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: 3-1549-E3
Luminaire: TE 2213382-1+92.76.365.00

Report No: GC20170511506	Voltage(V): 218.3000
Test No:	Current(A): 0.1020
LampCAT: NICHIA NFCLJ060B	Power (W): 20.3000
Lamp flux(lm): 2136.0	PF: 0.9070
Number of Lamps: 1	Ballast type: DC
Length(mm): 79	Width(mm): 79
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1931.31
Efficiency(%): 90.42%
Lumens(lm)/Power(W): 95.14
Central intensity(cd): 8232.583
Maximum intensity(cd): 8232.583
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=21.9
[C90/270]Total=21.9
Field angle(10%Imax): [C0/180]Total=49.5
[C90/270]Total=49.5
Maximum s/h(1/2): C0_180=0.37 C90_270=0.37
Maximum s/h(1/4): C0_180=0.38 C90_270=0.38
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.42%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.775%

Equipment: gms1980	Date: 2017/5/11	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	8232.583	0.000	0	.000%	.000%
1.0	8193.769	7.860	7.86	.368%	.407%
2.0	8043.052	23.305	31.164	1.091%	1.614%
3.0	7822.964	37.946	69.111	1.777%	3.578%
4.0	7531.027	51.395	120.505	2.406%	6.240%
5.0	7106.267	62.969	183.474	2.948%	9.500%
6.0	6696.372	72.537	256.011	3.396%	13.256%
7.0	6225.915	80.208	336.219	3.755%	17.409%
8.0	5704.531	85.384	421.603	3.997%	21.830%
9.0	5164.428	88.087	509.69	4.124%	26.391%
10.0	4640.153	88.728	598.418	4.154%	30.985%
11.0	4101.839	87.350	685.768	4.089%	35.508%
12.0	3624.363	84.458	770.227	3.954%	39.881%
13.0	3164.642	80.568	850.795	3.772%	44.053%
14.0	2707.811	75.167	925.962	3.519%	47.945%
15.0	2359.993	69.573	995.535	3.257%	51.547%
16.0	2047.823	64.587	1060.122	3.024%	54.891%
17.0	1776.257	59.551	1119.673	2.788%	57.975%
18.0	1551.214	54.863	1174.536	2.568%	60.815%
19.0	1372.955	50.875	1225.411	2.382%	63.450%
20.0	1227.414	47.594	1273.005	2.228%	65.914%
21.0	1102.959	44.748	1317.752	2.095%	68.231%
22.0	1013.120	42.524	1360.276	1.991%	70.433%
23.0	916.001	40.478	1400.754	1.895%	72.529%
24.0	864.317	38.924	1439.678	1.822%	74.544%
25.0	810.320	38.078	1477.756	1.783%	76.516%
26.0	766.605	37.224	1514.979	1.743%	78.443%
27.0	732.085	36.666	1551.645	1.717%	80.342%
28.0	706.126	36.412	1588.058	1.705%	82.227%
29.0	681.860	36.314	1624.371	1.700%	84.107%
30.0	658.585	36.192	1660.563	1.694%	85.981%
31.0	622.137	35.641	1696.204	1.669%	87.827%
32.0	573.839	34.263	1730.467	1.604%	89.601%
33.0	515.741	32.099	1762.566	1.503%	91.263%
34.0	459.804	29.523	1792.089	1.382%	92.791%
35.0	380.743	26.104	1818.193	1.222%	94.143%
36.0	303.911	21.800	1839.993	1.021%	95.272%
37.0	237.637	17.662	1857.655	.827%	96.186%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	187.247	14.182	1871.837	.664%	96.921%
39.0	112.480	10.231	1882.068	.479%	97.450%
40.0	68.683	6.318	1888.386	.296%	97.777%
41.0	32.291	3.596	1891.982	.168%	97.964%
42.0	18.705	1.853	1893.835	.087%	98.060%
43.0	13.103	1.178	1895.013	.055%	98.121%
44.0	11.355	0.923	1895.936	.043%	98.168%
45.0	10.323	0.833	1896.769	.039%	98.211%
46.0	9.717	0.784	1897.553	.037%	98.252%
47.0	9.153	0.751	1898.303	.035%	98.291%
48.0	8.809	0.726	1899.029	.034%	98.329%
49.0	8.520	0.712	1899.741	.033%	98.365%
50.0	8.396	0.705	1900.446	.033%	98.402%
51.0	8.286	0.706	1901.152	.033%	98.438%
52.0	8.203	0.708	1901.86	.033%	98.475%
53.0	8.135	0.711	1902.57	.033%	98.512%
54.0	8.066	0.714	1903.285	.033%	98.549%
55.0	8.011	0.718	1904.002	.034%	98.586%
56.0	7.956	0.721	1904.724	.034%	98.623%
57.0	7.928	0.726	1905.45	.034%	98.661%
58.0	7.873	0.731	1906.181	.034%	98.699%
59.0	7.804	0.733	1906.913	.034%	98.737%
60.0	7.790	0.737	1907.65	.034%	98.775%
61.0	7.763	0.742	1908.392	.035%	98.813%
62.0	7.749	0.747	1909.14	.035%	98.852%
63.0	7.722	0.752	1909.892	.035%	98.891%
64.0	7.694	0.756	1910.649	.035%	98.930%
65.0	7.639	0.759	1911.408	.036%	98.969%
66.0	7.625	0.762	1912.169	.036%	99.009%
67.0	7.625	0.767	1912.936	.036%	99.049%
68.0	7.598	0.771	1913.707	.036%	99.088%
69.0	7.570	0.774	1914.481	.036%	99.129%
70.0	7.556	0.777	1915.258	.036%	99.169%
71.0	7.543	0.780	1916.038	.037%	99.209%
72.0	7.570	0.786	1916.824	.037%	99.250%
73.0	7.543	0.790	1917.614	.037%	99.291%
74.0	7.515	0.792	1918.406	.037%	99.332%
75.0	7.515	0.794	1919.2	.037%	99.373%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.488	0.796	1919.997	.037%	99.414%
77.0	7.474	0.798	1920.794	.037%	99.455%
78.0	7.474	0.800	1921.594	.037%	99.497%
79.0	7.460	0.802	1922.397	.038%	99.538%
80.0	7.474	0.805	1923.202	.038%	99.580%
81.0	7.460	0.808	1924.01	.038%	99.622%
82.0	7.474	0.810	1924.819	.038%	99.664%
83.0	7.460	0.812	1925.631	.038%	99.706%
84.0	7.460	0.813	1926.444	.038%	99.748%
85.0	7.446	0.814	1927.258	.038%	99.790%
86.0	7.405	0.812	1928.07	.038%	99.832%
87.0	7.391	0.810	1928.879	.038%	99.874%
88.0	7.391	0.810	1929.689	.038%	99.916%
89.0	7.405	0.811	1930.5	.038%	99.958%
90.0	7.391	0.811	1931.311	.038%	100.000%

Zonal flux distribution table

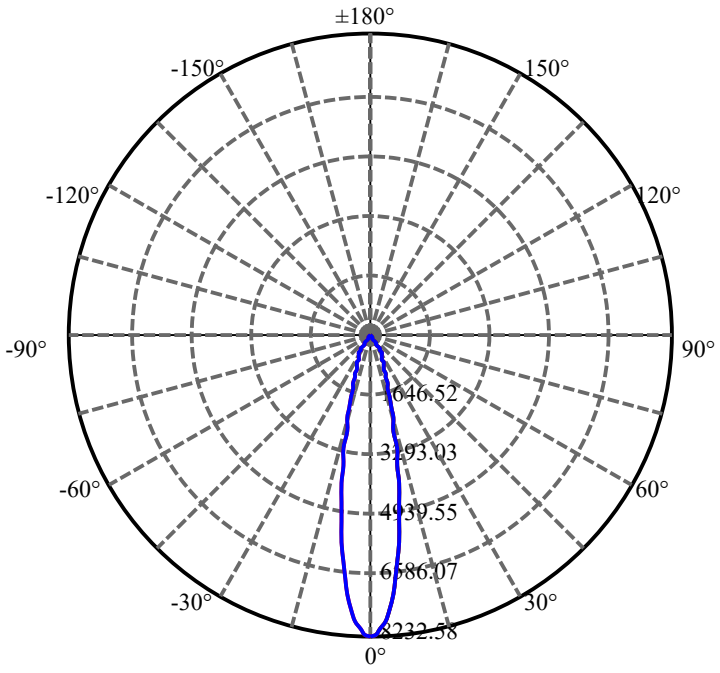
ZONAL LUMEN SUMMARY

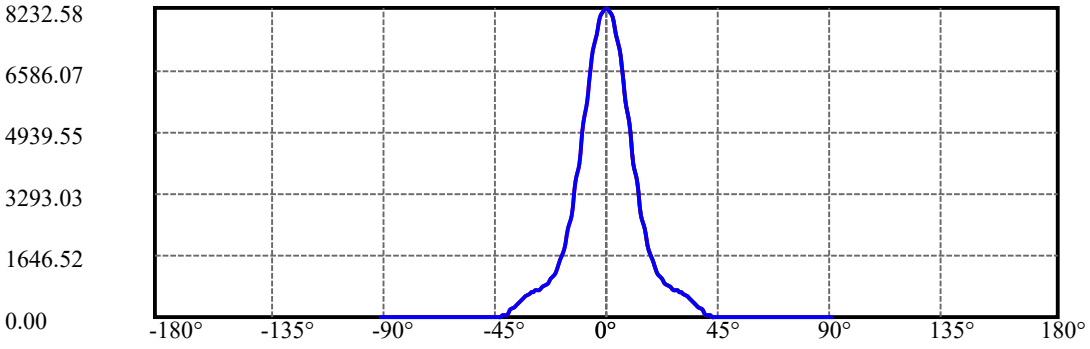
Zone	Lumens	%Lamp	%Fixt
0-30	1660.56	77.74%	85.98%
0-40	1888.39	88.41%	97.78%
0-60	1907.65	89.31%	98.77%
0-90	1930.50	90.38%	99.96%
0-120	1930.50	90.38%	99.96%
0-180	1931.31	90.42%	100.00%
60-90	23.59	1.10%	1.22%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.82	1545.05	72.33%	80.00%

ZONAL LUMEN SUMMARY

0-10	598.42
10-20	674.59
20-30	387.56
30-40	227.82
40-50	12.06
50-60	7.20
60-70	7.61
70-80	7.94
80-90	7.30
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):

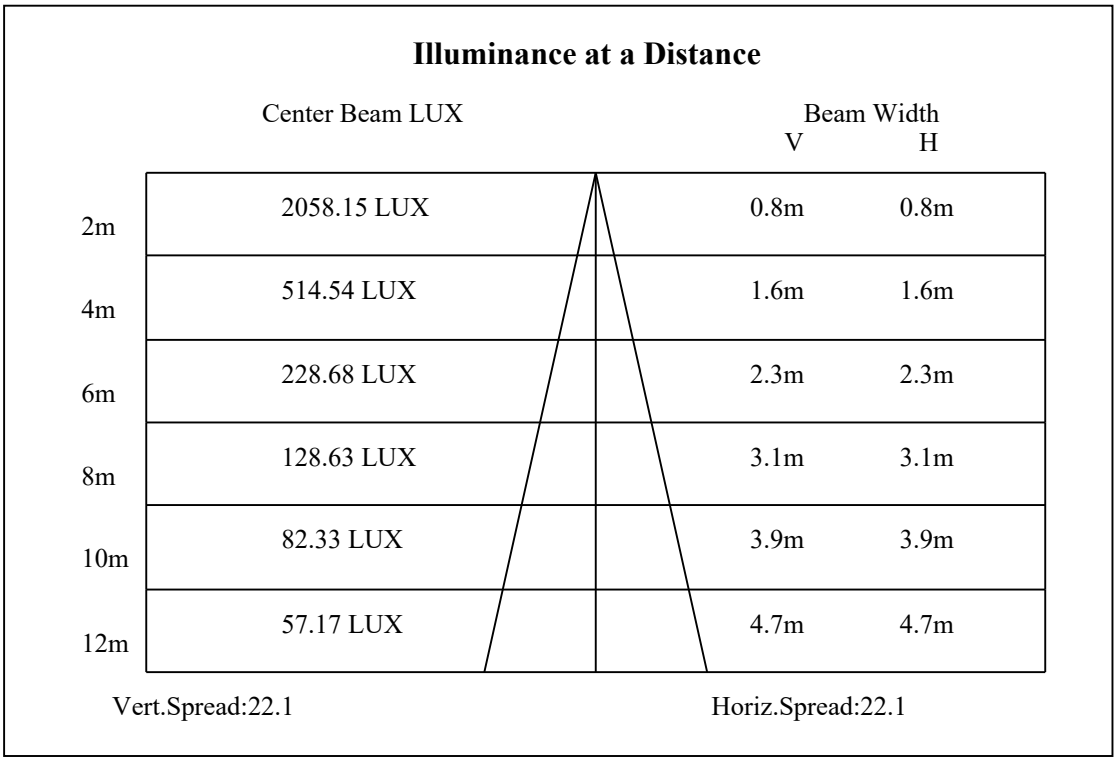
C0/C180:

C90/C270:

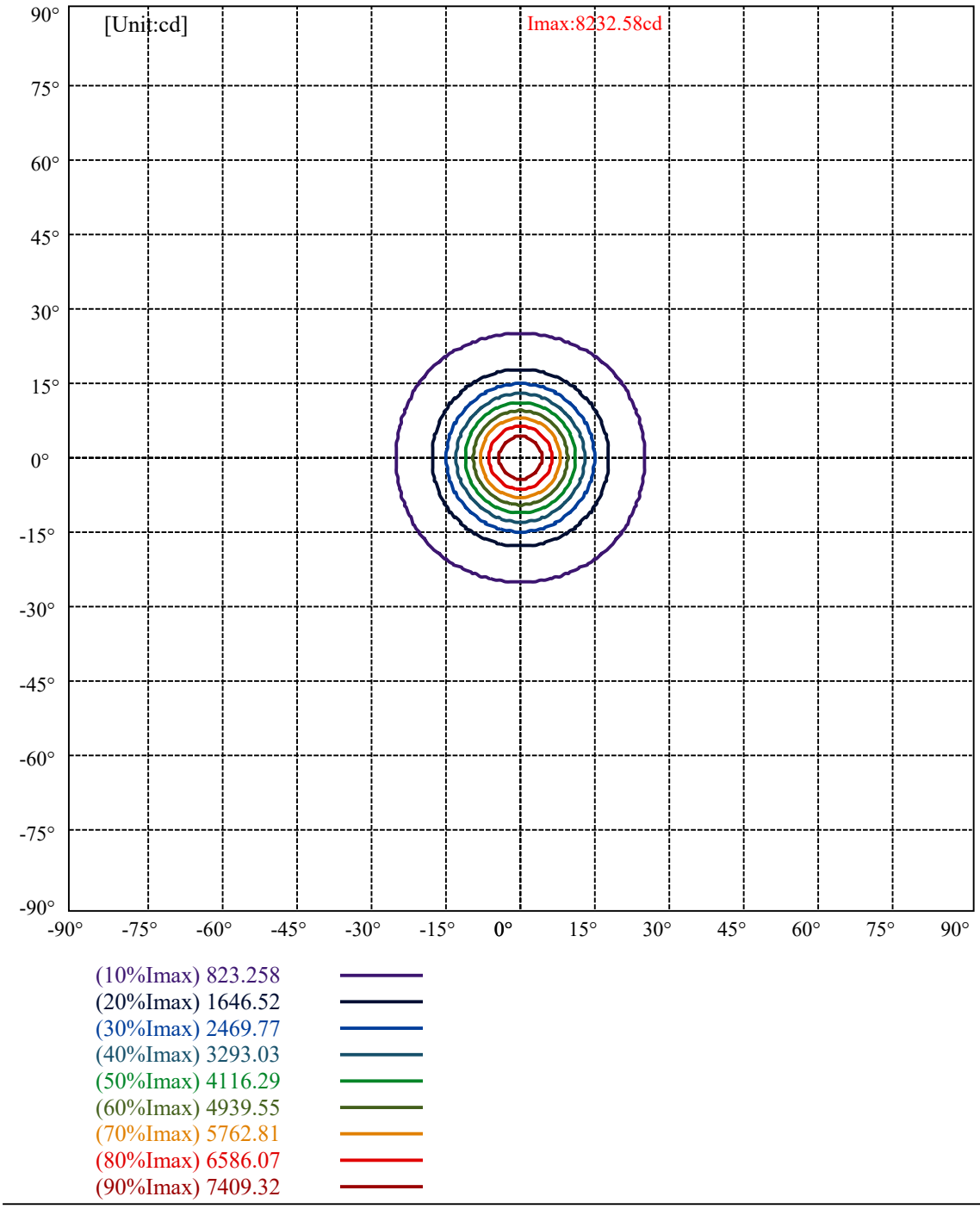
Field angle(10%Imax):C0/180Left:24.8 Right:24.8
:C90/270Left:24.8 Right:24.8

Beam Angle(50%Imax):C0/180Left:11.0 Right:11.0
:C90/270Left:11.0 Right:11.0

Lux distance Curve



ISO-Intensity(V-H)



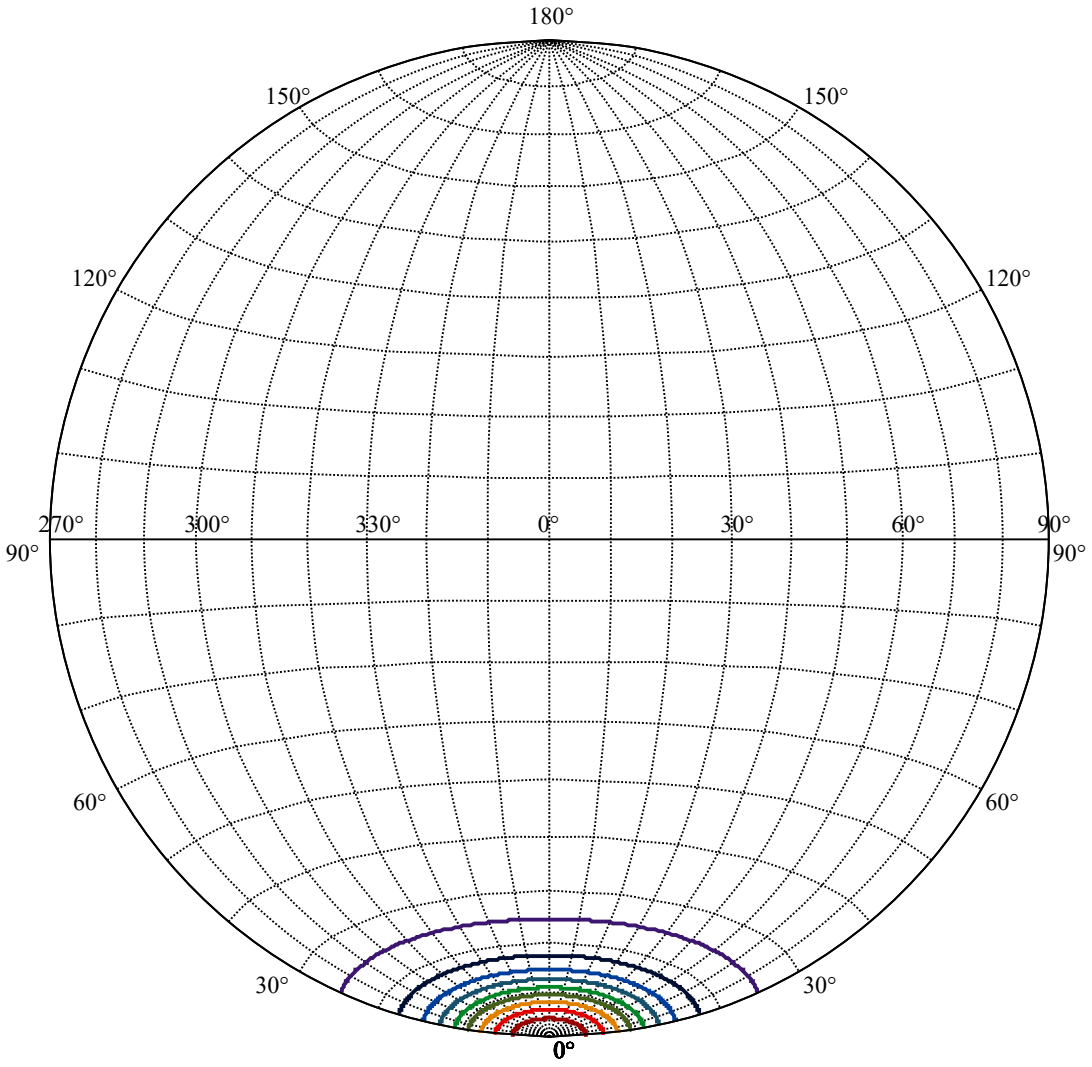
(10%Imax) 823.258
(20%Imax) 1646.52
(30%Imax) 2469.77
(40%Imax) 3293.03
(50%Imax) 4116.29
(60%Imax) 4939.55
(70%Imax) 5762.81
(80%Imax) 6586.07
(90%Imax) 7409.32

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



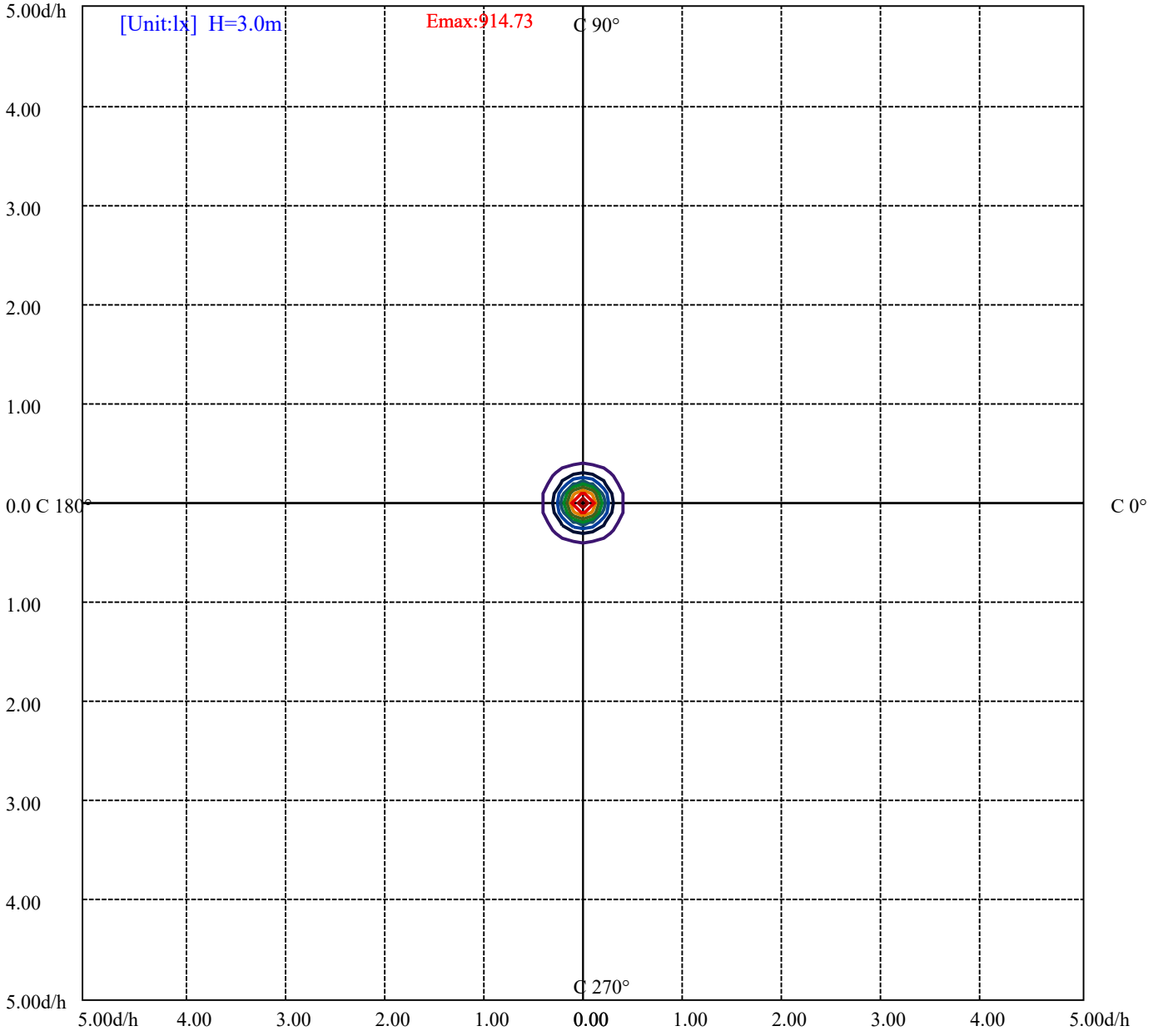
House [Unit:cd] Road

Imax:8232.58

(10%Imax) 823.258
(20%Imax) 1646.52
(30%Imax) 2469.77
(40%Imax) 3293.03
(50%Imax) 4116.29
(60%Imax) 4939.55
(70%Imax) 5762.81
(80%Imax) 6586.07
(90%Imax) 7409.32

Equipment: gms1980	Date: 2017/5/11	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

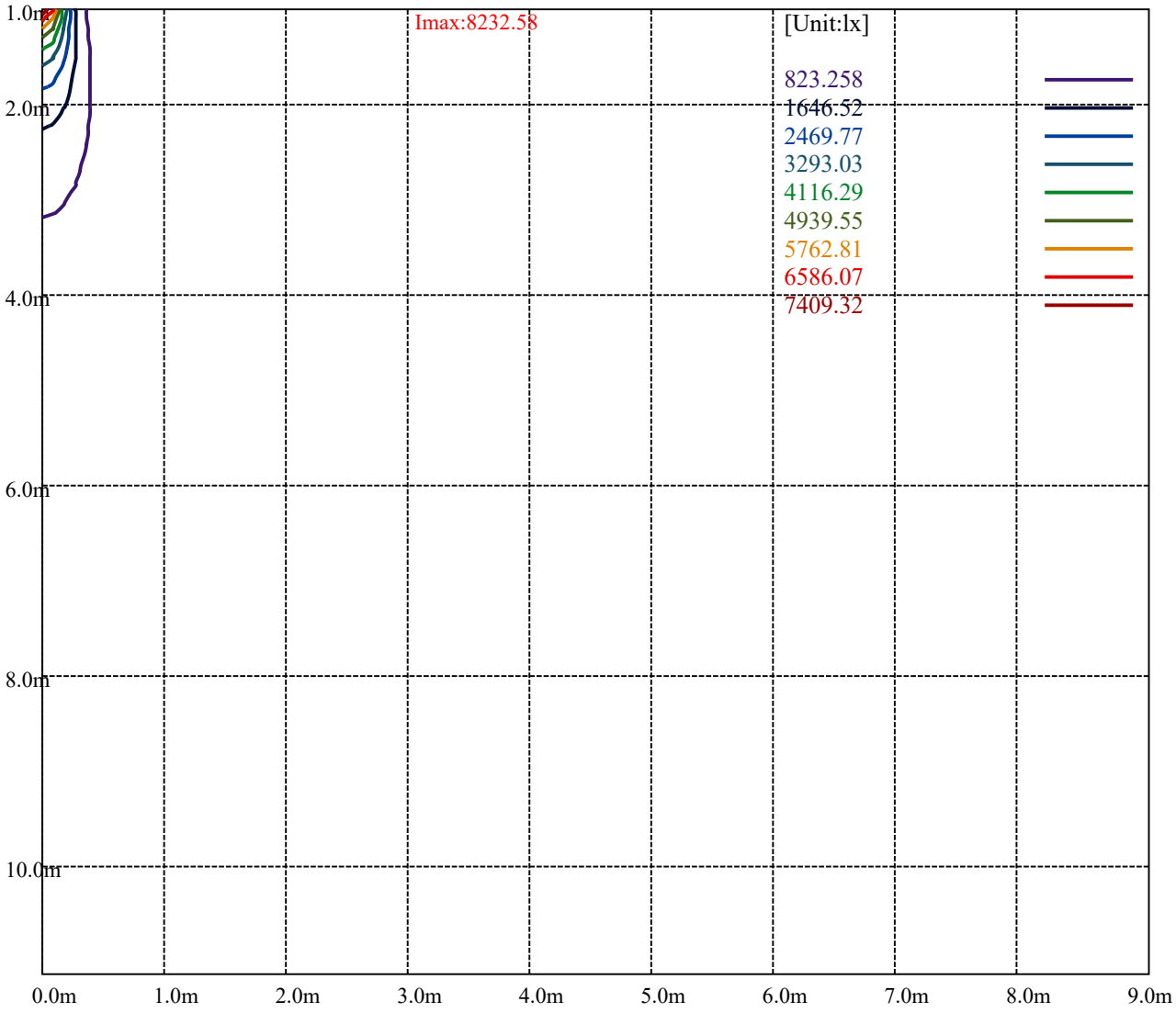
ISO illuminance diagram



(10%Emax) 91.47311
(20%Emax) 182.9467
(30%Emax) 274.4189
(40%Emax) 365.8922
(50%Emax) 457.3656
(60%Emax) 548.8389
(70%Emax) 640.3111
(80%Emax) 731.7844
(90%Emax) 823.2578

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/5/11
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

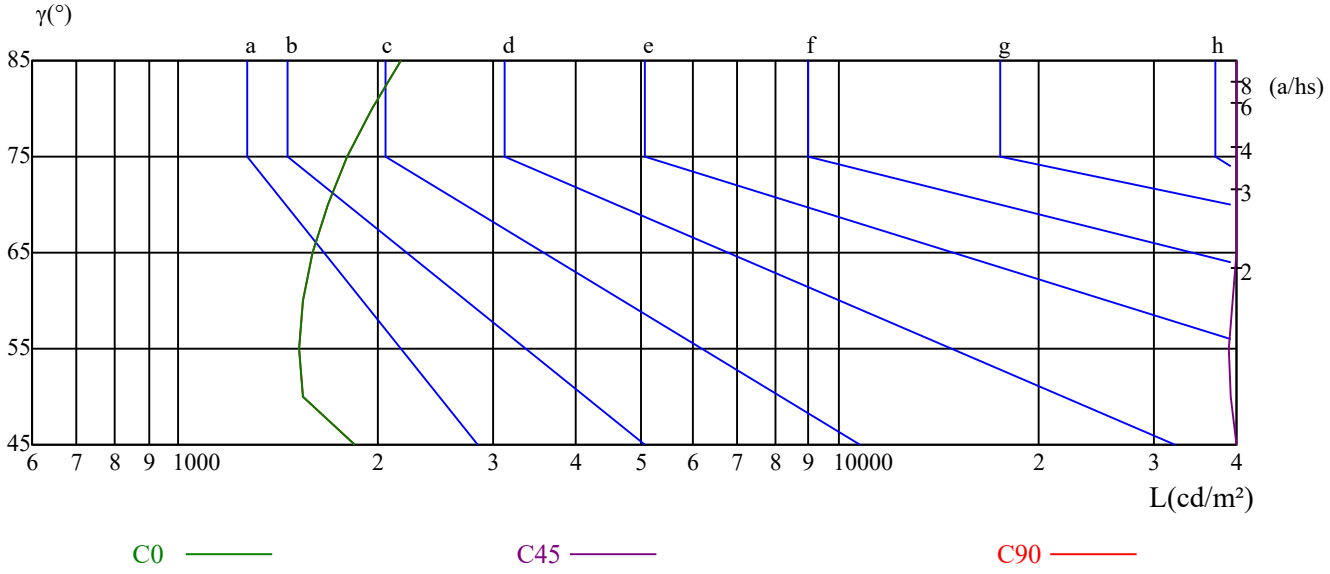
γ	45	50	55	60	65	70	75	80	85
C0	1846	1539	1518	1541	1592	1678	1800	1959	2174
C45	43822	39328	38823	39587	48059	78873	110071	119911	54397
C90	1846	1539	1518	1541	1592	1678	1800	1959	2174

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3689	3689	137594	5926	5926	466937	17436	17436	594540

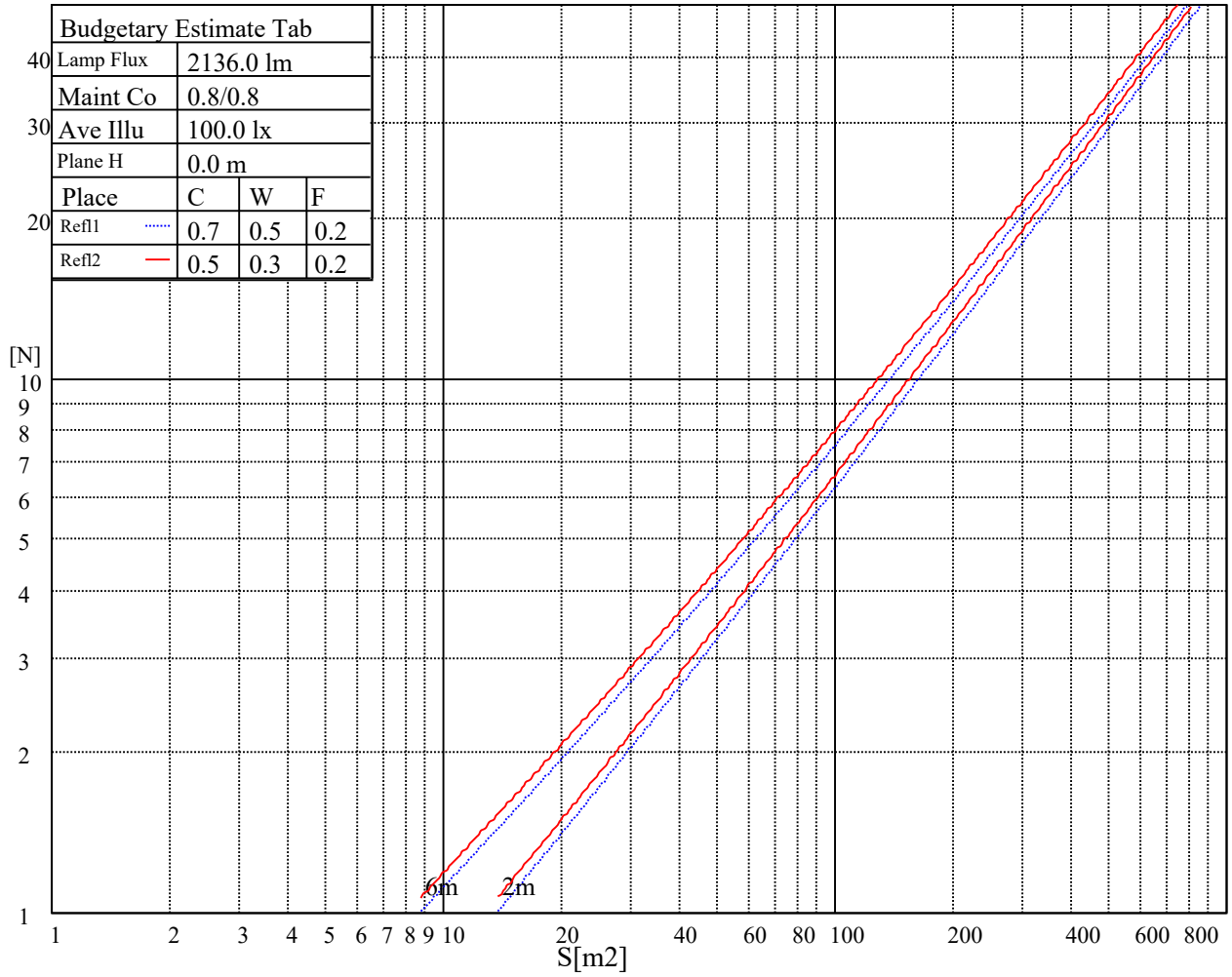
Glare Table

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



Budgetary Estimate Table

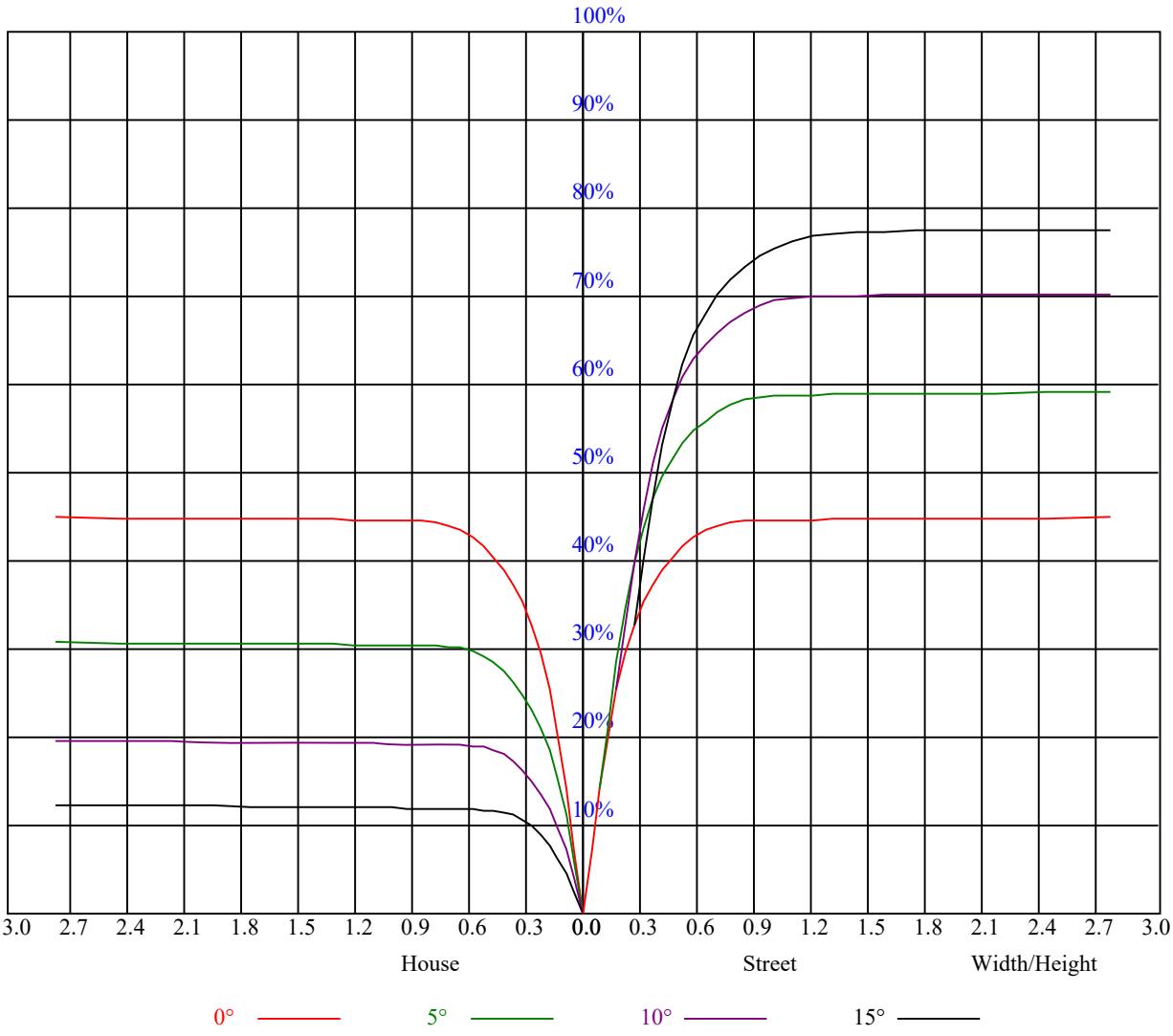


Equipment: gms1980 Date: 2017/5/11 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

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	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.01	0.99	0.98	0.99	0.98	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.86
2	0.96	0.93	0.90	0.94	0.92	0.89	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.84	0.82
3	0.91	0.87	0.84	0.90	0.87	0.84	0.88	0.85	0.82	0.85	0.83	0.81	0.84	0.82	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.76	0.74	0.72
6	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
7	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.67
8	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.65
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.61	0.61

Coefficient Utilization Curve



Equipment: gms1980	Date: 2017/5/11	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	8219.37	7930.32	7474.46	7041.16	6553.36	5955.45	5330.01	4773.39	4294.40
90.0	8245.80	8350.40	8344.90	8231.48	8030.53	7675.96	7325.25	6911.23	6395.35
180.0	8219.37	8437.39	8594.30	8634.50	8546.40	8362.52	8107.61	7758.00	7323.60
270.0	8245.80	8056.95	7758.55	7384.71	6993.81	6431.14	6022.62	5461.04	4804.77
360.0	8219.37	7930.32	7474.46	7041.16	6553.36	5955.45	5330.01	4773.39	4294.40

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3586.92	3123.90	2759.43	2304.66	1969.37	1745.29	1482.12	1307.04	1201.33
90.0	5842.59	5322.30	4715.58	4182.63	3615.55	3113.99	2719.24	2328.34	1998.55
180.0	6880.40	6336.99	5749.54	5200.63	4641.81	3963.51	3458.09	2998.92	2539.20
270.0	4347.80	3777.42	3182.81	2809.53	2431.84	2008.46	1780.52	1556.99	1365.95
360.0	3586.92	3123.90	2759.43	2304.66	1969.37	1745.29	1482.12	1307.04	1201.33

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1078.55	995.42	919.99	837.41	785.10	744.36	709.68	687.65	671.69
90.0	1746.94	1534.97	1332.92	1208.49	1107.73	1010.84	926.60	860.53	801.62
180.0	2154.91	1872.47	1620.31	1423.21	1283.92	1092.37	1057.85	965.85	886.08
270.0	1224.45	1088.96	1036.44	942.73	875.73	816.43	763.14	727.24	707.03
360.0	1078.55	995.42	919.99	837.41	785.10	744.36	709.68	687.65	671.69

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	655.72	644.71	631.50	590.76	508.72	415.68	300.06	225.46	98.06
90.0	758.68	730.60	703.62	686.00	669.49	655.72	644.16	596.81	516.43
180.0	825.90	777.01	733.68	711.77	693.22	676.31	663.65	651.65	634.47
270.0	688.04	672.18	658.64	645.81	617.13	547.65	455.10	365.30	274.02
360.0	655.72	644.71	631.50	590.76	508.72	415.68	300.06	225.46	98.06

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	34.25	16.46	14.04	12.11	10.68	9.80	9.25	8.92	8.75
90.0	430.54	334.74	296.75	135.55	63.87	24.17	17.01	14.76	12.61
180.0	586.41	509.05	401.91	283.82	183.67	80.33	35.24	16.52	14.48
270.0	164.45	90.29	36.28	18.44	16.52	14.87	13.32	12.22	9.58
360.0	34.25	16.46	14.04	12.11	10.68	9.80	9.25	8.92	8.75

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	8.59	8.48	8.37	8.26	8.15	8.09	8.04	7.98	7.87
90.0	10.85	10.08	9.14	8.92	8.70	8.59	8.48	8.37	8.31
180.0	12.88	11.51	10.52	9.58	8.86	8.59	8.42	8.31	8.26
270.0	8.97	8.81	8.59	8.48	8.37	8.31	8.20	8.15	8.09
360.0	8.59	8.48	8.37	8.26	8.15	8.09	8.04	7.98	7.87

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.82	7.82	7.82	7.76	7.71	7.65	7.65	7.60	7.60
90.0	8.26	8.20	8.09	8.09	8.04	7.98	7.93	7.93	7.87
180.0	8.15	8.04	7.98	7.93	7.87	7.76	7.76	7.71	7.71
270.0	8.04	7.98	7.93	7.93	7.87	7.82	7.82	7.82	7.82
360.0	7.82	7.82	7.82	7.76	7.71	7.65	7.65	7.60	7.60

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.60	7.54	7.49	7.49	7.49	7.49	7.43	7.43	7.43
90.0	7.87	7.87	7.82	7.76	7.76	7.71	7.71	7.71	7.71
180.0	7.65	7.60	7.54	7.54	7.54	7.49	7.49	7.43	7.43
270.0	7.76	7.76	7.71	7.71	7.71	7.71	7.65	7.65	7.60
360.0	7.60	7.54	7.49	7.49	7.49	7.49	7.43	7.43	7.43

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	7.43	7.43	7.38	7.38	7.32	7.32	7.38	7.38	7.38
90.0	7.71	7.65	7.65	7.65	7.65	7.60	7.60	7.60	7.60
180.0	7.49	7.43	7.43	7.43	7.38	7.38	7.32	7.32	7.38
270.0	7.65	7.65	7.60	7.60	7.60	7.60	7.60	7.54	7.54
360.0	7.43	7.43	7.38	7.38	7.32	7.32	7.38	7.38	7.38

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.32	7.38	7.38	7.38	7.32	7.32	7.32	7.27	7.27
90.0	7.60	7.60	7.54	7.54	7.54	7.54	7.49	7.54	7.54
180.0	7.38	7.32	7.32	7.32	7.32	7.27	7.27	7.27	7.27
270.0	7.54	7.60	7.60	7.60	7.60	7.49	7.49	7.49	7.54
360.0	7.32	7.38	7.38	7.38	7.32	7.32	7.32	7.27	7.27

C/γ(°)	90.0
0.0	7.27
90.0	7.49
180.0	7.27
270.0	7.54
360.0	7.27