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: 1535-E
Luminaire: 92.70.043.00
Report No: NT2016041308
Test No: GC2016041308
LampCAT: CREE CXA1304
Lamp flux(lm): 395.0
Number of Lamps: 1
Length(mm): 30
Phm Type: C

Voltage(V): 9.4000
Current(A): 0.3500
Power (W): 3.2900
PF: 0.0000
Ballast type: DC
Width(mm): 30
Height(mm): 0

Photometric Results

Lumens(lm): 324.15
Efficiency(%): 82.06%
Lumens(lm)/Power(W): 98.53
Central intensity(cd): 639.590
Maximum intensity(cd): 639.590
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=36.3
[C90/270]Total=36.3
Field angle(10%Imax): [C0/180]Total=77.4
[C90/270]Total=77.4
Maximum s/h(1/2): C0_180=0.59 C90_270=0.59
Maximum s/h(1/4): C0_180=0.61 C90_270=0.61
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.06%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.599%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	639.590	0.000	0	.000%	.000%
1.0	638.530	0.612	0.612	.155%	.189%
2.0	635.550	1.829	2.44	.463%	.753%
3.0	630.389	3.028	5.468	.767%	1.687%
4.0	622.702	4.194	9.662	1.062%	2.981%
5.0	612.571	5.314	14.977	1.345%	4.620%
6.0	600.796	6.377	21.353	1.614%	6.587%
7.0	586.736	7.371	28.724	1.866%	8.861%
8.0	569.703	8.276	37	2.095%	11.415%
9.0	551.046	9.083	46.084	2.300%	14.217%
10.0	530.468	9.787	55.871	2.478%	17.236%
11.0	508.398	10.380	66.251	2.628%	20.439%
12.0	483.044	10.838	77.089	2.744%	23.782%
13.0	457.815	11.166	88.255	2.827%	27.227%
14.0	431.979	11.389	99.644	2.883%	30.740%
15.0	404.279	11.481	111.125	2.906%	34.282%
16.0	376.228	11.437	122.561	2.895%	37.810%
17.0	350.069	11.310	133.872	2.863%	41.299%
18.0	323.043	11.098	144.97	2.810%	44.723%
19.0	297.745	10.800	155.77	2.734%	48.055%
20.0	273.059	10.447	166.218	2.645%	51.278%
21.0	250.424	10.052	176.269	2.545%	54.379%
22.0	229.461	9.643	185.913	2.441%	57.354%
23.0	209.118	9.203	195.116	2.330%	60.193%
24.0	190.330	8.733	203.849	2.211%	62.888%
25.0	173.744	8.278	212.127	2.096%	65.441%
26.0	159.664	7.870	219.997	1.992%	67.869%
27.0	146.429	7.489	227.486	1.896%	70.180%
28.0	136.423	7.161	234.647	1.813%	72.389%
29.0	128.646	6.935	241.582	1.756%	74.528%
30.0	122.390	6.778	248.36	1.716%	76.619%
31.0	117.077	6.664	255.024	1.687%	78.675%
32.0	112.921	6.589	261.613	1.668%	80.708%
33.0	108.943	6.536	268.149	1.655%	82.724%
34.0	104.208	6.451	274.6	1.633%	84.714%
35.0	97.395	6.261	280.861	1.585%	86.646%
36.0	89.501	5.951	286.812	1.507%	88.482%
37.0	81.015	5.561	292.373	1.408%	90.197%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	71.463	5.090	297.463	1.288%	91.767%
39.0	60.941	4.519	301.982	1.144%	93.162%
40.0	51.072	3.907	305.889	.989%	94.367%
41.0	41.306	3.290	309.178	.833%	95.382%
42.0	31.513	2.646	311.824	.670%	96.198%
43.0	22.683	2.008	313.831	.508%	96.817%
44.0	15.416	1.438	315.269	.364%	97.261%
45.0	9.415	0.954	316.224	.242%	97.555%
46.0	5.623	0.588	316.812	.149%	97.737%
47.0	3.572	0.366	317.177	.093%	97.849%
48.0	2.939	0.263	317.44	.067%	97.931%
49.0	2.822	0.237	317.677	.060%	98.004%
50.0	2.677	0.229	317.906	.058%	98.074%
51.0	2.526	0.220	318.126	.056%	98.142%
52.0	2.367	0.210	318.336	.053%	98.207%
53.0	2.010	0.190	318.527	.048%	98.266%
54.0	1.782	0.167	318.694	.042%	98.317%
55.0	1.734	0.157	318.851	.040%	98.366%
56.0	1.679	0.154	319.005	.039%	98.413%
57.0	1.659	0.153	319.158	.039%	98.460%
58.0	1.610	0.151	319.309	.038%	98.507%
59.0	1.590	0.150	319.459	.038%	98.553%
60.0	1.555	0.149	319.607	.038%	98.599%
61.0	1.528	0.147	319.754	.037%	98.644%
62.0	1.493	0.146	319.9	.037%	98.689%
63.0	1.500	0.146	320.045	.037%	98.734%
64.0	1.459	0.145	320.191	.037%	98.779%
65.0	1.438	0.143	320.334	.036%	98.823%
66.0	1.425	0.143	320.477	.036%	98.867%
67.0	1.411	0.143	320.619	.036%	98.911%
68.0	1.390	0.142	320.761	.036%	98.955%
69.0	1.376	0.141	320.902	.036%	98.999%
70.0	1.363	0.141	321.043	.036%	99.042%
71.0	1.349	0.140	321.183	.035%	99.085%
72.0	1.328	0.139	321.322	.035%	99.128%
73.0	1.335	0.139	321.462	.035%	99.171%
74.0	1.328	0.140	321.602	.035%	99.214%
75.0	1.308	0.139	321.741	.035%	99.257%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.308	0.139	321.88	.035%	99.300%
77.0	1.342	0.141	322.021	.036%	99.344%
78.0	1.411	0.147	322.168	.037%	99.389%
79.0	1.521	0.158	322.326	.040%	99.438%
80.0	1.679	0.173	322.499	.044%	99.491%
81.0	1.810	0.189	322.687	.048%	99.549%
82.0	1.893	0.201	322.888	.051%	99.611%
83.0	1.899	0.206	323.094	.052%	99.675%
84.0	1.776	0.200	323.294	.051%	99.737%
85.0	1.610	0.185	323.479	.047%	99.794%
86.0	1.370	0.163	323.642	.041%	99.844%
87.0	1.136	0.137	323.779	.035%	99.886%
88.0	1.122	0.124	323.903	.031%	99.924%
89.0	1.129	0.123	324.026	.031%	99.962%
90.0	1.101	0.122	324.148	.031%	100.000%

Zonal flux distribution table

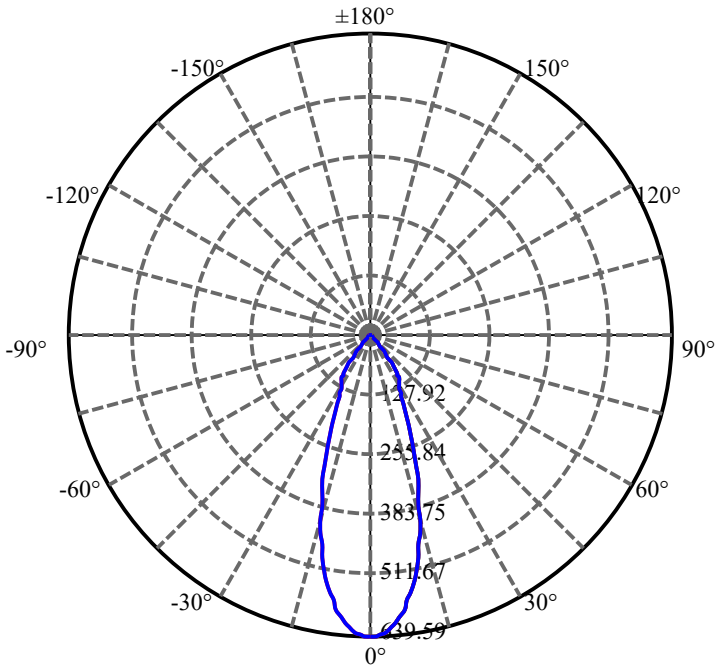
ZONAL LUMEN SUMMARY

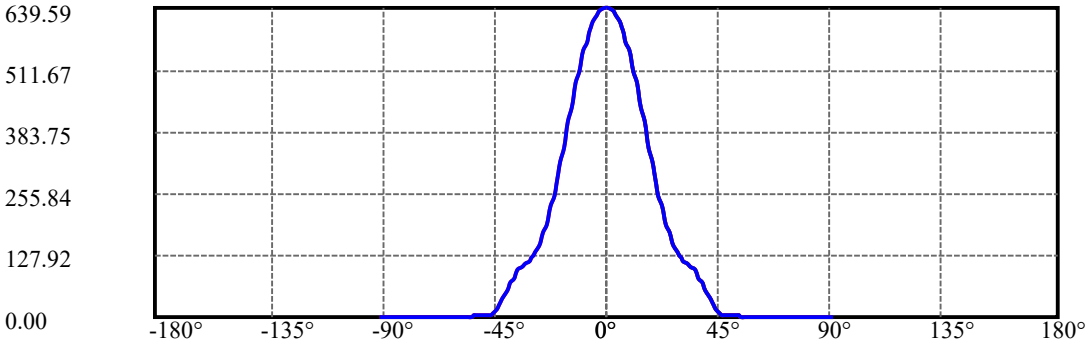
Zone	Lumens	%Lamp	%Fixt
0-30	248.36	62.88%	76.62%
0-40	305.89	77.44%	94.37%
0-60	319.61	80.91%	98.60%
0-90	324.03	82.03%	99.96%
0-120	324.03	82.03%	99.96%
0-180	324.15	82.06%	100.00%
60-90	4.57	1.16%	1.41%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-31.65	259.32	65.65%	80.00%

ZONAL LUMEN SUMMARY

0-10	55.87
10-20	110.35
20-30	82.14
30-40	57.53
40-50	12.02
50-60	1.70
60-70	1.44
70-80	1.46
80-90	1.53
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:

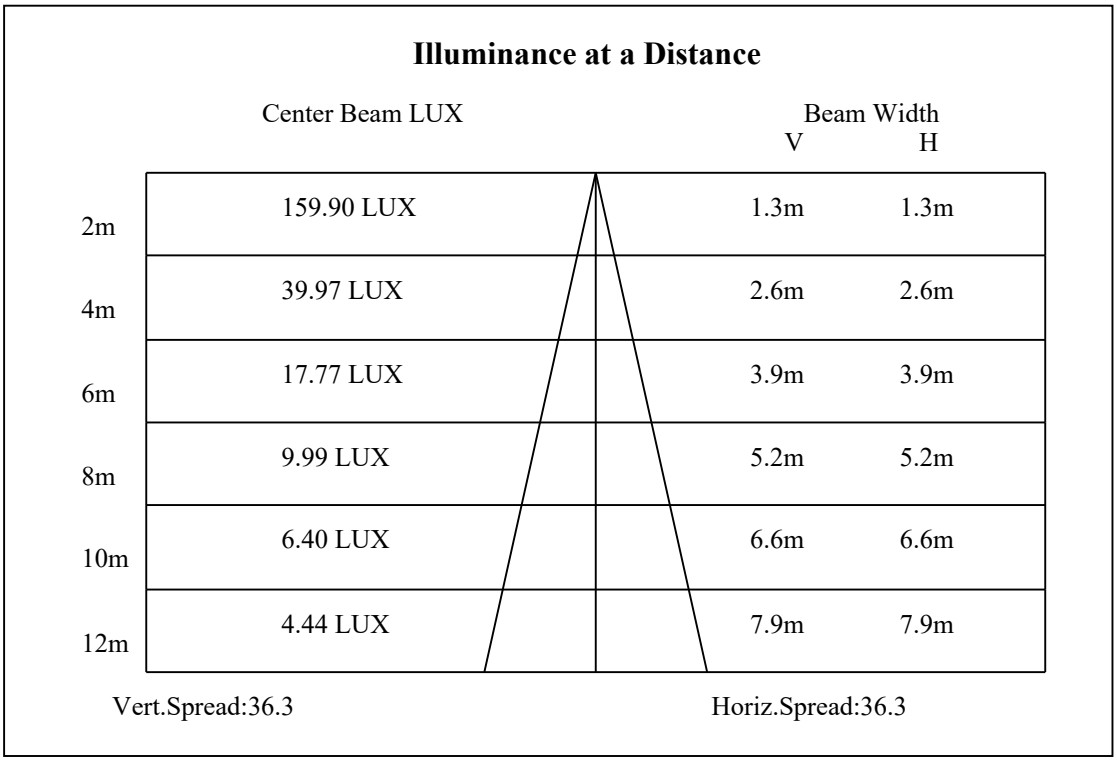
C90/C270:

Field angle(10%Imax):C0/180Left:38.7 Right:38.7
:C90/270Left:38.7 Right:38.7

Beam Angle(50%Imax):C0/180Left:18.1 Right:18.1
:C90/270Left:18.1 Right:18.1

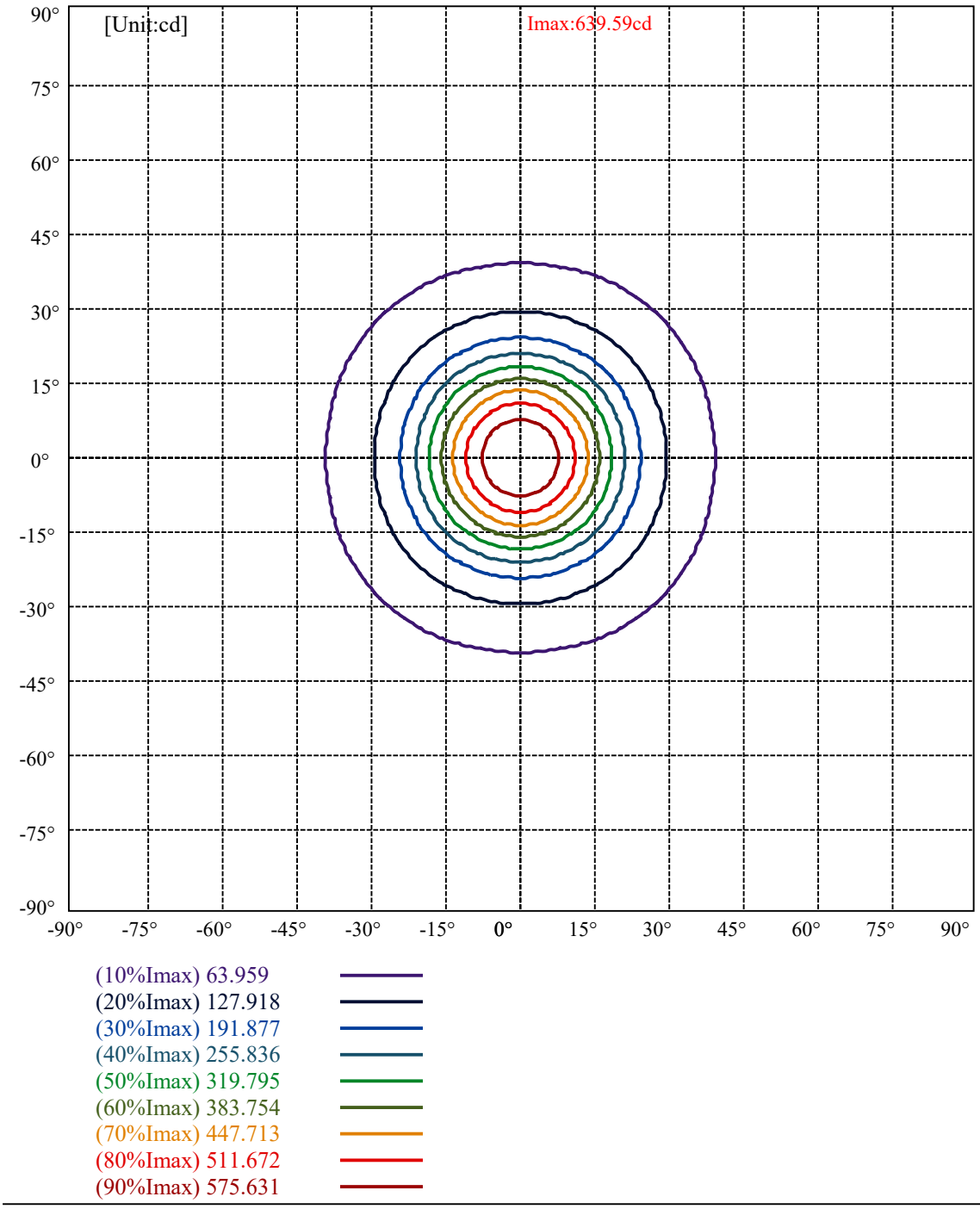
Equipment: GMS1980 Date: 2016-4-13 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 80.0% Distance(m): 7.42

Lux distance Curve



Equipment: GMS1980 Date: 2016-4-13 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 80.0% Distance(m): 7.42

ISO-Intensity(V-H)

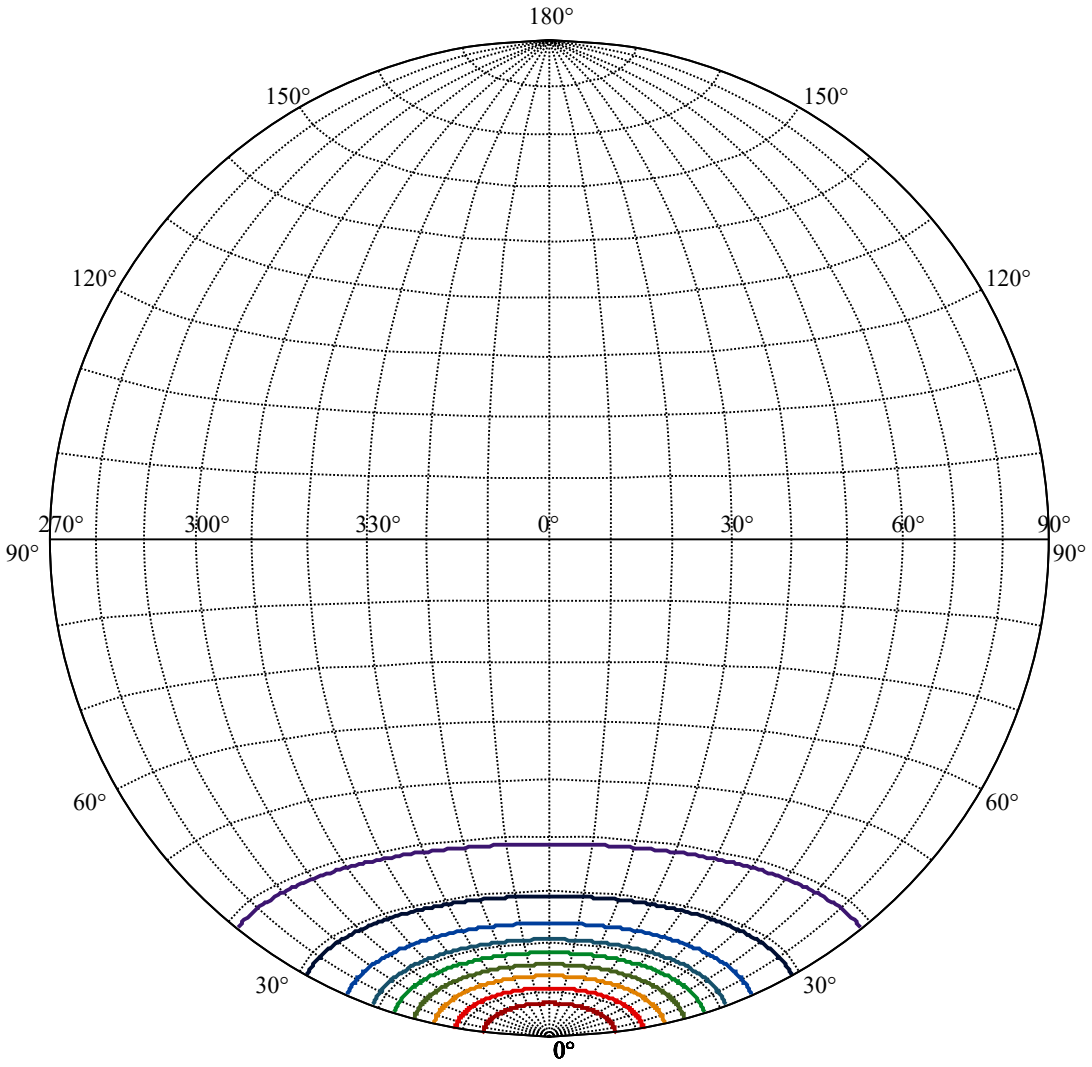


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2016-4-13
Humidity(%): 80.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:639.59

(10%Imax) 63.959
(20%Imax) 127.918
(30%Imax) 191.877
(40%Imax) 255.836
(50%Imax) 319.795
(60%Imax) 383.754
(70%Imax) 447.713
(80%Imax) 511.672
(90%Imax) 575.631

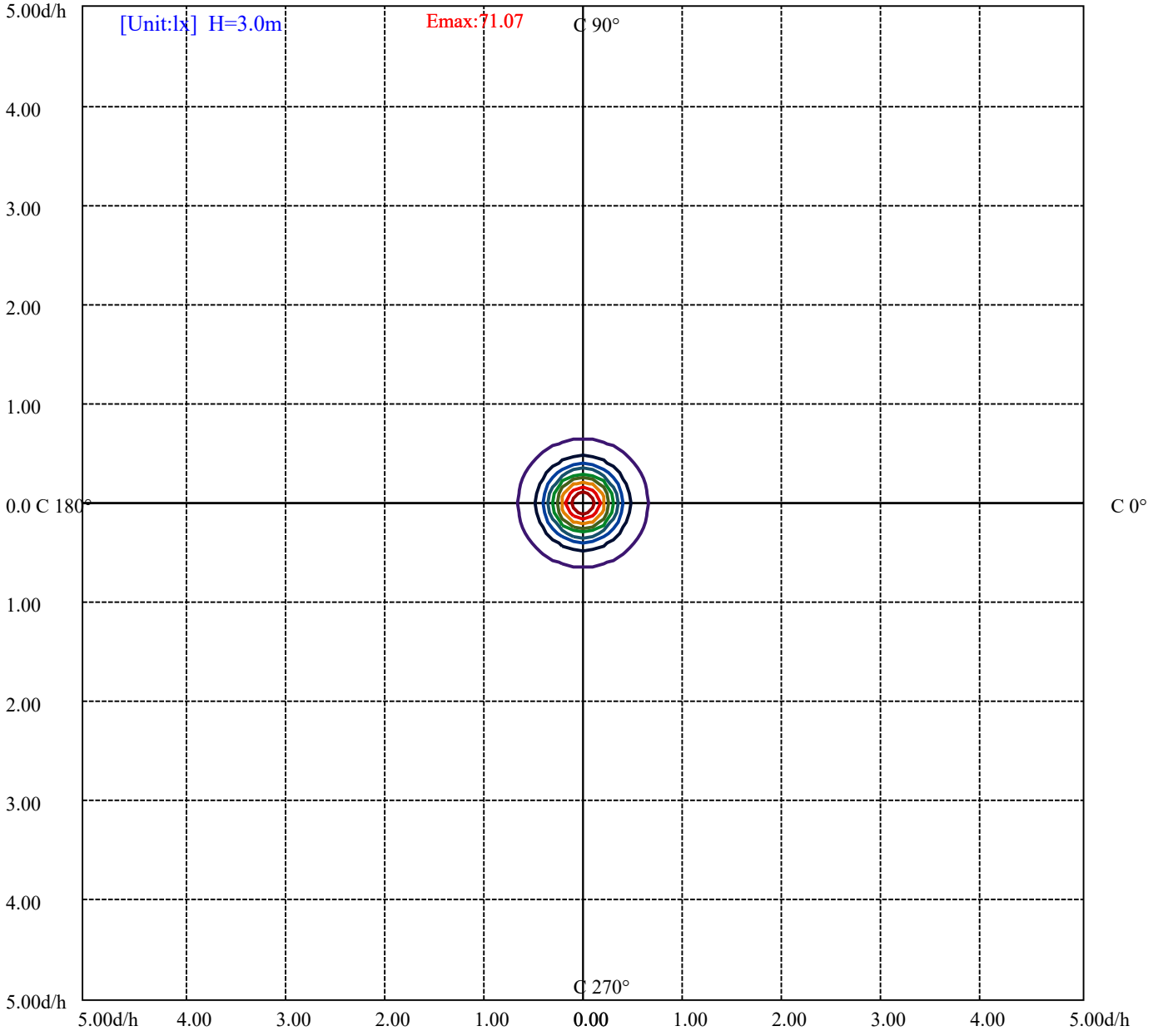
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2016-4-13
Humidity(%): 80.0%

Operator: NT07
Distance(m): 7.42

Nata 1535-E

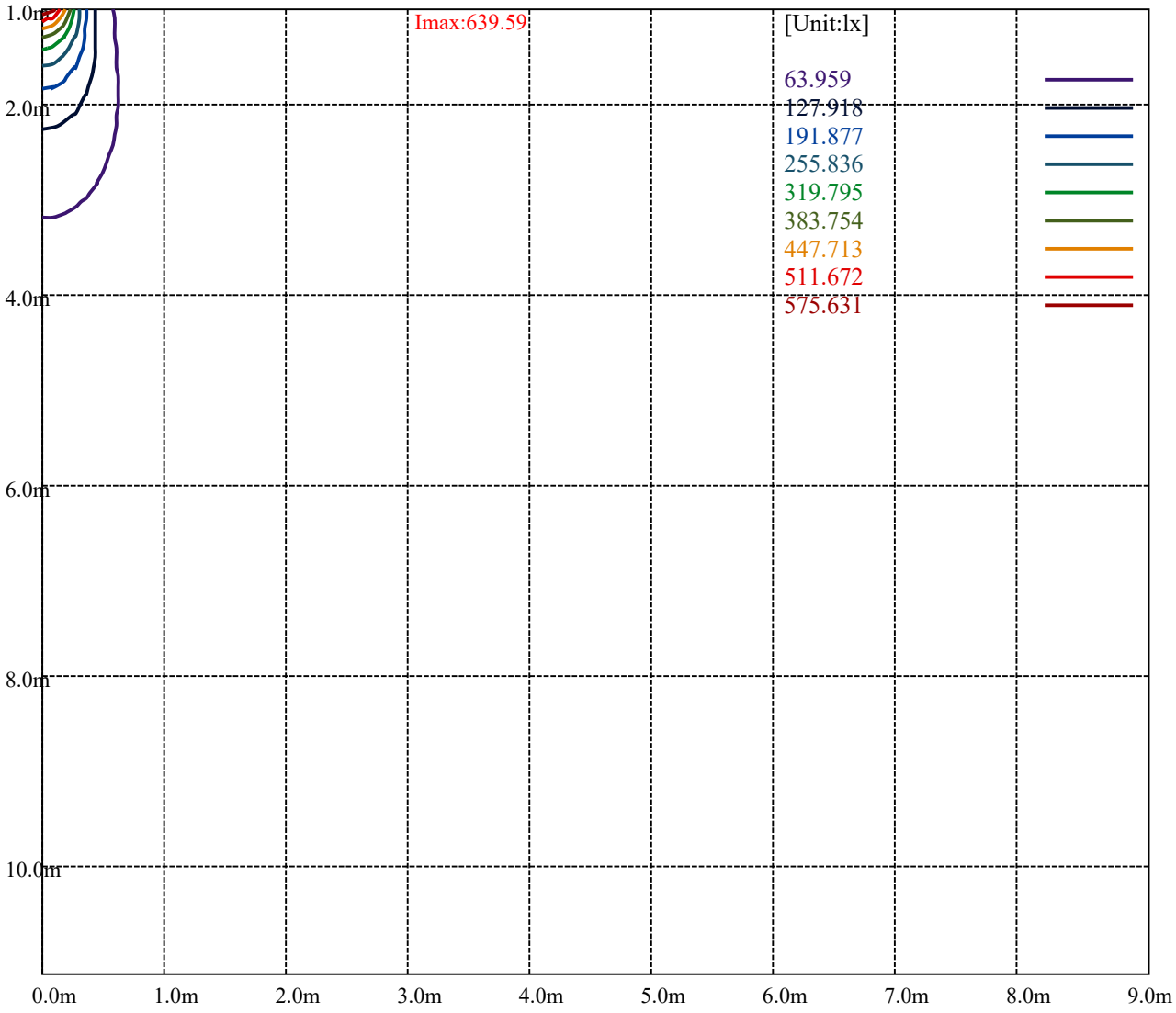
ISO illuminance diagram



(10%Emax) 7.106555
(20%Emax) 14.21311
(30%Emax) 21.31967
(40%Emax) 28.42622
(50%Emax) 35.53278
(60%Emax) 42.63933
(70%Emax) 49.74589
(80%Emax) 56.85244
(90%Emax) 63.959

Equipment: GMS1980 Date: 2016-4-13 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 80.0% Distance(m): 7.42

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2016-4-13
Humidity(%): 80.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

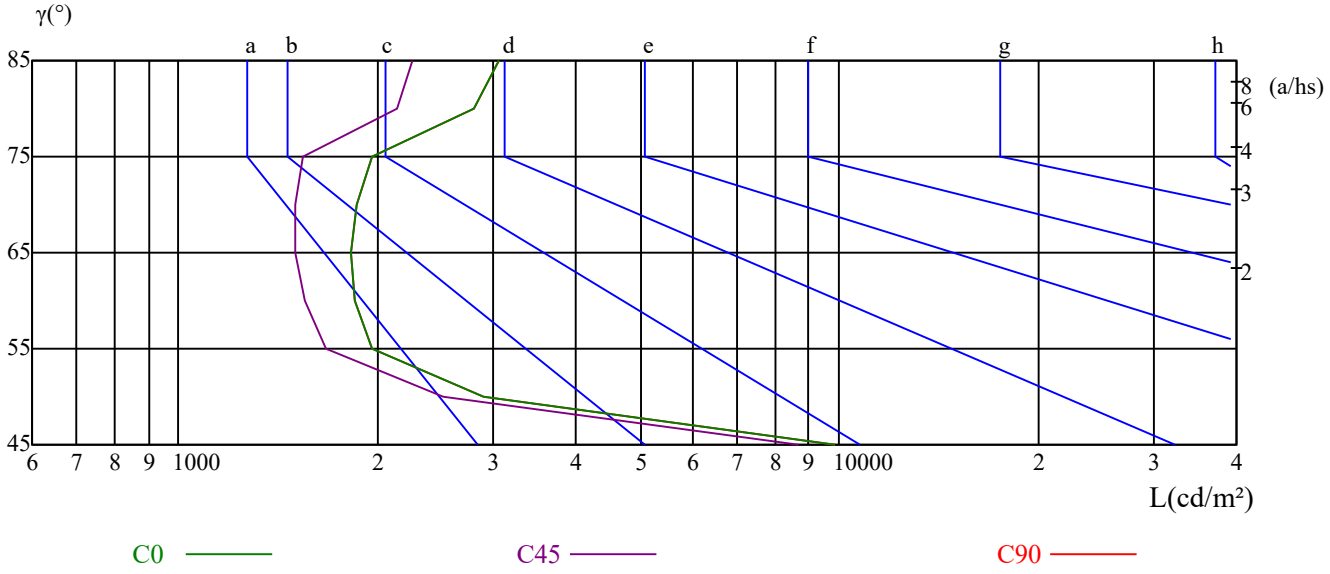
γ	45	50	55	60	65	70	75	80	85
C0	9862	2900	1960	1852	1825	1865	1959	2801	3057
C45	8666	2511	1672	1554	1503	1504	1543	2145	2260
C90	9862	2900	1960	1852	1825	1865	1959	2801	3057

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3782	3782	3782	5613	5613	5613	20530	20530	20530

Glare Table

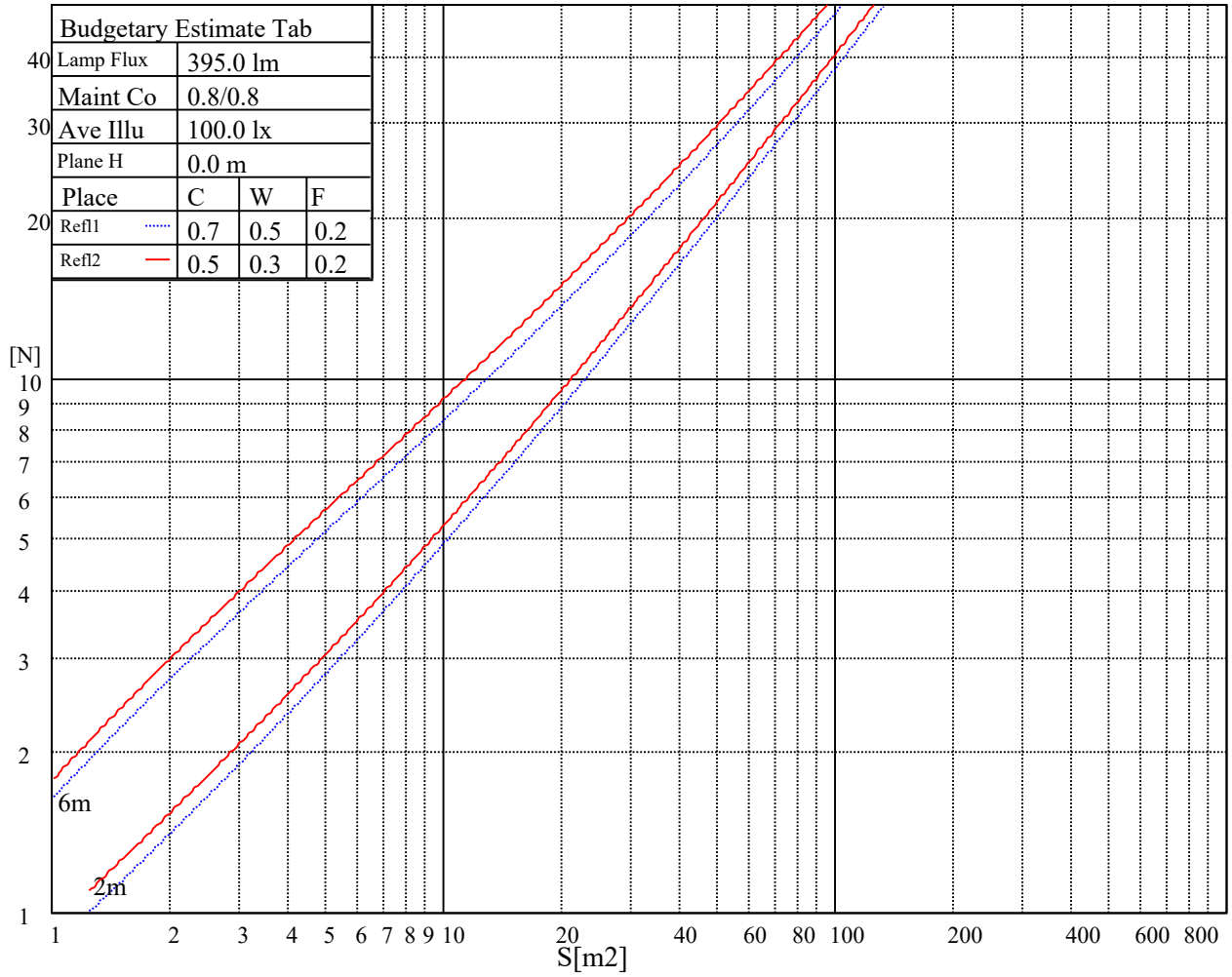
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limitting Curve



Equipment: GMS1980 Date: 2016-4-13 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 80.0% Distance(m): 7.42

Budgetary Estimate Table



Equipment: GMS1980 Date: 2016-4-13 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 80.0% 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	0.98	0.98	0.98	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.82
1	0.91	0.89	0.87	0.89	0.88	0.86	0.86	0.85	0.83	0.83	0.82	0.81	0.80	0.79	0.79	0.77
2	0.85	0.82	0.80	0.84	0.81	0.79	0.81	0.79	0.77	0.79	0.77	0.75	0.77	0.75	0.74	0.72
3	0.80	0.76	0.73	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.72	0.70	0.73	0.71	0.69	0.68
4	0.76	0.71	0.68	0.75	0.71	0.68	0.73	0.70	0.67	0.71	0.68	0.66	0.70	0.67	0.65	0.64
5	0.71	0.67	0.64	0.71	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61
6	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.57
7	0.64	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.55	0.54
8	0.61	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.53	0.52
9	0.58	0.54	0.51	0.58	0.54	0.51	0.57	0.53	0.50	0.56	0.53	0.50	0.56	0.52	0.50	0.49
10	0.56	0.51	0.48	0.55	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.48	0.53	0.50	0.48	0.47

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	638.87	638.16	635.41	630.89	622.91	612.56	601.11	587.67	567.63
45.0	641.13	640.47	638.27	633.81	625.39	616.47	605.18	590.15	572.86
90.0	639.48	638.38	635.08	629.79	622.74	609.69	599.56	586.24	567.03
135.0	638.87	638.82	636.34	631.99	625.17	617.18	606.12	592.74	579.19
180.0	638.87	637.11	634.08	628.74	621.86	610.74	599.56	584.97	568.13
225.0	641.13	639.43	636.23	630.40	623.02	612.78	600.33	587.34	572.31
270.0	639.48	638.38	635.68	630.95	622.08	612.89	601.93	587.12	569.72
315.0	638.87	637.50	633.31	626.54	618.45	608.26	592.57	577.65	560.75
360.0	638.87	638.16	635.41	630.89	622.91	612.56	601.11	587.67	567.63

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	550.73	531.24	507.23	481.25	457.19	428.72	399.60	373.61	345.37
45.0	553.26	533.72	512.52	484.50	460.22	435.28	403.78	378.24	352.86
90.0	549.35	529.86	504.04	482.07	458.67	431.20	406.26	377.58	348.56
135.0	563.61	541.37	521.55	500.35	474.92	448.32	423.60	395.14	369.65
180.0	550.78	529.20	508.67	484.00	454.99	433.46	408.41	376.48	350.82
225.0	548.25	531.40	509.99	481.30	457.46	432.96	404.50	375.54	350.16
270.0	552.77	530.96	509.77	484.17	457.08	432.03	403.23	374.11	348.89
315.0	539.61	515.99	493.42	466.71	441.99	413.86	384.84	359.13	334.25
360.0	550.73	531.24	507.23	481.25	457.19	428.72	399.60	373.61	345.37

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	321.20	297.91	270.22	249.68	232.78	208.17	191.76	176.51	161.15
45.0	324.67	297.86	275.28	250.89	230.47	211.53	189.83	173.98	161.92
90.0	323.35	298.96	270.22	248.69	228.65	207.67	188.51	173.21	157.63
135.0	337.72	313.22	289.82	264.22	239.99	220.06	199.08	180.42	166.11
180.0	325.27	297.69	271.70	249.96	227.05	208.17	188.68	171.34	157.74
225.0	322.74	298.79	273.30	249.35	228.98	209.99	188.35	173.10	159.66
270.0	324.45	295.21	272.91	251.94	229.97	209.38	194.40	174.86	160.71
315.0	304.96	282.33	261.02	238.67	217.80	197.98	182.02	166.55	152.40
360.0	321.20	297.91	270.22	249.68	232.78	208.17	191.76	176.51	161.15

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	147.55	137.97	129.82	123.66	117.88	113.97	110.00	104.77	97.23
45.0	144.91	135.27	127.95	121.23	115.89	112.26	107.97	103.34	95.41
90.0	146.06	135.49	127.29	121.34	116.11	111.71	108.41	103.51	97.01
135.0	152.18	141.55	132.80	124.76	119.64	115.12	110.61	106.97	103.29
180.0	146.17	134.89	127.79	121.51	115.51	111.43	107.30	103.51	98.22
225.0	146.56	136.71	129.93	123.44	118.32	113.69	110.00	105.54	98.06
270.0	146.73	136.32	129.38	123.33	117.66	113.86	110.06	104.94	97.73
315.0	141.27	133.18	124.21	119.86	115.62	111.32	107.19	101.08	92.22
360.0	147.55	137.97	129.82	123.66	117.88	113.97	110.00	104.77	97.23

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	88.97	78.62	67.55	57.31	45.92	36.72	27.42	18.72	12.61
45.0	88.20	80.00	69.43	59.08	50.49	40.08	29.90	21.97	14.76
90.0	90.07	81.21	73.11	63.09	51.42	43.27	34.30	24.33	16.68
135.0	96.46	88.81	80.99	71.19	62.27	51.37	40.30	31.11	22.35
180.0	91.72	84.29	75.92	65.13	55.83	45.86	34.80	24.83	16.79
225.0	90.79	82.25	71.74	61.06	52.14	40.63	32.48	22.90	14.81
270.0	90.02	80.27	70.14	59.30	49.77	40.52	29.95	22.30	15.31
315.0	79.78	72.67	62.82	51.37	40.74	31.99	22.96	15.31	10.02
360.0	88.97	78.62	67.55	57.31	45.92	36.72	27.42	18.72	12.61

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	8.31	4.84	3.36	2.92	2.81	2.70	2.59	2.48	2.31
45.0	9.30	5.67	3.74	3.19	3.03	2.86	2.70	2.53	2.15
90.0	10.52	6.17	3.91	3.41	3.30	3.14	2.97	2.75	2.09
135.0	13.27	7.76	4.96	2.97	2.81	2.64	2.48	2.31	1.98
180.0	9.36	5.95	3.47	2.81	2.64	2.53	2.37	2.15	1.93
225.0	9.36	5.56	3.25	2.97	2.92	2.75	2.59	2.42	1.87
270.0	9.25	5.29	3.30	2.75	2.70	2.53	2.37	2.26	1.98
315.0	5.95	3.74	2.59	2.48	2.37	2.26	2.15	2.04	1.76
360.0	8.31	4.84	3.36	2.92	2.81	2.70	2.59	2.48	2.31

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	1.82	1.76	1.71	1.71	1.65	1.65	1.60	1.54	1.49
45.0	1.82	1.76	1.71	1.65	1.60	1.60	1.54	1.54	1.49
90.0	1.76	1.71	1.65	1.65	1.60	1.60	1.54	1.54	1.43
135.0	1.82	1.76	1.71	1.65	1.65	1.60	1.54	1.54	1.49
180.0	1.87	1.82	1.76	1.71	1.65	1.60	1.60	1.54	1.54
225.0	1.82	1.76	1.71	1.71	1.65	1.60	1.60	1.54	1.54
270.0	1.71	1.65	1.60	1.60	1.54	1.54	1.54	1.49	1.49
315.0	1.65	1.65	1.60	1.60	1.54	1.54	1.49	1.49	1.49
360.0	1.82	1.76	1.71	1.71	1.65	1.65	1.60	1.54	1.49

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.54	1.49	1.49	1.43	1.43	1.43	1.43	1.38	1.38
45.0	1.49	1.49	1.49	1.43	1.43	1.38	1.38	1.38	1.38
90.0	1.49	1.43	1.43	1.43	1.38	1.38	1.32	1.38	1.32
135.0	1.54	1.49	1.43	1.43	1.43	1.38	1.38	1.38	1.32
180.0	1.54	1.49	1.49	1.43	1.43	1.38	1.38	1.38	1.38
225.0	1.54	1.49	1.43	1.43	1.43	1.43	1.43	1.38	1.38
270.0	1.43	1.43	1.38	1.43	1.38	1.38	1.32	1.32	1.32
315.0	1.43	1.38	1.38	1.38	1.38	1.38	1.38	1.32	1.32
360.0	1.54	1.49	1.49	1.43	1.43	1.43	1.43	1.38	1.38

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.38	1.38	1.38	1.38	1.43	1.49	1.71	2.09	2.53
45.0	1.32	1.32	1.32	1.32	1.32	1.38	1.43	1.60	1.82
90.0	1.32	1.32	1.32	1.27	1.27	1.27	1.27	1.27	1.27
135.0	1.32	1.32	1.27	1.27	1.27	1.27	1.21	1.21	1.21
180.0	1.32	1.32	1.32	1.32	1.27	1.32	1.38	1.43	1.65
225.0	1.32	1.38	1.38	1.32	1.32	1.38	1.43	1.65	1.82
270.0	1.32	1.32	1.32	1.27	1.27	1.27	1.32	1.32	1.43
315.0	1.32	1.32	1.32	1.32	1.32	1.38	1.54	1.60	1.71
360.0	1.38	1.38	1.38	1.38	1.43	1.49	1.71	2.09	2.53

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.08	3.41	3.52	3.25	2.86	1.93	1.16	1.16	1.10
45.0	1.98	2.04	1.98	1.82	1.60	1.32	1.16	1.16	1.16
90.0	1.21	1.21	1.21	1.21	1.21	1.16	1.16	1.10	1.10
135.0	1.21	1.21	1.27	1.32	1.38	1.38	1.10	1.10	1.16
180.0	1.93	2.15	2.20	2.04	1.71	1.32	1.10	1.10	1.10
225.0	1.93	1.93	1.93	1.65	1.43	1.27	1.16	1.16	1.16
270.0	1.32	1.27	1.21	1.21	1.21	1.21	1.16	1.10	1.16
315.0	1.82	1.93	1.87	1.71	1.49	1.38	1.10	1.10	1.10
360.0	3.08	3.41	3.52	3.25	2.86	1.93	1.16	1.16	1.10

Intensity data(cd)

C/γ(°)	90.0
0.0	1.10
45.0	1.10
90.0	1.10
135.0	1.10
180.0	1.10
225.0	1.10
270.0	1.10
315.0	1.10
360.0	1.10