NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 1-0919-M
Luminaire: 92.70.124.00

Report No: 210719-B017	Voltage(V): 36.2600
Test No: 210719-C017	Current(A): 0.5110
LampCAT: Fortimo LED SLM 1204 G7N	Power (W): 18.5280
Lamp flux(lm): 2370.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 570	Width(mm): 45
Phm Type: C	Height(mm): 20

Photometric Results

Lumens(lm): 1812.46
Efficiency(%): 76.48%
Lumens(lm)/Power(W): 97.82
Central intensity(cd): 8882.859
Maximum intensity(cd): 8882.859
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=25.3
[C90/270]Total=25.3
Field angle(10%Imax): [C0/180]Total=43.4
[C90/270]Total=43.4
Maximum s/h(1/2): C0_180=0.43 C90_270=0.43
Maximum s/h(1/4): C0_180=0.42 C90_270=0.42
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 76.48%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.583%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8882.859	0.000	0	.000%	.000%
1.0	8855.789	8.488	8.488	.358%	.468%
2.0	8756.930	25.279	33.767	1.067%	1.863%
3.0	8598.797	41.509	75.276	1.751%	4.153%
4.0	8402.555	56.909	132.185	2.401%	7.293%
5.0	8136.773	71.151	203.337	3.002%	11.219%
6.0	7780.219	83.648	286.985	3.529%	15.834%
7.0	7414.523	94.314	381.298	3.979%	21.038%
8.0	6981.398	103.029	484.327	4.347%	26.722%
9.0	6467.836	108.999	593.326	4.599%	32.736%
10.0	5933.953	112.232	705.557	4.736%	38.928%
11.0	5392.055	113.170	818.727	4.775%	45.172%
12.0	4832.086	111.765	930.492	4.716%	51.339%
13.0	4244.203	107.713	1038.205	4.545%	57.282%
14.0	3697.172	101.649	1139.854	4.289%	62.890%
15.0	3223.688	95.013	1234.866	4.009%	68.132%
16.0	2793.516	88.169	1323.035	3.720%	72.997%
17.0	2328.469	79.763	1402.798	3.366%	77.398%
18.0	1973.883	70.936	1473.735	2.993%	81.311%
19.0	1662.328	63.263	1536.997	2.669%	84.802%
20.0	1287.626	53.992	1590.99	2.278%	87.781%
21.0	1051.242	44.911	1635.901	1.895%	90.259%
22.0	824.084	37.685	1673.586	1.590%	92.338%
23.0	596.257	29.803	1703.389	1.257%	93.982%
24.0	400.641	21.796	1725.184	.920%	95.185%
25.0	267.504	15.192	1740.376	.641%	96.023%
26.0	182.644	10.626	1751.002	.448%	96.609%
27.0	70.502	6.193	1757.196	.261%	96.951%
28.0	38.447	2.758	1759.954	.116%	97.103%
29.0	25.327	1.668	1761.622	.070%	97.195%
30.0	19.645	1.214	1762.837	.051%	97.262%
31.0	17.501	1.034	1763.87	.044%	97.319%
32.0	16.073	0.962	1764.832	.041%	97.372%
33.0	14.878	0.912	1765.744	.038%	97.423%
34.0	13.922	0.872	1766.616	.037%	97.471%
35.0	13.127	0.840	1767.456	.035%	97.517%
36.0	12.410	0.813	1768.269	.034%	97.562%
37.0	11.897	0.793	1769.062	.033%	97.606%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	11.440	0.779	1769.84	.033%	97.649%
39.0	11.004	0.766	1770.607	.032%	97.691%
40.0	10.702	0.757	1771.364	.032%	97.733%
41.0	10.420	0.752	1772.116	.032%	97.774%
42.0	10.174	0.748	1772.864	.032%	97.815%
43.0	9.991	0.747	1773.611	.032%	97.857%
44.0	9.816	0.748	1774.359	.032%	97.898%
45.0	9.661	0.749	1775.107	.032%	97.939%
46.0	9.527	0.750	1775.857	.032%	97.981%
47.0	9.401	0.753	1776.61	.032%	98.022%
48.0	9.309	0.756	1777.367	.032%	98.064%
49.0	9.211	0.761	1778.127	.032%	98.106%
50.0	9.127	0.765	1778.892	.032%	98.148%
51.0	9.042	0.769	1779.66	.032%	98.190%
52.0	8.958	0.772	1780.433	.033%	98.233%
53.0	8.895	0.777	1781.209	.033%	98.276%
54.0	8.824	0.781	1781.99	.033%	98.319%
55.0	8.761	0.785	1782.775	.033%	98.362%
56.0	8.712	0.790	1783.565	.033%	98.406%
57.0	8.655	0.794	1784.359	.034%	98.450%
58.0	8.627	0.799	1785.158	.034%	98.494%
59.0	8.578	0.804	1785.962	.034%	98.538%
60.0	8.522	0.808	1786.77	.034%	98.583%
61.0	8.480	0.811	1787.582	.034%	98.627%
62.0	8.438	0.815	1788.397	.034%	98.672%
63.0	8.416	0.820	1789.217	.035%	98.718%
64.0	8.381	0.824	1790.041	.035%	98.763%
65.0	8.353	0.828	1790.869	.035%	98.809%
66.0	8.325	0.832	1791.701	.035%	98.855%
67.0	8.304	0.836	1792.537	.035%	98.901%
68.0	8.276	0.840	1793.377	.035%	98.947%
69.0	8.255	0.843	1794.22	.036%	98.994%
70.0	8.234	0.847	1795.067	.036%	99.040%
71.0	8.198	0.849	1795.917	.036%	99.087%
72.0	8.198	0.853	1796.769	.036%	99.134%
73.0	8.170	0.856	1797.625	.036%	99.182%
74.0	8.163	0.859	1798.484	.036%	99.229%
75.0	8.149	0.862	1799.346	.036%	99.277%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.135	0.864	1800.21	.036%	99.324%
77.0	8.121	0.867	1801.077	.037%	99.372%
78.0	8.114	0.869	1801.946	.037%	99.420%
79.0	8.107	0.872	1802.817	.037%	99.468%
80.0	8.093	0.873	1803.691	.037%	99.516%
81.0	8.079	0.875	1804.565	.037%	99.565%
82.0	8.079	0.876	1805.442	.037%	99.613%
83.0	8.072	0.878	1806.32	.037%	99.661%
84.0	8.051	0.878	1807.198	.037%	99.710%
85.0	8.030	0.878	1808.076	.037%	99.758%
86.0	8.009	0.877	1808.952	.037%	99.807%
87.0	8.009	0.877	1809.829	.037%	99.855%
88.0	8.002	0.877	1810.706	.037%	99.903%
89.0	7.988	0.876	1811.582	.037%	99.952%
90.0	7.995	0.876	1812.459	.037%	100.000%

Zonal flux distribution table

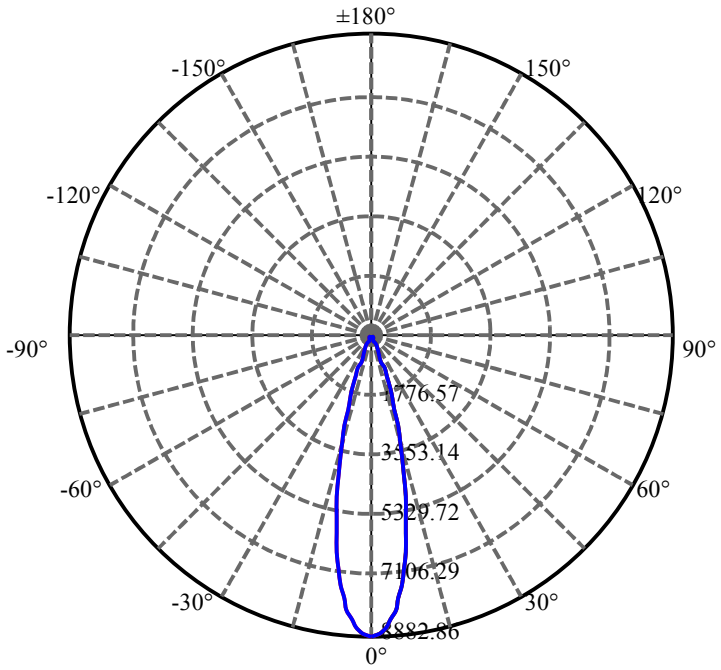
ZONAL LUMEN SUMMARY

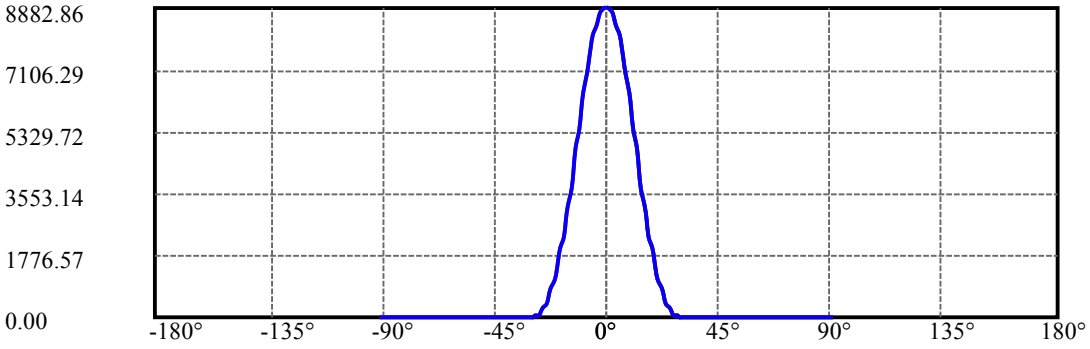
Zone	Lumens	%Lamp	%Fixt
0-30	1762.84	74.38%	97.26%
0-40	1771.36	74.74%	97.73%
0-60	1786.77	75.39%	98.58%
0-90	1811.58	76.44%	99.95%
0-120	1811.58	76.44%	99.95%
0-180	1812.46	76.48%	100.00%
60-90	25.62	1.08%	1.41%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-17.66	1449.97	61.18%	80.00%

ZONAL LUMEN SUMMARY

0-10	705.56
10-20	885.43
20-30	171.85
30-40	8.53
40-50	7.53
50-60	7.88
60-70	8.30
70-80	8.62
80-90	7.89
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):

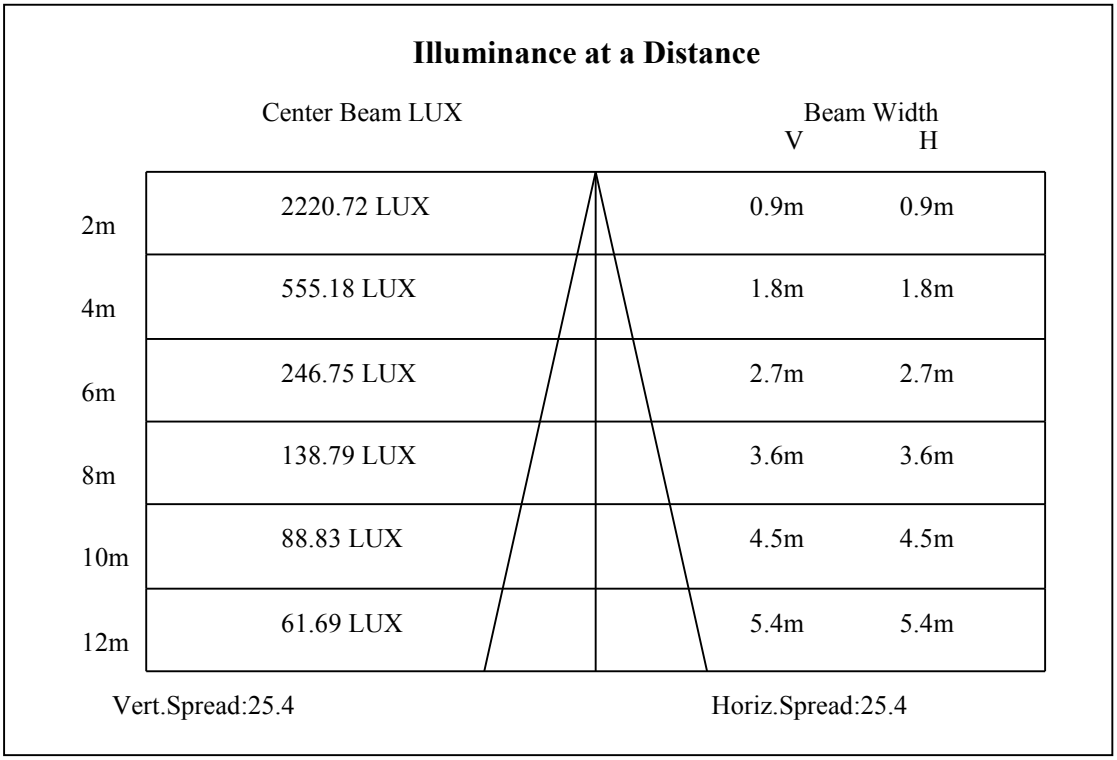
C0/C180:

C90/C270:

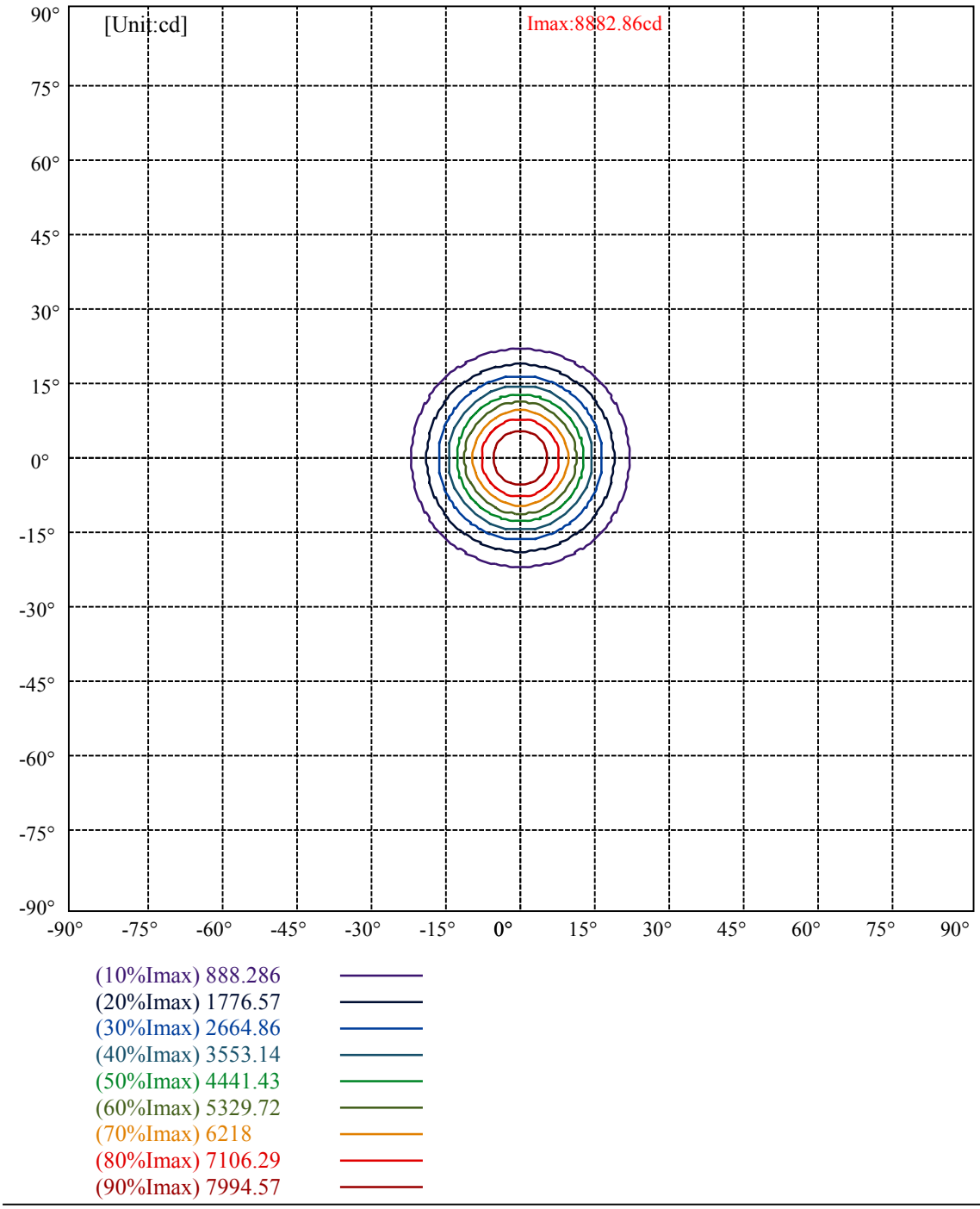
Field angle(10%Imax):C0/180Left:21.7 Right:21.7
:C90/270Left:21.7 Right:21.7

Beam Angle(50%Imax):C0/180Left:12.7 Right:12.7
:C90/270Left:12.7 Right:12.7

Lux distance Curve



ISO-Intensity(V-H)



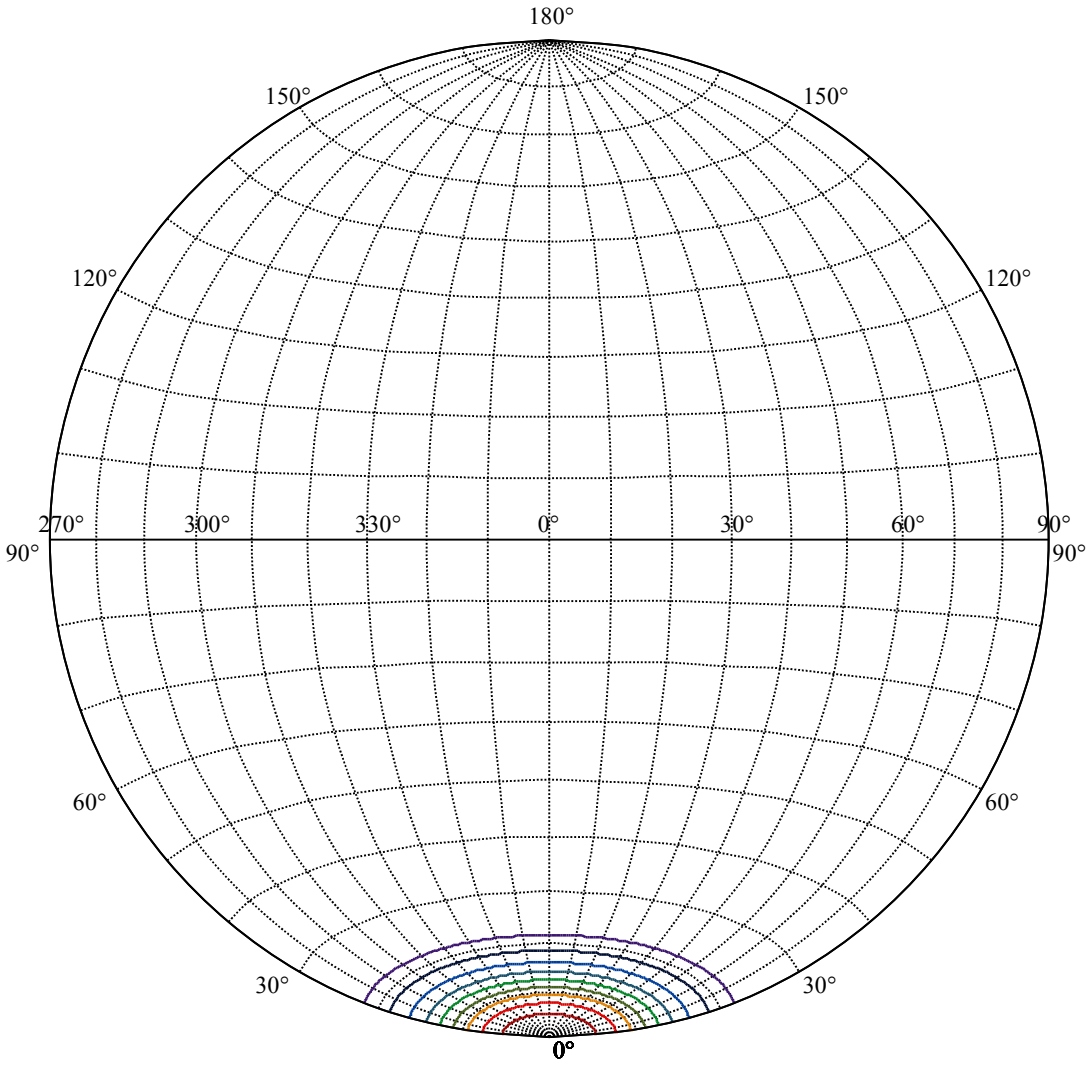
(10%Imax) 888.286
(20%Imax) 1776.57
(30%Imax) 2664.86
(40%Imax) 3553.14
(50%Imax) 4441.43
(60%Imax) 5329.72
(70%Imax) 6218
(80%Imax) 7106.29
(90%Imax) 7994.57

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:8882.86

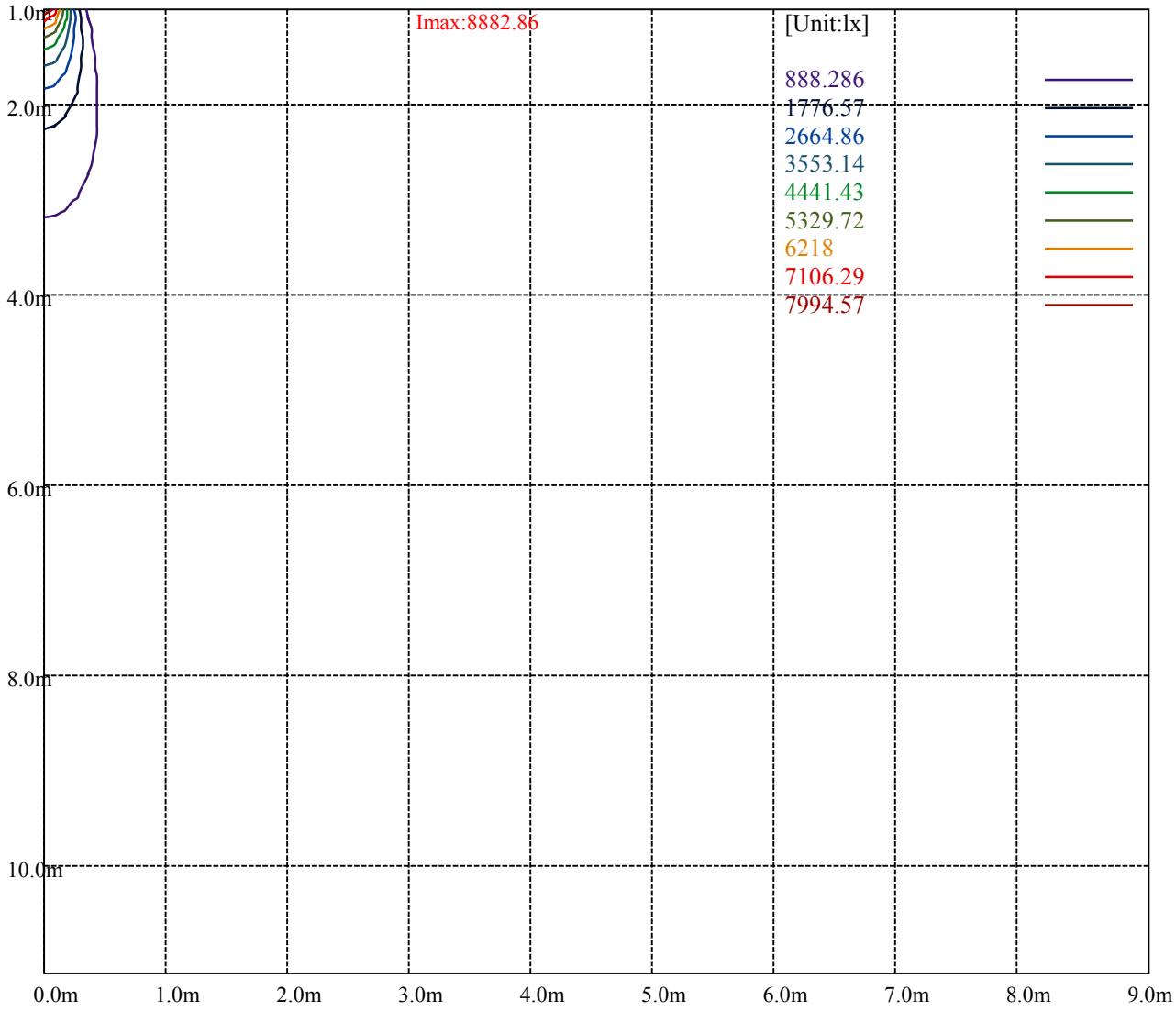
(10%Imax) 888.286
(20%Imax) 1776.57
(30%Imax) 2664.86
(40%Imax) 3553.14
(50%Imax) 4441.43
(60%Imax) 5329.72
(70%Imax) 6218
(80%Imax) 7106.29
(90%Imax) 7994.57

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

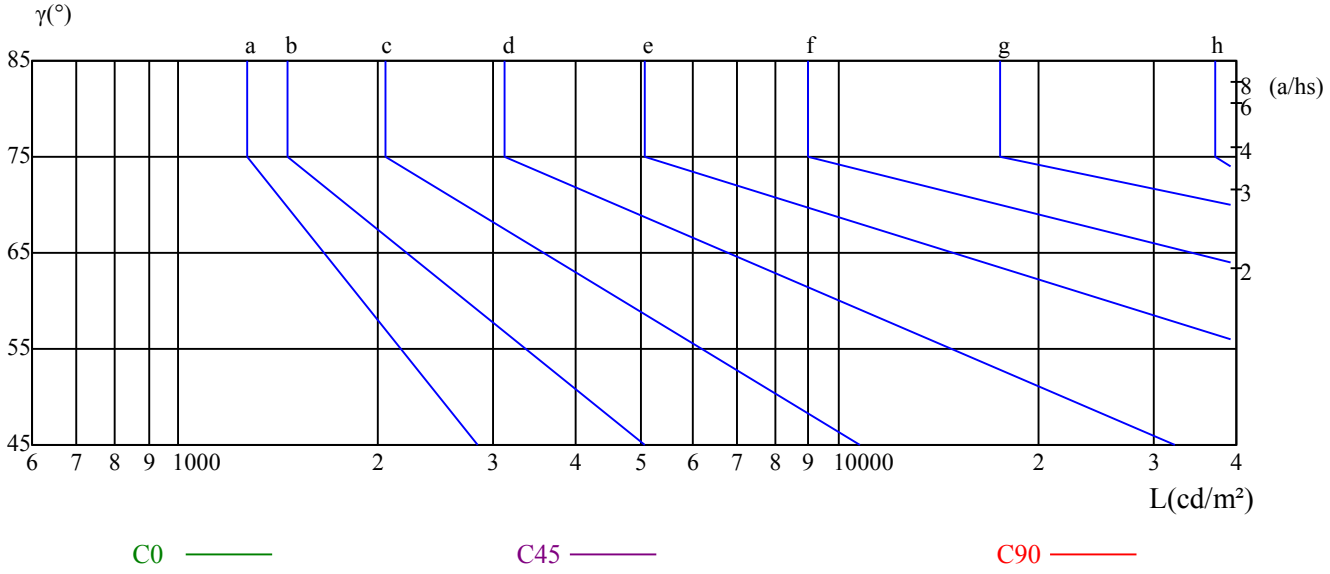
γ	45	50	55	60	65	70	75	80	85
C0	369	362	364	375	395	423	462	516	591
C45	398	394	401	419	446	486	542	622	737
C90	515	531	567	626	717	856	1085	1515	2564

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
771	771	771	1228	1228	1228	3592	3592	3592

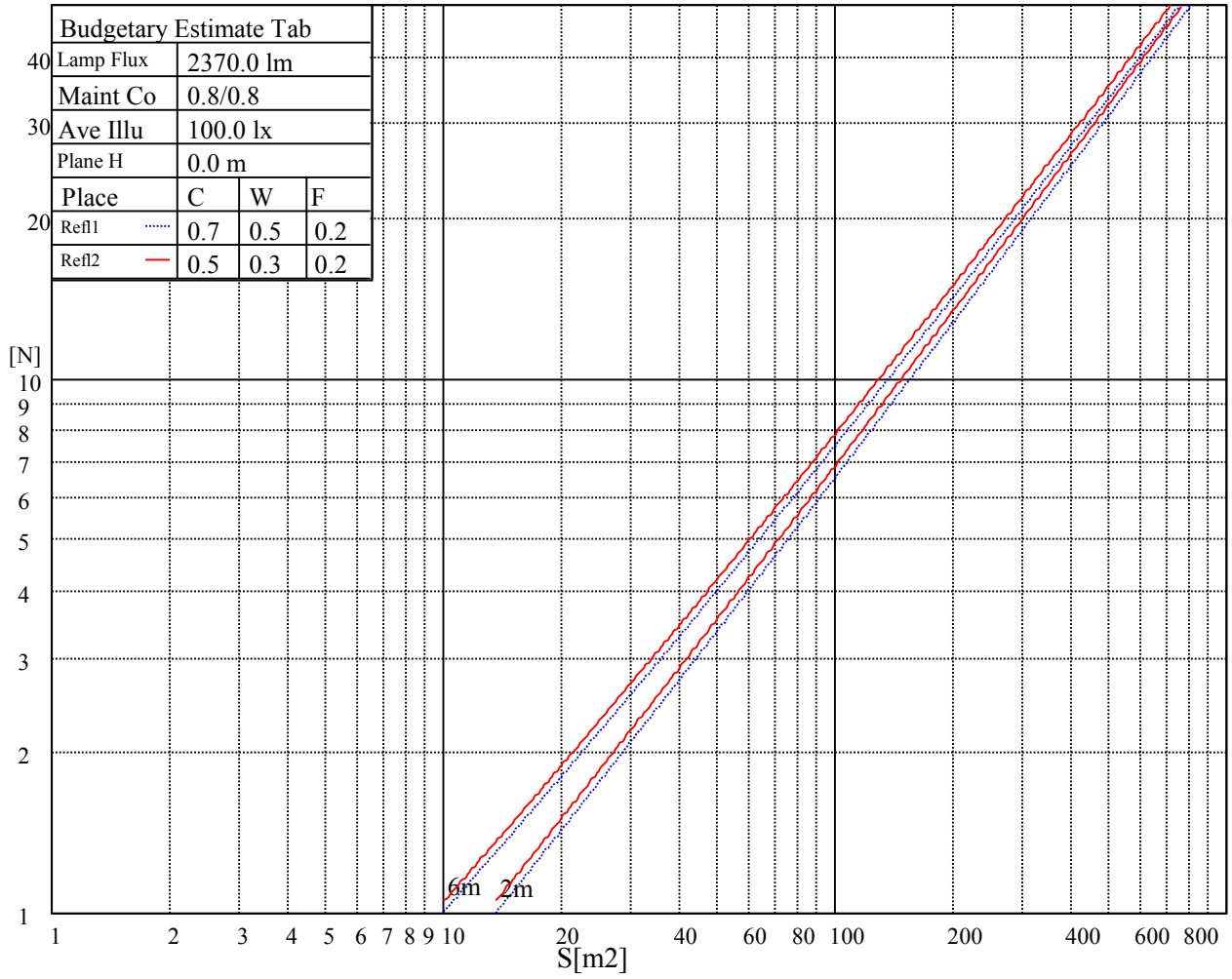
Glare Table

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

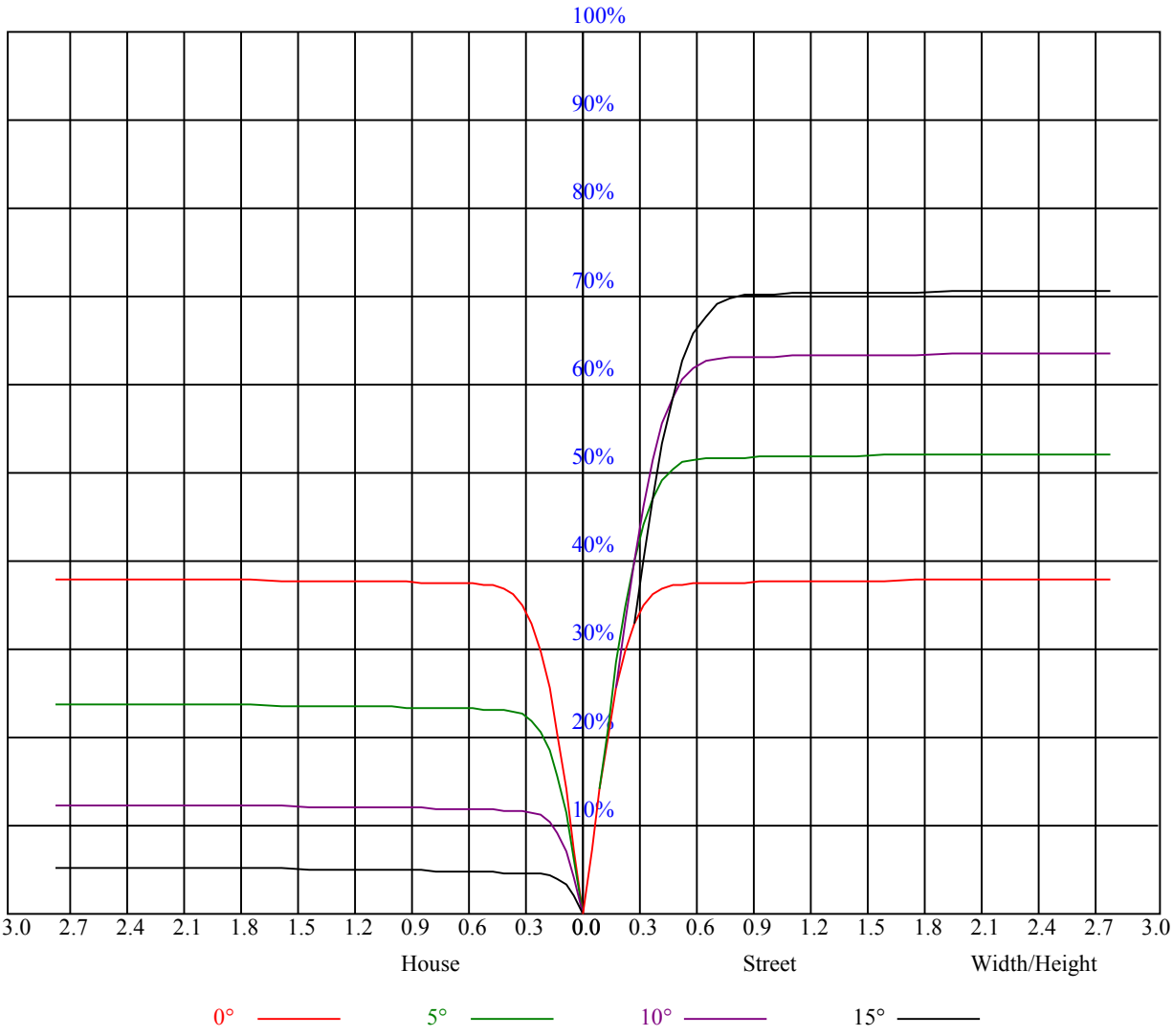


Equipment: GMS1980 Date: 2021/7/19 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.78	0.78	0.78	0.76
1	0.86	0.85	0.83	0.85	0.83	0.82	0.82	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74
2	0.82	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.76	0.77	0.75	0.74	0.75	0.74	0.73	0.71
3	0.79	0.76	0.74	0.78	0.76	0.74	0.76	0.74	0.73	0.75	0.73	0.71	0.73	0.72	0.70	0.69
4	0.76	0.73	0.71	0.76	0.73	0.71	0.74	0.72	0.70	0.73	0.71	0.69	0.71	0.70	0.68	0.68
5	0.74	0.71	0.69	0.73	0.70	0.68	0.72	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.67	0.66
6	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.69	0.67	0.65	0.68	0.66	0.65	0.64
7	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.68	0.65	0.64	0.67	0.65	0.63	0.63
8	0.68	0.65	0.63	0.67	0.65	0.63	0.67	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.62	0.61
9	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.65	0.62	0.61	0.64	0.62	0.60	0.60
10	0.64	0.62	0.60	0.64	0.61	0.60	0.64	0.61	0.59	0.63	0.61	0.59	0.63	0.61	0.59	0.58

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/7/19	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

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	8865.56	8881.88	8821.13	8696.81	8506.13	8198.44	7900.88	7551.56	7114.50
45.0	8886.38	8851.50	8737.88	8551.69	8332.31	8091.56	7630.88	7241.06	6873.19
90.0	8890.88	8845.31	8729.44	8546.06	8341.88	8035.88	7652.81	7254.56	6734.81
135.0	8888.63	8868.94	8782.31	8652.94	8474.63	8237.25	7917.19	7566.19	7124.06
180.0	8865.56	8807.06	8679.38	8484.75	8276.63	7994.81	7683.75	7270.88	6789.38
225.0	8886.38	8867.81	8780.06	8639.44	8468.44	8213.63	7896.38	7583.63	7159.50
270.0	8890.88	8877.38	8811.56	8665.88	8489.81	8288.44	7902.00	7558.31	7230.94
315.0	8888.63	8846.44	8713.69	8552.81	8330.63	8034.19	7657.88	7290.00	6824.81
360.0	8865.56	8881.88	8821.13	8696.81	8506.13	8198.44	7900.88	7551.56	7114.50

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6625.69	6147.56	5577.75	5051.81	4448.25	3871.69	3391.88	2898.00	2446.88
45.0	6208.88	5671.69	5186.81	4505.06	3925.13	3445.88	2962.13	2570.63	2180.25
90.0	6230.81	5569.31	5025.94	4491.56	3859.88	3393.00	2964.94	2570.06	2133.56
135.0	6605.44	6095.81	5498.44	4959.00	4361.63	3789.00	3325.50	2898.00	2418.75
180.0	6315.19	5752.69	5167.69	4641.75	4125.94	3511.69	3065.63	2649.38	2173.50
225.0	6725.81	6209.44	5658.75	5147.44	4551.75	3966.19	3486.94	3038.63	2513.25
270.0	6660.56	6202.13	5781.94	5149.13	4561.88	4042.69	3490.31	3040.31	2559.94
315.0	6370.31	5823.00	5239.13	4710.94	4119.19	3557.25	3102.19	2683.13	2201.63
360.0	6625.69	6147.56	5577.75	5051.81	4448.25	3871.69	3391.88	2898.00	2446.88

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2097.56	1781.44	1427.63	1163.81	920.25	648.00	465.19	305.44	288.56
45.0	1829.81	1542.94	1241.44	966.38	741.38	540.56	329.63	293.63	99.68
90.0	1822.50	1537.88	1116.68	966.66	749.08	529.26	340.93	208.63	104.18
135.0	2073.94	1766.25	1413.00	1151.44	911.25	666.56	464.63	307.13	289.69
180.0	1833.75	1531.13	1092.04	941.74	722.42	509.29	349.26	207.84	106.99
225.0	2136.38	1792.13	1449.00	1111.22	902.64	664.93	458.16	303.98	169.71
270.0	2134.13	1792.13	1449.56	1146.38	905.63	691.31	461.25	306.56	289.13
315.0	1863.00	1554.75	1111.67	962.33	740.03	520.14	336.09	206.83	113.23
360.0	2097.56	1781.44	1427.63	1163.81	920.25	648.00	465.19	305.44	288.56

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	78.41	42.47	28.41	20.76	18.39	17.04	15.53	14.34	13.61
45.0	44.94	25.88	20.59	17.83	16.31	15.24	14.29	13.50	12.83
90.0	48.66	27.11	20.64	18.28	16.76	15.36	14.46	13.67	12.94
135.0	85.84	40.56	27.28	19.69	17.38	16.14	14.96	13.95	13.28
180.0	58.05	33.92	20.98	17.61	16.09	14.85	13.84	13.05	12.43
225.0	95.63	52.65	30.49	22.05	18.90	16.93	15.64	14.57	13.44
270.0	92.81	51.19	31.44	21.71	18.73	17.10	15.64	14.57	13.61
315.0	59.68	33.81	22.78	19.24	17.44	15.92	14.68	13.73	12.88
360.0	78.41	42.47	28.41	20.76	18.39	17.04	15.53	14.34	13.61

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	12.71	12.15	11.59	11.08	10.74	10.46	10.18	9.96	9.79
45.0	12.21	11.81	11.42	11.03	10.80	10.52	10.29	10.13	10.01
90.0	12.38	11.93	11.53	11.14	10.86	10.58	10.35	10.18	10.01
135.0	12.54	12.04	11.59	11.14	10.86	10.58	10.29	10.13	9.90
180.0	11.81	11.31	10.97	10.58	10.35	10.07	9.90	9.73	9.56
225.0	12.71	12.09	11.59	11.08	10.74	10.46	10.18	9.96	9.79
270.0	12.77	12.21	11.70	11.19	10.80	10.52	10.24	10.07	9.84
315.0	12.15	11.64	11.14	10.80	10.46	10.18	9.96	9.79	9.62
360.0	12.71	12.15	11.59	11.08	10.74	10.46	10.18	9.96	9.79

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	9.62	9.51	9.34	9.23	9.17	9.06	9.00	8.89	8.83
45.0	9.84	9.68	9.56	9.51	9.39	9.28	9.23	9.17	9.06
90.0	9.84	9.73	9.56	9.51	9.39	9.34	9.23	9.11	9.06
135.0	9.79	9.62	9.51	9.39	9.28	9.23	9.11	9.00	8.94
180.0	9.39	9.28	9.17	9.06	9.00	8.94	8.83	8.78	8.72
225.0	9.62	9.51	9.34	9.28	9.17	9.06	8.94	8.89	8.83
270.0	9.73	9.56	9.45	9.34	9.23	9.11	9.11	9.00	8.94
315.0	9.45	9.34	9.28	9.17	9.06	9.00	8.89	8.83	8.78
360.0	9.62	9.51	9.34	9.23	9.17	9.06	9.00	8.89	8.83

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.78	8.66	8.66	8.61	8.55	8.49	8.44	8.38	8.33
45.0	8.94	8.94	8.89	8.78	8.78	8.72	8.61	8.61	8.55
90.0	9.00	8.94	8.83	8.78	8.78	8.72	8.66	8.61	8.55
135.0	8.89	8.78	8.72	8.72	8.66	8.61	8.55	8.49	8.49
180.0	8.66	8.61	8.55	8.49	8.44	8.38	8.38	8.33	8.27
225.0	8.78	8.72	8.66	8.61	8.61	8.55	8.49	8.49	8.44
270.0	8.89	8.83	8.78	8.72	8.72	8.66	8.61	8.55	8.55
315.0	8.66	8.61	8.61	8.55	8.49	8.49	8.44	8.38	8.33
360.0	8.78	8.66	8.66	8.61	8.55	8.49	8.44	8.38	8.33

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.33	8.27	8.27	8.21	8.21	8.16	8.16	8.10	8.10
45.0	8.55	8.49	8.44	8.44	8.44	8.38	8.33	8.33	8.27
90.0	8.55	8.49	8.49	8.49	8.44	8.44	8.38	8.38	8.33
135.0	8.44	8.38	8.38	8.33	8.27	8.27	8.27	8.21	8.21
180.0	8.27	8.21	8.21	8.16	8.16	8.10	8.10	8.04	8.04
225.0	8.38	8.38	8.33	8.33	8.33	8.27	8.27	8.27	8.21
270.0	8.49	8.49	8.44	8.44	8.38	8.38	8.38	8.38	8.33
315.0	8.33	8.33	8.27	8.21	8.21	8.21	8.16	8.16	8.10
360.0	8.33	8.27	8.27	8.21	8.21	8.16	8.16	8.10	8.10

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.10	8.04	8.10	8.04	8.04	7.99	7.99	7.99	7.99
45.0	8.27	8.27	8.27	8.21	8.21	8.21	8.21	8.16	8.16
90.0	8.33	8.27	8.27	8.27	8.27	8.27	8.21	8.21	8.21
135.0	8.21	8.16	8.16	8.16	8.10	8.04	8.10	8.10	8.04
180.0	8.04	8.04	7.99	7.99	7.99	7.99	7.99	7.99	7.93
225.0	8.21	8.21	8.16	8.16	8.16	8.16	8.16	8.16	8.16
270.0	8.33	8.27	8.27	8.27	8.27	8.27	8.21	8.21	8.21
315.0	8.10	8.10	8.10	8.10	8.04	8.04	8.04	8.04	8.04
360.0	8.10	8.04	8.10	8.04	8.04	7.99	7.99	7.99	7.99

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.93	7.99	7.93	7.93	7.93	7.93	7.93	7.93	7.88
45.0	8.16	8.16	8.16	8.10	8.10	8.10	8.10	8.04	8.10
90.0	8.16	8.21	8.21	8.16	8.04	8.04	8.04	8.04	8.04
135.0	8.04	8.04	8.04	8.04	7.99	7.99	7.99	7.99	7.99
180.0	7.93	7.93	7.93	7.88	7.88	7.88	7.88	7.88	7.88
225.0	8.16	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.04
270.0	8.21	8.21	8.21	8.21	8.21	8.04	8.04	8.04	8.04
315.0	8.04	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.93
360.0	7.93	7.99	7.93	7.93	7.93	7.93	7.93	7.93	7.88

Intensity data(cd)

C/γ(°)	90.0
0.0	7.88
45.0	8.04
90.0	8.04
135.0	7.99
180.0	7.93
225.0	8.04
270.0	8.04
315.0	7.99
360.0	7.88