NATA LIGHTING CO.,LTD
www.nata.cn
Email:info@nata.cn
Tel:+86 0750-377 0000(10 lines) Fax:+86 0750-377 1111
Address:380JinOu Road,Gaoxin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 1450-E
Luminaire: 92.70.064.00
Report No: NT2017091902
Test No: GC2017091902
LampCAT: CITIZEN CLU700
Lamp flux(lm): 331.0
Number of Lamps: 1
Length(mm): 44
Phm Type: C

Voltage(V): 9.4000
Current(A): 0.3100
Power (W): 2.9140
PF: 0.0000
Ballast type: DC
Width(mm):44
Height(mm): 0

Photometric Results

Lumens(lm): 279.43
Efficiency(%): 84.42%
Lumens(lm)/Power(W): 95.89
Central intensity(cd): 880.992
Maximum intensity(cd): 880.992
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=22.4
[C90/270]Total=22.4
Field angle(10%Imax): [C0/180]Total=68.6
[C90/270]Total=68.6
Maximum s/h(1/2): C0_180=0.38 C90_270=0.38
Maximum s/h(1/4): C0_180=0.43 C90_270=0.43
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 84.42%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.499%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	880.992	0.000	0	.000%	.000%
1.0	875.349	0.840	0.84	.254%	.301%
2.0	858.783	2.489	3.329	.752%	1.191%
3.0	830.643	4.041	7.37	1.221%	2.637%
4.0	794.746	5.441	12.811	1.644%	4.584%
5.0	749.675	6.644	19.455	2.007%	6.962%
6.0	702.299	7.631	27.085	2.305%	9.693%
7.0	647.050	8.375	35.461	2.530%	12.690%
8.0	596.041	8.897	44.357	2.688%	15.874%
9.0	543.524	9.236	53.593	2.790%	19.179%
10.0	491.475	9.366	62.959	2.830%	22.531%
11.0	448.194	9.389	72.348	2.837%	25.891%
12.0	408.704	9.367	81.715	2.830%	29.243%
13.0	369.938	9.241	90.956	2.792%	32.550%
14.0	335.603	9.031	99.987	2.728%	35.782%
15.0	306.182	8.811	108.797	2.662%	38.935%
16.0	278.475	8.567	117.364	2.588%	42.001%
17.0	254.113	8.294	125.658	2.506%	44.969%
18.0	231.313	8.004	133.662	2.418%	47.833%
19.0	212.167	7.716	141.377	2.331%	50.594%
20.0	194.253	7.439	148.816	2.247%	53.256%
21.0	179.112	7.169	155.985	2.166%	55.822%
22.0	166.325	6.942	162.927	2.097%	58.306%
23.0	154.309	6.728	169.655	2.033%	60.714%
24.0	144.853	6.541	176.196	1.976%	63.054%
25.0	136.237	6.391	182.587	1.931%	65.342%
26.0	128.949	6.260	188.847	1.891%	67.582%
27.0	122.356	6.148	194.995	1.857%	69.782%
28.0	117.284	6.067	201.062	1.833%	71.953%
29.0	112.542	6.013	207.075	1.817%	74.105%
30.0	108.551	5.969	213.045	1.803%	76.241%
31.0	105.048	5.944	218.989	1.796%	78.369%
32.0	100.973	5.902	224.891	1.783%	80.481%
33.0	96.404	5.815	230.706	1.757%	82.562%
34.0	90.327	5.651	236.357	1.707%	84.584%
35.0	83.101	5.386	241.743	1.627%	86.512%
36.0	74.257	5.010	246.753	1.514%	88.305%
37.0	64.478	4.525	251.278	1.367%	89.924%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	52.517	3.905	255.183	1.180%	91.321%
39.0	41.464	3.208	258.391	.969%	92.469%
40.0	32.084	2.565	260.956	.775%	93.387%
41.0	23.385	1.975	262.931	.597%	94.094%
42.0	16.661	1.455	264.386	.440%	94.615%
43.0	12.161	1.068	265.454	.323%	94.997%
44.0	9.394	0.814	266.267	.246%	95.288%
45.0	7.976	0.668	266.935	.202%	95.527%
46.0	7.412	0.602	267.537	.182%	95.742%
47.0	6.889	0.569	268.105	.172%	95.946%
48.0	6.435	0.539	268.644	.163%	96.139%
49.0	5.588	0.494	269.138	.149%	96.315%
50.0	4.673	0.428	269.566	.129%	96.468%
51.0	3.785	0.358	269.923	.108%	96.597%
52.0	3.586	0.316	270.24	.096%	96.710%
53.0	3.441	0.306	270.545	.092%	96.819%
54.0	3.297	0.297	270.842	.090%	96.925%
55.0	3.180	0.289	271.131	.087%	97.029%
56.0	3.042	0.281	271.413	.085%	97.129%
57.0	2.897	0.272	271.684	.082%	97.227%
58.0	2.780	0.263	271.947	.079%	97.321%
59.0	2.643	0.254	272.2	.077%	97.411%
60.0	2.533	0.244	272.445	.074%	97.499%
61.0	2.443	0.237	272.682	.072%	97.584%
62.0	2.374	0.232	272.914	.070%	97.667%
63.0	2.361	0.230	273.145	.070%	97.749%
64.0	2.340	0.231	273.375	.070%	97.832%
65.0	2.367	0.233	273.608	.070%	97.915%
66.0	2.395	0.238	273.846	.072%	98.000%
67.0	2.471	0.245	274.09	.074%	98.088%
68.0	2.526	0.253	274.344	.076%	98.178%
69.0	2.629	0.263	274.607	.079%	98.272%
70.0	2.705	0.274	274.88	.083%	98.370%
71.0	2.767	0.283	275.163	.085%	98.472%
72.0	2.815	0.290	275.453	.088%	98.575%
73.0	2.849	0.296	275.75	.089%	98.681%
74.0	2.856	0.300	276.05	.091%	98.789%
75.0	2.877	0.303	276.352	.092%	98.897%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.808	0.302	276.654	.091%	99.005%
77.0	2.691	0.293	276.947	.089%	99.110%
78.0	2.533	0.280	277.227	.084%	99.210%
79.0	2.216	0.255	277.482	.077%	99.301%
80.0	1.913	0.223	277.705	.067%	99.381%
81.0	1.817	0.202	277.906	.061%	99.453%
82.0	1.817	0.197	278.104	.060%	99.524%
83.0	1.817	0.198	278.301	.060%	99.595%
84.0	1.851	0.200	278.501	.060%	99.666%
85.0	1.858	0.202	278.703	.061%	99.739%
86.0	1.507	0.184	278.887	.056%	99.804%
87.0	1.259	0.151	279.039	.046%	99.859%
88.0	1.191	0.134	279.173	.041%	99.907%
89.0	1.191	0.131	279.303	.039%	99.953%
90.0	1.191	0.131	279.434	.039%	100.000%

Zonal flux distribution table

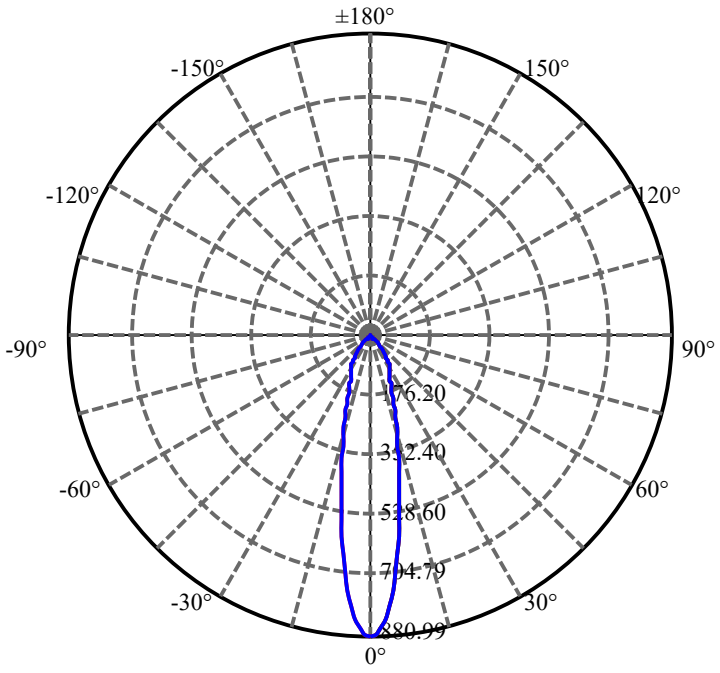
ZONAL LUMEN SUMMARY

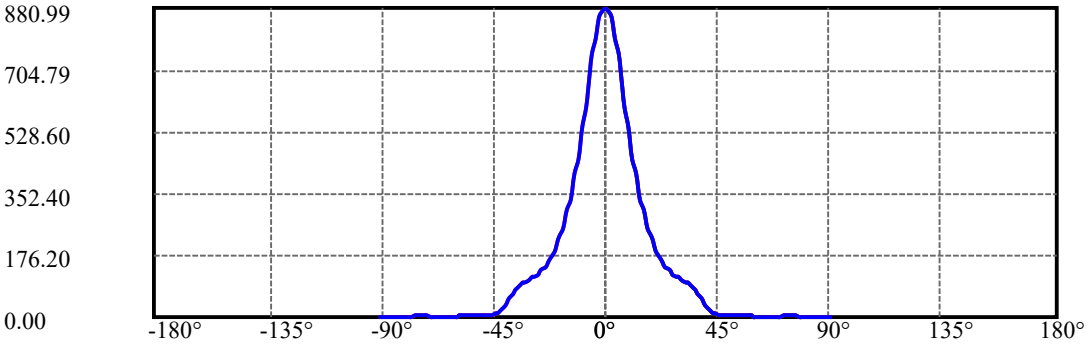
Zone	Lumens	%Lamp	%Fixt
0-30	213.04	64.36%	76.24%
0-40	260.96	78.84%	93.39%
0-60	272.44	82.31%	97.50%
0-90	279.30	84.38%	99.95%
0-120	279.30	84.38%	99.95%
0-180	279.43	84.42%	100.00%
60-90	7.10	2.15%	2.54%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-31.77	223.55	67.54%	80.00%

ZONAL LUMEN SUMMARY

0-10	62.96
10-20	85.86
20-30	64.23
30-40	47.91
40-50	8.61
50-60	2.88
60-70	2.44
70-80	2.82
80-90	1.60
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):

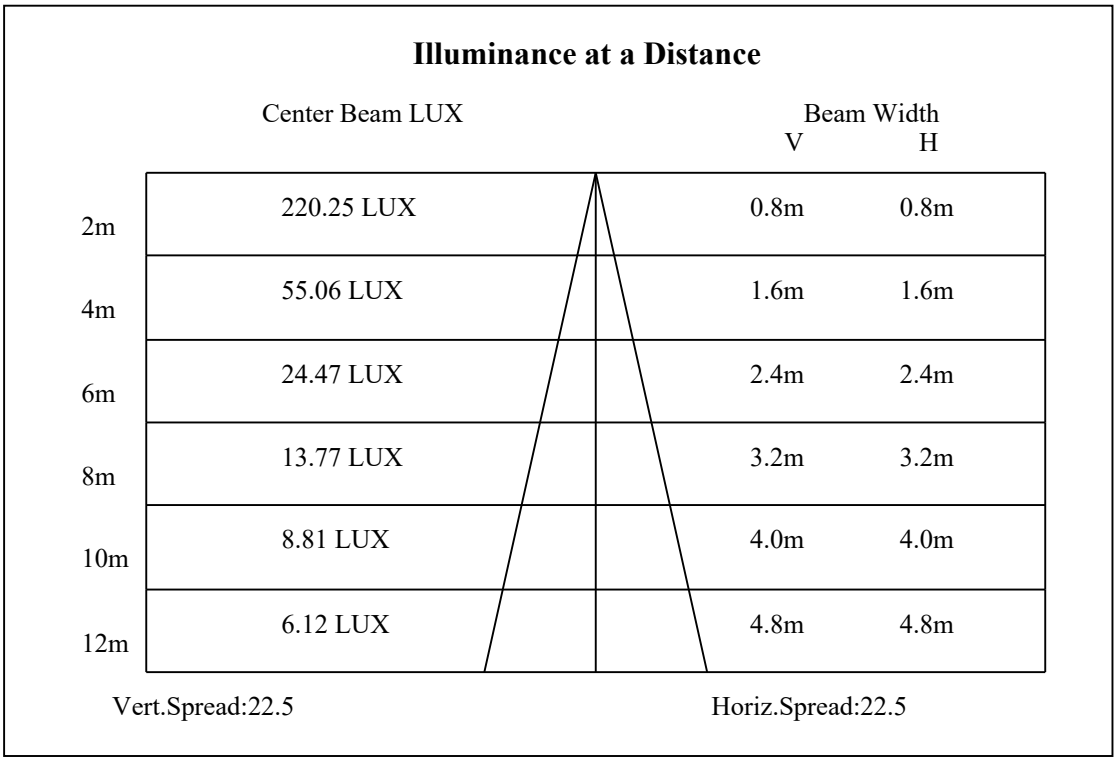
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:34.3 Right:34.3
:C90/270Left:34.3 Right:34.3

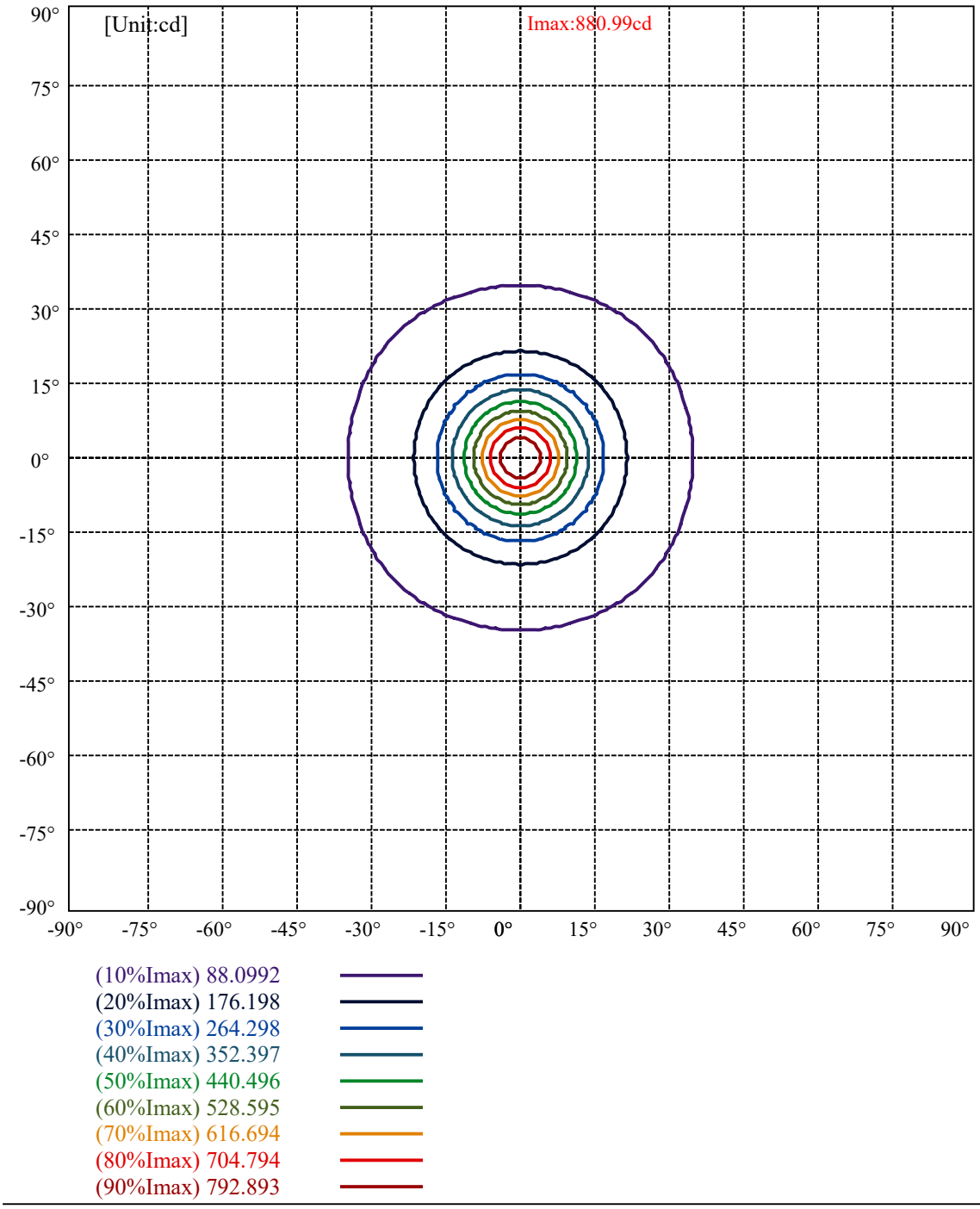
Beam Angle(50%Imax):C0/180Left:11.2 Right:11.2
:C90/270Left:11.2 Right:11.2

Lux distance Curve



Equipment: GMS1980 Date: 2017/9/19 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)

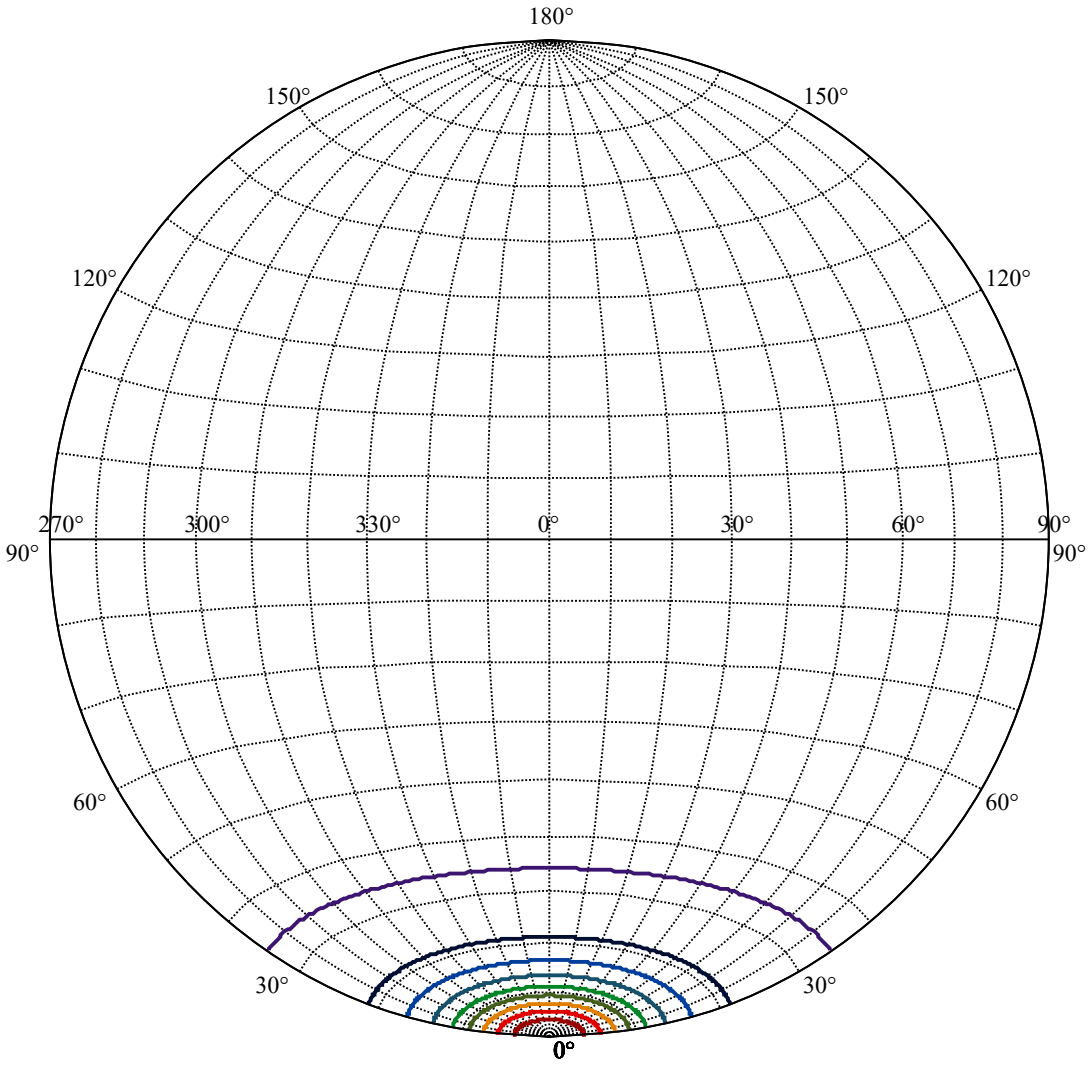


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/9/19
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:880.99

(10%Imax) 88.0992
(20%Imax) 176.198
(30%Imax) 264.298
(40%Imax) 352.397
(50%Imax) 440.496
(60%Imax) 528.595
(70%Imax) 616.694
(80%Imax) 704.794
(90%Imax) 792.893

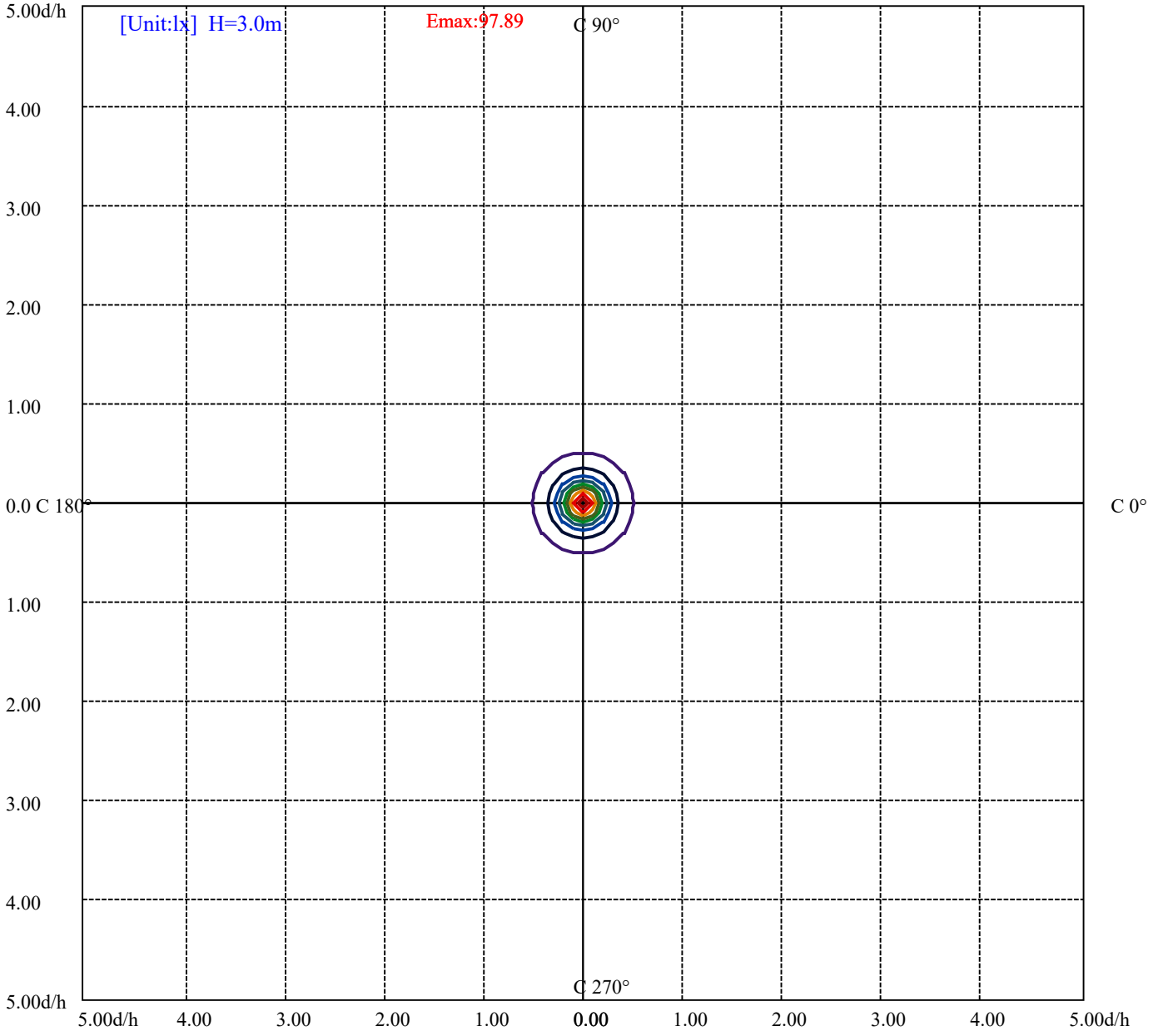
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/9/19
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Nata 1450-E

ISO illuminance diagram

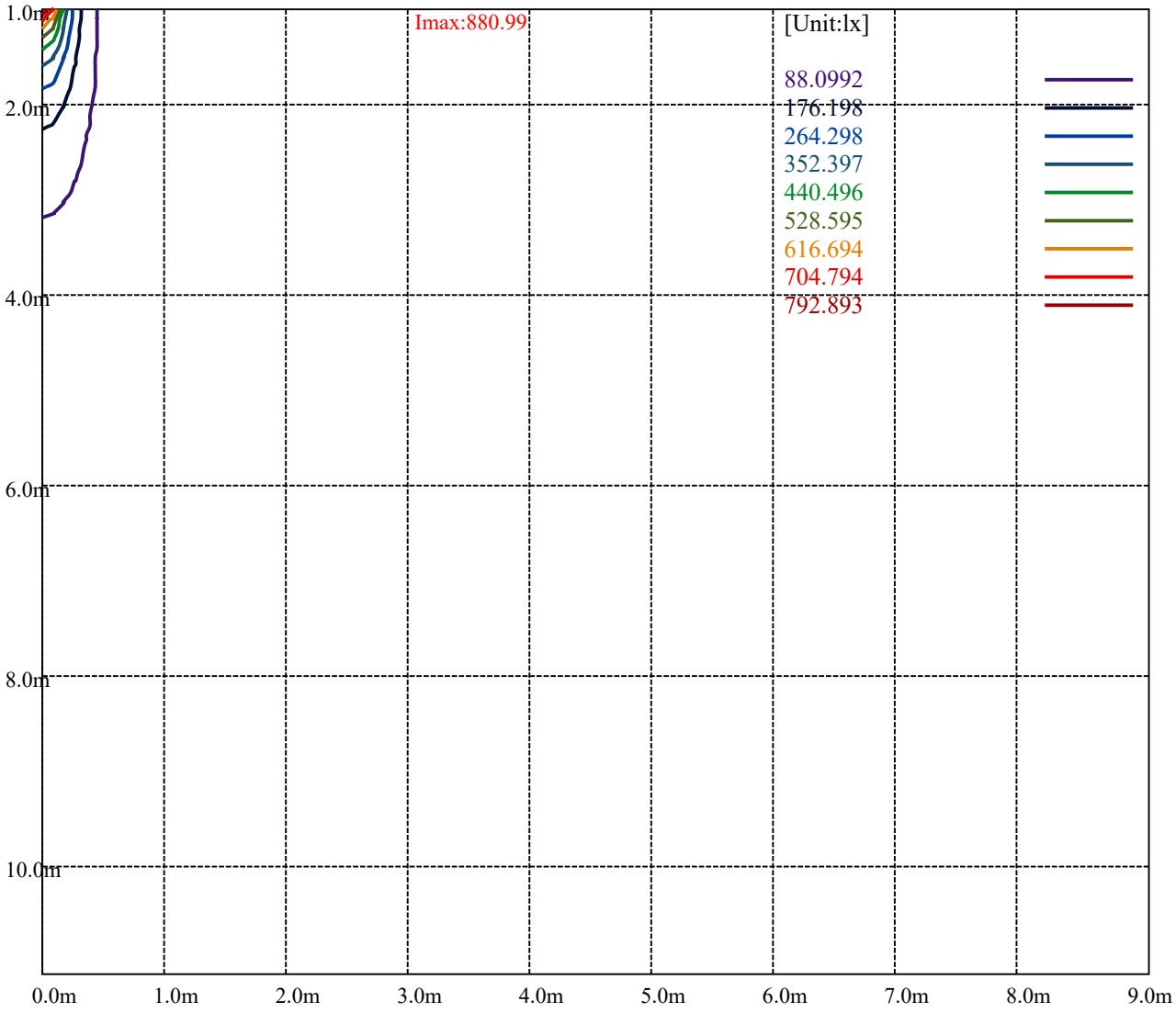


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/9/19
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/9/19
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

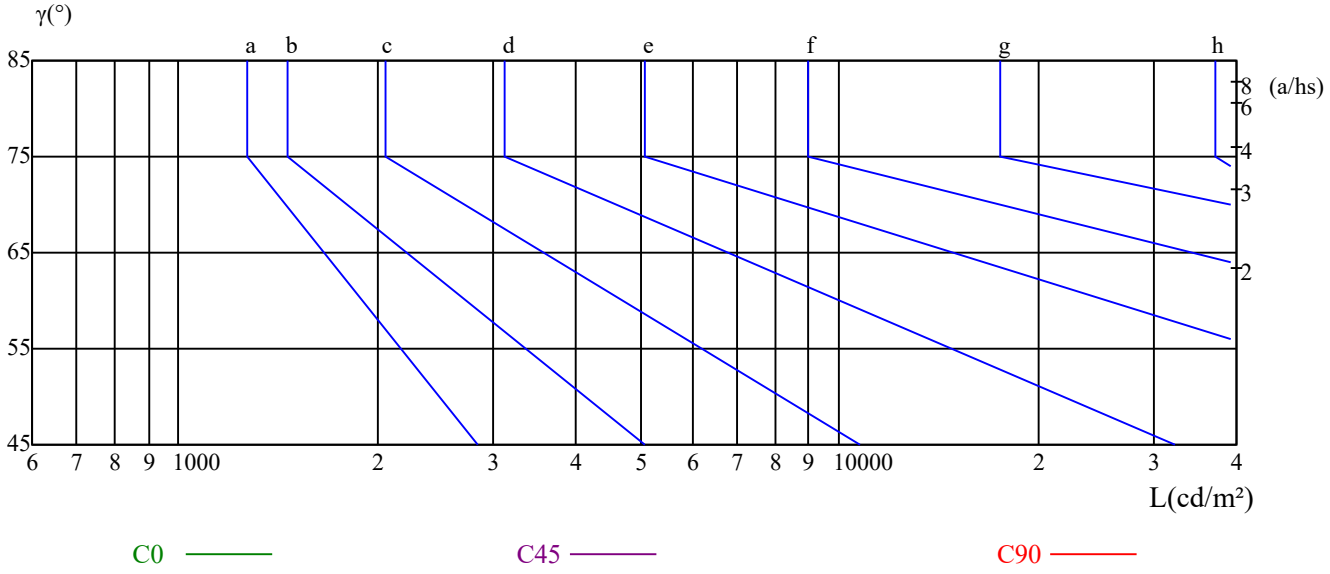
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

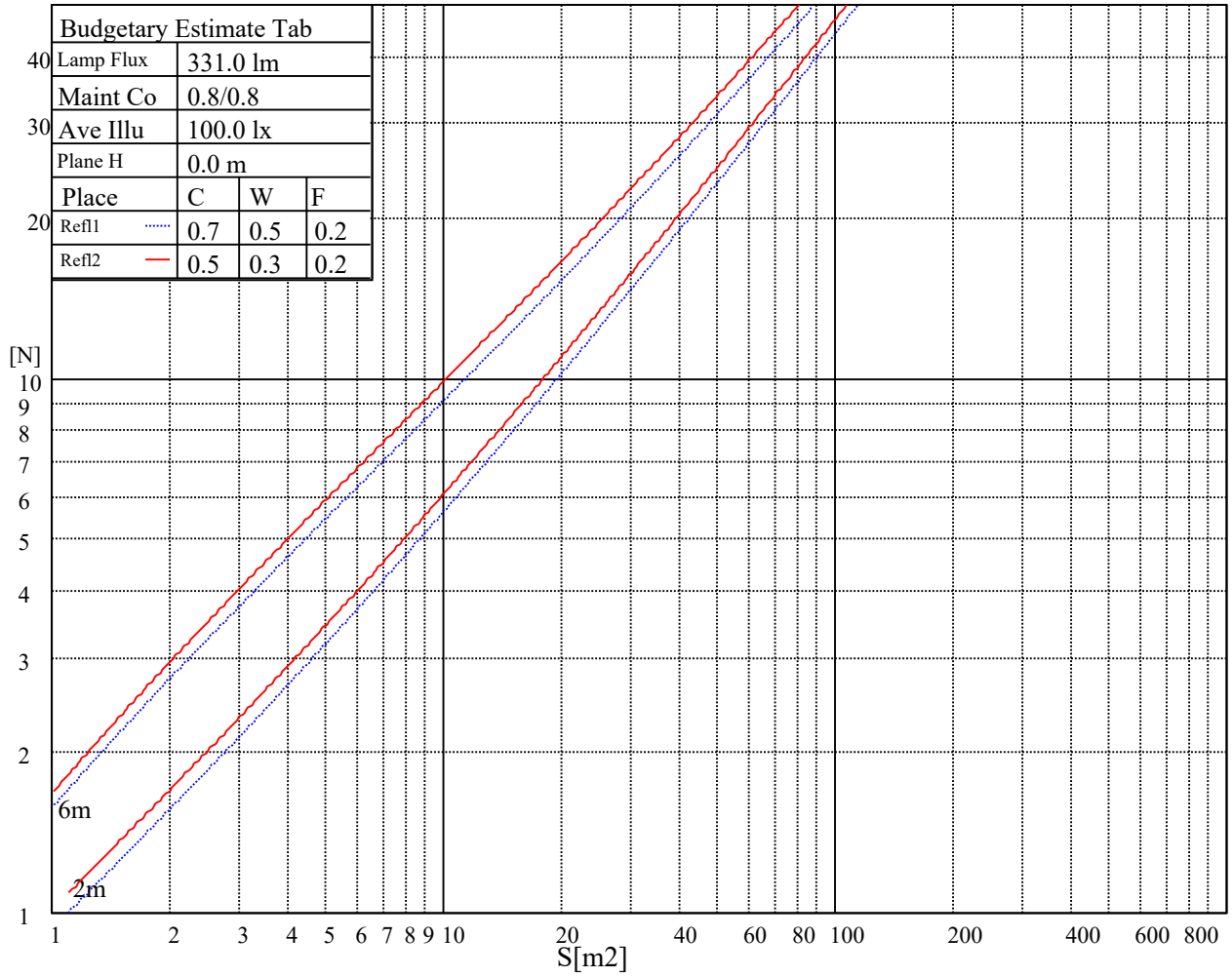
Glare Table

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: 2017/9/19	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	1.01	1.01	1.01	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.84
1	0.94	0.92	0.90	0.92	0.90	0.88	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.79
2	0.88	0.84	0.82	0.86	0.83	0.81	0.84	0.81	0.79	0.81	0.79	0.77	0.79	0.77	0.76	0.74
3	0.82	0.79	0.75	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.75	0.73	0.71	0.70
4	0.78	0.74	0.70	0.77	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.68	0.72	0.70	0.68	0.66
5	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
6	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.60
7	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.57
8	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.62	0.58	0.55	0.61	0.58	0.55	0.54
9	0.61	0.56	0.53	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.56	0.53	0.58	0.55	0.53	0.52
10	0.58	0.54	0.51	0.58	0.54	0.51	0.57	0.54	0.51	0.57	0.53	0.51	0.56	0.53	0.51	0.50

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	882.88	892.52	889.99	878.37	849.08	812.41	770.90	721.24	672.46
45.0	874.79	889.77	894.12	884.76	869.07	840.33	801.95	758.84	712.48
90.0	882.83	886.90	877.87	857.17	828.98	787.97	745.90	692.06	636.45
135.0	882.55	879.80	858.82	834.77	799.03	747.12	700.37	642.51	587.84
180.0	884.70	863.89	833.66	783.95	738.03	690.96	637.33	569.34	520.01
225.0	874.79	840.27	808.56	760.16	706.32	653.57	598.96	537.30	492.42
270.0	882.83	871.54	843.46	811.70	769.69	709.84	657.15	603.97	546.71
315.0	882.55	878.09	863.78	834.27	797.77	755.21	705.82	651.15	599.95
360.0	882.88	892.52	889.99	878.37	849.08	812.41	770.90	721.24	672.46

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	621.92	560.64	513.68	468.36	413.80	375.15	337.99	299.29	273.19
45.0	649.45	598.35	547.15	493.42	446.89	409.18	369.48	335.84	308.87
90.0	585.08	529.15	475.25	433.18	393.21	349.17	318.34	292.35	263.94
135.0	530.96	476.07	433.62	396.46	359.68	328.14	302.20	276.99	252.60
180.0	474.70	428.67	395.42	367.83	337.55	310.30	287.78	263.55	244.89
225.0	450.86	406.37	376.75	348.51	320.37	294.55	273.19	252.32	228.92
270.0	492.59	448.38	405.82	371.74	336.17	305.51	280.46	252.87	229.59
315.0	542.64	484.17	437.86	390.13	351.81	312.83	280.02	254.58	230.91
360.0	621.92	560.64	513.68	468.36	413.80	375.15	337.99	299.29	273.19

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	249.35	225.40	203.87	188.46	173.43	160.65	150.58	142.98	137.26
45.0	281.17	259.92	240.43	220.83	204.75	187.85	172.99	162.20	152.95
90.0	239.22	219.23	200.24	184.77	172.00	159.94	152.84	144.30	137.04
135.0	232.34	213.78	193.63	178.66	166.11	152.34	142.93	134.34	125.53
180.0	223.53	205.42	191.16	177.06	164.29	153.83	144.36	133.62	125.86
225.0	208.00	189.28	174.58	160.05	148.87	138.36	130.10	121.23	115.01
270.0	210.76	195.01	176.73	164.95	155.04	144.19	137.09	130.65	123.55
315.0	206.13	189.28	173.37	158.12	146.12	137.31	127.95	120.57	114.41
360.0	249.35	225.40	203.87	188.46	173.43	160.65	150.58	142.98	137.26

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	131.64	126.08	120.85	116.44	111.32	107.86	105.38	102.74	99.65
45.0	142.93	136.26	129.88	121.51	116.66	113.25	109.73	106.86	104.28
90.0	131.47	126.74	120.74	116.66	113.31	109.51	107.42	104.44	98.44
135.0	118.26	111.32	104.22	100.04	95.96	92.83	89.08	82.64	74.27
180.0	118.43	112.32	108.24	105.71	102.35	96.84	89.52	79.39	69.65
225.0	110.83	107.97	105.27	102.74	99.21	91.78	83.03	73.23	62.10
270.0	117.44	113.75	110.44	107.75	105.49	102.13	96.90	88.15	77.96
315.0	107.86	103.84	100.70	97.56	96.07	93.60	90.18	85.17	78.46
360.0	131.64	126.08	120.85	116.44	111.32	107.86	105.38	102.74	99.65

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	94.31	85.39	73.94	63.15	50.05	38.87	27.36	17.56	11.73
45.0	100.37	93.71	82.69	71.08	60.56	48.23	34.52	24.22	15.69
90.0	89.58	79.78	66.51	55.33	43.94	30.39	21.91	13.49	9.19
135.0	65.79	56.93	42.72	32.76	26.43	17.89	12.50	10.41	9.25
180.0	57.75	45.31	35.02	24.22	14.98	9.19	6.94	6.50	6.22
225.0	50.21	39.59	28.57	17.51	10.85	7.32	6.83	6.50	6.17
270.0	67.77	56.43	41.84	31.27	21.58	13.76	8.15	7.10	6.72
315.0	68.27	58.69	48.84	36.39	28.30	21.42	15.09	11.51	10.19
360.0	94.31	85.39	73.94	63.15	50.05	38.87	27.36	17.56	11.73

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	8.86	8.31	7.98	7.49	6.22	4.46	3.47	3.19	2.97
45.0	10.35	9.47	9.19	8.75	8.09	6.88	2.86	2.42	2.26
90.0	8.64	8.31	8.04	7.60	6.88	4.96	3.85	3.52	3.36
135.0	8.70	8.26	7.54	7.27	6.61	6.11	5.78	5.56	5.29
180.0	5.95	5.51	4.90	4.62	3.74	3.36	3.19	3.19	3.19
225.0	5.78	5.18	4.68	4.24	2.97	2.53	2.42	2.37	2.37
270.0	6.22	5.73	5.12	4.51	3.96	3.36	3.30	3.30	3.19
315.0	9.30	8.53	7.65	6.99	6.22	5.73	5.40	5.12	4.90
360.0	8.86	8.31	7.98	7.49	6.22	4.46	3.47	3.19	2.97

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	2.86	2.75	2.59	2.48	2.31	2.15	2.04	1.98	1.87
45.0	2.15	2.09	1.98	1.93	1.87	1.82	1.87	1.82	1.82
90.0	3.19	3.03	2.81	2.64	2.53	2.37	2.31	2.20	2.04
135.0	5.07	4.90	4.62	4.35	4.13	3.91	3.74	3.63	3.58
180.0	3.08	3.03	2.97	2.86	2.75	2.64	2.53	2.37	2.31
225.0	2.37	2.31	2.31	2.31	2.26	2.15	2.09	2.09	2.15
270.0	3.08	2.97	2.92	2.75	2.64	2.53	2.26	2.15	2.04
315.0	4.57	4.35	4.13	3.85	3.74	3.58	3.41	3.30	3.19
360.0	2.86	2.75	2.59	2.48	2.31	2.15	2.04	1.98	1.87

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.87	1.71	1.71	1.65	1.71	1.65	1.65	1.60	1.60
45.0	1.82	1.71	1.65	1.65	1.65	1.60	1.60	1.60	1.54
90.0	1.98	1.93	1.93	1.87	1.87	1.87	1.76	1.76	1.76
135.0	3.47	3.41	3.30	3.30	3.30	3.19	3.14	3.08	2.97
180.0	2.31	2.53	2.75	2.92	3.19	3.47	3.74	4.02	4.24
225.0	2.20	2.37	2.59	2.86	3.19	3.58	4.07	4.40	4.73
270.0	2.04	1.98	1.98	1.98	1.98	2.04	2.26	2.42	2.64
315.0	3.19	3.08	3.03	2.92	2.86	2.81	2.81	2.75	2.64
360.0	1.87	1.71	1.71	1.65	1.71	1.65	1.65	1.60	1.60

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.60	1.60	1.60	1.54	1.49	1.49	1.49	1.43	1.38
45.0	1.54	1.49	1.49	1.54	1.49	1.43	1.38	1.38	1.38
90.0	1.76	1.76	1.71	1.65	1.65	1.65	1.65	1.65	1.54
135.0	2.92	2.97	2.97	2.97	2.92	2.70	2.70	2.48	2.20
180.0	4.46	4.62	4.73	4.79	4.62	4.35	4.02	3.14	2.09
225.0	4.84	4.84	4.84	4.90	4.68	4.40	3.91	2.92	2.48
270.0	2.86	3.03	3.08	3.14	3.19	3.14	2.86	2.59	2.20
315.0	2.53	2.48	2.42	2.48	2.42	2.37	2.26	2.15	2.04
360.0	1.60	1.60	1.60	1.54	1.49	1.49	1.49	1.43	1.38

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.32	1.38	1.32	1.38	1.32	1.32	1.21	1.21	1.21
45.0	1.38	1.38	1.32	1.32	1.38	1.32	1.38	1.21	1.27
90.0	1.49	1.43	1.38	1.43	1.32	1.32	1.21	1.21	1.21
135.0	1.93	1.82	1.76	1.76	1.71	1.71	1.38	1.16	1.21
180.0	2.09	2.20	2.26	2.48	2.59	2.64	1.21	1.21	1.16
225.0	2.59	2.70	2.81	2.81	2.86	1.27	1.27	1.21	1.21
270.0	1.98	2.09	2.15	2.20	2.20	1.27	1.27	1.16	1.16
315.0	1.76	1.54	1.54	1.43	1.49	1.21	1.16	1.16	1.10
360.0	1.32	1.38	1.32	1.38	1.32	1.32	1.21	1.21	1.21

Intensity data(cd)

C/γ(°)	90.0
0.0	1.21
45.0	1.27
90.0	1.27
135.0	1.16
180.0	1.16
225.0	1.16
270.0	1.16
315.0	1.16
360.0	1.21