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Address:380JinOu Road,Gaoxin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 3-2033-M
Luminaire: 92.70.129.00
Report No: GC2017061906
Test No: NT-0010
LampCAT: CREE CXA1830
Lamp flux(lm): 2036.0
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 218.3000
Current(A): 0.1000
Power (W): 19.8000
PF: 0.9010
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 1823.06
Efficiency(%): 89.54%
Lumens(lm)/Power(W): 92.07
Central intensity(cd): 15115.730
Maximum intensity(cd): 15115.730
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=14.1
[C90/270]Total=14.1
Field angle(10%Imax): [C0/180]Total=28.4
[C90/270]Total=28.4
Maximum s/h(1/2): C0_180=0.24 C90_270=0.24
Maximum s/h(1/4): C0_180=0.24 C90_270=0.24
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.54%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.764%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	15115.735	0.000	0	.000%	.000%
1.0	14914.779	14.369	14.369	.706%	.788%
2.0	14238.961	41.844	56.213	2.055%	3.083%
3.0	13326.402	65.927	122.141	3.238%	6.700%
4.0	12119.290	85.175	207.315	4.183%	11.372%
5.0	10675.161	98.061	305.376	4.816%	16.751%
6.0	9188.776	104.390	409.766	5.127%	22.477%
7.0	7633.295	104.414	514.181	5.128%	28.204%
8.0	6192.744	98.950	613.131	4.860%	33.632%
9.0	4885.980	89.787	702.918	4.410%	38.557%
10.0	3691.807	77.626	780.544	3.813%	42.815%
11.0	2902.160	65.887	846.431	3.236%	46.429%
12.0	2250.430	56.325	902.756	2.766%	49.519%
13.0	1823.193	48.344	951.1	2.374%	52.170%
14.0	1547.085	43.139	994.239	2.119%	54.537%
15.0	1360.444	39.916	1034.155	1.961%	56.726%
16.0	1196.238	37.463	1071.617	1.840%	58.781%
17.0	1071.067	35.308	1106.926	1.734%	60.718%
18.0	1003.059	34.198	1141.123	1.680%	62.594%
19.0	935.202	33.722	1174.845	1.656%	64.443%
20.0	880.971	33.241	1208.086	1.633%	66.267%
21.0	841.867	33.082	1241.168	1.625%	68.081%
22.0	811.752	33.230	1274.398	1.632%	69.904%
23.0	787.912	33.565	1307.964	1.649%	71.745%
24.0	765.697	33.967	1341.931	1.668%	73.609%
25.0	746.647	34.387	1376.318	1.689%	75.495%
26.0	730.364	34.865	1411.183	1.712%	77.407%
27.0	709.154	35.218	1446.402	1.730%	79.339%
28.0	689.430	35.409	1481.811	1.739%	81.281%
29.0	674.895	35.695	1517.505	1.753%	83.239%
30.0	659.865	36.038	1553.544	1.770%	85.216%
31.0	642.894	36.254	1589.798	1.781%	87.205%
32.0	609.887	35.891	1625.688	1.763%	89.173%
33.0	549.119	34.145	1659.833	1.677%	91.046%
34.0	476.499	31.038	1690.871	1.524%	92.749%
35.0	389.662	26.900	1717.771	1.321%	94.224%
36.0	308.192	22.220	1739.991	1.091%	95.443%
37.0	250.011	18.205	1758.196	.894%	96.442%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	149.946	13.350	1771.546	.656%	97.174%
39.0	77.671	7.769	1779.315	.382%	97.600%
40.0	35.911	3.961	1783.277	.195%	97.818%
41.0	21.623	2.049	1785.325	.101%	97.930%
42.0	17.577	1.424	1786.75	.070%	98.008%
43.0	14.108	1.174	1787.923	.058%	98.072%
44.0	11.755	0.976	1788.9	.048%	98.126%
45.0	10.282	0.847	1789.746	.042%	98.172%
46.0	9.539	0.775	1790.522	.038%	98.215%
47.0	9.208	0.746	1791.267	.037%	98.256%
48.0	8.960	0.734	1792.002	.036%	98.296%
49.0	8.740	0.727	1792.729	.036%	98.336%
50.0	8.548	0.721	1793.449	.035%	98.376%
51.0	8.382	0.716	1794.166	.035%	98.415%
52.0	8.258	0.714	1794.88	.035%	98.454%
53.0	8.107	0.712	1795.592	.035%	98.493%
54.0	7.969	0.709	1796.3	.035%	98.532%
55.0	7.846	0.706	1797.006	.035%	98.571%
56.0	7.777	0.706	1797.712	.035%	98.609%
57.0	7.667	0.706	1798.418	.035%	98.648%
58.0	7.598	0.706	1799.124	.035%	98.687%
59.0	7.529	0.707	1799.831	.035%	98.726%
60.0	7.460	0.708	1800.539	.035%	98.764%
61.0	7.419	0.710	1801.249	.035%	98.803%
62.0	7.378	0.713	1801.962	.035%	98.843%
63.0	7.323	0.715	1802.677	.035%	98.882%
64.0	7.295	0.717	1803.395	.035%	98.921%
65.0	7.240	0.719	1804.114	.035%	98.961%
66.0	7.212	0.721	1804.835	.035%	99.000%
67.0	7.199	0.725	1805.56	.036%	99.040%
68.0	7.157	0.727	1806.287	.036%	99.080%
69.0	7.130	0.729	1807.016	.036%	99.120%
70.0	7.130	0.732	1807.748	.036%	99.160%
71.0	7.089	0.735	1808.483	.036%	99.200%
72.0	7.089	0.737	1809.22	.036%	99.241%
73.0	7.075	0.741	1809.961	.036%	99.281%
74.0	7.061	0.743	1810.704	.037%	99.322%
75.0	7.075	0.747	1811.451	.037%	99.363%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.102	0.753	1812.203	.037%	99.404%
77.0	7.350	0.771	1812.974	.038%	99.447%
78.0	7.639	0.802	1813.776	.039%	99.491%
79.0	7.612	0.819	1814.596	.040%	99.535%
80.0	7.419	0.810	1815.406	.040%	99.580%
81.0	7.226	0.792	1816.198	.039%	99.623%
82.0	7.102	0.777	1816.975	.038%	99.666%
83.0	7.033	0.768	1817.743	.038%	99.708%
84.0	6.978	0.763	1818.507	.037%	99.750%
85.0	6.978	0.762	1819.268	.037%	99.792%
86.0	6.965	0.762	1820.031	.037%	99.834%
87.0	6.937	0.761	1820.791	.037%	99.875%
88.0	6.910	0.758	1821.55	.037%	99.917%
89.0	6.910	0.757	1822.307	.037%	99.958%
90.0	6.896	0.757	1823.064	.037%	100.000%

Zonal flux distribution table

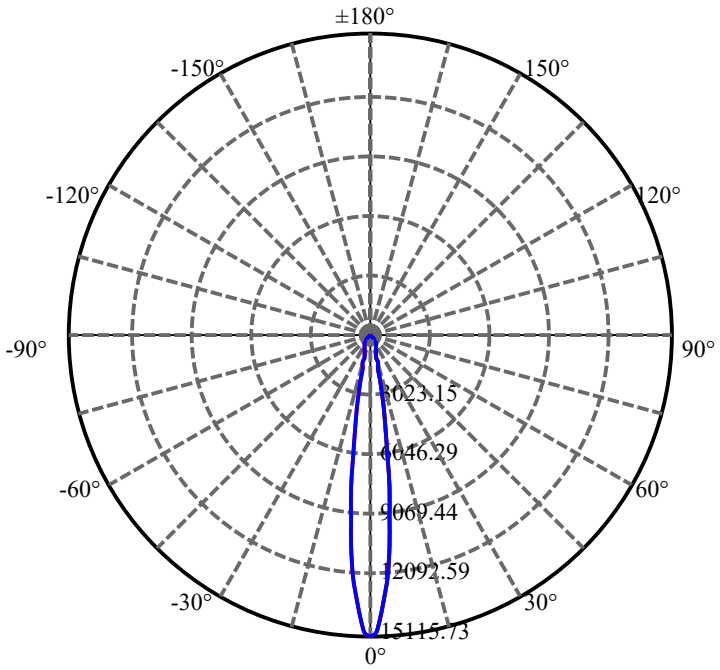
ZONAL LUMEN SUMMARY

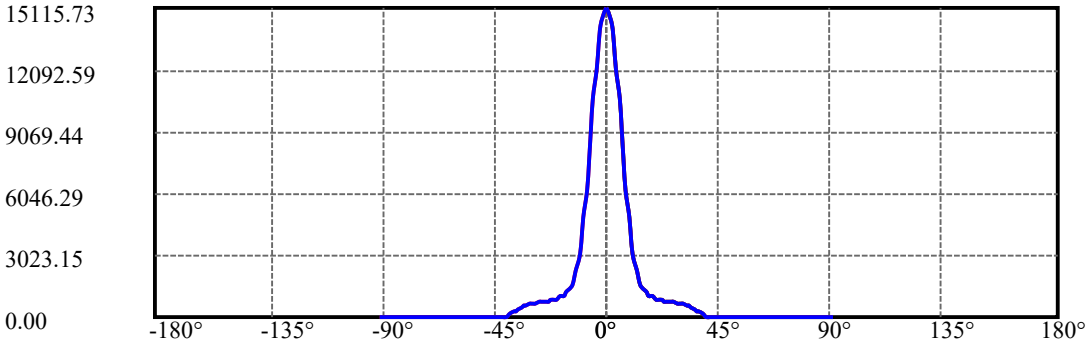
Zone	Lumens	%Lamp	%Fixt
0-30	1553.54	76.30%	85.22%
0-40	1783.28	87.59%	97.82%
0-60	1800.54	88.44%	98.76%
0-90	1822.31	89.50%	99.96%
0-120	1822.31	89.50%	99.96%
0-180	1823.06	89.54%	100.00%
60-90	22.48	1.10%	1.23%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.34	1458.45	71.63%	80.00%

ZONAL LUMEN SUMMARY

0-10	780.54
10-20	427.54
20-30	345.46
30-40	229.73
40-50	10.17
50-60	7.09
60-70	7.21
70-80	7.66
80-90	6.90
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:

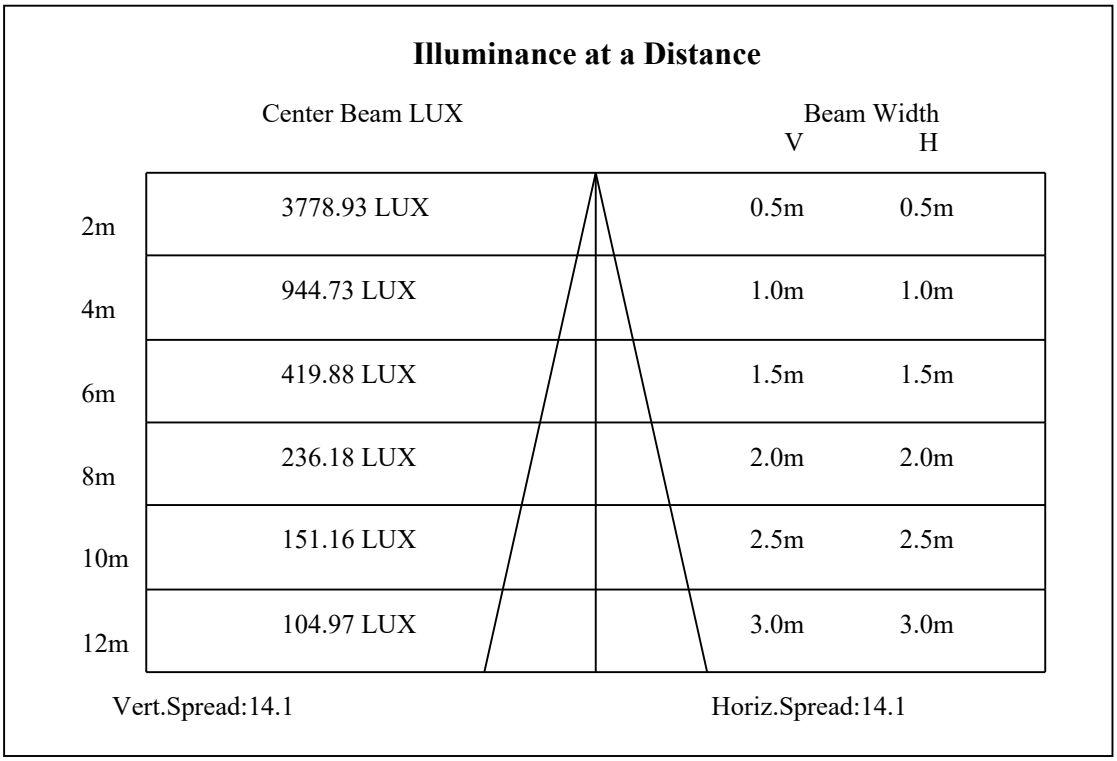
C90/C270:

Field angle(10%Imax):C0/180Left:14.2 Right:14.2
:C90/270Left:14.2 Right:14.2

Beam Angle(50%Imax):C0/180Left:7.1 Right:7.1
:C90/270Left:7.1 Right:7.1

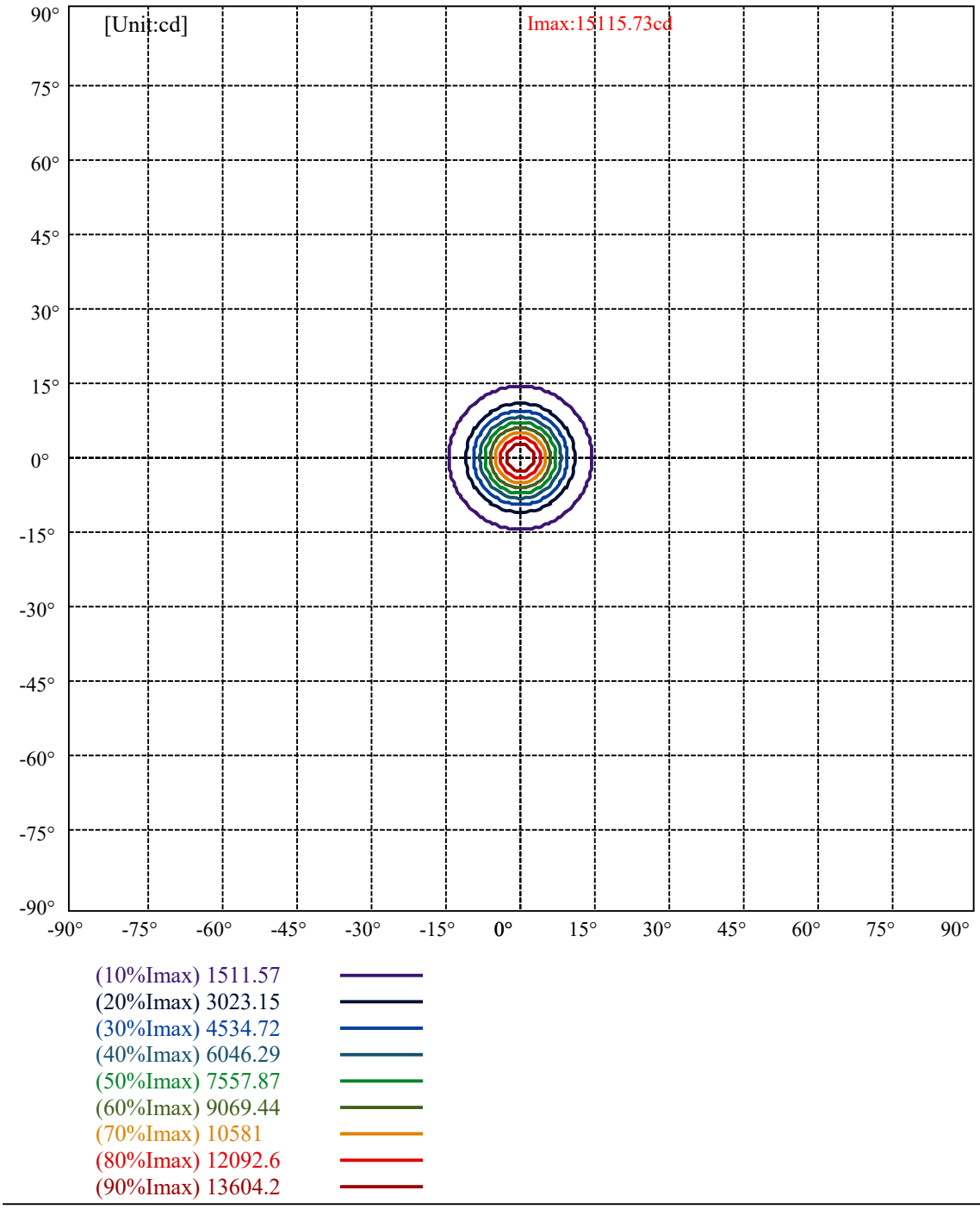
Equipment: gms1980 Date: 2017/6/3 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Lux distance Curve



Equipment: gms1980 Date: 2017/6/3 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)



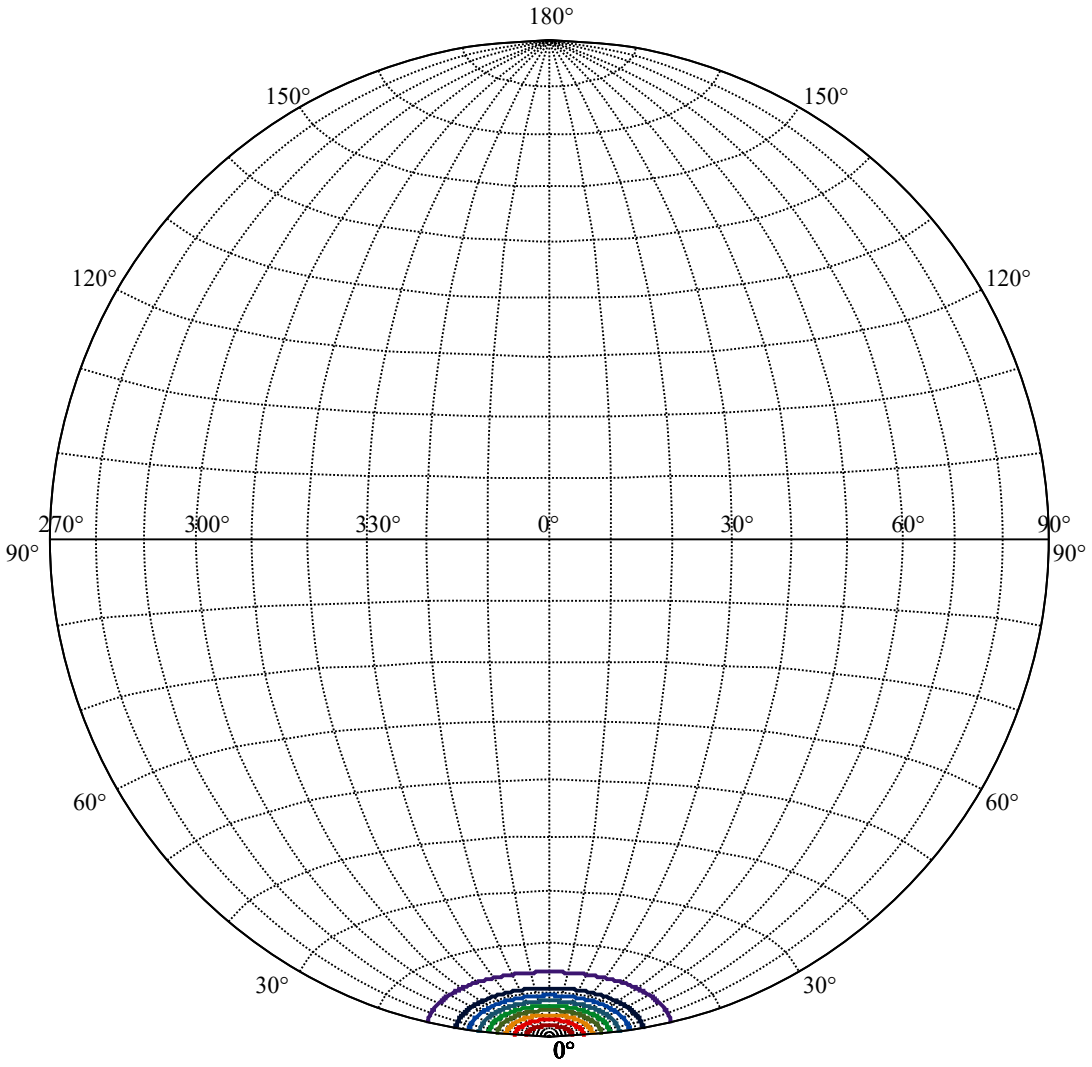
(10%Imax) 1511.57
(20%Imax) 3023.15
(30%Imax) 4534.72
(40%Imax) 6046.29
(50%Imax) 7557.87
(60%Imax) 9069.44
(70%Imax) 10581
(80%Imax) 12092.6
(90%Imax) 13604.2

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/3
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



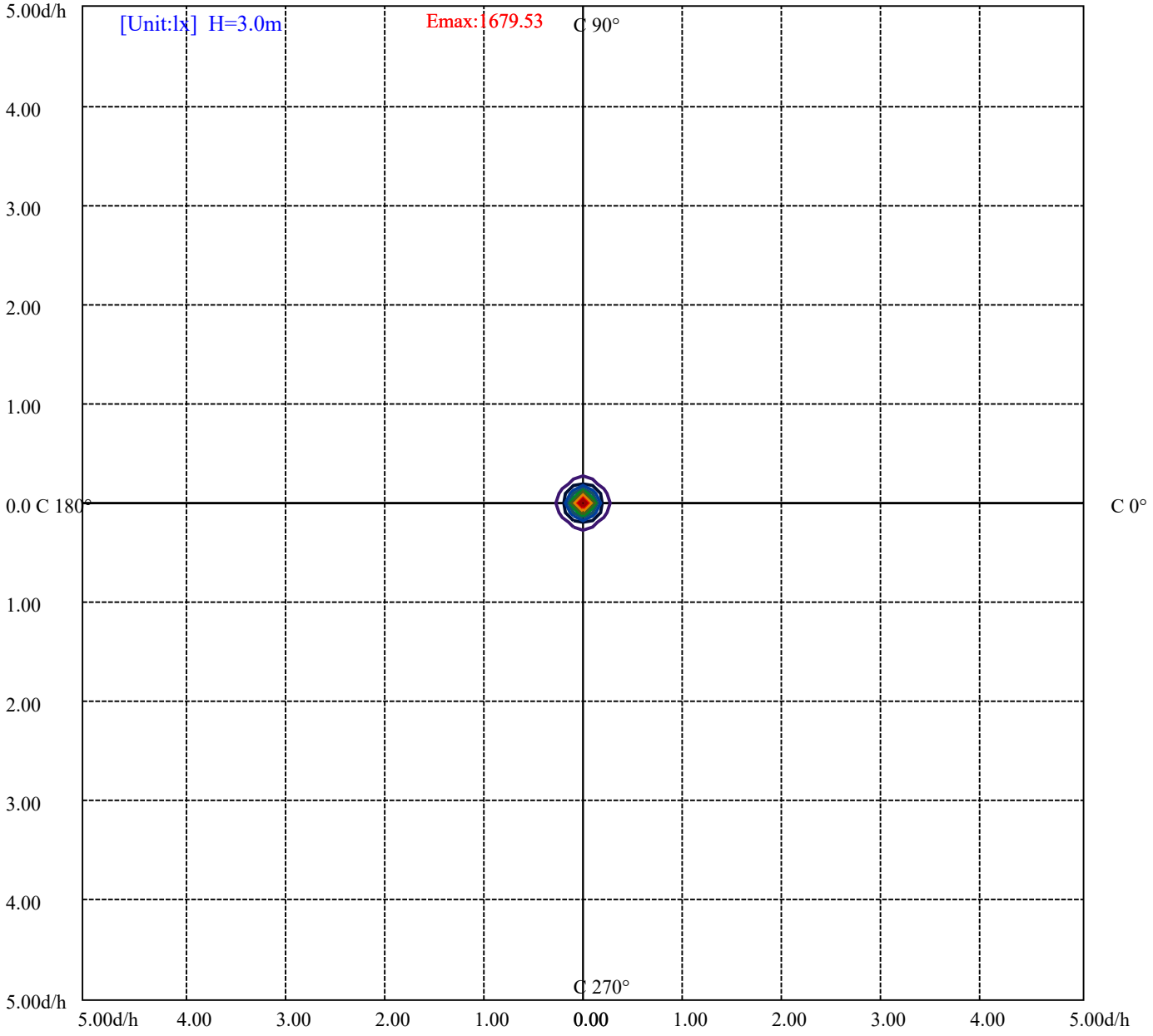
House [Unit:cd] Road

Imax:15115.73

(10%Imax) 1511.57
(20%Imax) 3023.15
(30%Imax) 4534.72
(40%Imax) 6046.29
(50%Imax) 7557.87
(60%Imax) 9069.44
(70%Imax) 10581
(80%Imax) 12092.6
(90%Imax) 13604.2

Equipment: gms1980 Date: 2017/6/3 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

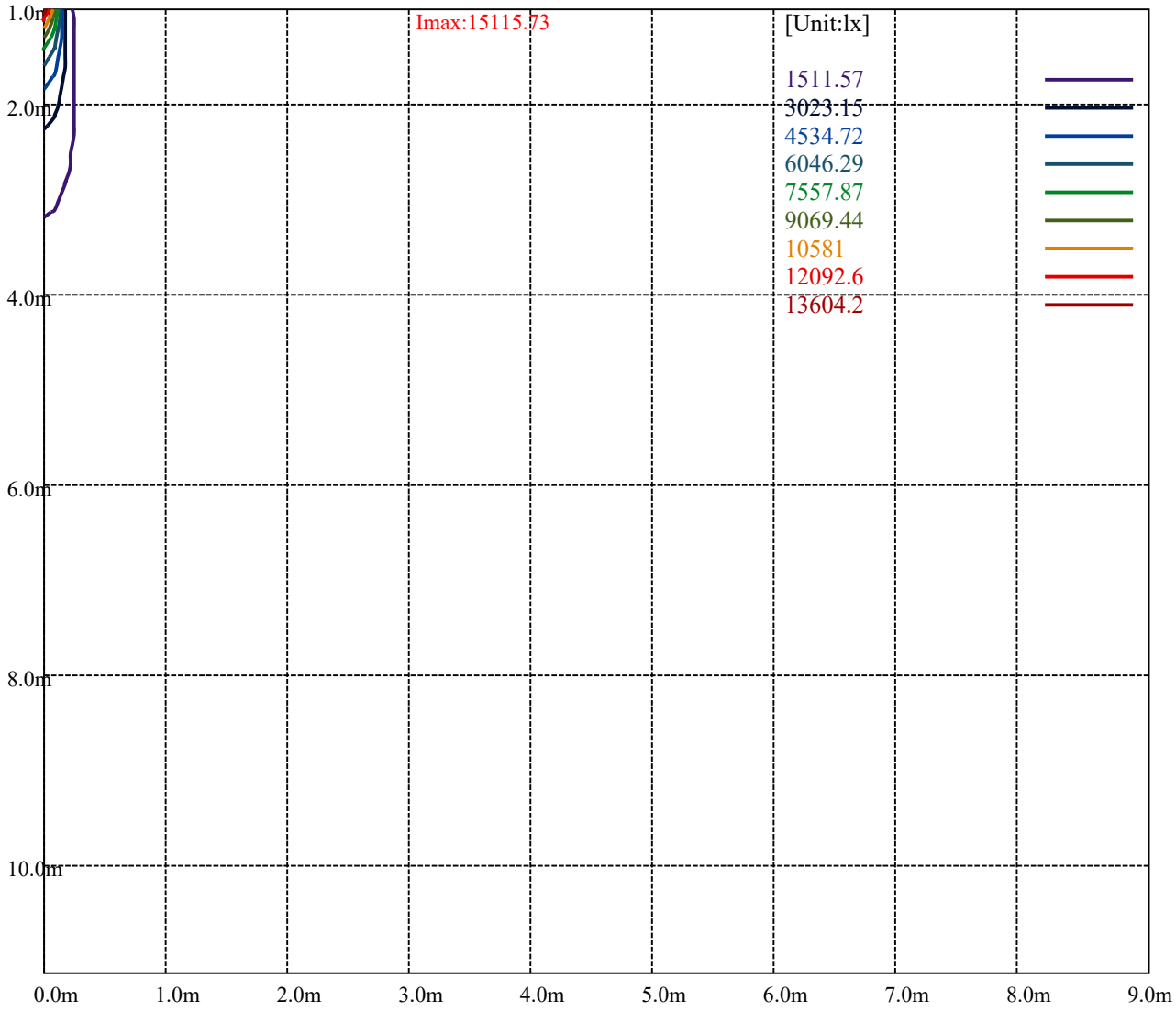
ISO illuminance diagram



(10%Emax) 167.9522
(20%Emax) 335.9044
(30%Emax) 503.8567
(40%Emax) 671.8088
(50%Emax) 839.7611
(60%Emax) 1007.713
(70%Emax) 1175.667
(80%Emax) 1343.622
(90%Emax) 1511.567

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/6/3
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/3
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

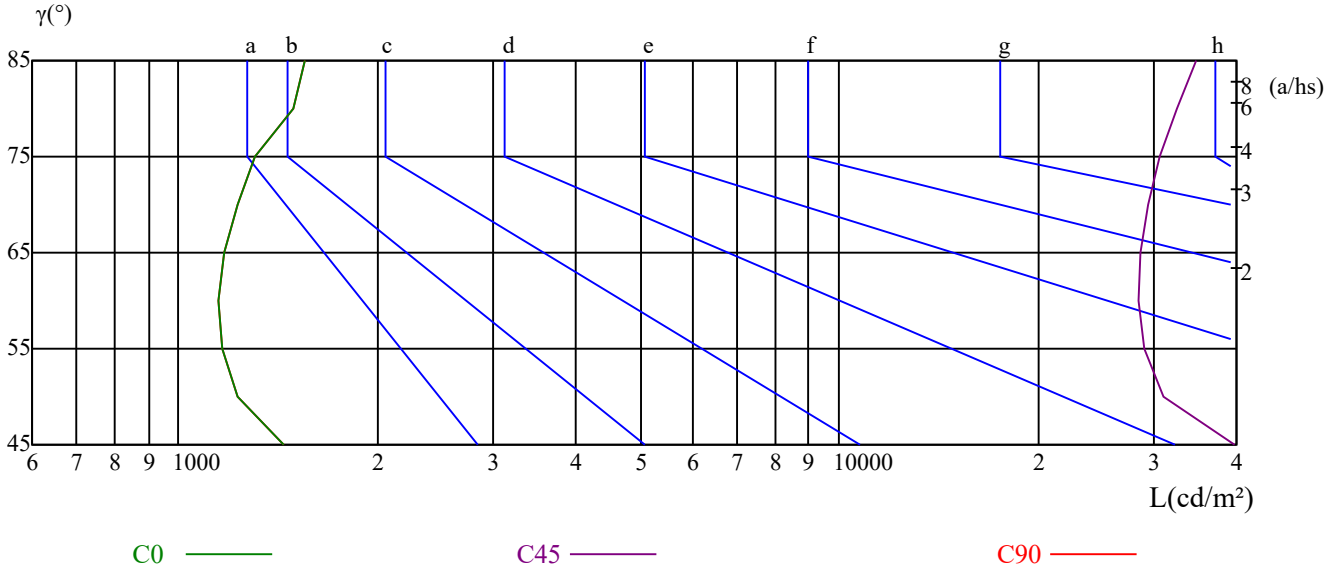
γ	45	50	55	60	65	70	75	80	85
C0	1445	1228	1163	1150	1172	1225	1306	1492	1553
C45	39793	30925	29016	28486	28660	29422	30588	32498	34779
C90	1445	1228	1163	1150	1172	1225	1306	1492	1553

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2816	2816	85493	4493	4493	136146	13160	13160	402367

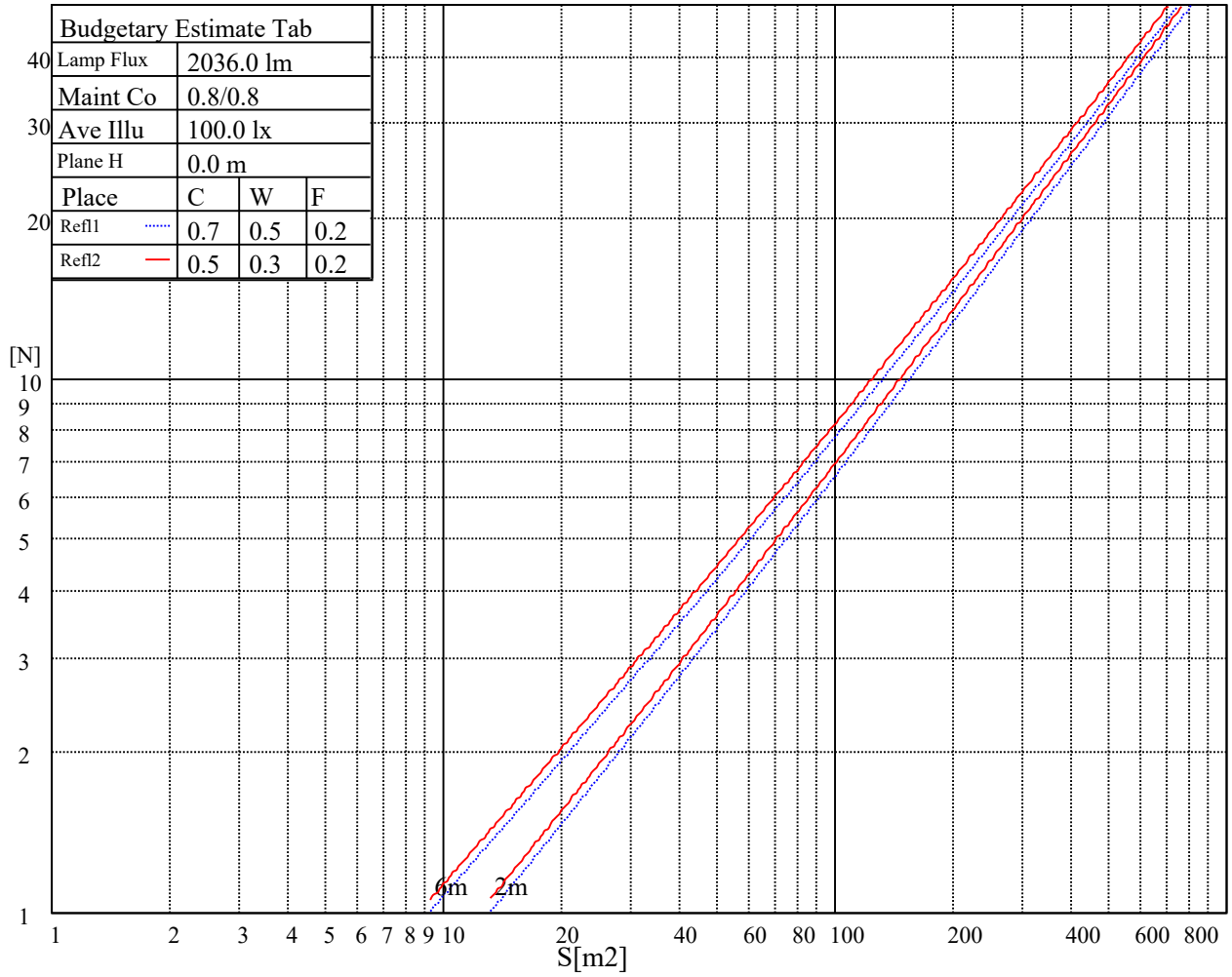
Glare Table

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

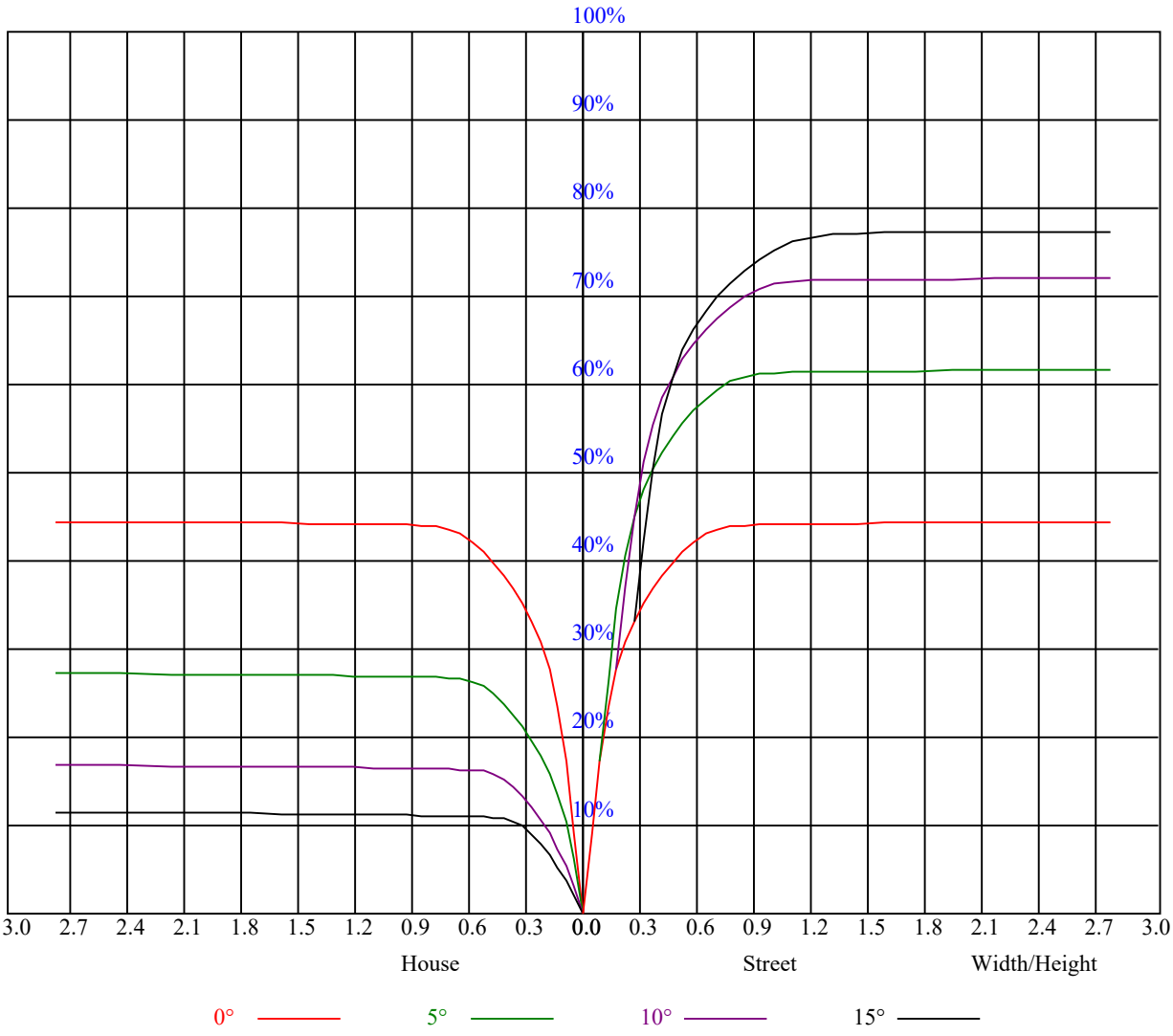


Equipment: gms1980 Date: 2017/6/3 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

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	1.07	1.07	1.07	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	1.01	0.99	0.97	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.95	0.93	0.90	0.94	0.91	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	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.83	0.82	0.84	0.82	0.80	0.79
4	0.87	0.83	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.78	0.76	0.80	0.77	0.75	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.75	0.72	0.70	0.69
8	0.75	0.71	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.67
9	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.69	0.66	0.64	0.63

Coefficient Utilization Curve



Equipment: gms1980	Date: 2017/6/3	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	15041.41	14793.65	14000.84	13048.37	11875.67	10367.12	8770.48	7366.55	5863.51
90.0	15190.06	14892.76	14127.47	13301.63	11837.13	10510.27	9122.85	7344.52	6012.16
180.0	15041.41	14914.78	14347.70	13411.74	12321.62	10851.62	9279.76	7846.09	6314.97
270.0	15190.06	15057.93	14479.83	13543.87	12442.75	10971.64	9582.02	7976.02	6580.34
360.0	15041.41	14793.65	14000.84	13048.37	11875.67	10367.12	8770.48	7366.55	5863.51

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4509.12	3485.07	2862.93	2091.04	1708.95	1445.23	1273.45	1128.66	1024.60
90.0	4822.94	3540.13	2846.42	2229.23	1790.98	1550.94	1369.80	1215.09	1097.27
180.0	5074.55	3865.51	2927.35	2352.56	1963.31	1628.02	1431.47	1278.41	1082.46
270.0	5137.31	3876.52	2971.94	2328.89	1829.52	1564.15	1367.05	1162.79	1079.93
360.0	4509.12	3485.07	2862.93	2091.04	1708.95	1445.23	1273.45	1128.66	1024.60

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	956.33	901.82	851.17	821.99	797.77	777.40	755.37	739.41	723.44
90.0	1016.34	942.57	887.51	849.52	815.39	788.41	765.83	744.36	727.30
180.0	1039.80	967.29	909.15	855.63	824.14	798.81	775.69	755.37	738.91
270.0	999.77	929.13	876.06	840.33	809.71	787.03	765.89	747.45	731.81
360.0	956.33	901.82	851.17	821.99	797.77	777.40	755.37	739.41	723.44

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	698.67	682.15	667.83	651.32	632.05	591.86	524.69	454.77	370.53
90.0	706.37	684.90	670.04	656.27	637.55	605.07	545.06	471.28	377.14
180.0	717.55	697.40	681.76	664.92	652.31	624.50	564.66	497.71	414.96
270.0	714.03	693.27	679.95	666.95	649.67	618.12	562.07	482.24	396.02
360.0	698.67	682.15	667.83	651.32	632.05	591.86	524.69	454.77	370.53

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	284.09	236.30	133.35	59.41	28.68	20.87	17.12	13.93	11.78
90.0	301.71	280.24	128.89	68.99	31.60	19.93	15.91	12.55	10.74
180.0	329.18	251.72	177.50	94.64	44.71	23.12	18.28	14.42	11.67
270.0	317.79	231.79	160.05	87.65	38.65	22.57	18.99	15.53	12.83
360.0	284.09	236.30	133.35	59.41	28.68	20.87	17.12	13.93	11.78

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	9.80	9.25	8.97	8.70	8.48	8.37	8.20	8.09	7.98
90.0	9.86	9.52	9.14	8.92	8.75	8.53	8.37	8.26	8.09
180.0	10.02	9.41	9.08	8.86	8.64	8.48	8.31	8.20	8.04
270.0	11.45	9.97	9.63	9.36	9.08	8.81	8.64	8.48	8.31
360.0	9.80	9.25	8.97	8.70	8.48	8.37	8.20	8.09	7.98

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.87	7.76	7.71	7.60	7.54	7.49	7.43	7.38	7.38
90.0	7.93	7.82	7.82	7.71	7.65	7.54	7.49	7.43	7.38
180.0	7.93	7.76	7.65	7.60	7.54	7.49	7.38	7.38	7.32
270.0	8.15	8.04	7.93	7.76	7.65	7.60	7.54	7.49	7.43
360.0	7.87	7.76	7.71	7.60	7.54	7.49	7.43	7.38	7.38

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.32	7.27	7.21	7.21	7.21	7.21	7.16	7.16	7.10
90.0	7.32	7.32	7.27	7.27	7.21	7.10	7.10	7.10	7.10
180.0	7.27	7.27	7.21	7.16	7.16	7.10	7.10	7.10	7.05
270.0	7.38	7.32	7.27	7.21	7.21	7.21	7.16	7.16	7.10
360.0	7.32	7.27	7.21	7.21	7.21	7.21	7.16	7.16	7.10

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	7.10	7.05	7.05	7.10	7.10	7.05	7.05	6.99	6.99
90.0	7.10	7.10	7.10	7.05	7.10	7.38	7.49	7.43	7.27
180.0	7.05	7.05	6.99	7.05	7.05	7.10	7.32	7.32	7.21
270.0	7.10	7.10	7.10	7.10	7.16	7.87	8.70	8.70	8.20
360.0	7.10	7.05	7.05	7.10	7.10	7.05	7.05	6.99	6.99

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.99	6.99	6.99	6.99	6.99	6.99	6.99	6.94	6.94
90.0	7.16	7.05	6.99	6.94	6.94	6.88	6.88	6.88	6.88
180.0	7.10	7.05	6.99	6.99	6.99	6.99	6.94	6.94	6.94
270.0	7.65	7.32	7.16	6.99	6.99	6.99	6.94	6.88	6.88
360.0	6.99	6.99	6.99	6.99	6.99	6.99	6.99	6.94	6.94

C/γ(°)	90.0
0.0	6.88
90.0	6.88
180.0	6.88
270.0	6.94
360.0	6.88