NATA LIGHTING CO.,LTD
www.nata.cn
Email:info@nata.cn
Tel:+86 0750-377 0000(10 lines) Fax:+86 0750-377 1111
Address:380JinOu Road,Gaoxin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 3-1550-A3
Luminaire: TE 2213130-1+92.76.365.00

Report No: GC20170511507	Voltage(V): 219.9000
Test No: NT-0010	Current(A): 0.1350
LampCAT: LUXEON CoB 1208	Power (W): 28.1000
Lamp flux(lm): 3194.0	PF: 0.9420
Number of Lamps: 1	Ballast type: C
Length(mm): 78	Width(mm): 78
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2909.25
Efficiency(%): 91.08%
Lumens(lm)/Power(W): 103.53
Central intensity(cd): 4928.924
Maximum intensity(cd): 4928.924
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=43.9
[C90/270]Total=43.9
Field angle(10%Imax): [C0/180]Total=73.4
[C90/270]Total=73.4
Maximum s/h(1/2): C0_180=0.70 C90_270=0.70
Maximum s/h(1/4): C0_180=0.73 C90_270=0.73
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.08%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.638%

Equipment: gms1980	Date: 2017/5/15	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4928.924	0.000	0	.000%	.000%
1.0	4920.390	4.713	4.713	.148%	.162%
2.0	4894.514	14.087	18.8	.441%	.646%
3.0	4847.441	23.300	42.1	.729%	1.447%
4.0	4782.199	32.233	74.333	1.009%	2.555%
5.0	4705.258	40.815	115.148	1.278%	3.958%
6.0	4622.948	49.022	164.17	1.535%	5.643%
7.0	4532.105	56.825	220.995	1.779%	7.596%
8.0	4444.153	64.241	285.236	2.011%	9.804%
9.0	4342.574	71.212	356.448	2.230%	12.252%
10.0	4228.607	77.566	434.014	2.428%	14.918%
11.0	4118.494	83.405	517.419	2.611%	17.785%
12.0	4006.179	88.814	606.233	2.781%	20.838%
13.0	3872.254	93.497	699.73	2.927%	24.052%
14.0	3753.745	97.612	797.342	3.056%	27.407%
15.0	3632.759	101.405	898.748	3.175%	30.893%
16.0	3481.629	104.246	1002.993	3.264%	34.476%
17.0	3348.943	106.370	1109.364	3.330%	38.132%
18.0	3181.021	107.665	1217.029	3.371%	41.833%
19.0	2987.498	107.320	1324.348	3.360%	45.522%
20.0	2806.775	106.051	1430.4	3.320%	49.167%
21.0	2626.603	104.332	1534.731	3.266%	52.753%
22.0	2456.479	102.147	1636.878	3.198%	56.265%
23.0	2322.417	100.274	1737.152	3.139%	59.711%
24.0	2182.298	98.489	1835.641	3.084%	63.097%
25.0	2039.289	95.990	1931.631	3.005%	66.396%
26.0	1928.763	93.666	2025.297	2.933%	69.616%
27.0	1803.097	91.301	2116.598	2.859%	72.754%
28.0	1686.928	88.360	2204.958	2.766%	75.791%
29.0	1576.265	85.374	2290.333	2.673%	78.726%
30.0	1472.483	82.316	2372.648	2.577%	81.555%
31.0	1348.056	78.492	2451.14	2.457%	84.253%
32.0	1213.897	73.397	2524.537	2.298%	86.776%
33.0	1060.951	67.018	2591.555	2.098%	89.080%
34.0	896.910	59.251	2650.805	1.855%	91.116%
35.0	750.956	51.177	2701.982	1.602%	92.875%
36.0	594.692	42.846	2744.827	1.341%	94.348%
37.0	450.898	34.101	2778.929	1.068%	95.520%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	325.287	25.908	2804.837	.811%	96.411%
39.0	203.420	18.046	2822.883	.565%	97.031%
40.0	122.790	11.377	2834.26	.356%	97.422%
41.0	63.150	6.621	2840.881	.207%	97.650%
42.0	40.095	3.751	2844.632	.117%	97.779%
43.0	32.277	2.681	2847.313	.084%	97.871%
44.0	26.455	2.217	2849.53	.069%	97.947%
45.0	20.784	1.815	2851.345	.057%	98.010%
46.0	16.765	1.468	2852.814	.046%	98.060%
47.0	15.209	1.272	2854.085	.040%	98.104%
48.0	14.783	1.212	2855.298	.038%	98.145%
49.0	14.370	1.197	2856.495	.037%	98.187%
50.0	14.108	1.187	2857.682	.037%	98.227%
51.0	13.929	1.186	2858.868	.037%	98.268%
52.0	13.709	1.186	2860.054	.037%	98.309%
53.0	13.544	1.185	2861.24	.037%	98.350%
54.0	13.406	1.188	2862.428	.037%	98.390%
55.0	13.241	1.189	2863.617	.037%	98.431%
56.0	13.117	1.191	2864.808	.037%	98.472%
57.0	13.048	1.196	2866.005	.037%	98.513%
58.0	12.924	1.201	2867.206	.038%	98.555%
59.0	12.814	1.203	2868.409	.038%	98.596%
60.0	12.746	1.208	2869.617	.038%	98.638%
61.0	12.622	1.211	2870.827	.038%	98.679%
62.0	12.567	1.214	2872.041	.038%	98.721%
63.0	12.484	1.218	2873.259	.038%	98.763%
64.0	12.443	1.223	2874.482	.038%	98.805%
65.0	12.429	1.231	2875.713	.039%	98.847%
66.0	12.457	1.242	2876.955	.039%	98.890%
67.0	12.539	1.257	2878.212	.039%	98.933%
68.0	12.553	1.271	2879.483	.040%	98.977%
69.0	12.553	1.281	2880.764	.040%	99.021%
70.0	12.539	1.289	2882.052	.040%	99.065%
71.0	12.553	1.297	2883.349	.041%	99.110%
72.0	12.580	1.307	2884.656	.041%	99.155%
73.0	12.663	1.320	2885.976	.041%	99.200%
74.0	12.759	1.337	2887.313	.042%	99.246%
75.0	12.911	1.356	2888.669	.042%	99.292%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.090	1.380	2890.049	.043%	99.340%
77.0	13.214	1.402	2891.451	.044%	99.388%
78.0	13.379	1.424	2892.875	.045%	99.437%
79.0	13.668	1.453	2894.328	.045%	99.487%
80.0	13.833	1.483	2895.811	.046%	99.538%
81.0	13.833	1.496	2897.307	.047%	99.589%
82.0	13.599	1.488	2898.795	.047%	99.641%
83.0	12.924	1.442	2900.236	.045%	99.690%
84.0	12.112	1.364	2901.6	.043%	99.737%
85.0	11.837	1.307	2902.907	.041%	99.782%
86.0	11.768	1.290	2904.198	.040%	99.826%
87.0	11.589	1.278	2905.476	.040%	99.870%
88.0	11.507	1.265	2906.741	.040%	99.914%
89.0	11.438	1.258	2907.999	.039%	99.957%
90.0	11.424	1.253	2909.252	.039%	100.000%

Zonal flux distribution table

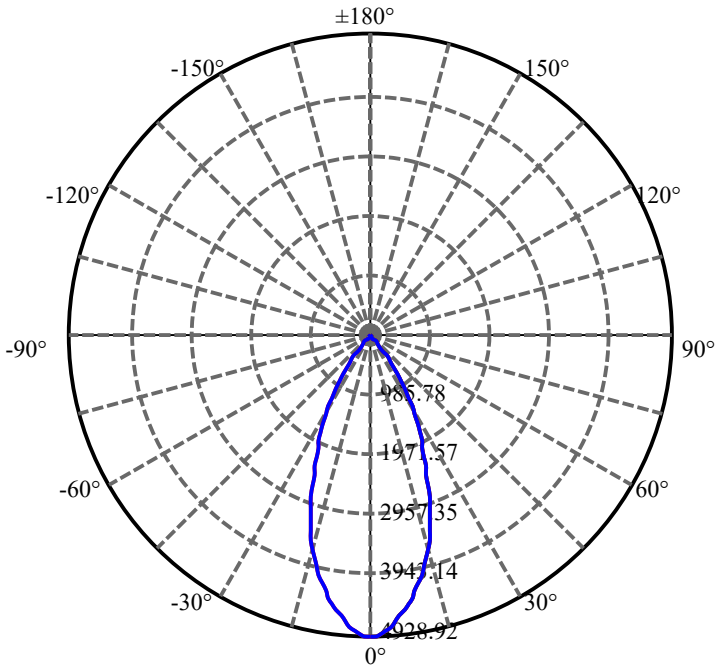
ZONAL LUMEN SUMMARY

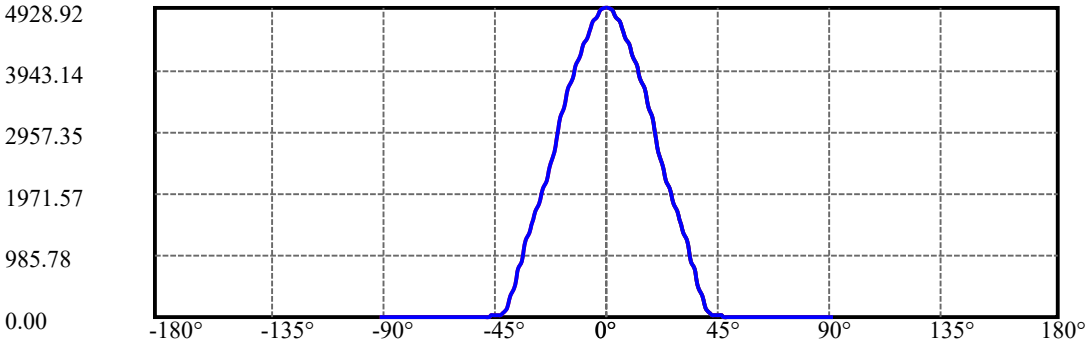
Zone	Lumens	%Lamp	%Fixt
0-30	2372.65	74.28%	81.56%
0-40	2834.26	88.74%	97.42%
0-60	2869.62	89.84%	98.64%
0-90	2908.00	91.05%	99.96%
0-120	2908.00	91.05%	99.96%
0-180	2909.25	91.08%	100.00%
60-90	39.59	1.24%	1.36%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-29.45	2327.40	72.87%	80.00%

ZONAL LUMEN SUMMARY

0-10	434.01
10-20	996.39
20-30	942.25
30-40	461.61
40-50	23.42
50-60	11.93
60-70	12.44
70-80	13.76
80-90	12.19
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

Light Distribution Curve [Unit:cd]





C0(Max):

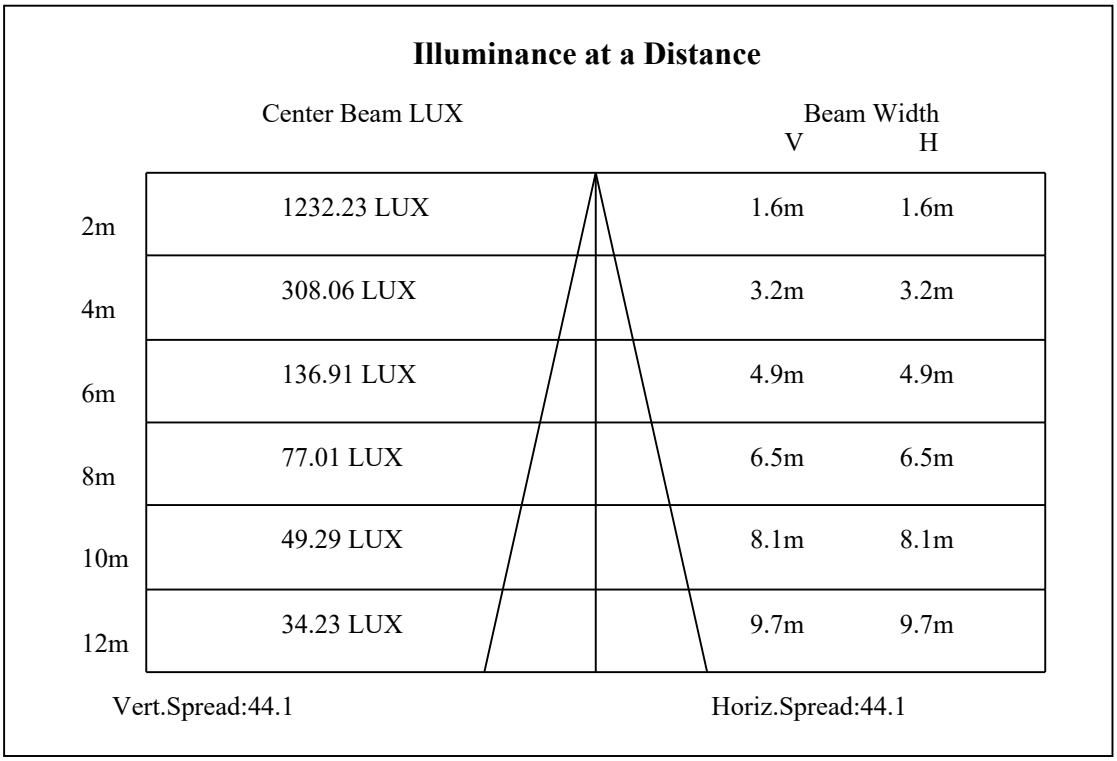
C0/C180:

C90/C270:

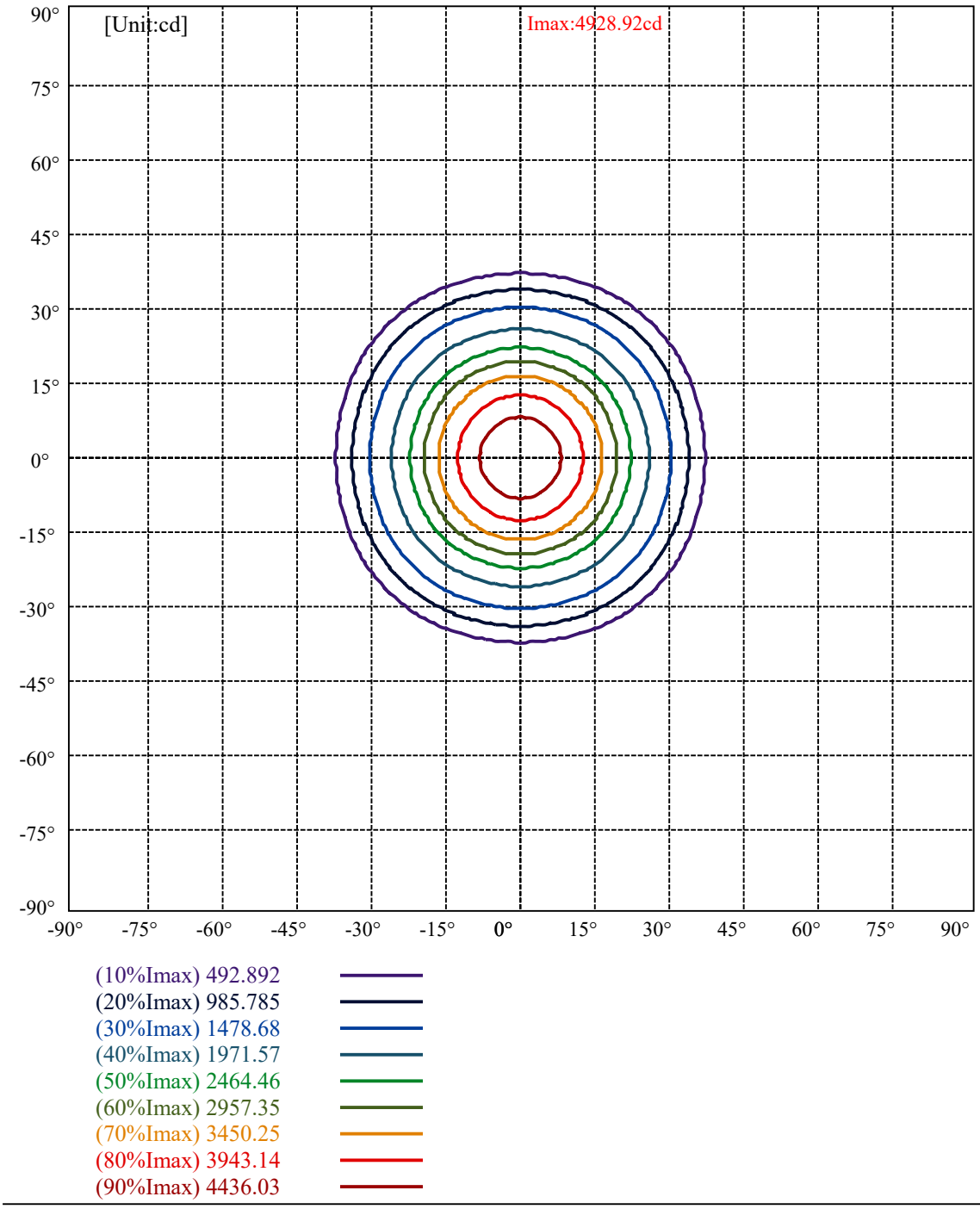
Field angle(10%Imax):C0/180Left:36.7 Right:36.7
:C90/270Left:36.7 Right:36.7

Beam Angle(50%Imax):C0/180Left:22.0 Right:22.0
:C90/270Left:22.0 Right:22.0

Lux distance Curve



ISO-Intensity(V-H)

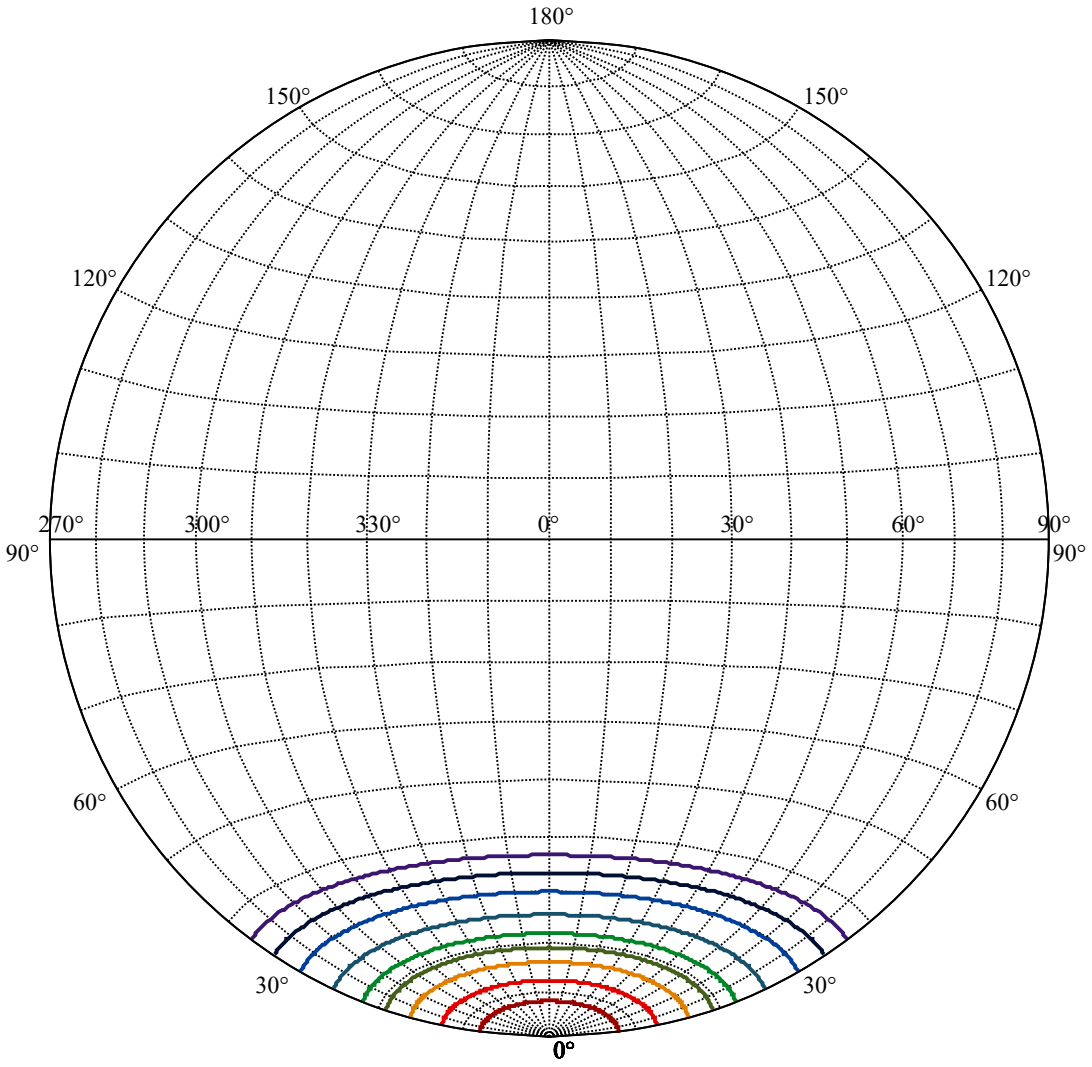


Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/15
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:4928.92

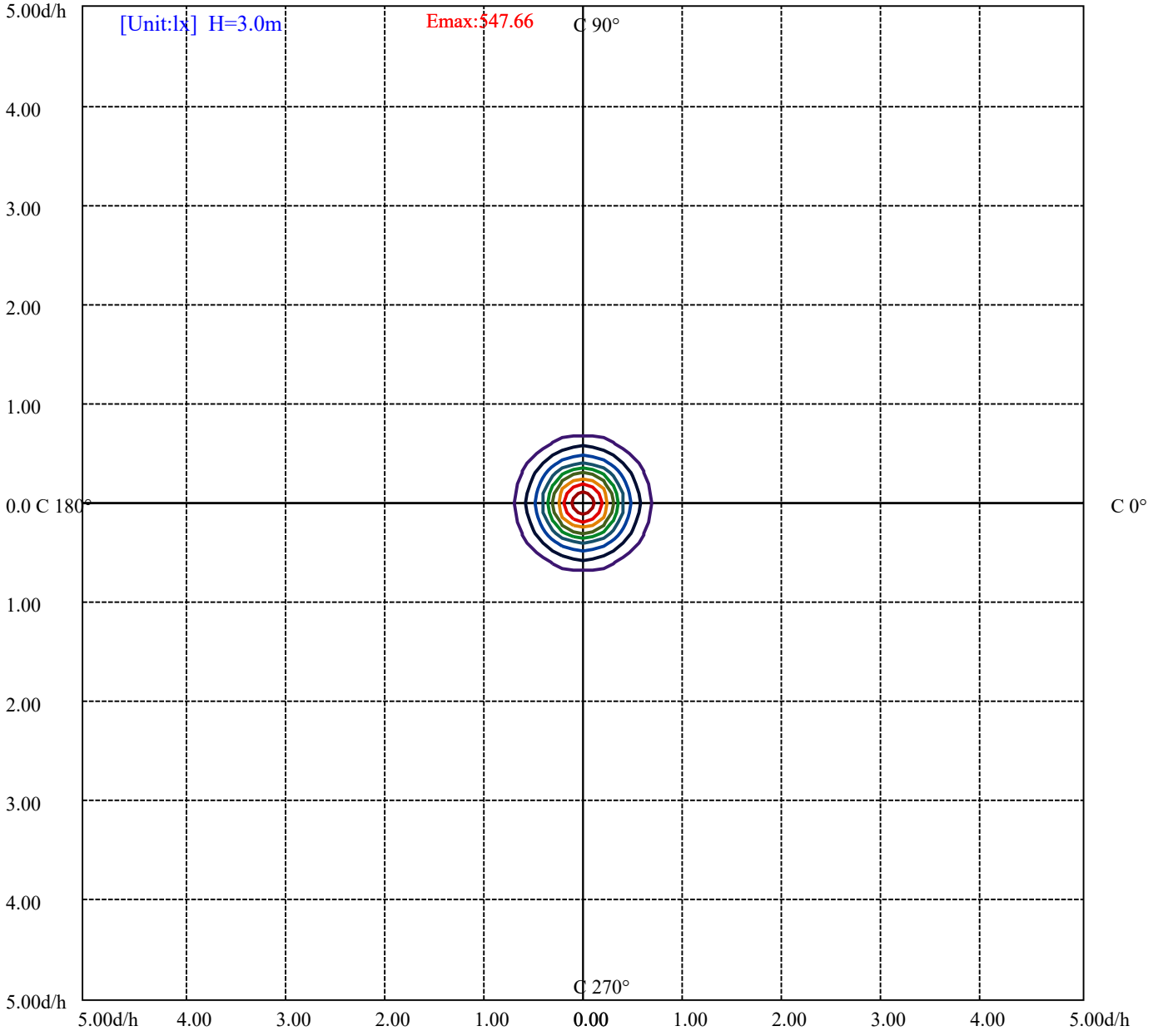
(10%Imax) 492.892
(20%Imax) 985.785
(30%Imax) 1478.68
(40%Imax) 1971.57
(50%Imax) 2464.46
(60%Imax) 2957.35
(70%Imax) 3450.25
(80%Imax) 3943.14
(90%Imax) 4436.03

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/15
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

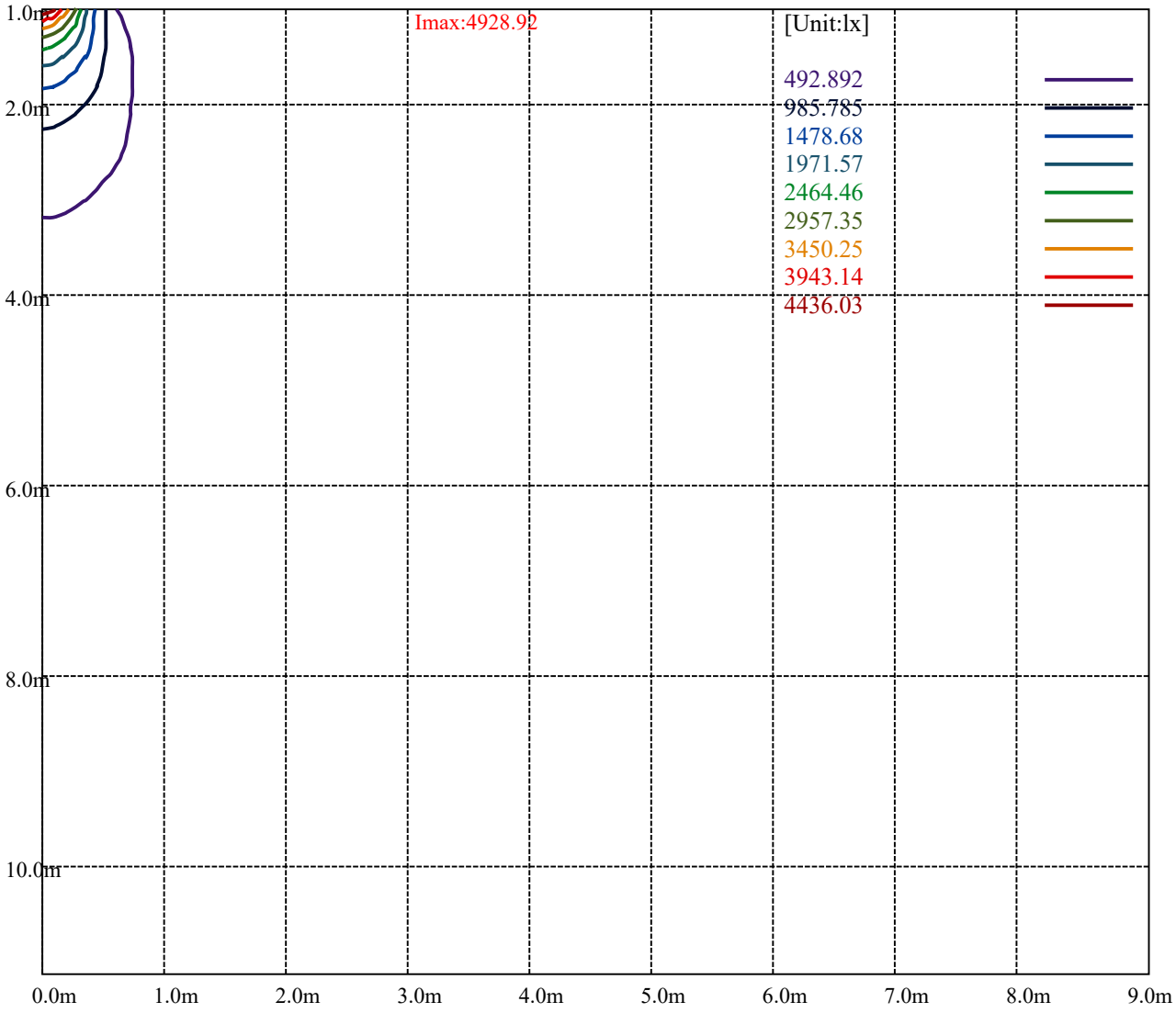
ISO illuminance diagram



(10%Emax) 54.76578
(20%Emax) 109.5316
(30%Emax) 164.2978
(40%Emax) 219.0633
(50%Emax) 273.8289
(60%Emax) 328.5945
(70%Emax) 383.3611
(80%Emax) 438.1266
(90%Emax) 492.8922

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/5/15
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/15
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

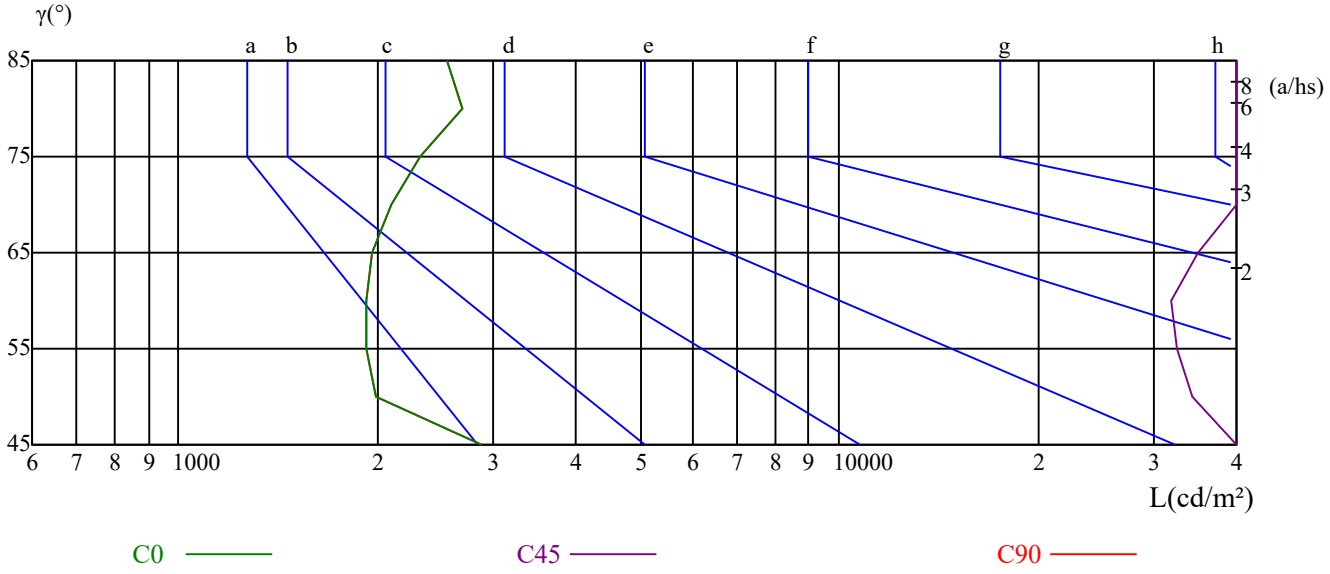
γ	45	50	55	60	65	70	75	80	85
C0	2877	1993	1926	1925	1967	2102	2319	2698	2546
C45	40463	34244	32490	31933	35057	53542	72279	78239	43069
C90	2877	1993	1926	1925	1967	2102	2319	2698	2546

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4834	4834	107300	8199	8199	331490	22323	22323	516119

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limitting Curve

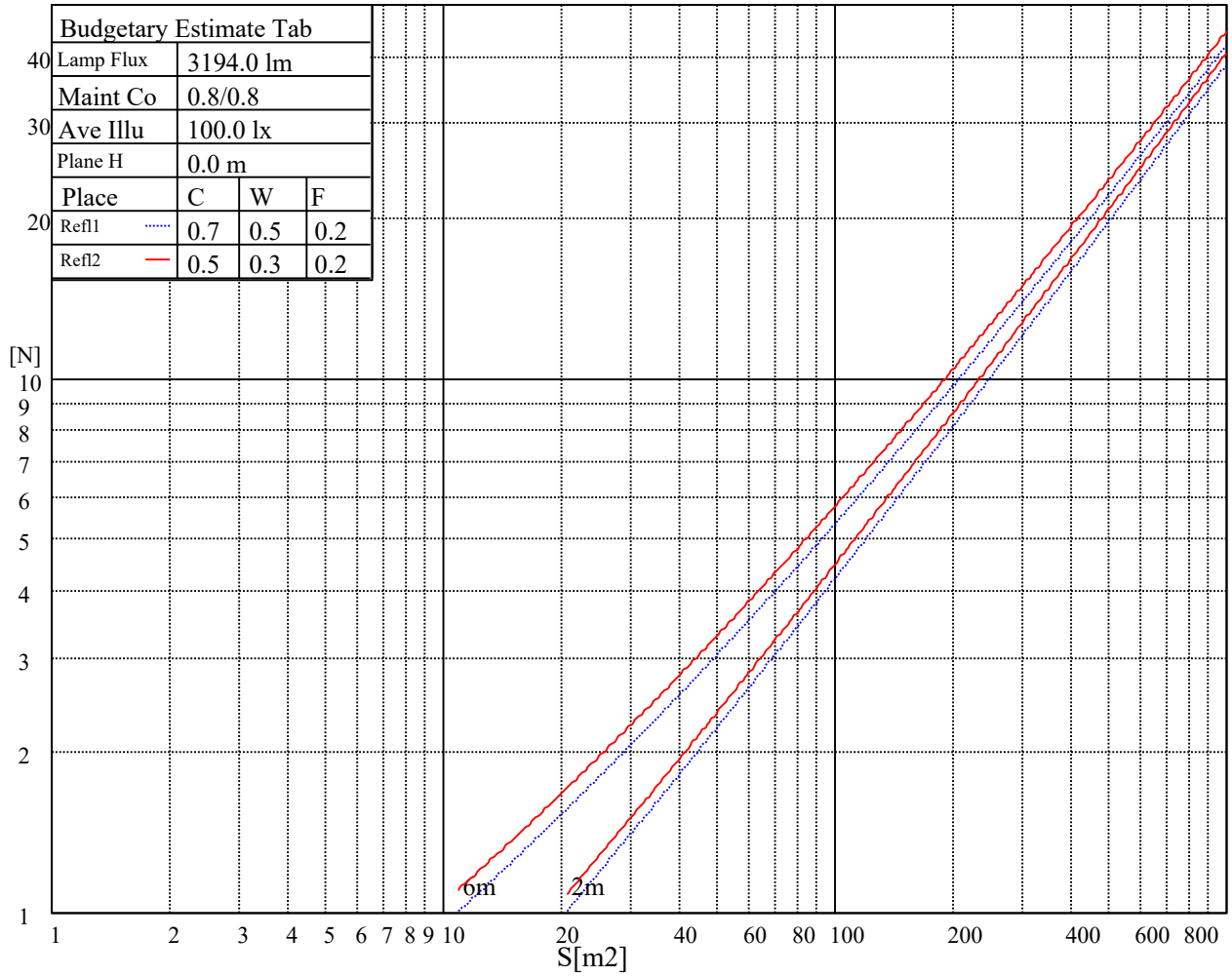


Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/15
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Budgetary Estimate Table

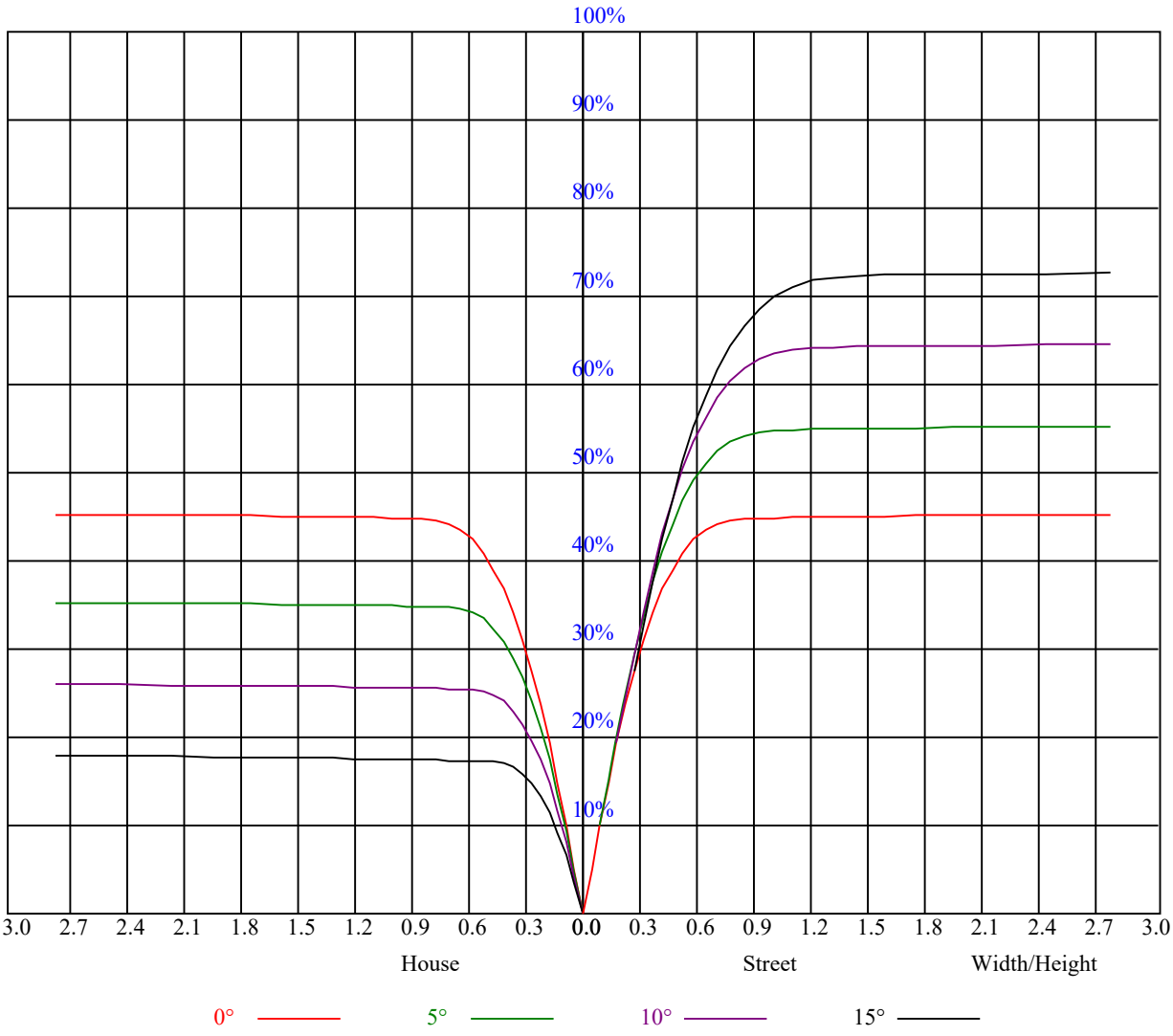


Equipment: gms1980 Date: 2017/5/15 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Utilization factor table for indoor luminaire

RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.01	0.99	0.97	0.99	0.97	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.95	0.91	0.88	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.82	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.76
4	0.84	0.79	0.76	0.83	0.79	0.75	0.81	0.78	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
5	0.79	0.75	0.71	0.79	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.68
6	0.75	0.70	0.67	0.75	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.64
7	0.71	0.66	0.63	0.71	0.66	0.63	0.70	0.66	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.61
8	0.68	0.63	0.60	0.67	0.63	0.59	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.58
9	0.65	0.60	0.56	0.64	0.60	0.56	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.55
10	0.62	0.57	0.54	0.61	0.57	0.54	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.56	0.53	0.52

Coefficient Utilization Curve



Equipment: gms1980	Date: 2017/5/15	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	4933.05	4915.44	4874.14	4817.44	4737.60	4644.01	4561.42	4470.58	4383.59
90.0	4924.79	4931.95	4922.59	4892.31	4845.51	4777.24	4694.66	4616.48	4530.04
180.0	4933.05	4934.71	4925.35	4893.41	4846.06	4783.85	4707.32	4601.06	4509.12
270.0	4924.79	4899.47	4855.97	4786.60	4699.61	4615.93	4528.39	4440.30	4353.86
360.0	4933.05	4915.44	4874.14	4817.44	4737.60	4644.01	4561.42	4470.58	4383.59

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4292.20	4166.12	4061.51	3955.25	3814.86	3698.69	3577.56	3410.19	3259.34
90.0	4419.38	4320.28	4212.92	4088.49	3963.51	3853.40	3724.57	3592.98	3470.76
180.0	4398.46	4292.75	4171.07	4062.06	3935.43	3804.95	3689.33	3553.34	3427.26
270.0	4260.26	4135.29	4028.48	3918.91	3775.22	3657.95	3539.58	3370.00	3238.42
360.0	4292.20	4166.12	4061.51	3955.25	3814.86	3698.69	3577.56	3410.19	3259.34

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	3095.82	2906.98	2723.64	2566.18	2407.07	2277.13	2136.19	2006.81	1890.64
90.0	3315.50	3149.23	2947.17	2765.48	2601.97	2452.76	2285.94	2155.46	2038.19
180.0	3263.19	3070.50	2886.61	2686.75	2501.76	2358.62	2228.13	2072.87	1962.76
270.0	3049.57	2823.29	2669.68	2488.00	2315.12	2201.15	2078.93	1922.02	1823.47
360.0	3095.82	2906.98	2723.64	2566.18	2407.07	2277.13	2136.19	2006.81	1890.64

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1765.66	1642.33	1540.48	1443.58	1304.29	1164.99	1019.64	834.66	687.10
90.0	1897.24	1787.68	1681.97	1560.85	1447.43	1342.83	1198.03	1021.30	877.60
180.0	1838.33	1728.77	1606.00	1503.04	1394.58	1264.09	1090.61	964.59	819.35
270.0	1711.15	1588.93	1476.61	1382.47	1245.93	1083.68	935.52	767.10	619.77
360.0	1765.66	1642.33	1540.48	1443.58	1304.29	1164.99	1019.64	834.66	687.10

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	544.51	395.86	290.15	159.39	78.51	47.62	40.91	32.32	25.88
90.0	712.98	567.63	423.93	286.29	218.74	98.72	45.42	36.39	31.00
180.0	657.43	501.51	372.95	243.84	135.66	66.84	40.36	32.98	27.53
270.0	463.85	338.60	214.11	124.15	58.25	39.42	33.69	27.42	21.42
360.0	544.51	395.86	290.15	159.39	78.51	47.62	40.91	32.32	25.88

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	19.82	15.42	15.03	14.65	14.37	14.15	13.98	13.76	13.54
90.0	25.11	19.55	15.91	15.36	14.70	14.48	14.31	14.04	13.87
180.0	22.46	17.01	15.36	14.92	14.53	14.15	13.93	13.71	13.54
270.0	15.75	15.09	14.53	14.20	13.87	13.65	13.49	13.32	13.21
360.0	19.82	15.42	15.03	14.65	14.37	14.15	13.98	13.76	13.54

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	13.43	13.27	13.16	13.10	12.99	12.88	12.77	12.61	12.55
90.0	13.71	13.54	13.38	13.32	13.16	13.05	12.99	12.88	12.83
180.0	13.43	13.21	13.10	13.05	12.88	12.77	12.72	12.61	12.55
270.0	13.05	12.94	12.83	12.72	12.66	12.55	12.50	12.39	12.33
360.0	13.43	13.27	13.16	13.10	12.99	12.88	12.77	12.61	12.55

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	12.50	12.55	12.61	12.72	12.77	12.77	12.77	12.77	12.83
90.0	12.72	12.61	12.55	12.55	12.72	12.83	12.83	12.77	12.77
180.0	12.50	12.39	12.33	12.33	12.44	12.39	12.39	12.39	12.39
270.0	12.22	12.22	12.22	12.22	12.22	12.22	12.22	12.22	12.22
360.0	12.50	12.55	12.61	12.72	12.77	12.77	12.77	12.77	12.83

Intensity data(cd)

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.05	13.43	13.87	14.42	15.03	15.64	16.02	16.57	16.68
90.0	12.77	12.83	12.83	12.88	12.94	12.99	13.32	13.76	14.20
180.0	12.33	12.28	12.22	12.22	12.28	12.17	12.17	12.33	12.44
270.0	12.17	12.11	12.11	12.11	12.11	12.06	12.00	12.00	12.00
360.0	13.05	13.43	13.87	14.42	15.03	15.64	16.02	16.57	16.68

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	16.08	14.81	13.65	12.06	11.89	11.84	11.56	11.45	11.45
90.0	14.65	14.87	13.43	12.39	12.06	11.95	11.84	11.62	11.45
180.0	12.66	12.83	12.83	12.33	11.73	11.73	11.51	11.45	11.40
270.0	11.95	11.89	11.78	11.67	11.67	11.56	11.45	11.51	11.45
360.0	16.08	14.81	13.65	12.06	11.89	11.84	11.56	11.45	11.45

C/γ(°)	90.0
0.0	11.40
90.0	11.45
180.0	11.40
270.0	11.45
360.0	11.40