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

Nata

LumCAT: 3-2033-M
Luminaire: 92.70.131.00
Report No: GC2017061703
Test No: NT-0010
LampCAT: CITIZEN CLU038
Lamp flux(lm): 2365.0
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 34.2000
Current(A): 0.5000
Power (W): 17.1000
PF: 0.0000
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 2127.30
Efficiency(%): 89.95%
Lumens(lm)/Power(W): 124.40
Central intensity(cd): 17689.620
Maximum intensity(cd): 17689.620
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=13.9
[C90/270]Total=13.9
Field angle(10%Imax): [C0/180]Total=28.7
[C90/270]Total=28.7
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(%): 89.95%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.776%

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/6/4
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	17689.621	0.000	0	.000%	.000%
1.0	17401.951	16.791	16.791	.710%	.789%
2.0	16716.498	48.970	65.761	2.071%	3.091%
3.0	15579.585	77.242	143.002	3.266%	6.722%
4.0	14066.910	99.236	242.239	4.196%	11.387%
5.0	12377.229	113.761	356	4.810%	16.735%
6.0	10380.609	119.598	475.598	5.057%	22.357%
7.0	8777.091	118.912	594.51	5.028%	27.947%
8.0	7212.251	114.433	708.943	4.839%	33.326%
9.0	5717.194	104.786	813.729	4.431%	38.252%
10.0	4310.366	90.746	904.474	3.837%	42.518%
11.0	3387.070	76.913	981.388	3.252%	46.133%
12.0	2798.242	67.614	1049.002	2.859%	49.311%
13.0	2261.855	60.051	1109.053	2.539%	52.134%
14.0	1850.446	52.637	1161.69	2.226%	54.609%
15.0	1617.557	47.610	1209.3	2.013%	56.847%
16.0	1421.556	44.532	1253.831	1.883%	58.940%
17.0	1279.511	42.063	1295.894	1.779%	60.917%
18.0	1180.781	40.565	1336.459	1.715%	62.824%
19.0	1090.488	39.515	1375.975	1.671%	64.682%
20.0	1033.257	38.870	1414.845	1.644%	66.509%
21.0	984.367	38.742	1453.588	1.638%	68.330%
22.0	945.841	38.788	1492.376	1.640%	70.154%
23.0	916.496	39.077	1531.453	1.652%	71.990%
24.0	889.615	39.488	1570.941	1.670%	73.847%
25.0	865.404	39.905	1610.846	1.687%	75.723%
26.0	844.180	40.355	1651.201	1.706%	77.620%
27.0	823.341	40.796	1691.997	1.725%	79.537%
28.0	801.208	41.130	1733.127	1.739%	81.471%
29.0	783.618	41.464	1774.591	1.753%	83.420%
30.0	767.583	41.882	1816.473	1.771%	85.389%
31.0	741.362	41.992	1858.465	1.776%	87.363%
32.0	696.753	41.200	1899.665	1.742%	89.299%
33.0	633.548	39.191	1938.856	1.657%	91.142%
34.0	547.206	35.733	1974.589	1.511%	92.821%
35.0	451.531	31.017	2005.606	1.312%	94.279%
36.0	355.926	25.710	2031.316	1.087%	95.488%
37.0	266.941	20.314	2051.63	.859%	96.443%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	182.815	15.012	2066.643	.635%	97.149%
39.0	95.729	9.507	2076.15	.402%	97.596%
40.0	48.119	5.017	2081.167	.212%	97.831%
41.0	28.629	2.733	2083.9	.116%	97.960%
42.0	20.151	1.772	2085.672	.075%	98.043%
43.0	16.090	1.342	2087.015	.057%	98.106%
44.0	13.351	1.111	2088.126	.047%	98.159%
45.0	11.589	0.958	2089.085	.041%	98.204%
46.0	10.791	0.875	2089.96	.037%	98.245%
47.0	10.240	0.836	2090.796	.035%	98.284%
48.0	9.951	0.816	2091.613	.035%	98.322%
49.0	9.731	0.808	2092.421	.034%	98.360%
50.0	9.566	0.805	2093.225	.034%	98.398%
51.0	9.415	0.803	2094.028	.034%	98.436%
52.0	9.263	0.801	2094.83	.034%	98.474%
53.0	9.153	0.801	2095.631	.034%	98.511%
54.0	8.988	0.800	2096.431	.034%	98.549%
55.0	8.905	0.799	2097.229	.034%	98.586%
56.0	8.823	0.801	2098.03	.034%	98.624%
57.0	8.740	0.803	2098.833	.034%	98.662%
58.0	8.671	0.805	2099.639	.034%	98.700%
59.0	8.603	0.808	2100.446	.034%	98.738%
60.0	8.534	0.810	2101.256	.034%	98.776%
61.0	8.465	0.811	2102.067	.034%	98.814%
62.0	8.437	0.814	2102.881	.034%	98.852%
63.0	8.396	0.819	2103.7	.035%	98.891%
64.0	8.355	0.822	2104.522	.035%	98.929%
65.0	8.314	0.825	2105.347	.035%	98.968%
66.0	8.286	0.828	2106.175	.035%	99.007%
67.0	8.231	0.831	2107.006	.035%	99.046%
68.0	8.203	0.833	2107.838	.035%	99.085%
69.0	8.190	0.836	2108.674	.035%	99.124%
70.0	8.162	0.840	2109.514	.036%	99.164%
71.0	8.148	0.843	2110.357	.036%	99.204%
72.0	8.148	0.847	2111.205	.036%	99.243%
73.0	8.148	0.852	2112.057	.036%	99.283%
74.0	8.121	0.855	2112.912	.036%	99.324%
75.0	8.272	0.866	2113.778	.037%	99.364%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.658	0.899	2114.677	.038%	99.407%
77.0	8.933	0.938	2115.615	.040%	99.451%
78.0	8.864	0.953	2116.568	.040%	99.496%
79.0	8.658	0.941	2117.509	.040%	99.540%
80.0	8.506	0.925	2118.434	.039%	99.583%
81.0	8.341	0.911	2119.345	.039%	99.626%
82.0	8.231	0.899	2120.244	.038%	99.668%
83.0	8.231	0.895	2121.139	.038%	99.710%
84.0	8.135	0.892	2122.031	.038%	99.752%
85.0	8.093	0.886	2122.916	.037%	99.794%
86.0	8.038	0.882	2123.798	.037%	99.835%
87.0	8.024	0.879	2124.677	.037%	99.877%
88.0	7.956	0.875	2125.552	.037%	99.918%
89.0	7.969	0.873	2126.425	.037%	99.959%
90.0	7.969	0.874	2127.299	.037%	100.000%

Zonal flux distribution table

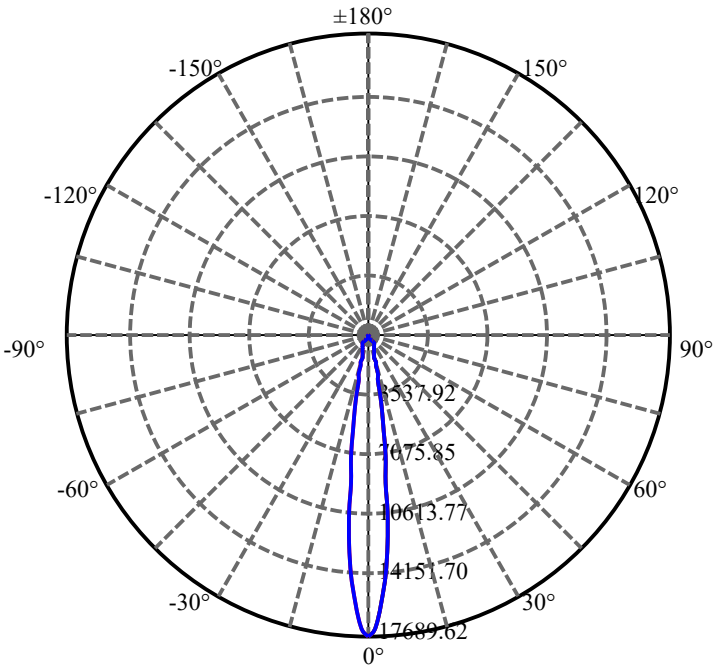
ZONAL LUMEN SUMMARY

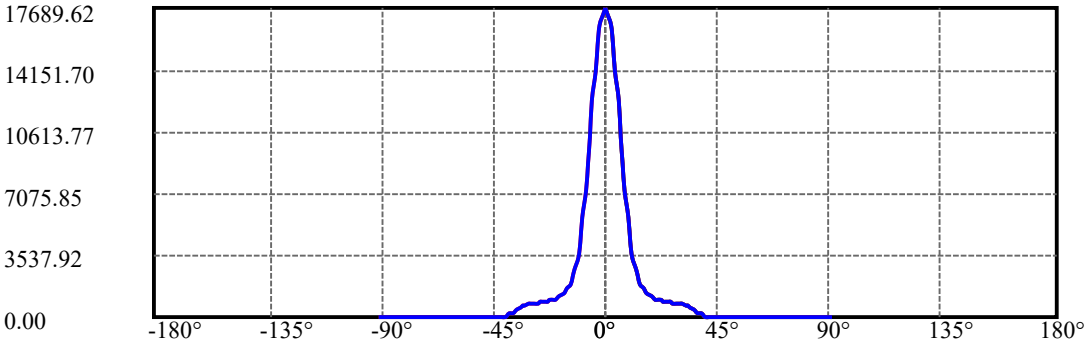
Zone	Lumens	%Lamp	%Fixt
0-30	1816.47	76.81%	85.39%
0-40	2081.17	88.00%	97.83%
0-60	2101.26	88.85%	98.78%
0-90	2126.43	89.91%	99.96%
0-120	2126.43	89.91%	99.96%
0-180	2127.30	89.95%	100.00%
60-90	25.98	1.10%	1.22%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.24	1701.84	71.96%	80.00%

ZONAL LUMEN SUMMARY

0-10	904.47
10-20	510.37
20-30	401.63
30-40	264.69
40-50	12.06
50-60	8.03
60-70	8.26
70-80	8.92
80-90	7.99
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):

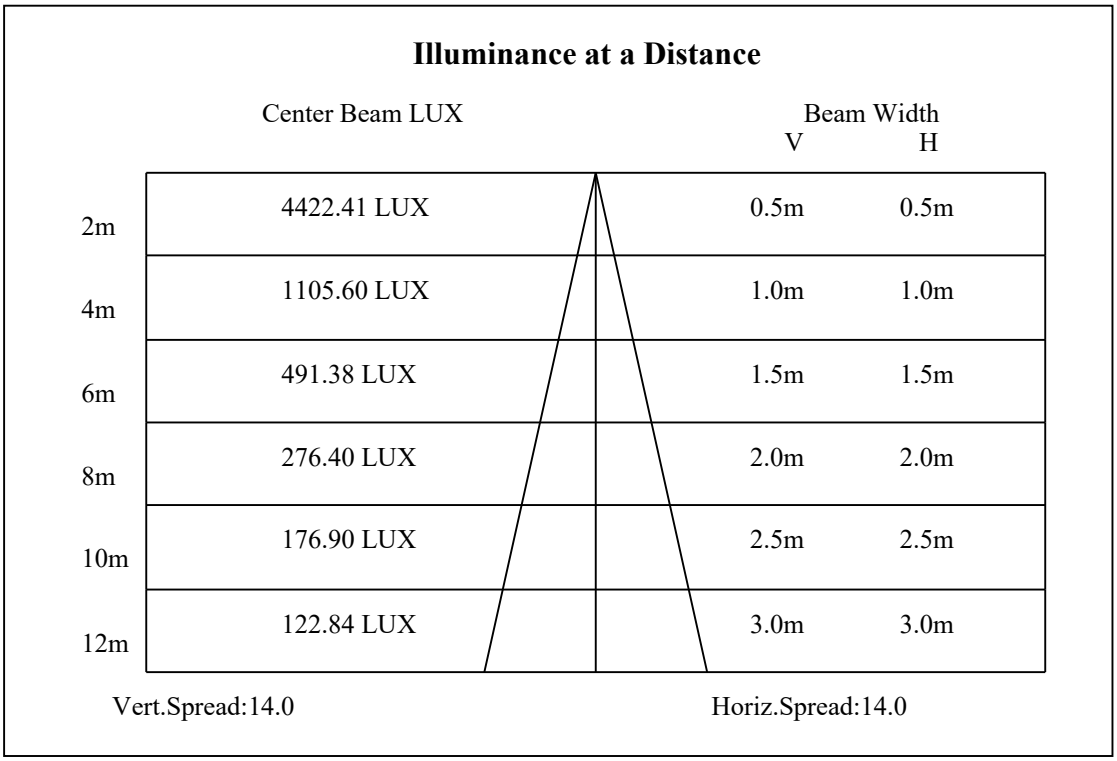
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:14.3 Right:14.3
:C90/270Left:14.3 Right:14.3

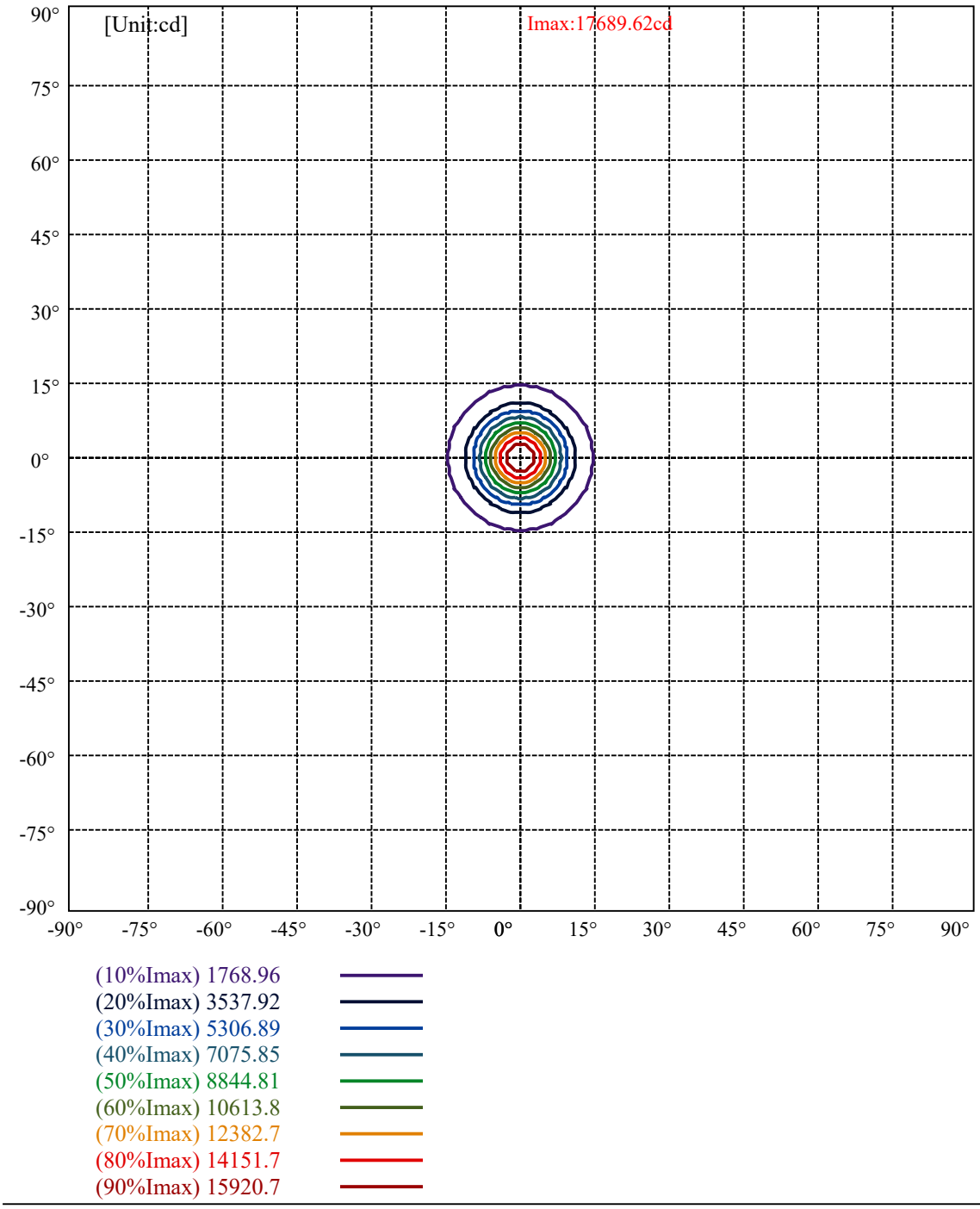
Beam Angle(50%Imax):C0/180Left:7.0 Right:7.0
:C90/270Left:7.0 Right:7.0

Lux distance Curve



Equipment: gms1980 Date: 2017/6/4 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)

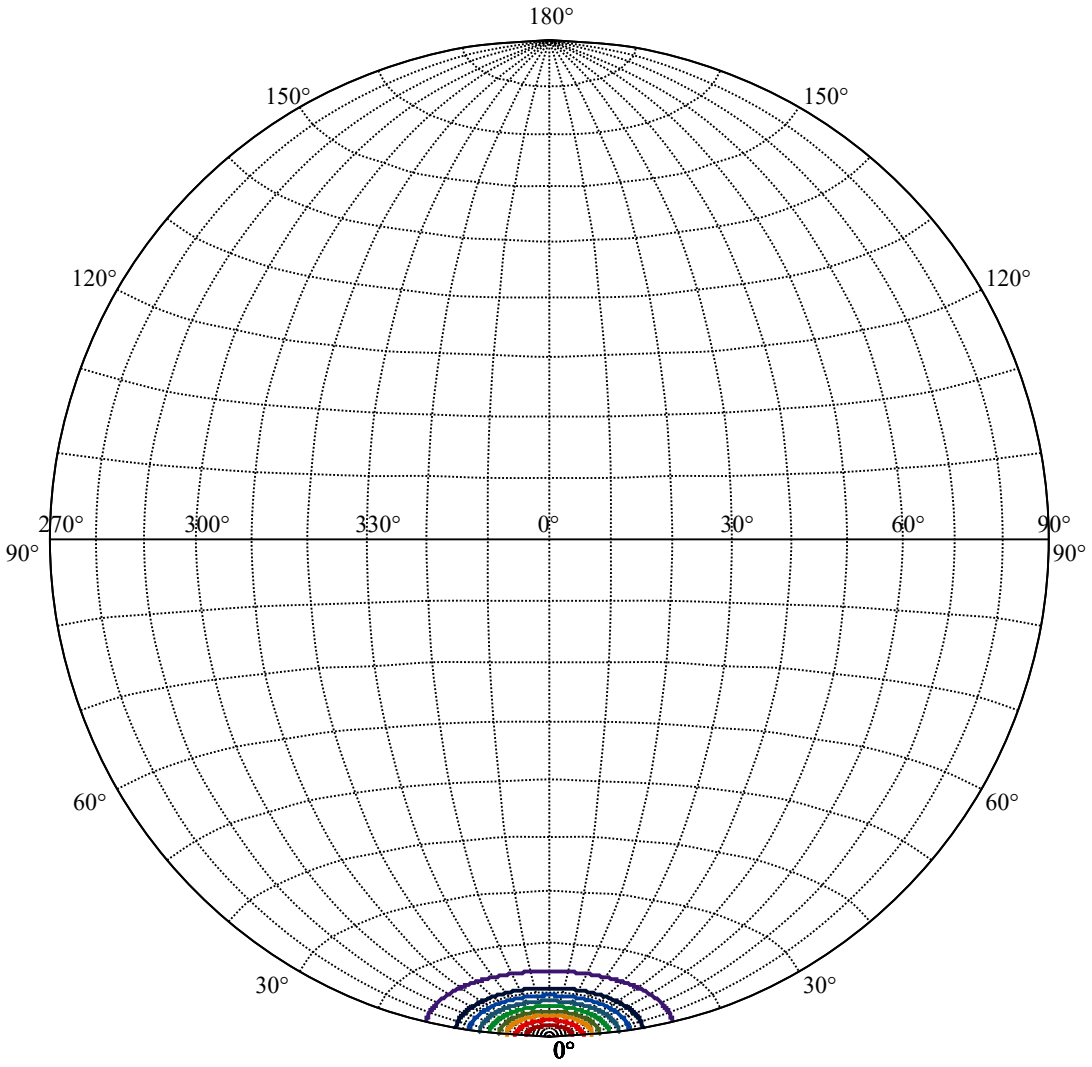


Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/4
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



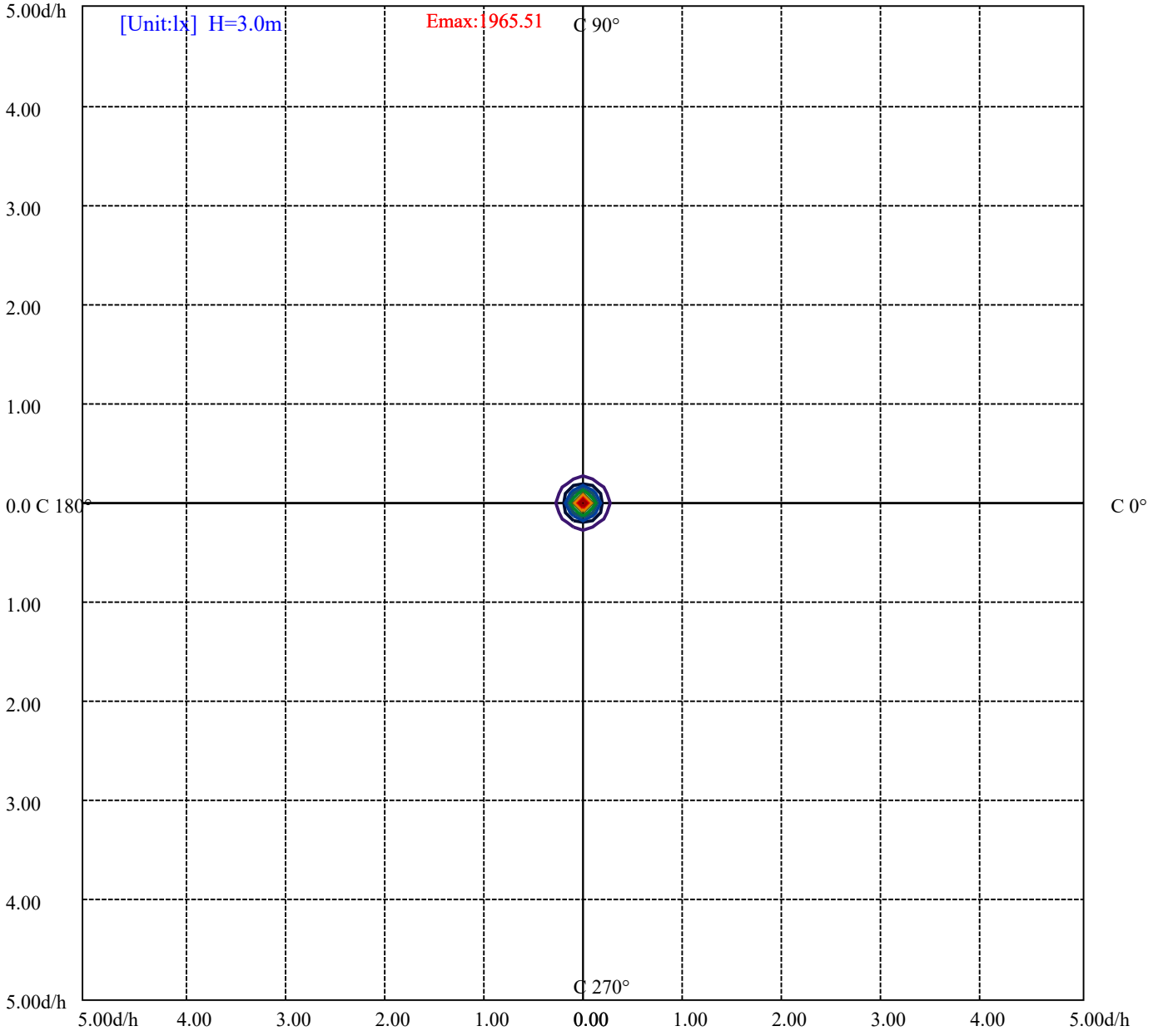
House [Unit:cd] Road

Imax:17689.62

(10%Imax) 1768.96
(20%Imax) 3537.92
(30%Imax) 5306.89
(40%Imax) 7075.85
(50%Imax) 8844.81
(60%Imax) 10613.8
(70%Imax) 12382.7
(80%Imax) 14151.7
(90%Imax) 15920.7

Equipment: gms1980 Date: 2017/6/4 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

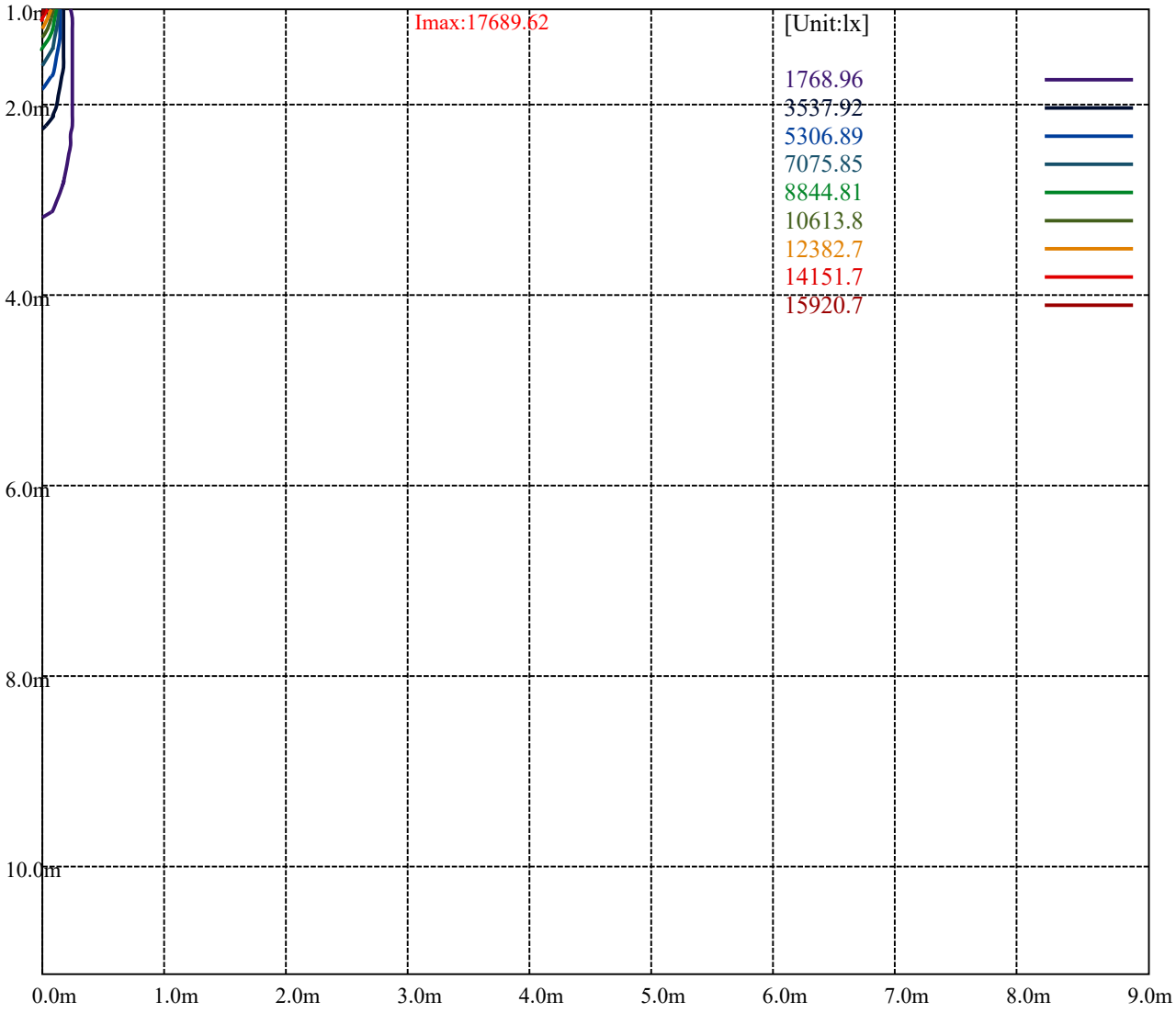
ISO illuminance diagram



(10%Emax) 196.5511
(20%Emax) 393.1022
(30%Emax) 589.6522
(40%Emax) 786.2034
(50%Emax) 982.7545
(60%Emax) 1179.3
(70%Emax) 1375.856
(80%Emax) 1572.411
(90%Emax) 1768.956

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/6/4
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/4
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

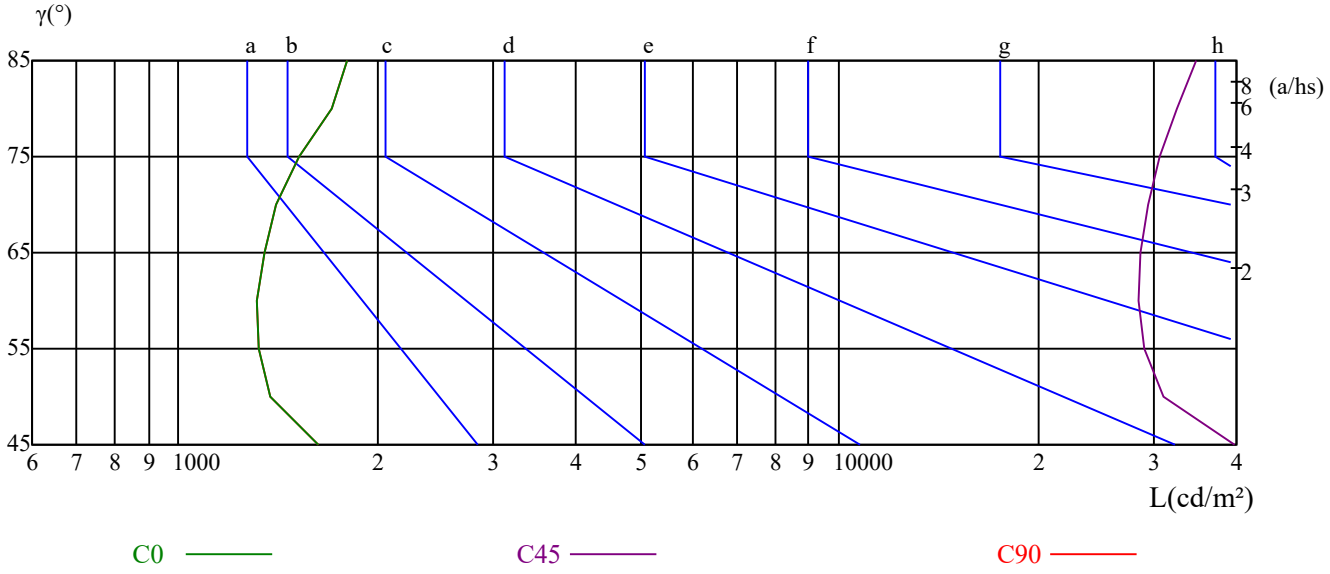
γ	45	50	55	60	65	70	75	80	85
C0	1629	1375	1320	1316	1346	1403	1527	1710	1801
C45	39793	30925	29016	28486	28660	29422	30588	32498	34779
C90	1629	1375	1320	1316	1346	1403	1527	1710	1801

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3233	3233	85493	5253	5253	136146	15263	15263	402367

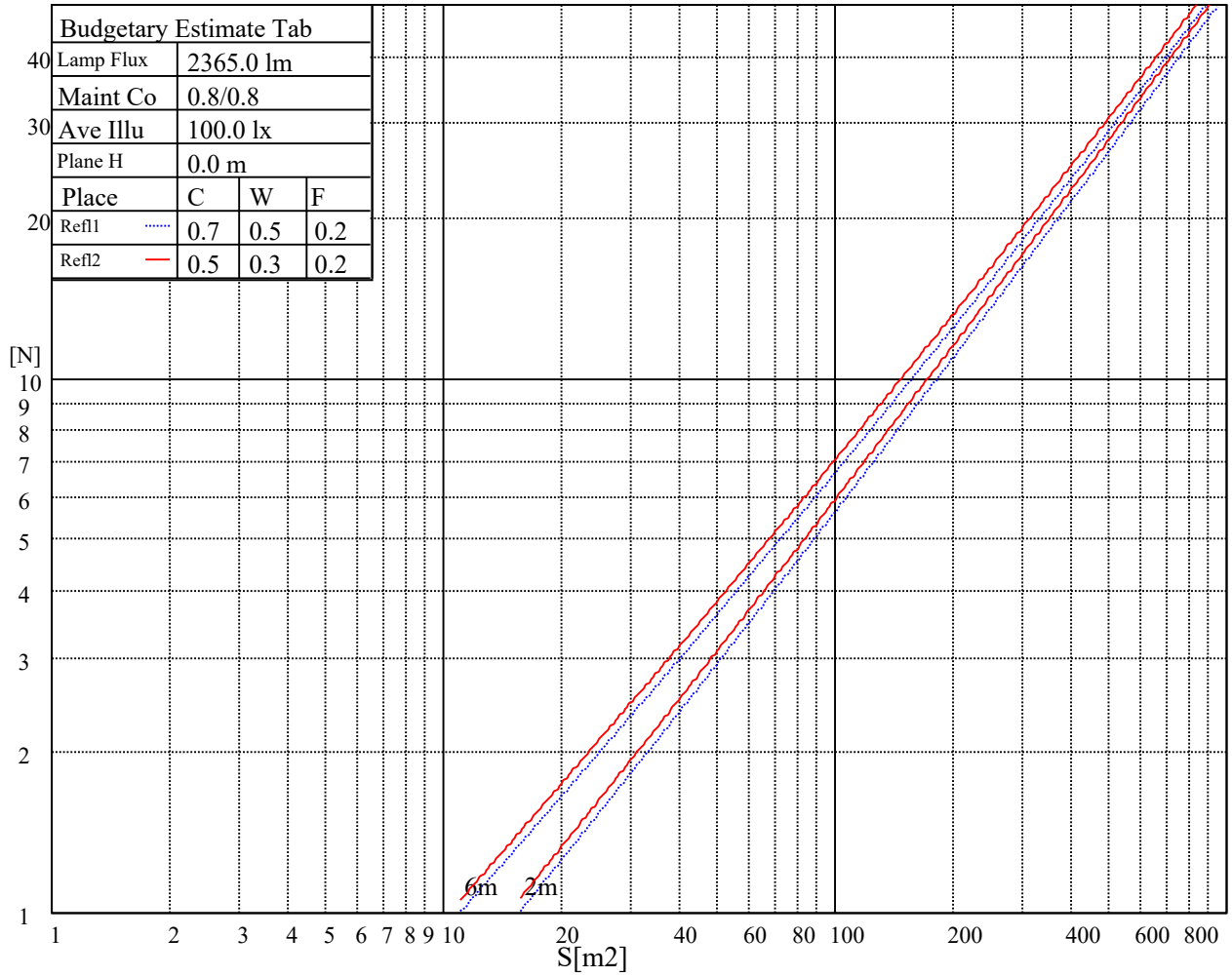
Glare Table

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

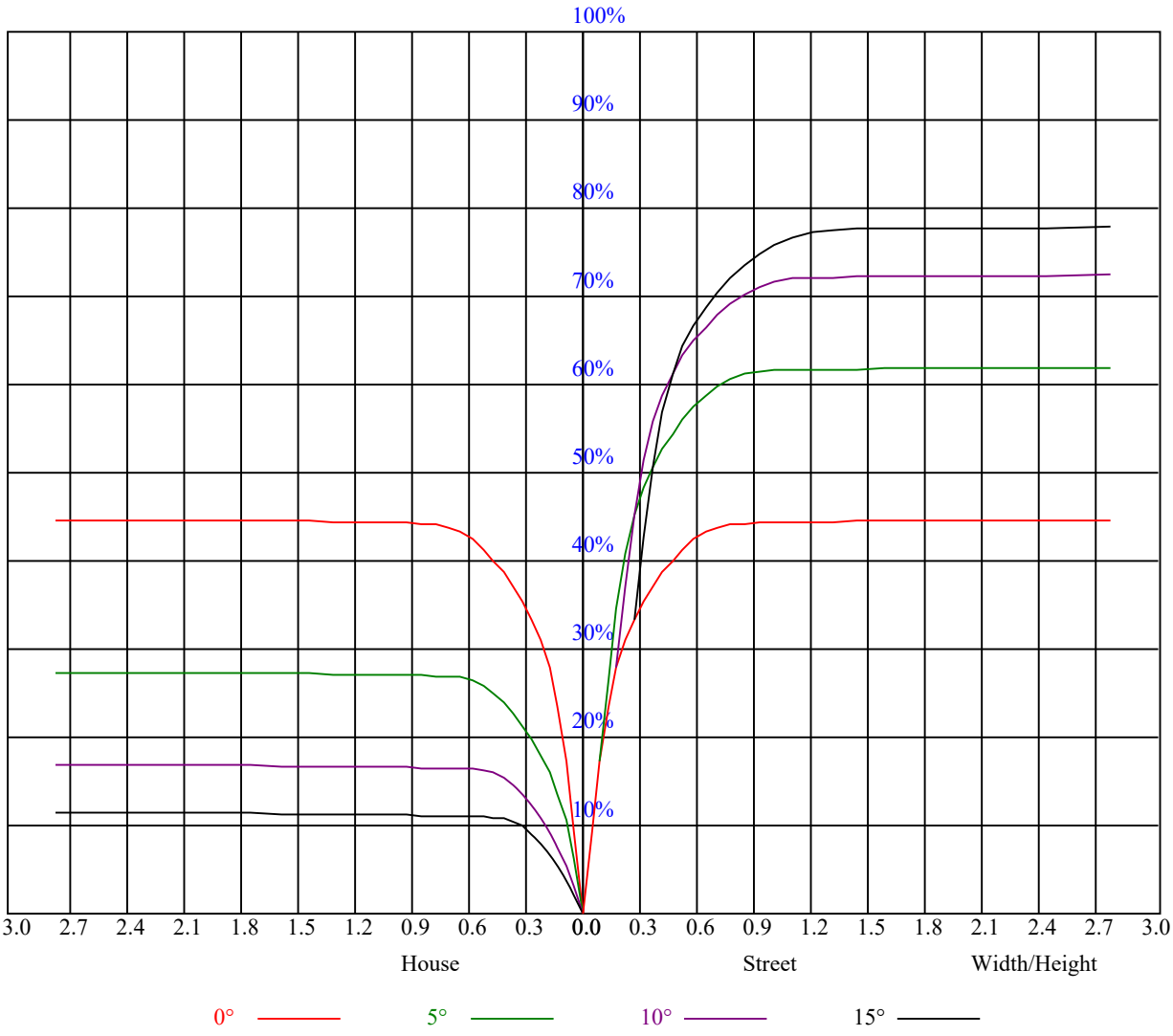


Equipment: gms1980 Date: 2017/6/4 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

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	1.05	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	0.97	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	0.91	0.94	0.92	0.90	0.92	0.89	0.88	0.89	0.87	0.86	0.87	0.85	0.84	0.83
3	0.91	0.88	0.85	0.90	0.87	0.85	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.80
4	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.80	0.83	0.81	0.79	0.82	0.79	0.78	0.77
5	0.84	0.80	0.77	0.83	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.76	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.75	0.73	0.72
7	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
9	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
10	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.65	0.64

Coefficient Utilization Curve



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/4
Humidity(%): 60.0%

Operator: NT07
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	17601.53	17689.62	17331.75	16329.73	15123.99	13659.49	11804.09	9926.67	8302.51
90.0	17777.71	17177.60	16109.50	14837.70	13119.94	11226.00	9524.76	7685.87	6204.86
180.0	17601.53	16902.31	15955.34	14694.55	12778.59	10870.34	9383.81	7542.73	6054.00
270.0	17777.71	17838.27	17469.40	16456.36	15245.12	13753.09	10809.77	9953.10	8287.64
360.0	17601.53	17689.62	17331.75	16329.73	15123.99	13659.49	11804.09	9926.67	8302.51

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6617.78	5142.27	4035.63	3094.17	2851.92	2095.45	1794.84	1587.83	1408.34
90.0	4773.39	3606.19	2862.93	2785.85	1940.19	1701.79	1517.35	1341.17	1235.47
180.0	4742.56	3456.44	2745.11	2265.02	1854.85	1620.86	1441.93	1289.97	1153.98
270.0	6735.05	5036.56	3904.60	3047.92	2400.46	1983.68	1716.11	1467.25	1320.25
360.0	6617.78	5142.27	4035.63	3094.17	2851.92	2095.45	1794.84	1587.83	1408.34

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1271.80	1175.45	1098.38	1029.55	979.45	944.22	911.18	884.21	862.73
90.0	1146.27	1067.54	1008.08	968.99	933.21	907.33	881.45	857.78	835.76
180.0	1094.36	1032.91	979.51	947.25	920.43	894.01	870.06	850.35	827.17
270.0	1210.69	1086.04	1047.06	991.68	950.27	920.43	895.77	869.29	851.06
360.0	1271.80	1175.45	1098.38	1029.55	979.45	944.22	911.18	884.21	862.73

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	839.06	815.94	797.22	779.05	764.18	743.81	686.00	613.88	532.40
90.0	813.18	792.81	776.30	762.53	726.19	666.73	600.67	493.86	390.35
180.0	807.18	788.85	770.73	754.00	718.32	647.19	570.11	485.60	372.95
270.0	833.94	807.24	790.22	774.75	756.75	729.28	677.41	595.49	510.43
360.0	839.06	815.94	797.22	779.05	764.18	743.81	686.00	613.88	532.40

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	421.73	329.24	284.64	144.36	71.46	36.78	23.51	19.38	15.36
90.0	310.52	231.51	108.35	52.74	27.53	21.47	16.35	12.61	11.12
180.0	282.88	198.70	115.40	52.36	28.68	21.91	17.40	13.98	12.28
270.0	408.57	308.32	222.87	133.46	64.80	34.36	23.34	18.39	14.65
360.0	421.73	329.24	284.64	144.36	71.46	36.78	23.51	19.38	15.36

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	12.44	11.45	11.07	10.46	10.24	10.02	9.86	9.63	9.52
90.0	10.41	9.97	9.74	9.58	9.36	9.25	9.08	8.97	8.92
180.0	10.85	10.46	10.13	9.97	9.74	9.58	9.47	9.30	9.19
270.0	12.66	11.29	10.02	9.80	9.58	9.41	9.25	9.14	8.97
360.0	12.44	11.45	11.07	10.46	10.24	10.02	9.86	9.63	9.52

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.30	9.19	9.08	8.97	8.92	8.81	8.70	8.64	8.59
90.0	8.81	8.70	8.64	8.59	8.53	8.48	8.42	8.37	8.31
180.0	9.03	8.97	8.86	8.81	8.70	8.64	8.59	8.53	8.53
270.0	8.81	8.75	8.70	8.59	8.53	8.48	8.42	8.31	8.31
360.0	9.30	9.19	9.08	8.97	8.92	8.81	8.70	8.64	8.59

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.59	8.53	8.48	8.42	8.37	8.31	8.31	8.26	8.26
90.0	8.26	8.26	8.26	8.20	8.15	8.09	8.09	8.09	8.09
180.0	8.48	8.42	8.31	8.31	8.26	8.31	8.26	8.26	8.20
270.0	8.26	8.20	8.20	8.20	8.15	8.09	8.09	8.04	8.04
360.0	8.59	8.53	8.48	8.42	8.37	8.31	8.31	8.26	8.26

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	8.20	8.26	8.20	8.31	8.86	9.47	9.86	9.80	9.47
90.0	8.09	8.09	8.04	8.09	8.20	8.92	8.97	8.64	8.42
180.0	8.20	8.20	8.20	8.64	9.52	9.30	8.59	8.20	8.15
270.0	8.09	8.04	8.04	8.04	8.04	8.04	8.04	7.98	7.98
360.0	8.20	8.26	8.20	8.31	8.86	9.47	9.86	9.80	9.47

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.08	8.81	8.81	8.53	8.37	8.26	8.26	8.04	8.04
90.0	8.20	8.04	8.04	7.98	7.98	7.93	7.93	7.93	7.93
180.0	8.09	8.09	8.09	8.04	8.04	8.04	7.98	7.98	7.98
270.0	7.98	7.98	7.98	7.98	7.98	7.93	7.93	7.87	7.93
360.0	9.08	8.81	8.81	8.53	8.37	8.26	8.26	8.04	8.04

C/γ(°)	90.0
0.0	8.04
90.0	7.93
180.0	7.98
270.0	7.93
360.0	8.04