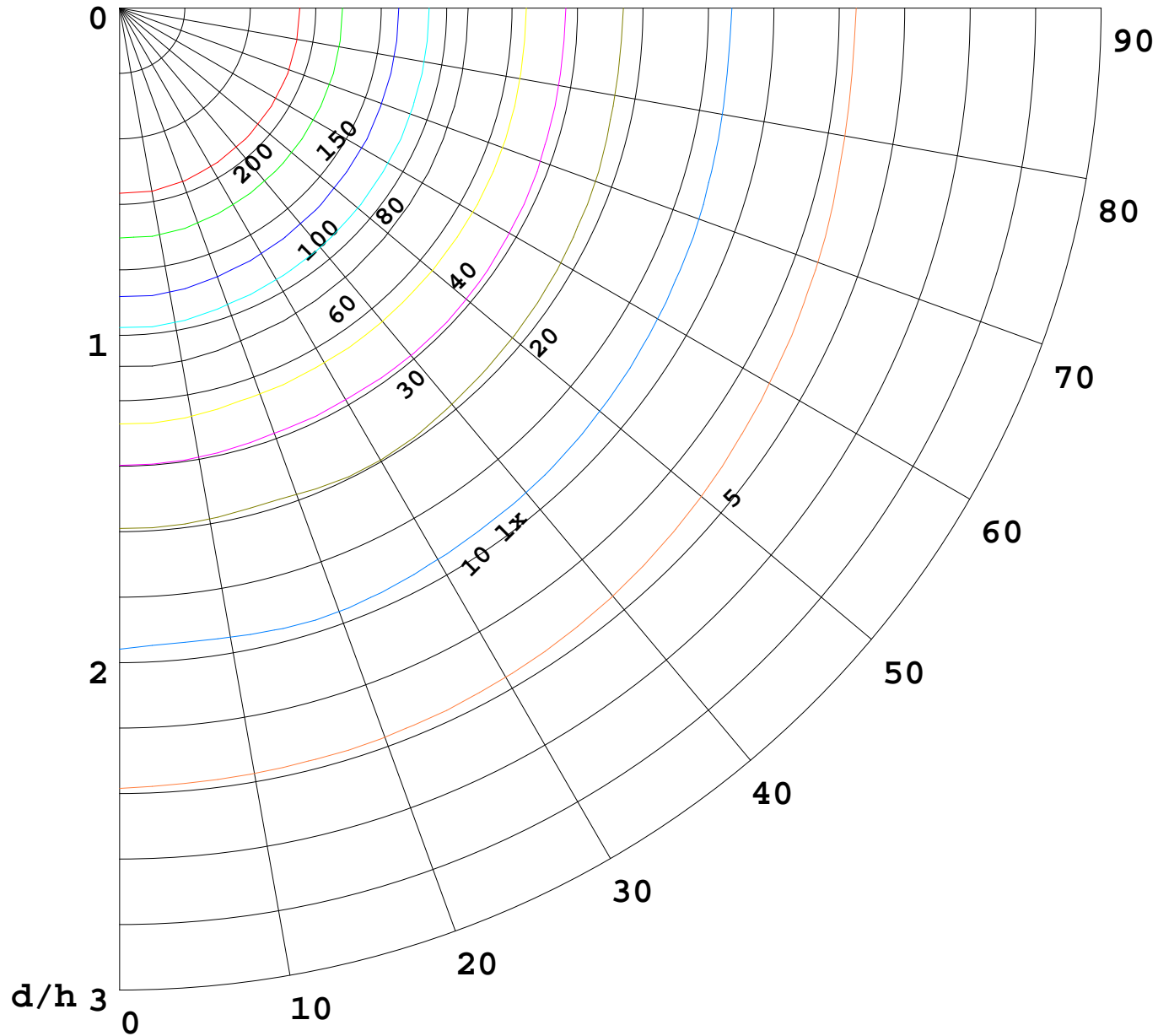
γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.287  
 Humidity:67.1%  
 Test Distance:26.000m [K=1.0000]  
 Remarks:

I (cd)



1000 lm

$\kappa = 1$



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

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

