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NATA

LumCAT: 2-1674-M
Luminaire: 92.70.135.00
Report No: NT2017060504
Test No: GC2017060504
LampCAT: BRIDGELUX LUXEON 1208
Lamp flux(lm): 3097.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 35.3000
Current(A): 0.7000
Power (W): 24.7100
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 2798.33
Efficiency(%): 90.36%
Lumens(lm)/Power(W): 113.25
Central intensity(cd): 16682.090
Maximum intensity(cd): 16682.090
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=17.1
[C90/270]Total=17.1
Field angle(10%Imax): [C0/180]Total=35.6
[C90/270]Total=35.6
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.29 C90_270=0.29
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.36%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.801%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	16682.090	0.000	0	.000%	.000%
1.0	16599.506	15.925	15.925	.514%	.569%
2.0	16343.492	47.283	63.208	1.527%	2.259%
3.0	15787.423	76.847	140.054	2.481%	5.005%
4.0	14979.470	102.987	243.041	3.325%	8.685%
5.0	13925.140	124.346	367.387	4.015%	13.129%
6.0	12428.982	138.498	505.885	4.472%	18.078%
7.0	10851.341	144.501	650.385	4.666%	23.242%
8.0	9141.840	143.087	793.473	4.620%	28.355%
9.0	7703.079	136.519	929.992	4.408%	33.234%
10.0	6040.926	124.378	1054.37	4.016%	37.679%
11.0	4891.899	109.241	1163.611	3.527%	41.582%
12.0	3963.510	96.802	1260.414	3.126%	45.042%
13.0	3271.314	85.859	1346.273	2.772%	48.110%
14.0	2671.612	76.069	1422.342	2.456%	50.828%
15.0	2376.785	69.307	1491.648	2.238%	53.305%
16.0	2017.817	64.393	1556.041	2.079%	55.606%
17.0	1797.591	59.416	1615.458	1.919%	57.729%
18.0	1638.891	56.660	1672.118	1.830%	59.754%
19.0	1507.857	54.747	1726.865	1.768%	61.711%
20.0	1406.278	53.337	1780.202	1.722%	63.617%
21.0	1318.325	52.318	1832.519	1.689%	65.486%
22.0	1252.533	51.662	1884.182	1.668%	67.332%
23.0	1205.735	51.581	1935.763	1.666%	69.176%
24.0	1165.819	51.851	1987.614	1.674%	71.029%
25.0	1126.743	52.128	2039.742	1.683%	72.891%
26.0	1103.220	52.639	2092.38	1.700%	74.772%
27.0	1072.567	53.231	2145.611	1.719%	76.675%
28.0	1050.669	53.756	2199.367	1.736%	78.596%
29.0	1029.403	54.421	2253.788	1.757%	80.540%
30.0	1006.775	54.976	2308.764	1.775%	82.505%
31.0	978.077	55.236	2364	1.784%	84.479%
32.0	933.701	54.770	2418.77	1.768%	86.436%
33.0	877.819	53.368	2472.138	1.723%	88.343%
34.0	795.923	50.652	2522.79	1.636%	90.153%
35.0	706.030	46.645	2569.435	1.506%	91.820%
36.0	603.955	41.710	2611.146	1.347%	93.311%
37.0	501.550	36.055	2647.201	1.164%	94.599%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	406.908	30.323	2677.524	.979%	95.683%
39.0	296.410	24.006	2701.53	.775%	96.541%
40.0	215.326	17.848	2719.378	.576%	97.179%
41.0	135.521	12.493	2731.871	.403%	97.625%
42.0	78.056	7.760	2739.631	.251%	97.902%
43.0	41.829	4.441	2744.072	.143%	98.061%
44.0	25.753	2.551	2746.622	.082%	98.152%
45.0	20.481	1.777	2748.399	.057%	98.216%
46.0	16.861	1.460	2749.86	.047%	98.268%
47.0	14.480	1.247	2751.106	.040%	98.312%
48.0	13.406	1.127	2752.233	.036%	98.353%
49.0	12.938	1.082	2753.315	.035%	98.391%
50.0	12.346	1.054	2754.37	.034%	98.429%
51.0	12.140	1.036	2755.405	.033%	98.466%
52.0	12.030	1.037	2756.443	.033%	98.503%
53.0	11.851	1.039	2757.481	.034%	98.540%
54.0	11.686	1.037	2758.519	.033%	98.577%
55.0	11.562	1.038	2759.557	.034%	98.614%
56.0	11.479	1.041	2760.598	.034%	98.652%
57.0	11.355	1.044	2761.642	.034%	98.689%
58.0	11.273	1.046	2762.688	.034%	98.726%
59.0	11.190	1.050	2763.738	.034%	98.764%
60.0	11.149	1.055	2764.794	.034%	98.802%
61.0	11.066	1.060	2765.854	.034%	98.839%
62.0	11.025	1.064	2766.918	.034%	98.877%
63.0	10.998	1.071	2767.989	.035%	98.916%
64.0	10.929	1.076	2769.065	.035%	98.954%
65.0	10.901	1.080	2770.146	.035%	98.993%
66.0	10.832	1.084	2771.23	.035%	99.032%
67.0	10.791	1.087	2772.317	.035%	99.070%
68.0	10.777	1.093	2773.41	.035%	99.109%
69.0	10.736	1.098	2774.507	.035%	99.149%
70.0	10.708	1.101	2775.609	.036%	99.188%
71.0	10.708	1.107	2776.716	.036%	99.228%
72.0	10.681	1.112	2777.828	.036%	99.267%
73.0	10.653	1.116	2778.944	.036%	99.307%
74.0	10.640	1.119	2780.063	.036%	99.347%
75.0	10.612	1.123	2781.186	.036%	99.387%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.612	1.127	2782.312	.036%	99.428%
77.0	10.585	1.130	2783.443	.036%	99.468%
78.0	10.598	1.134	2784.577	.037%	99.508%
79.0	10.557	1.137	2785.713	.037%	99.549%
80.0	10.557	1.138	2786.852	.037%	99.590%
81.0	10.557	1.142	2787.993	.037%	99.631%
82.0	10.543	1.144	2789.138	.037%	99.671%
83.0	10.530	1.146	2790.283	.037%	99.712%
84.0	10.557	1.149	2791.432	.037%	99.753%
85.0	10.516	1.150	2792.582	.037%	99.795%
86.0	10.543	1.151	2793.733	.037%	99.836%
87.0	10.516	1.153	2794.886	.037%	99.877%
88.0	10.461	1.149	2796.035	.037%	99.918%
89.0	10.461	1.147	2797.181	.037%	99.959%
90.0	10.516	1.150	2798.332	.037%	100.000%

Zonal flux distribution table

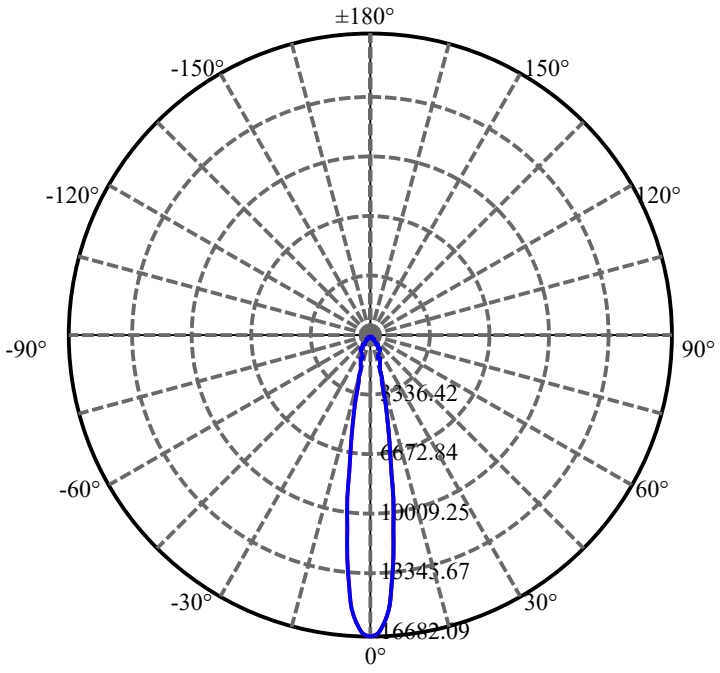
ZONAL LUMEN SUMMARY

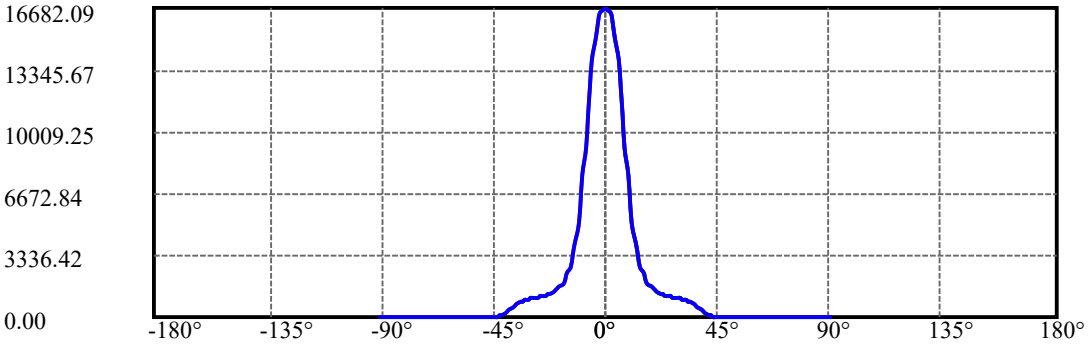
Zone	Lumens	%Lamp	%Fixt
0-30	2308.76	74.55%	82.51%
0-40	2719.38	87.81%	97.18%
0-60	2764.79	89.27%	98.80%
0-90	2797.18	90.32%	99.96%
0-120	2797.18	90.32%	99.96%
0-180	2798.33	90.36%	100.00%
60-90	33.44	1.08%	1.20%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.72	2238.67	72.28%	80.00%

ZONAL LUMEN SUMMARY

0-10	1054.37
10-20	725.83
20-30	528.56
30-40	410.61
40-50	34.99
50-60	10.42
60-70	10.82
70-80	11.24
80-90	10.33
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):

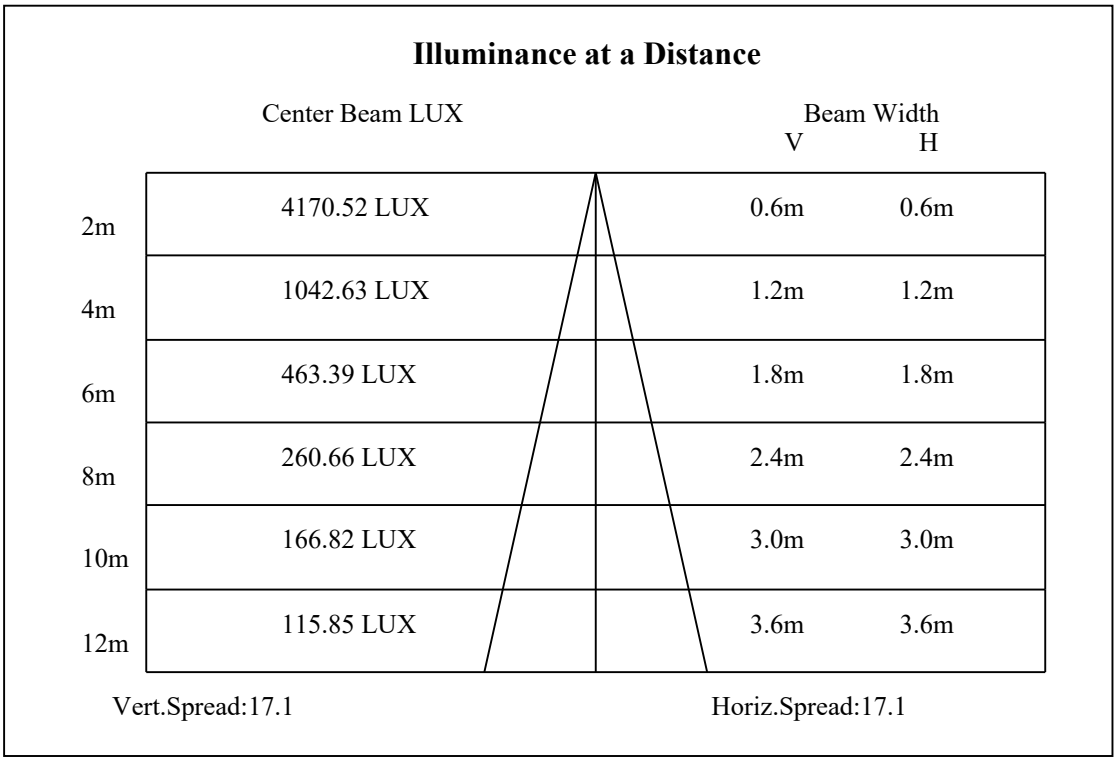
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:17.8 Right:17.8
:C90/270Left:17.8 Right:17.8

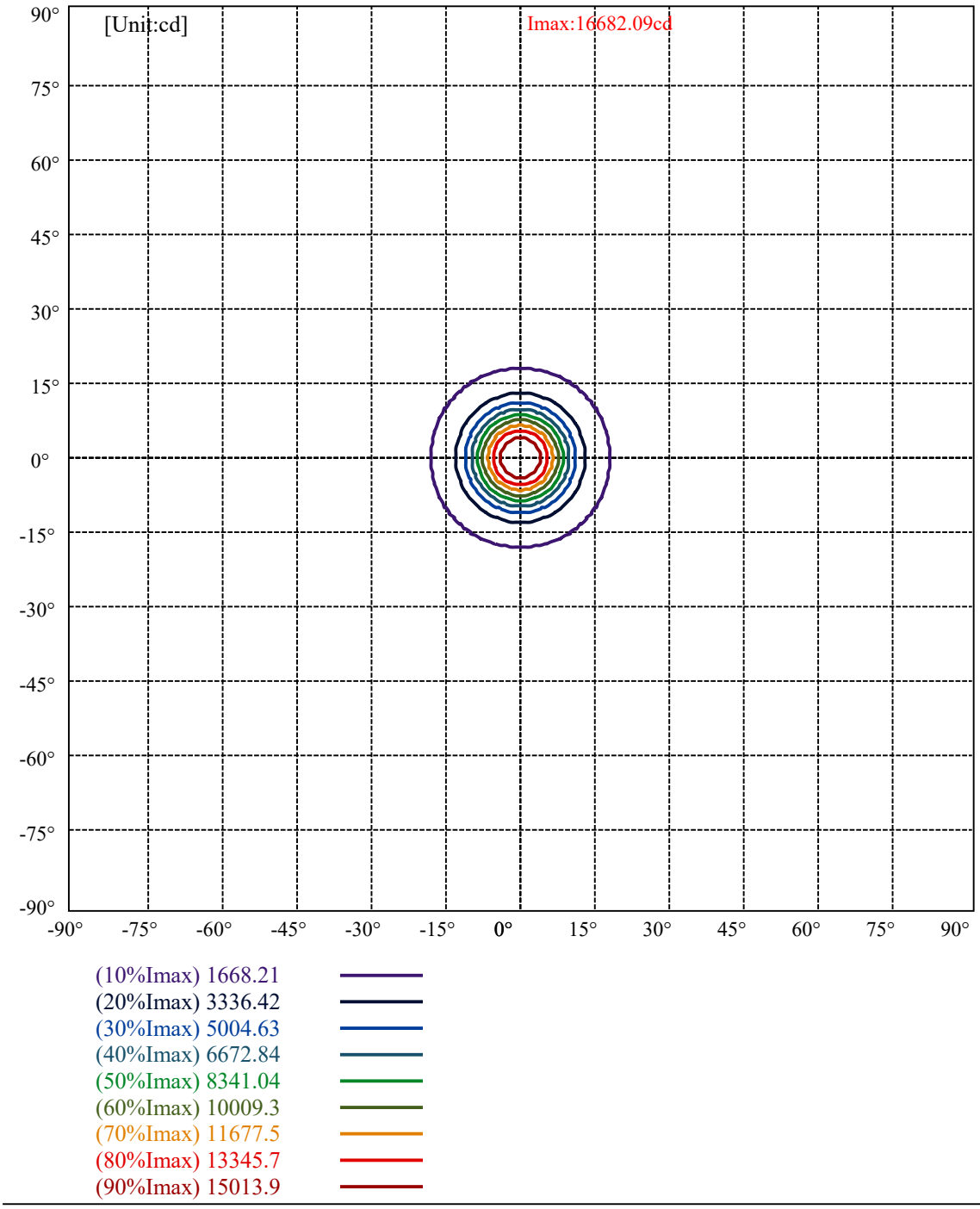
Beam Angle(50%Imax):C0/180Left:8.6 Right:8.6
:C90/270Left:8.6 Right:8.6

Lux distance Curve



Equipment: gms1980 Date: 2017/4/29 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

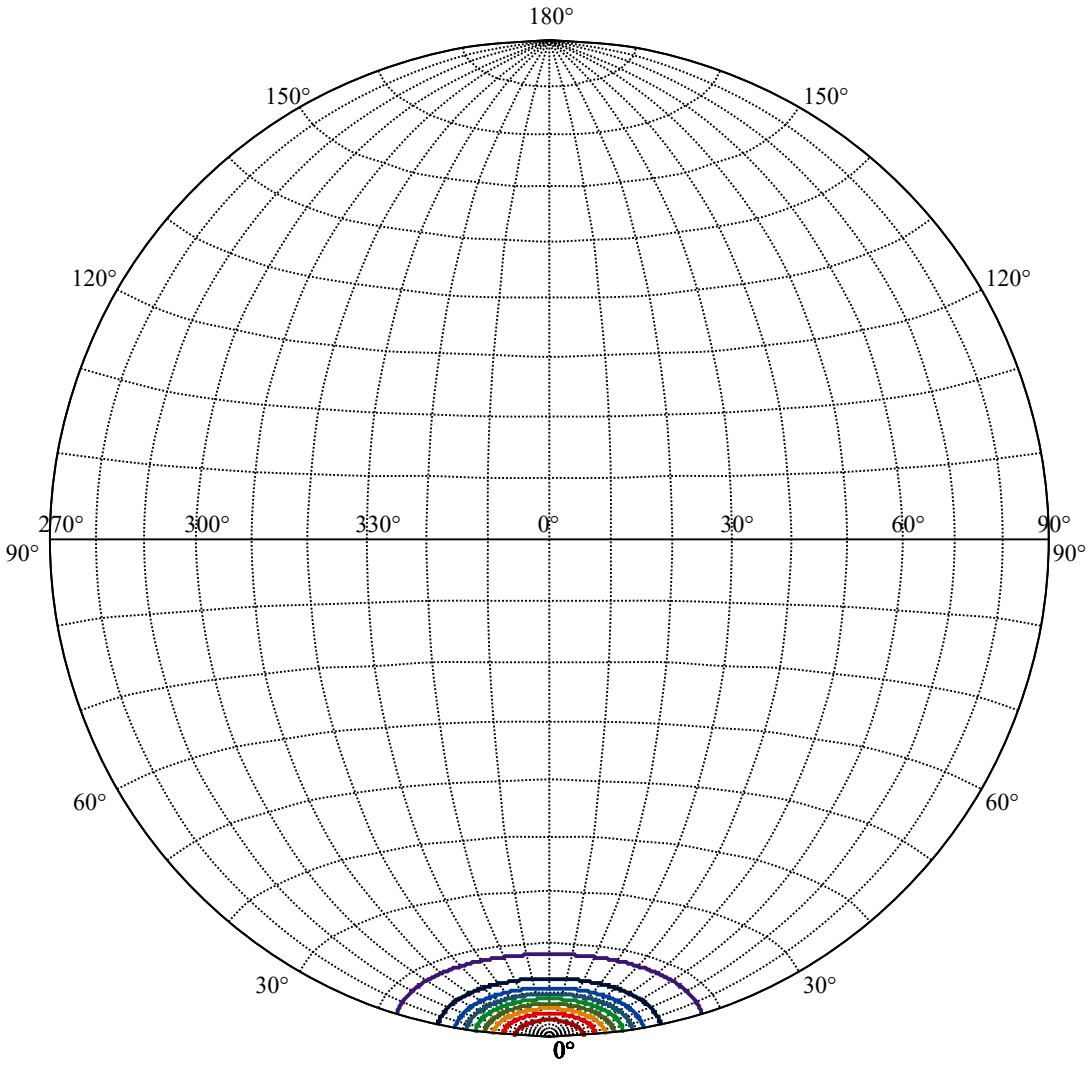
ISO-Intensity(V-H)



Equipment: gms1980 Date: 2017/4/29 Operator: NT07

Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO candela diagram on circular web



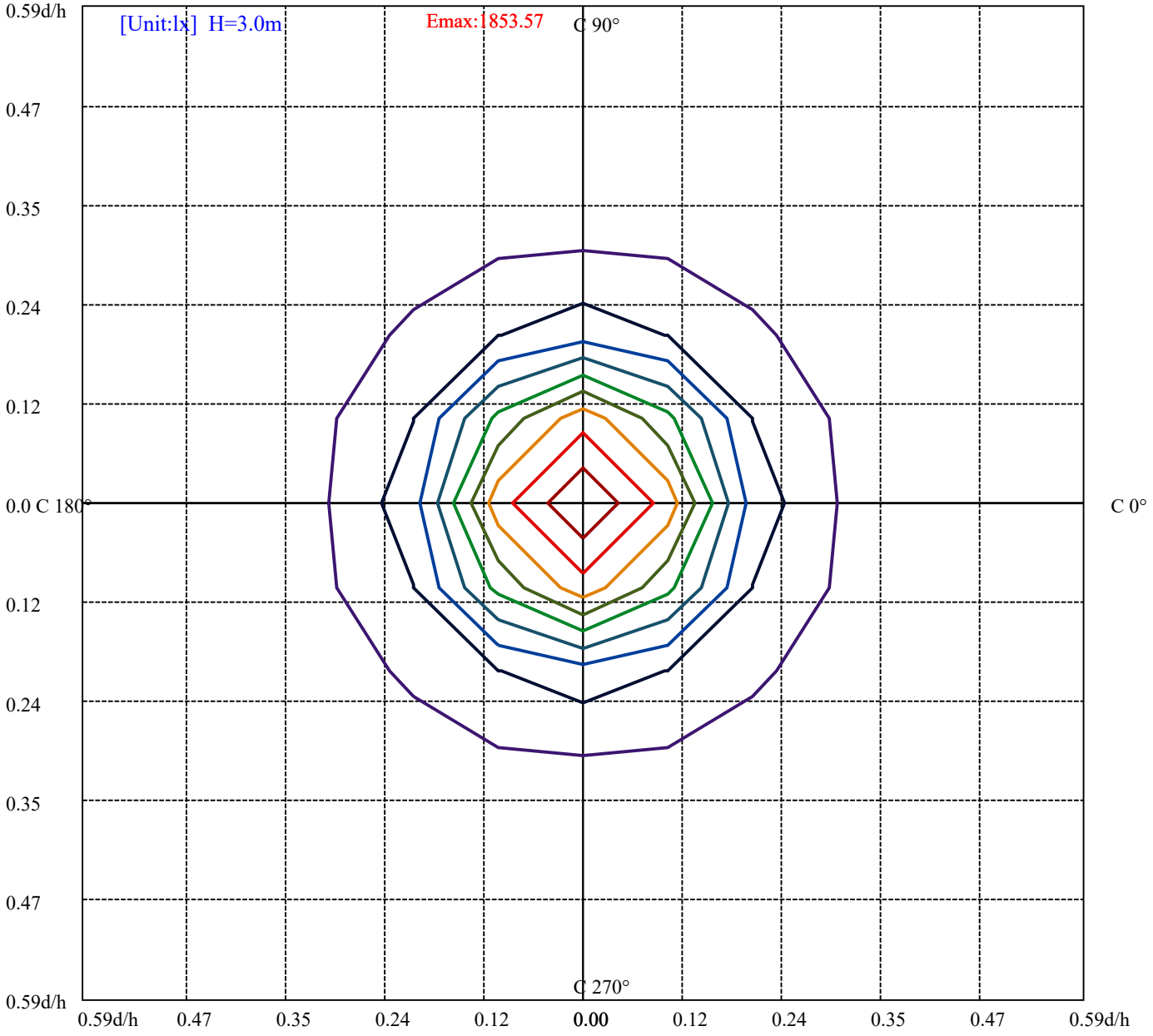
House [Unit:cd] Road

Imax:16682.09

(10%Imax) 1668.21
(20%Imax) 3336.42
(30%Imax) 5004.63
(40%Imax) 6672.84
(50%Imax) 8341.04
(60%Imax) 10009.3
(70%Imax) 11677.5
(80%Imax) 13345.7
(90%Imax) 15013.9

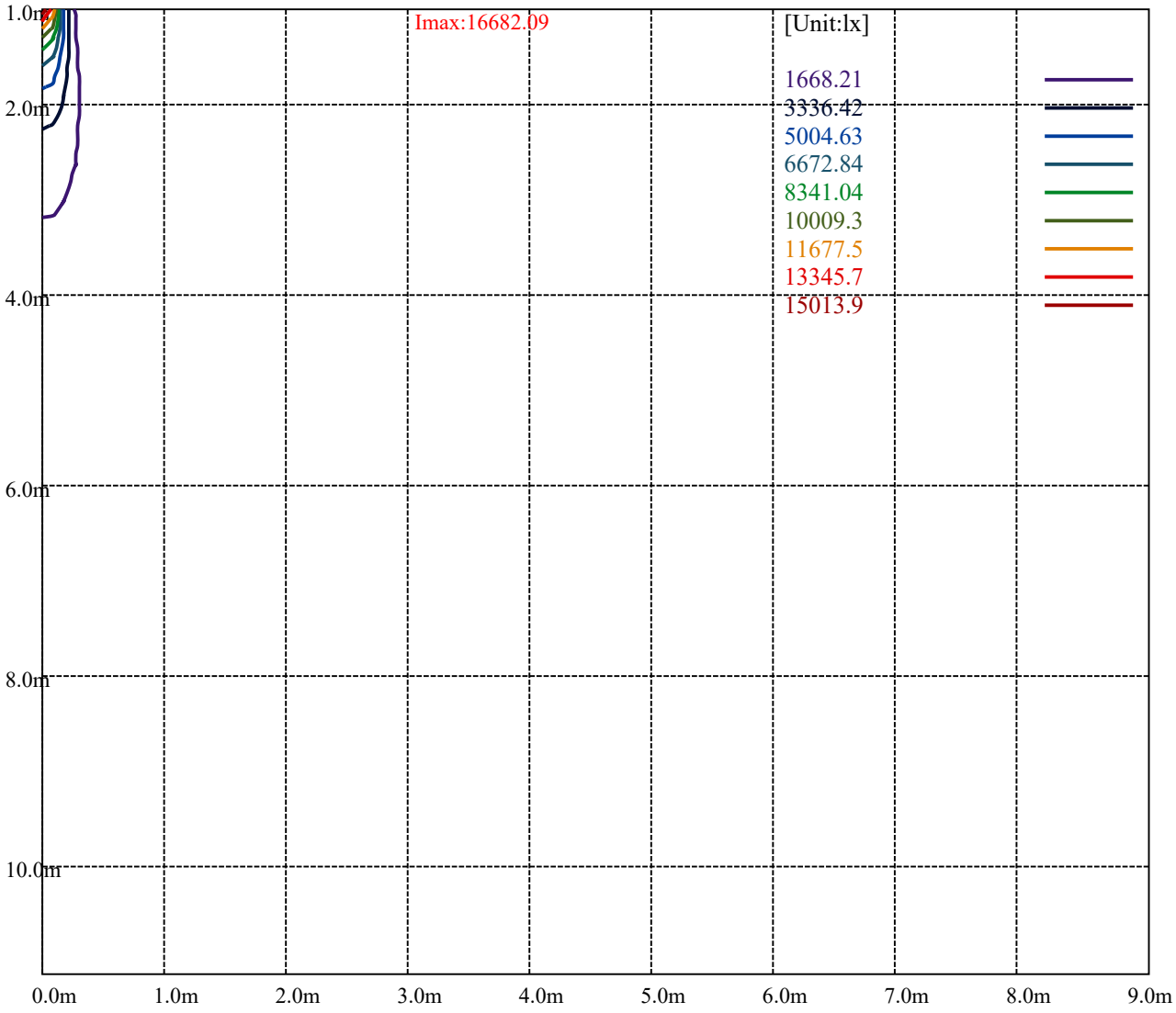
Equipment: gms1980 Date: 2017/4/29 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO illuminance diagram



Equipment: gms1980 Date: 2017/4/29 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/4/29
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

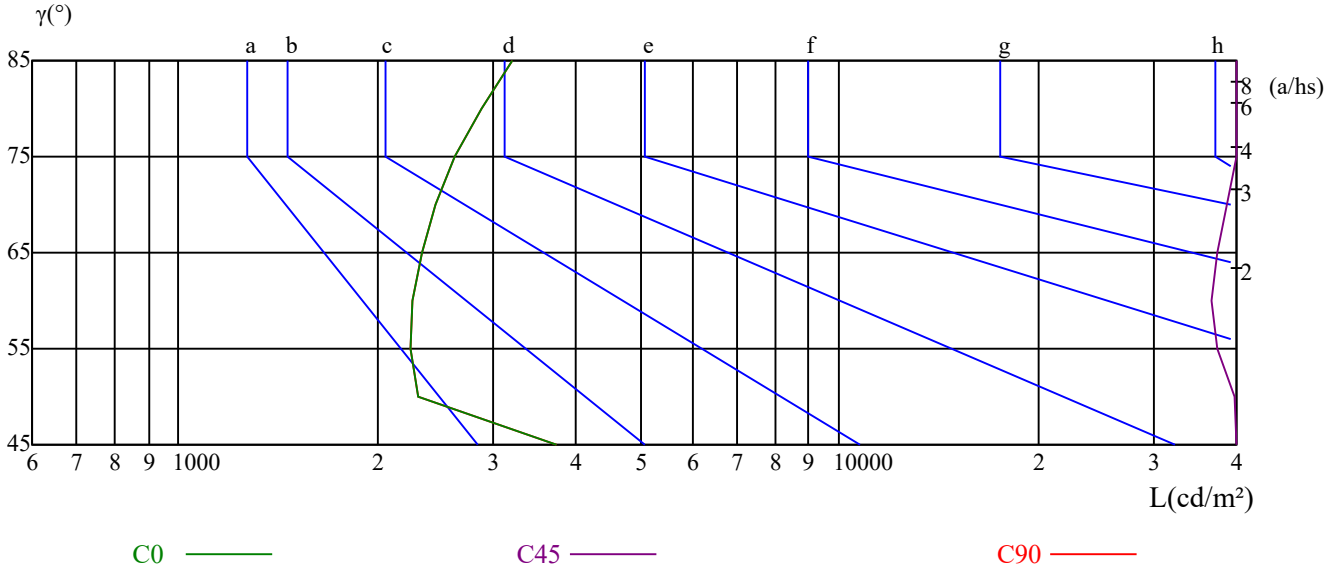
γ	45	50	55	60	65	70	75	80	85
C0	3728	2309	2240	2259	2333	2449	2626	2871	3200
C45	67111	39721	37328	36753	37311	38674	40561	43204	46778
C90	3728	2309	2240	2259	2333	2449	2626	2871	3200

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5264	5264	103588	8368	8368	165950	24623	24623	489665

Glare Table

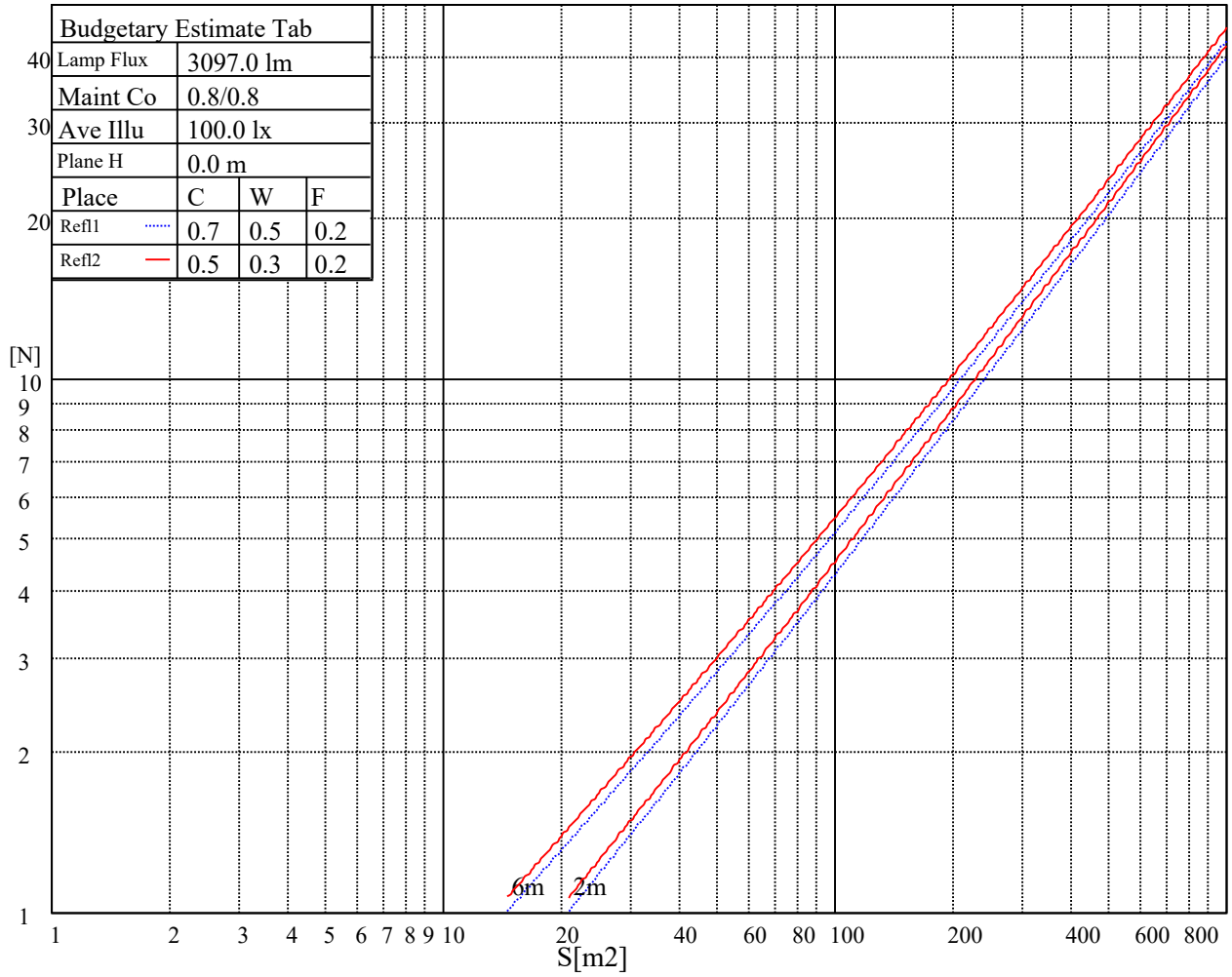
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limitting Curve



Equipment: gms1980 Date: 2017/4/29 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Budgetary Estimate Table

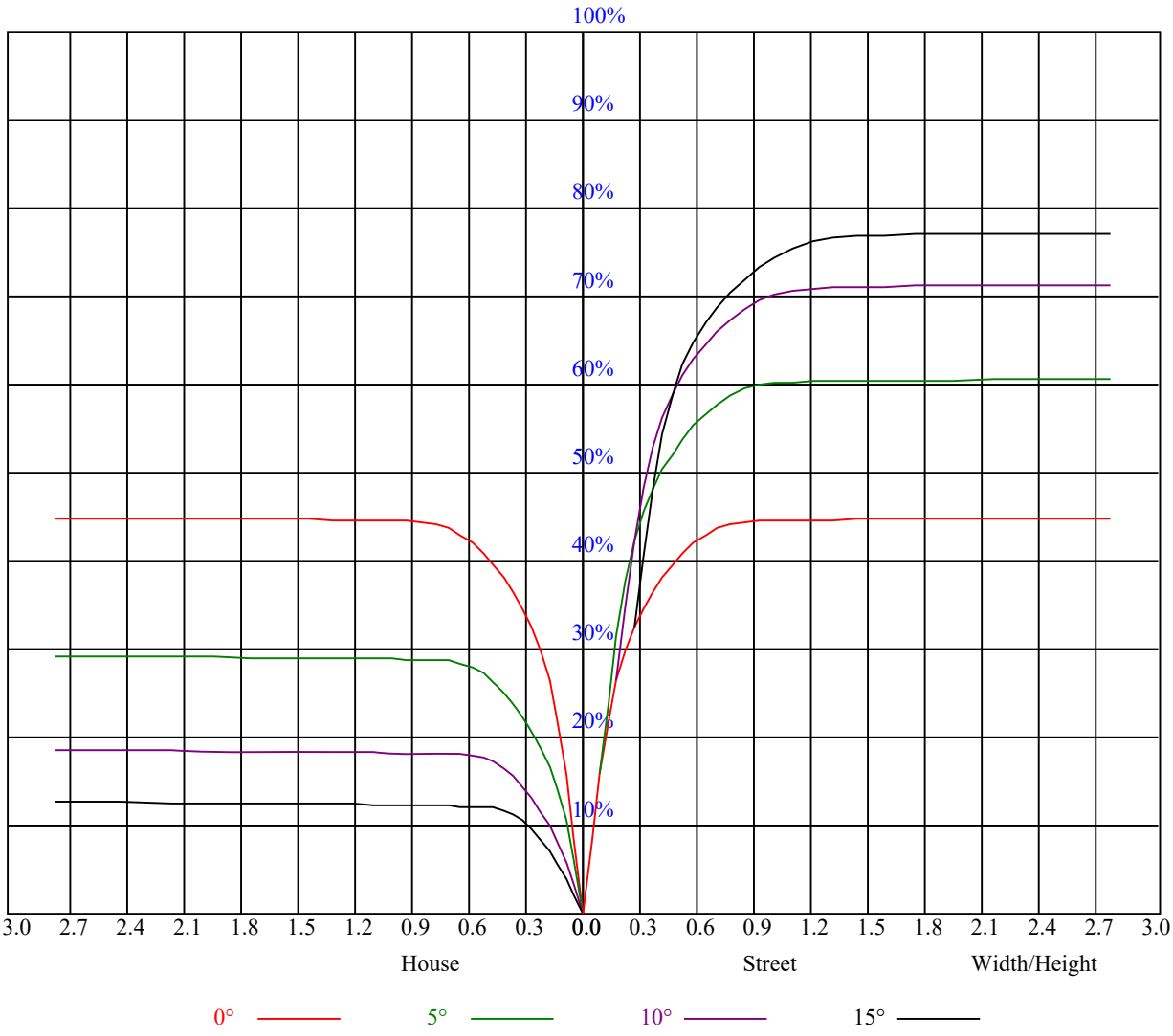


Equipment: gms1980 Date: 2017/4/29 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

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	0.89	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	0.86	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	0.81	0.84	0.82	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.83	0.79	0.76	0.82	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.68
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
9	0.72	0.68	0.65	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61

Coefficient Utilization Curve



Equipment: gms1980	Date: 2017/4/29	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	16643.55	16346.25	15812.20	14837.70	13505.33	12090.39	10741.50	8533.74	6986.66
90.0	16720.63	16753.66	16643.55	16368.27	15779.16	14936.80	13648.48	12046.34	10477.23
180.0	16643.55	16742.65	16720.63	16544.45	16203.10	15487.37	14369.72	13081.40	10981.00
270.0	16720.63	16555.46	16197.59	15399.28	14430.28	13186.01	10956.22	9743.88	8122.47
360.0	16643.55	16346.25	15812.20	14837.70	13505.33	12090.39	10741.50	8533.74	6986.66

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5797.44	4338.44	3567.65	3044.62	2796.87	2147.75	1915.41	1718.86	1570.76
90.0	8649.36	6904.07	5555.19	4476.09	3479.56	2923.49	2807.88	2170.32	1916.51
180.0	9750.49	7889.58	6382.14	4994.72	4058.21	3279.16	2723.09	2355.31	2048.10
270.0	6615.03	5031.60	4062.61	3338.62	2750.62	2336.04	2060.76	1826.77	1655.00
360.0	5797.44	4338.44	3567.65	3044.62	2796.87	2147.75	1915.41	1718.86	1570.76

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1462.85	1362.10	1290.52	1226.66	1176.00	1140.77	1113.79	1084.61	1059.84
90.0	1748.04	1593.88	1468.90	1378.06	1296.58	1238.22	1184.26	1144.07	1118.20
180.0	1814.11	1657.20	1528.92	1402.29	1324.66	1268.50	1219.50	1179.86	1150.13
270.0	1530.57	1418.25	1336.77	1266.30	1212.89	1175.45	1145.72	1098.43	1084.72
360.0	1462.85	1362.10	1290.52	1226.66	1176.00	1140.77	1113.79	1084.61	1059.84

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1039.46	1017.44	996.52	978.35	933.76	860.53	781.25	681.60	588.00
90.0	1096.17	1066.44	1046.07	1025.70	1000.93	981.66	942.57	856.68	765.83
180.0	1095.73	1087.86	1060.94	1030.66	1012.05	987.93	956.66	909.86	839.22
270.0	1058.90	1030.93	1014.08	992.39	965.58	904.69	830.80	735.55	631.06
360.0	1039.46	1017.44	996.52	978.35	933.76	860.53	781.25	681.60	588.00

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	478.99	369.43	286.84	173.87	102.52	46.36	27.36	22.74	17.62
90.0	678.85	565.98	458.07	362.82	281.89	175.68	97.67	41.73	27.03
180.0	721.90	642.23	548.47	415.40	331.71	240.38	149.20	76.25	36.34
270.0	536.08	428.56	334.25	233.55	145.18	79.67	37.99	26.59	22.02
360.0	478.99	369.43	286.84	173.87	102.52	46.36	27.36	22.74	17.62

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	14.65	13.54	12.77	12.50	12.28	12.06	11.89	11.78	11.62
90.0	23.23	17.40	14.59	13.43	12.83	12.55	12.28	12.11	11.95
180.0	26.32	21.14	16.96	14.76	13.93	12.33	12.11	12.11	11.84
270.0	17.73	15.36	13.60	12.94	12.72	12.44	12.28	12.11	12.00
360.0	14.65	13.54	12.77	12.50	12.28	12.06	11.89	11.78	11.62

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.56	11.40	11.34	11.23	11.18	11.07	11.07	10.96	10.96
90.0	11.78	11.67	11.56	11.45	11.34	11.23	11.23	11.18	11.12
180.0	11.62	11.56	11.45	11.34	11.23	11.18	11.12	11.01	10.96
270.0	11.78	11.62	11.56	11.40	11.34	11.29	11.18	11.12	11.07
360.0	11.56	11.40	11.34	11.23	11.18	11.07	11.07	10.96	10.96

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.96	10.85	10.79	10.79	10.74	10.74	10.68	10.68	10.68
90.0	11.07	10.96	10.90	10.90	10.85	10.85	10.79	10.79	10.74
180.0	10.96	10.96	10.96	10.74	10.74	10.74	10.68	10.63	10.68
270.0	11.01	10.96	10.96	10.90	10.85	10.79	10.79	10.74	10.74
360.0	10.96	10.85	10.79	10.79	10.74	10.74	10.68	10.68	10.68

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	10.63	10.63	10.57	10.57	10.57	10.57	10.57	10.52	10.52
90.0	10.74	10.68	10.74	10.68	10.68	10.63	10.63	10.63	10.63
180.0	10.63	10.57	10.57	10.52	10.57	10.52	10.57	10.46	10.52
270.0	10.74	10.74	10.68	10.68	10.63	10.63	10.63	10.63	10.57
360.0	10.63	10.63	10.57	10.57	10.57	10.57	10.57	10.52	10.52

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.52	10.52	10.46	10.52	10.46	10.46	10.52	10.46	10.46
90.0	10.63	10.57	10.63	10.57	10.57	10.57	10.57	10.52	10.52
180.0	10.52	10.52	10.46	10.52	10.46	10.46	10.46	10.41	10.35
270.0	10.57	10.57	10.57	10.63	10.57	10.68	10.52	10.46	10.52
360.0	10.52	10.52	10.46	10.52	10.46	10.46	10.52	10.46	10.46

C/γ(°)	90.0
0.0	10.46
90.0	10.52
180.0	10.52
270.0	10.57
360.0	10.46