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

Nata

LumCAT: 3-2042-M
Luminaire: 92.70.131.00
Report No: GC2017061905
Test No: NT-0010
LampCAT: BMTC MA-1919 20W
Lamp flux(lm): 2561.0
Number of Lamps: 1
Length(mm): 84
Phm Type: C

Voltage(V): 220.1000
Current(A): 0.1300
Power (W): 27.0000
PF: 0.9410
Ballast type: DC
Width(mm): 84
Height(mm): 0

Photometric Results

Lumens(lm): 2327.95
Efficiency(%): 90.90%
Lumens(lm)/Power(W): 86.22
Central intensity(cd): 21791.320
Maximum intensity(cd): 21791.320
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=13.5
[C90/270]Total=13.5
Field angle(10%Imax): [C0/180]Total=26.7
[C90/270]Total=26.7
Maximum s/h(1/2): C0_180=0.23 C90_270=0.23
Maximum s/h(1/4): C0_180=0.23 C90_270=0.23
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.90%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.820%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	21791.322	0.000	0	.000%	.000%
1.0	21550.451	20.738	20.738	.810%	.891%
2.0	20749.381	60.713	81.451	2.371%	3.499%
3.0	19538.141	96.355	177.805	3.762%	7.638%
4.0	17806.615	125.005	302.81	4.881%	13.008%
5.0	15071.827	141.441	444.252	5.523%	19.083%
6.0	12981.060	147.425	591.677	5.757%	25.416%
7.0	10120.605	143.392	735.069	5.599%	31.576%
8.0	8033.692	129.927	864.996	5.073%	37.157%
9.0	6079.465	114.379	979.375	4.466%	42.070%
10.0	4561.836	96.300	1075.675	3.760%	46.207%
11.0	3482.868	80.383	1156.058	3.139%	49.660%
12.0	2770.163	68.355	1224.413	2.669%	52.596%
13.0	2314.020	60.336	1284.749	2.356%	55.188%
14.0	1933.168	54.364	1339.113	2.123%	57.523%
15.0	1673.715	49.517	1388.63	1.933%	59.650%
16.0	1484.596	46.278	1434.908	1.807%	61.638%
17.0	1330.713	43.842	1478.75	1.712%	63.521%
18.0	1200.133	41.728	1520.478	1.629%	65.314%
19.0	1088.465	39.817	1560.295	1.555%	67.024%
20.0	1033.147	38.831	1599.126	1.516%	68.692%
21.0	975.434	38.569	1637.695	1.506%	70.349%
22.0	936.124	38.414	1676.108	1.500%	71.999%
23.0	903.476	38.600	1714.708	1.507%	73.657%
24.0	880.875	39.012	1753.721	1.523%	75.333%
25.0	862.335	39.637	1793.357	1.548%	77.036%
26.0	843.836	40.274	1833.632	1.573%	78.766%
27.0	828.090	40.904	1874.536	1.597%	80.523%
28.0	813.885	41.571	1916.107	1.623%	82.309%
29.0	800.135	42.227	1958.334	1.649%	84.123%
30.0	787.224	42.858	2001.193	1.674%	85.964%
31.0	765.408	43.207	2044.4	1.687%	87.820%
32.0	727.735	42.777	2087.177	1.670%	89.657%
33.0	663.870	40.997	2128.174	1.601%	91.418%
34.0	578.147	37.587	2165.761	1.468%	93.033%
35.0	483.588	32.974	2198.735	1.288%	94.449%
36.0	382.780	27.585	2226.32	1.077%	95.634%
37.0	302.714	22.357	2248.677	.873%	96.595%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	187.866	16.375	2265.052	.639%	97.298%
39.0	107.332	10.076	2275.128	.393%	97.731%
40.0	56.804	5.725	2280.852	.224%	97.977%
41.0	26.317	2.960	2283.812	.116%	98.104%
42.0	16.187	1.544	2285.357	.060%	98.170%
43.0	14.053	1.120	2286.477	.044%	98.218%
44.0	11.851	0.978	2287.454	.038%	98.260%
45.0	10.915	0.875	2288.329	.034%	98.298%
46.0	10.007	0.818	2289.148	.032%	98.333%
47.0	9.828	0.789	2289.936	.031%	98.367%
48.0	9.676	0.788	2290.725	.031%	98.401%
49.0	9.594	0.791	2291.516	.031%	98.435%
50.0	9.483	0.795	2292.312	.031%	98.469%
51.0	9.387	0.798	2293.11	.031%	98.503%
52.0	9.277	0.801	2293.911	.031%	98.538%
53.0	9.208	0.804	2294.715	.031%	98.572%
54.0	9.139	0.809	2295.524	.032%	98.607%
55.0	9.098	0.814	2296.338	.032%	98.642%
56.0	9.071	0.821	2297.159	.032%	98.677%
57.0	8.988	0.826	2297.984	.032%	98.713%
58.0	8.947	0.829	2298.814	.032%	98.748%
59.0	8.919	0.835	2299.649	.033%	98.784%
60.0	8.878	0.841	2300.49	.033%	98.820%
61.0	8.850	0.846	2301.336	.033%	98.857%
62.0	8.837	0.852	2302.188	.033%	98.893%
63.0	8.823	0.859	2303.047	.034%	98.930%
64.0	8.823	0.866	2303.913	.034%	98.967%
65.0	8.781	0.871	2304.784	.034%	99.005%
66.0	8.781	0.876	2305.66	.034%	99.042%
67.0	8.740	0.881	2306.541	.034%	99.080%
68.0	8.740	0.886	2307.427	.035%	99.118%
69.0	8.726	0.891	2308.318	.035%	99.157%
70.0	8.726	0.896	2309.214	.035%	99.195%
71.0	8.726	0.902	2310.116	.035%	99.234%
72.0	8.740	0.908	2311.025	.035%	99.273%
73.0	8.726	0.913	2311.938	.036%	99.312%
74.0	8.726	0.918	2312.855	.036%	99.351%
75.0	8.699	0.921	2313.776	.036%	99.391%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.713	0.924	2314.7	.036%	99.431%
77.0	8.713	0.929	2315.629	.036%	99.471%
78.0	8.726	0.934	2316.563	.036%	99.511%
79.0	8.713	0.937	2317.5	.037%	99.551%
80.0	8.699	0.939	2318.439	.037%	99.591%
81.0	8.726	0.942	2319.381	.037%	99.632%
82.0	8.726	0.946	2320.327	.037%	99.672%
83.0	8.754	0.950	2321.278	.037%	99.713%
84.0	8.726	0.952	2322.23	.037%	99.754%
85.0	8.740	0.953	2323.183	.037%	99.795%
86.0	8.713	0.954	2324.137	.037%	99.836%
87.0	8.699	0.953	2325.09	.037%	99.877%
88.0	8.713	0.954	2326.044	.037%	99.918%
89.0	8.699	0.954	2326.998	.037%	99.959%
90.0	8.699	0.954	2327.952	.037%	100.000%

Zonal flux distribution table

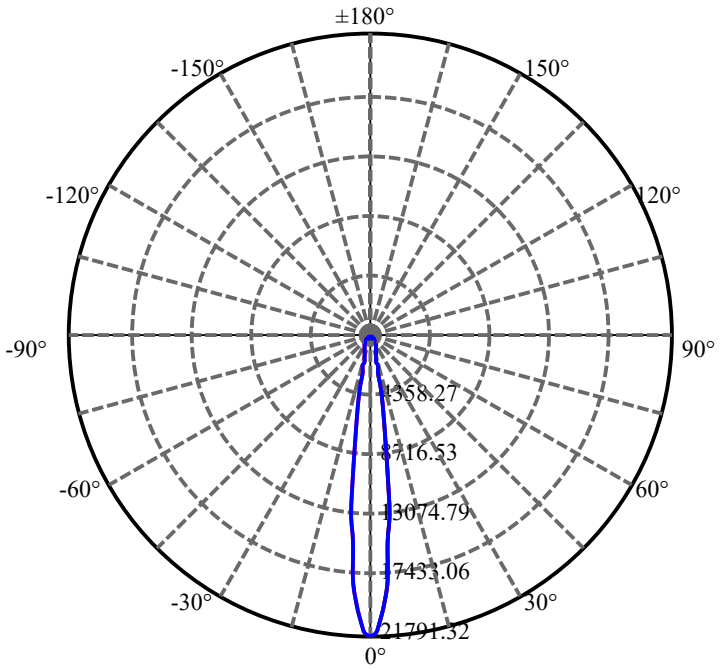
ZONAL LUMEN SUMMARY

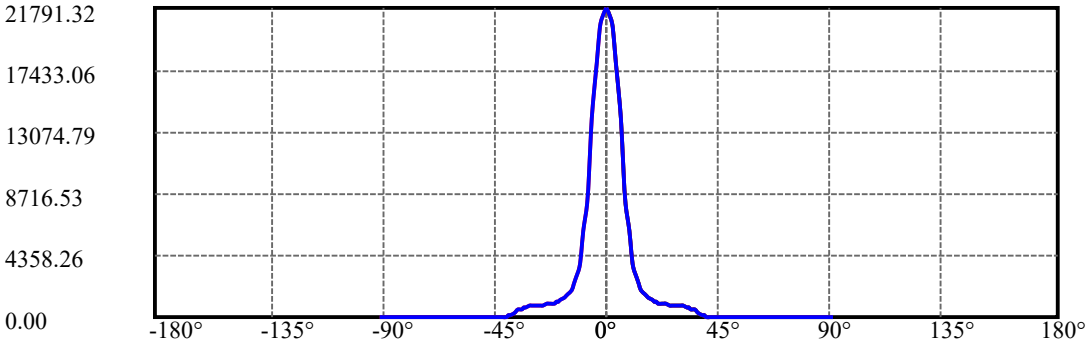
Zone	Lumens	%Lamp	%Fixt
0-30	2001.19	78.14%	85.96%
0-40	2280.85	89.06%	97.98%
0-60	2300.49	89.83%	98.82%
0-90	2327.00	90.86%	99.96%
0-120	2327.00	90.86%	99.96%
0-180	2327.95	90.90%	100.00%
60-90	27.35	1.07%	1.17%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.70	1862.36	72.72%	80.00%

ZONAL LUMEN SUMMARY

0-10	1075.67
10-20	523.45
20-30	402.07
30-40	279.66
40-50	11.46
50-60	8.18
60-70	8.72
70-80	9.22
80-90	8.56
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):

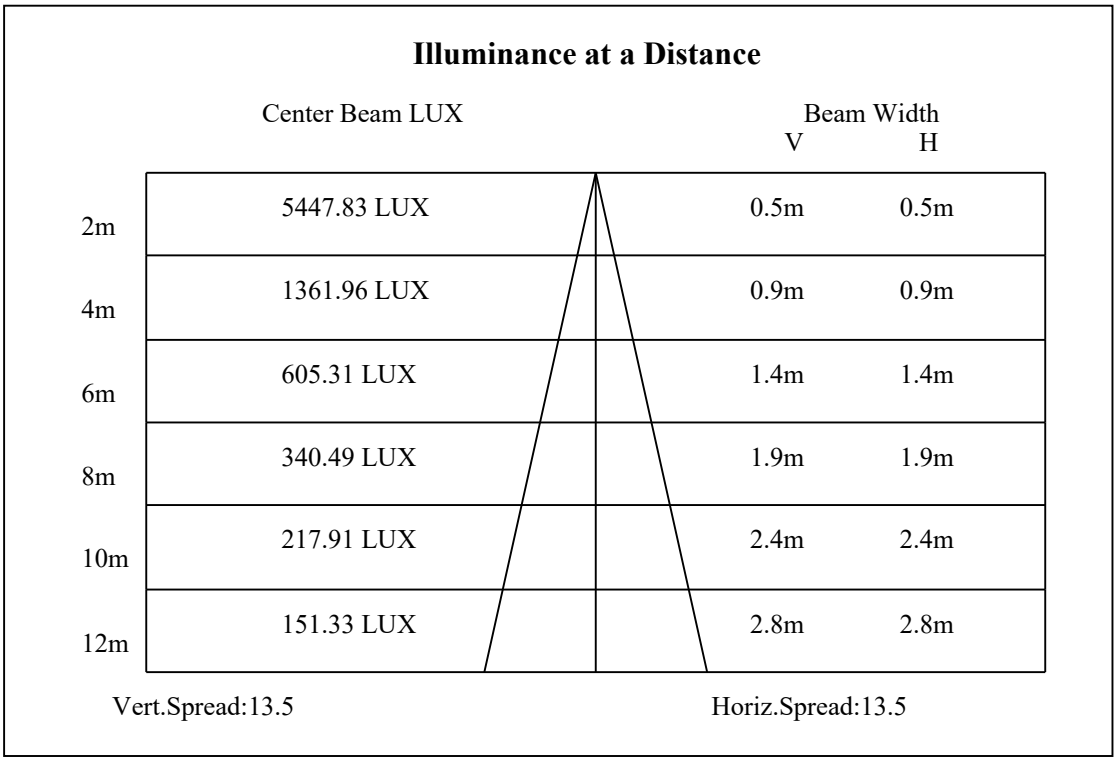
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:13.4 Right:13.4
:C90/270Left:13.4 Right:13.4

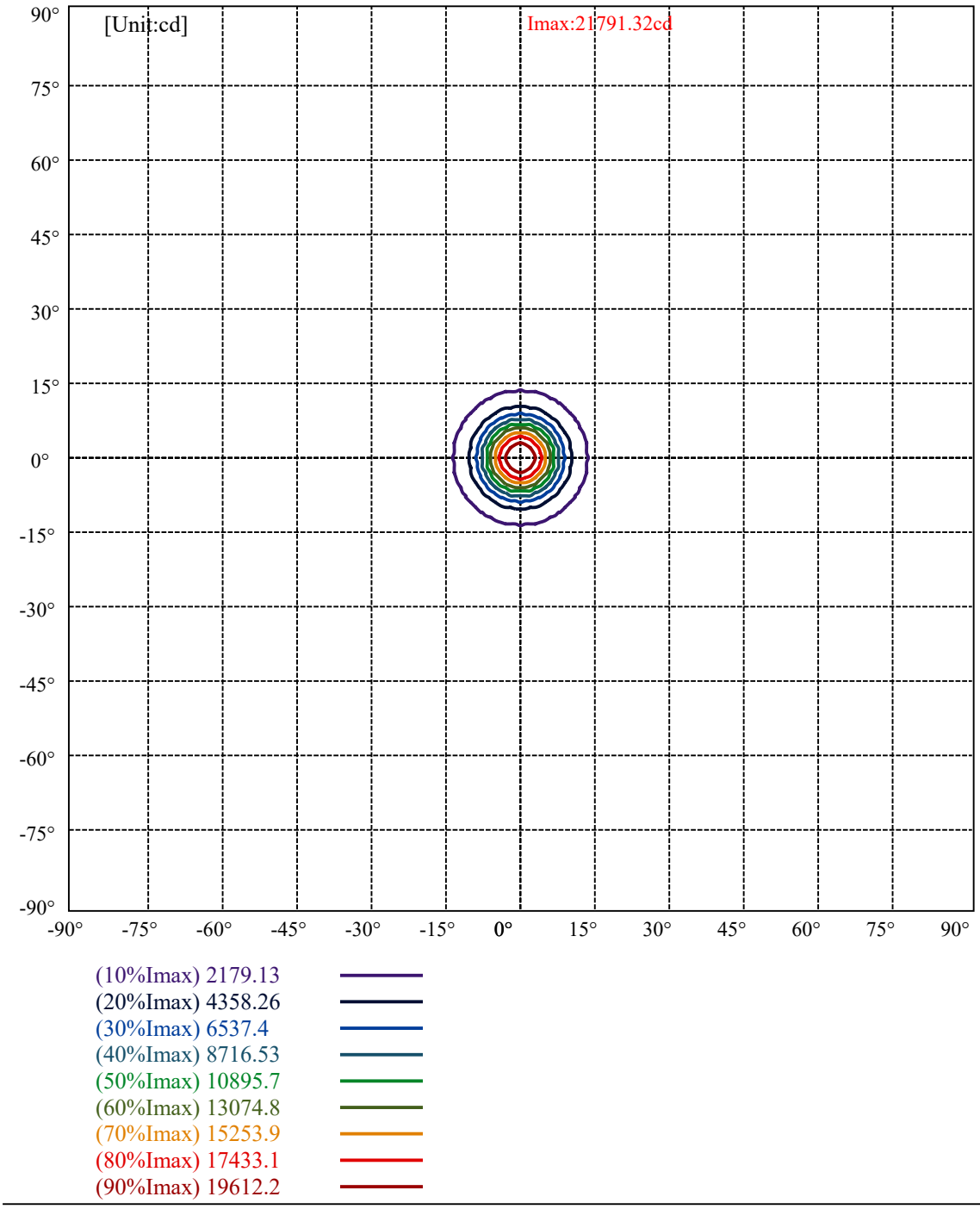
Beam Angle(50%Imax):C0/180Left:6.7 Right:6.7
:C90/270Left:6.7 Right:6.7

Lux distance Curve



Equipment: gms1980 Date: 2017/5/18 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)

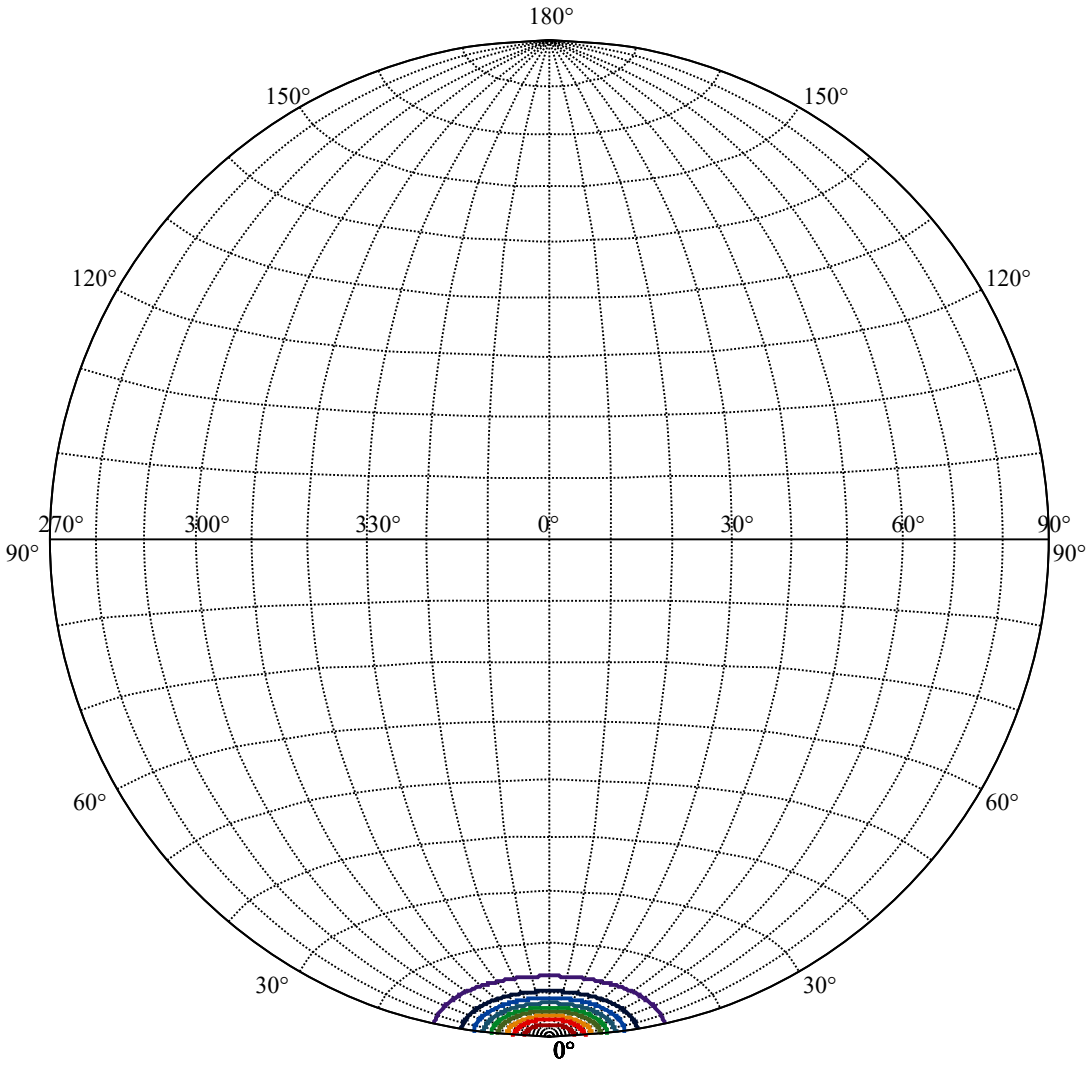


Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/18
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



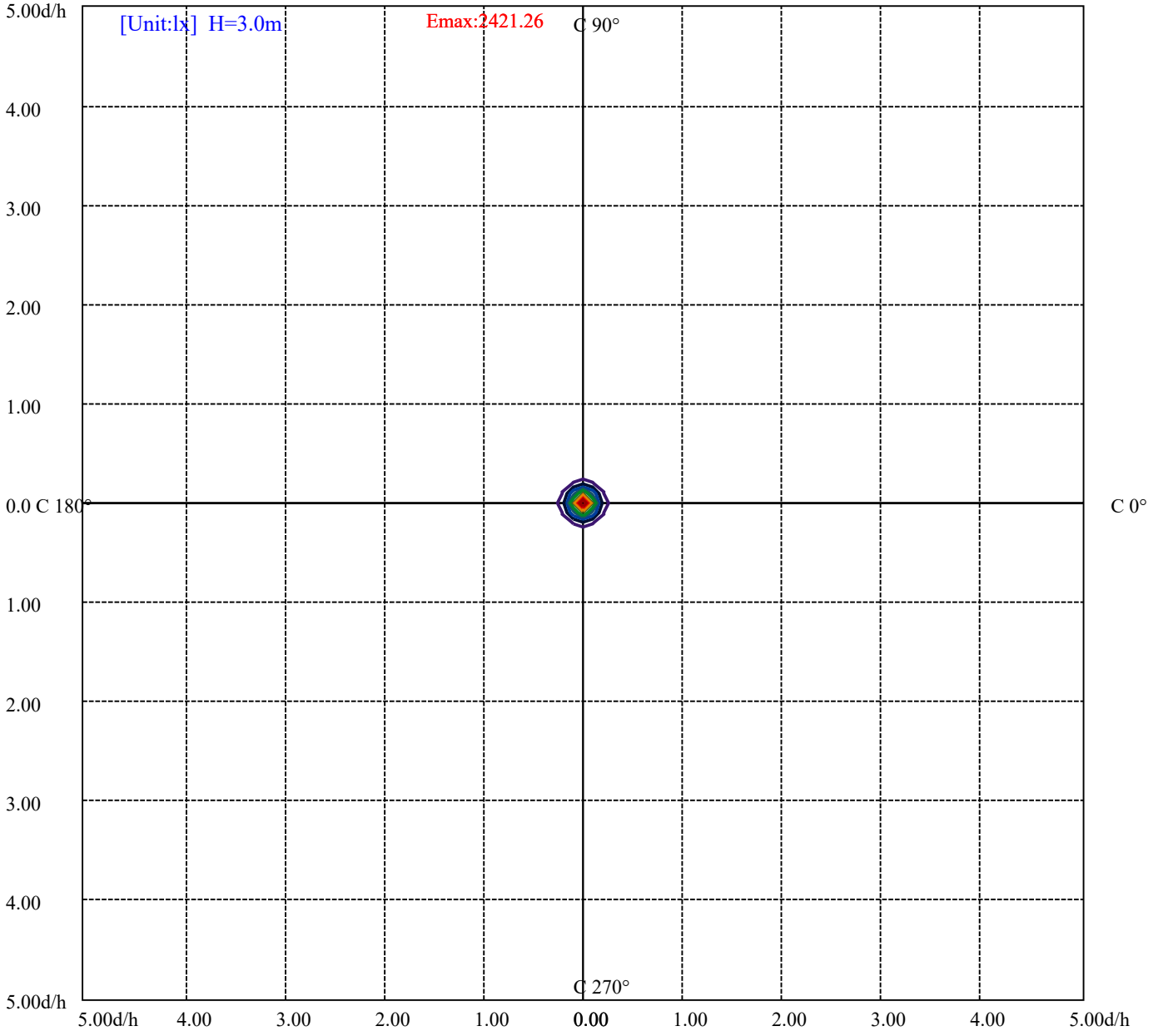
House [Unit:cd] Road

Imax:21791.32

(10%Imax) 2179.13
(20%Imax) 4358.26
(30%Imax) 6537.4
(40%Imax) 8716.53
(50%Imax) 10895.7
(60%Imax) 13074.8
(70%Imax) 15253.9
(80%Imax) 17433.1
(90%Imax) 19612.2

Equipment: gms1980	Date: 2017/5/18	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

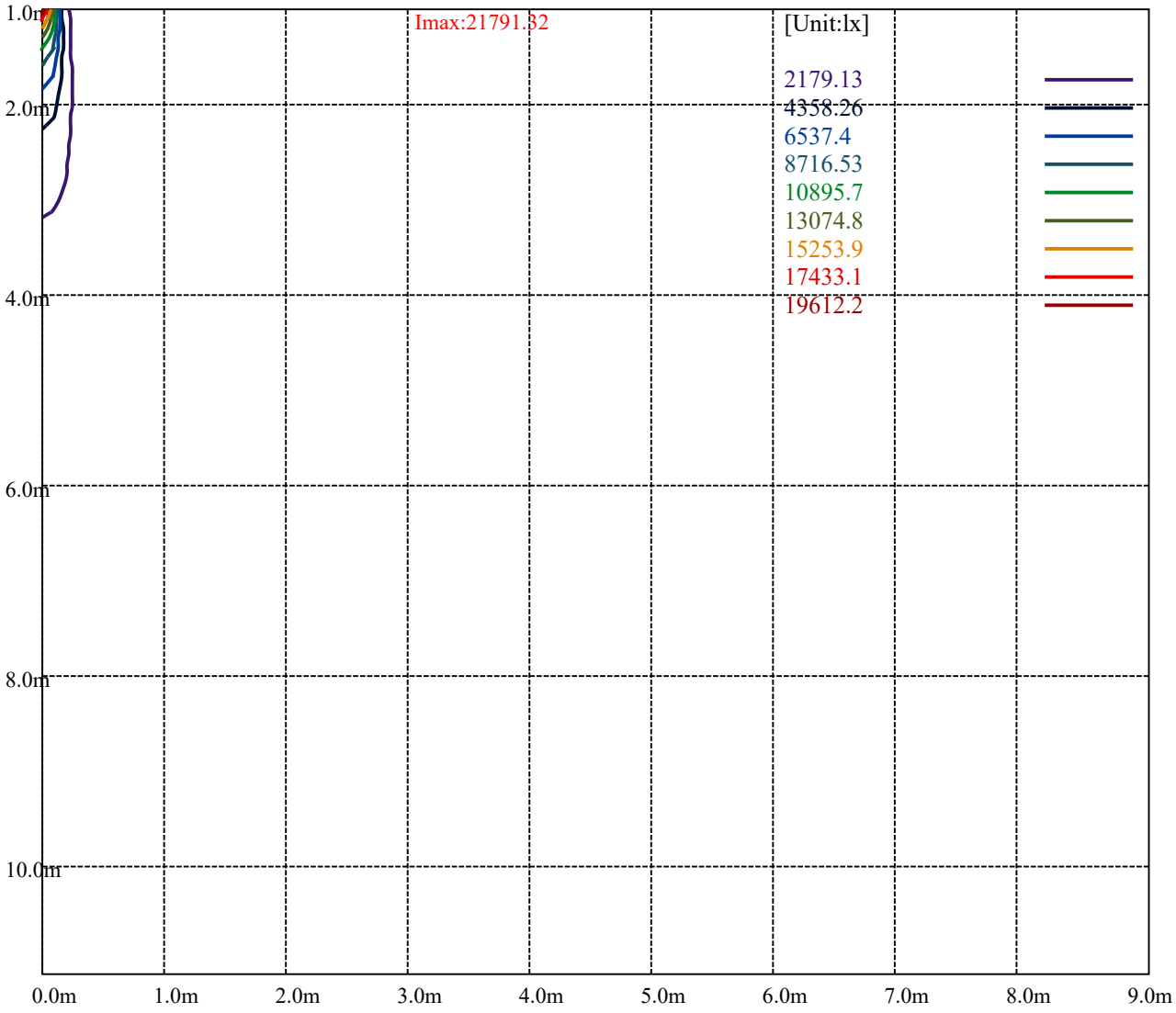
ISO illuminance diagram



(10%Emax) 242.1255
(20%Emax) 484.2511
(30%Emax) 726.3767
(40%Emax) 968.5011
(50%Emax) 1210.622
(60%Emax) 1452.755
(70%Emax) 1694.878
(80%Emax) 1937
(90%Emax) 2179.133

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/5/18
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/18
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Nata 3-2042-M

Luminance Limitting Curve(no luminous side)

Luminance Table

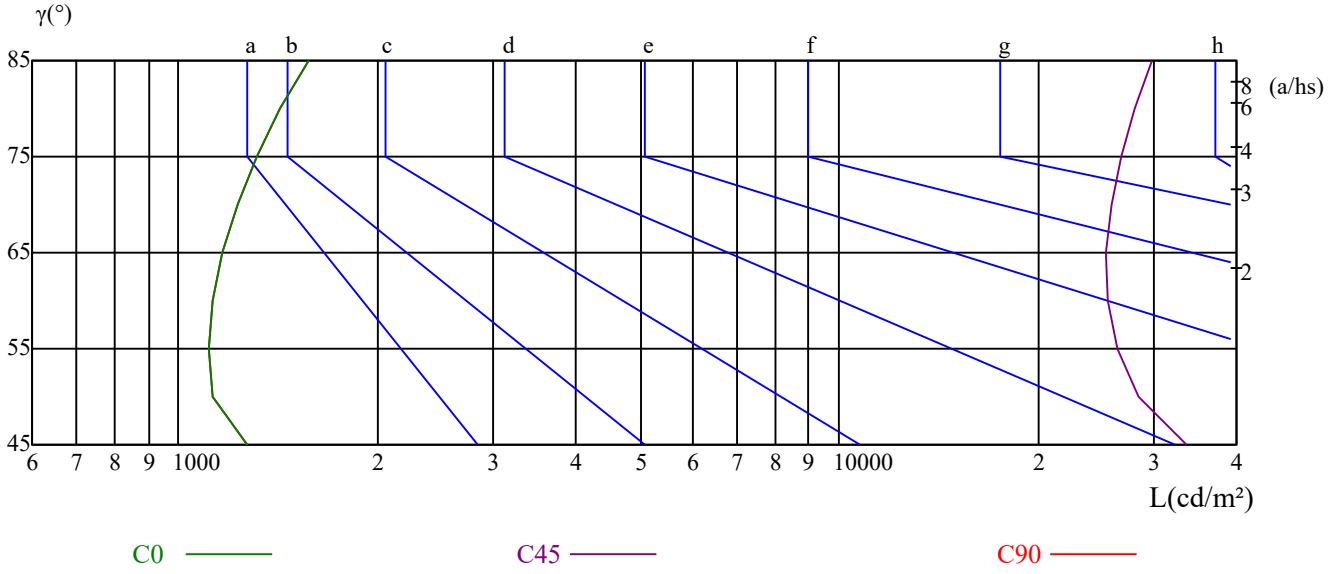
γ	45	50	55	60	65	70	75	80	85
C0	1270	1126	1112	1126	1168	1228	1312	1424	1577
C45	33525	28332	26375	25506	25410	25820	26696	28067	29872
C90	1270	1126	1112	1126	1168	1228	1312	1424	1577

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2876	2876	77996	4652	4652	122838	13880	13880	359359

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

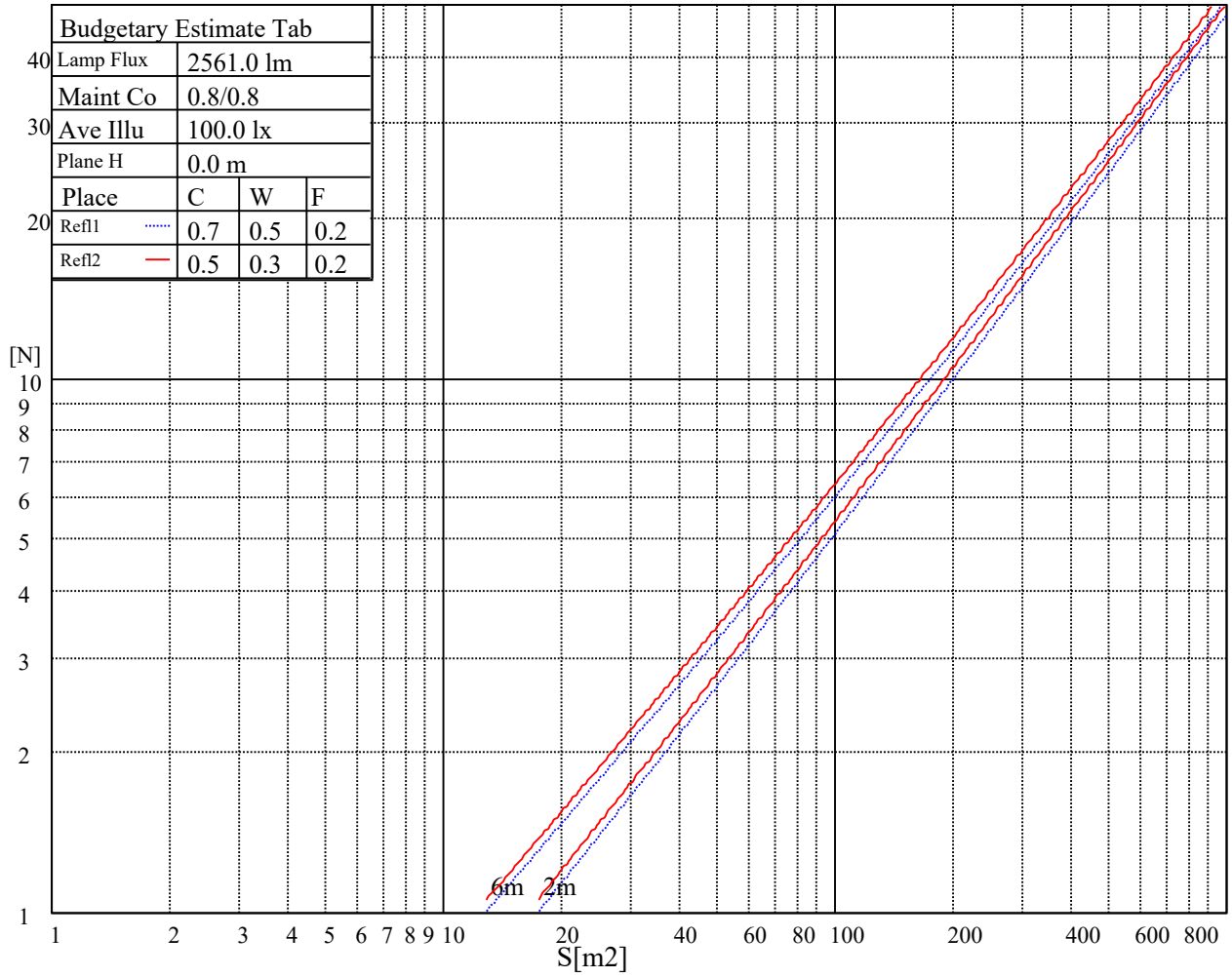


Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/18
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Budgetary Estimate Table

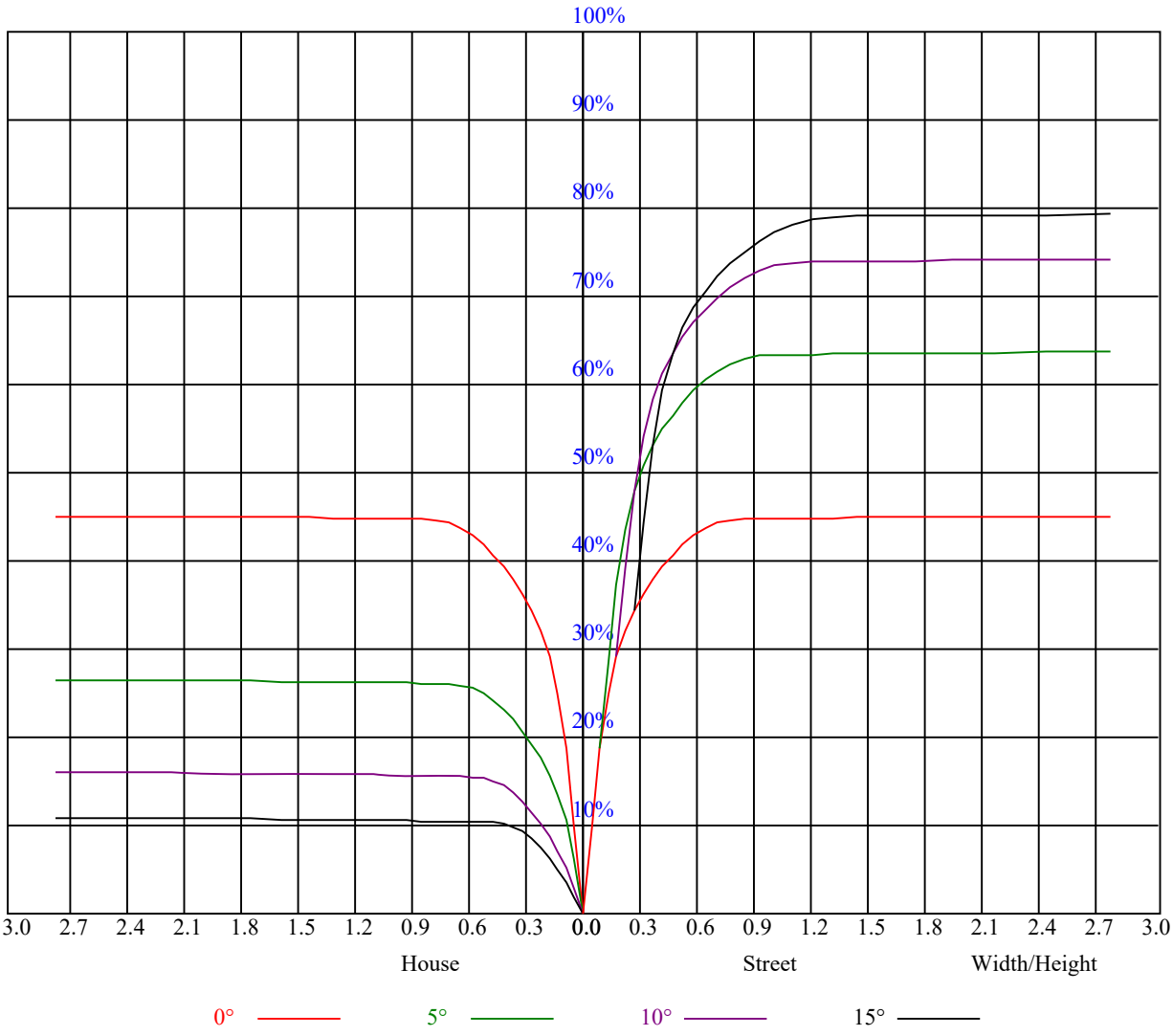


Equipment: gms1980 Date: 2017/5/18 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

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	1.02	1.00	0.99	1.00	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89	0.87
2	0.97	0.94	0.92	0.96	0.93	0.91	0.93	0.91	0.89	0.90	0.89	0.87	0.88	0.87	0.85	0.84
3	0.93	0.89	0.87	0.92	0.89	0.86	0.89	0.87	0.85	0.87	0.85	0.83	0.85	0.84	0.82	0.81
4	0.89	0.85	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.78
5	0.86	0.82	0.79	0.85	0.81	0.79	0.84	0.80	0.78	0.82	0.80	0.77	0.81	0.79	0.77	0.76
6	0.83	0.79	0.76	0.82	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
7	0.80	0.76	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
8	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
9	0.75	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.68
10	0.73	0.70	0.67	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.66

Coefficient Utilization Curve



Equipment: gms1980	Date: 2017/5/18	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	21851.89	21345.37	20167.16	18300.75	16092.99	13301.63	10537.79	8214.41	6237.89
90.0	21730.76	21984.02	21851.89	21328.85	20343.34	18399.85	16274.67	13813.65	10680.94
180.0	21851.89	21978.51	21686.72	20882.89	19484.46	17662.09	15382.76	10972.74	9743.88
270.0	21730.76	20893.90	19291.76	17640.07	15305.68	10923.74	9729.02	7481.61	5472.06
360.0	21851.89	21345.37	20167.16	18300.75	16092.99	13301.63	10537.79	8214.41	6237.89

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4421.03	3452.04	2796.87	2286.49	1927.52	1691.33	1493.13	1335.12	1216.75
90.0	8324.53	6292.95	4432.04	3402.49	2791.36	2217.12	1866.41	1642.33	1446.88
180.0	7497.03	5258.44	4029.03	3207.59	2642.16	2155.46	1865.31	1648.39	1455.69
270.0	4075.27	3243.92	2673.54	2184.09	1895.04	1668.76	1470.01	1312.54	1203.53
360.0	4421.03	3452.04	2796.87	2286.49	1927.52	1691.33	1493.13	1335.12	1216.75

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1115.99	1051.03	992.67	947.52	917.24	891.36	870.99	853.92	837.41
90.0	1294.38	1185.36	1089.02	1019.64	966.24	928.25	901.27	880.90	861.08
180.0	1300.43	1096.45	1076.85	1001.92	955.61	913.88	891.14	869.29	850.73
270.0	1089.73	1021.02	974.06	932.66	905.40	880.41	860.09	845.23	826.12
360.0	1115.99	1051.03	992.67	947.52	917.24	891.36	870.99	853.92	837.41

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	818.14	806.58	795.56	781.80	752.62	693.71	601.22	498.26	403.01
90.0	846.77	830.25	813.18	802.72	789.51	776.85	739.96	674.44	589.65
180.0	838.07	823.42	807.62	795.29	783.84	767.60	729.39	662.22	568.79
270.0	809.38	795.29	784.17	769.08	735.66	672.79	584.92	477.67	372.90
360.0	818.14	806.58	795.56	781.80	752.62	693.71	601.22	498.26	403.01

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	296.20	284.09	105.05	47.35	20.54	17.29	14.04	12.39	11.12
90.0	505.42	387.05	283.54	178.88	96.40	37.05	18.72	16.30	13.32
180.0	465.83	372.29	268.29	167.10	90.79	34.69	18.88	15.64	12.77
270.0	263.67	167.43	94.59	36.01	19.49	16.24	13.10	11.89	10.19
360.0	296.20	284.09	105.05	47.35	20.54	17.29	14.04	12.39	11.12

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	10.02	9.91	9.74	9.58	9.47	9.36	9.30	9.19	9.08
90.0	11.89	10.30	10.02	9.86	9.80	9.69	9.58	9.47	9.41
180.0	11.84	10.08	9.91	9.80	9.69	9.58	9.52	9.41	9.36
270.0	9.91	9.74	9.63	9.47	9.41	9.30	9.14	9.03	8.97
360.0	10.02	9.91	9.74	9.58	9.47	9.36	9.30	9.19	9.08

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.03	9.03	8.97	8.92	8.86	8.86	8.81	8.81	8.75
90.0	9.30	9.25	9.25	9.14	9.08	9.03	9.03	8.97	8.97
180.0	9.30	9.25	9.19	9.14	9.08	9.08	8.97	8.97	8.97
270.0	8.92	8.86	8.86	8.75	8.75	8.70	8.70	8.64	8.64
360.0	9.03	9.03	8.97	8.92	8.86	8.86	8.81	8.81	8.75

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.75	8.75	8.75	8.75	8.70	8.70	8.70	8.70	8.75
90.0	8.92	8.92	8.86	8.86	8.81	8.81	8.81	8.81	8.75
180.0	8.97	8.97	8.92	8.86	8.86	8.86	8.86	8.86	8.86
270.0	8.64	8.64	8.59	8.64	8.59	8.59	8.53	8.53	8.53
360.0	8.75	8.75	8.75	8.75	8.70	8.70	8.70	8.70	8.75

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	8.75	8.75	8.75	8.75	8.70	8.75	8.75	8.75	8.75
90.0	8.75	8.75	8.75	8.70	8.75	8.70	8.70	8.70	8.70
180.0	8.86	8.81	8.81	8.81	8.81	8.86	8.86	8.81	8.81
270.0	8.59	8.59	8.59	8.53	8.59	8.53	8.59	8.59	8.53
360.0	8.75	8.75	8.75	8.75	8.70	8.75	8.75	8.75	8.75

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.81	8.81	8.86	8.81	8.81	8.81	8.75	8.81	8.81
90.0	8.70	8.70	8.70	8.70	8.70	8.64	8.64	8.70	8.64
180.0	8.81	8.81	8.86	8.81	8.81	8.81	8.81	8.75	8.75
270.0	8.59	8.59	8.59	8.59	8.64	8.59	8.59	8.59	8.59
360.0	8.81	8.81	8.86	8.81	8.81	8.81	8.75	8.81	8.81

C/γ(°)	90.0
0.0	8.81
90.0	8.64
180.0	8.75
270.0	8.59
360.0	8.81