NATA LIGHTING CO.,LTD
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Address:380JinOu Road,Gaoxin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 1497-E
Luminaire: 92.70.051.00
Report No: NT2016041306
Test No: GC2016041306
LampCAT: Bridgelux V8
Lamp flux(lm): 520.0
Number of Lamps: 1
Length(mm): 46
Phm Type: C

Voltage(V): 17.5000
Current(A): 0.3000
Power (W): 5.2500
PF: 0.0000
Ballast type: DC
Width(mm): 46
Height(mm): 0

Photometric Results

Lumens(lm): 468.31
Efficiency(%): 90.06%
Lumens(lm)/Power(W): 89.20
Central intensity(cd): 563.957
Maximum intensity(cd): 563.957
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=56.5
[C90/270]Total=56.5
Field angle(10%Imax): [C0/180]Total=83.5
[C90/270]Total=83.5
Maximum s/h(1/2): C0_180=0.86 C90_270=0.86
Maximum s/h(1/4): C0_180=0.87 C90_270=0.87
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.06%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.873%

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2016-4-13
Humidity(%): 80.0%
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	563.956	0.000	0	.000%	.000%
1.0	563.585	0.540	0.54	.104%	.115%
2.0	562.731	1.617	2.156	.311%	.460%
3.0	561.403	2.689	4.845	.517%	1.034%
4.0	559.153	3.751	8.596	.721%	1.835%
5.0	556.077	4.798	13.393	.923%	2.860%
6.0	552.670	5.827	19.22	1.121%	4.104%
7.0	548.713	6.836	26.056	1.315%	5.564%
8.0	543.262	7.815	33.871	1.503%	7.233%
9.0	537.942	8.763	42.634	1.685%	9.104%
10.0	531.831	9.681	52.315	1.862%	11.171%
11.0	525.038	10.560	62.875	2.031%	13.426%
12.0	516.051	11.381	74.256	2.189%	15.856%
13.0	507.028	12.141	86.397	2.335%	18.449%
14.0	496.912	12.850	99.247	2.471%	21.193%
15.0	485.343	13.485	112.732	2.593%	24.072%
16.0	471.365	14.018	126.751	2.696%	27.066%
17.0	458.042	14.473	141.224	2.783%	30.156%
18.0	443.975	14.872	156.096	2.860%	33.332%
19.0	428.401	15.178	171.274	2.919%	36.573%
20.0	412.538	15.392	186.665	2.960%	39.859%
21.0	397.659	15.557	202.223	2.992%	43.181%
22.0	382.036	15.668	217.891	3.013%	46.527%
23.0	365.643	15.688	233.58	3.017%	49.877%
24.0	349.484	15.635	249.215	3.007%	53.216%
25.0	334.509	15.553	264.767	2.991%	56.537%
26.0	319.231	15.432	280.199	2.968%	59.832%
27.0	303.120	15.226	295.425	2.928%	63.083%
28.0	286.080	14.917	310.342	2.869%	66.268%
29.0	270.520	14.562	324.904	2.800%	69.378%
30.0	254.347	14.171	339.076	2.725%	72.404%
31.0	234.705	13.610	352.685	2.617%	75.310%
32.0	217.659	12.960	365.645	2.492%	78.078%
33.0	200.674	12.324	377.969	2.370%	80.709%
34.0	182.512	11.596	389.566	2.230%	83.185%
35.0	163.614	10.749	400.315	2.067%	85.481%
36.0	147.097	9.893	410.208	1.903%	87.593%
37.0	130.133	9.042	419.25	1.739%	89.524%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	113.554	8.134	427.384	1.564%	91.261%
39.0	97.051	7.189	434.572	1.382%	92.796%
40.0	82.488	6.262	440.834	1.204%	94.133%
41.0	67.981	5.358	446.192	1.030%	95.277%
42.0	52.930	4.393	450.585	.845%	96.215%
43.0	38.512	3.387	453.972	.651%	96.938%
44.0	26.881	2.468	456.44	.475%	97.465%
45.0	17.178	1.693	458.133	.326%	97.827%
46.0	10.302	1.075	459.208	.207%	98.056%
47.0	6.325	0.661	459.869	.127%	98.198%
48.0	4.769	0.448	460.318	.086%	98.293%
49.0	3.909	0.356	460.674	.069%	98.369%
50.0	3.365	0.303	460.978	.058%	98.434%
51.0	2.918	0.266	461.243	.051%	98.491%
52.0	2.643	0.239	461.482	.046%	98.542%
53.0	2.443	0.221	461.703	.043%	98.589%
54.0	2.285	0.208	461.912	.040%	98.634%
55.0	2.175	0.199	462.111	.038%	98.676%
56.0	2.099	0.193	462.304	.037%	98.717%
57.0	2.016	0.188	462.492	.036%	98.758%
58.0	1.948	0.183	462.675	.035%	98.797%
59.0	1.899	0.180	462.855	.035%	98.835%
60.0	1.838	0.177	463.032	.034%	98.873%
61.0	1.817	0.174	463.206	.034%	98.910%
62.0	1.776	0.173	463.379	.033%	98.947%
63.0	1.755	0.172	463.551	.033%	98.984%
64.0	1.727	0.171	463.722	.033%	99.020%
65.0	1.714	0.170	463.892	.033%	99.057%
66.0	1.700	0.170	464.062	.033%	99.093%
67.0	1.700	0.171	464.233	.033%	99.129%
68.0	1.686	0.172	464.405	.033%	99.166%
69.0	1.679	0.172	464.577	.033%	99.203%
70.0	1.665	0.172	464.748	.033%	99.239%
71.0	1.665	0.172	464.92	.033%	99.276%
72.0	1.665	0.173	465.094	.033%	99.313%
73.0	1.665	0.174	465.268	.033%	99.350%
74.0	1.652	0.174	465.442	.034%	99.388%
75.0	1.665	0.175	465.618	.034%	99.425%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.659	0.176	465.794	.034%	99.463%
77.0	1.652	0.176	465.97	.034%	99.500%
78.0	1.638	0.176	466.147	.034%	99.538%
79.0	1.645	0.176	466.323	.034%	99.576%
80.0	1.645	0.177	466.5	.034%	99.614%
81.0	1.645	0.178	466.678	.034%	99.652%
82.0	1.665	0.180	466.858	.035%	99.690%
83.0	1.686	0.182	467.04	.035%	99.729%
84.0	1.714	0.185	467.225	.036%	99.768%
85.0	1.700	0.186	467.411	.036%	99.808%
86.0	1.665	0.184	467.595	.035%	99.847%
87.0	1.624	0.180	467.775	.035%	99.886%
88.0	1.624	0.178	467.953	.034%	99.924%
89.0	1.631	0.178	468.132	.034%	99.962%
90.0	1.624	0.178	468.31	.034%	100.000%

Zonal flux distribution table

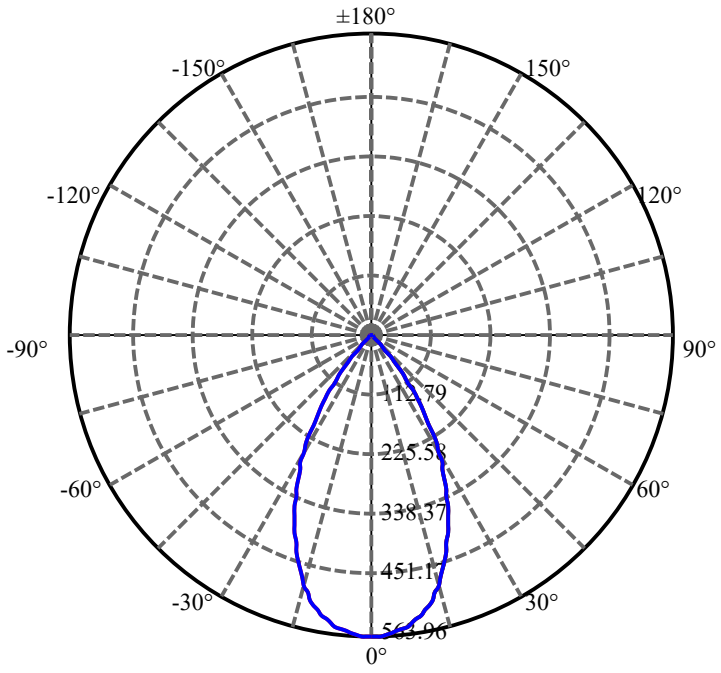
ZONAL LUMEN SUMMARY

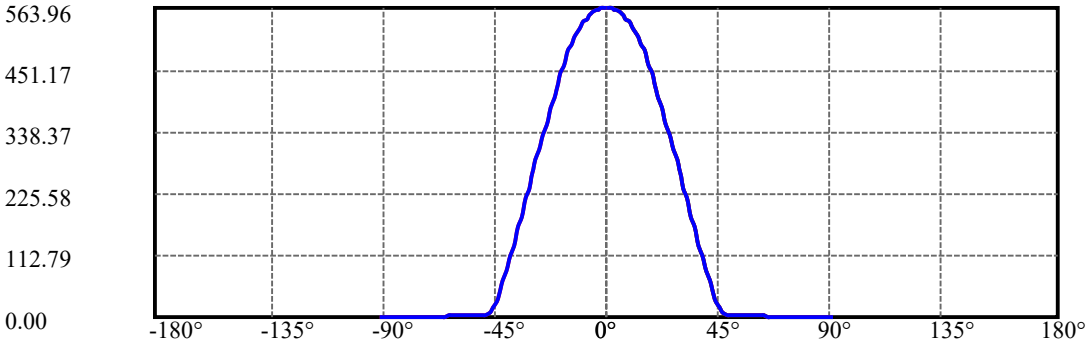
Zone	Lumens	%Lamp	%Fixt
0-30	339.08	65.21%	72.40%
0-40	440.83	84.78%	94.13%
0-60	463.03	89.04%	98.87%
0-90	468.13	90.03%	99.96%
0-120	468.13	90.03%	99.96%
0-180	468.31	90.06%	100.00%
60-90	5.28	1.01%	1.13%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-32.73	374.65	72.05%	80.00%

ZONAL LUMEN SUMMARY

0-10	52.31
10-20	134.35
20-30	152.41
30-40	101.76
40-50	20.14
50-60	2.05
60-70	1.72
70-80	1.75
80-90	1.63
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:

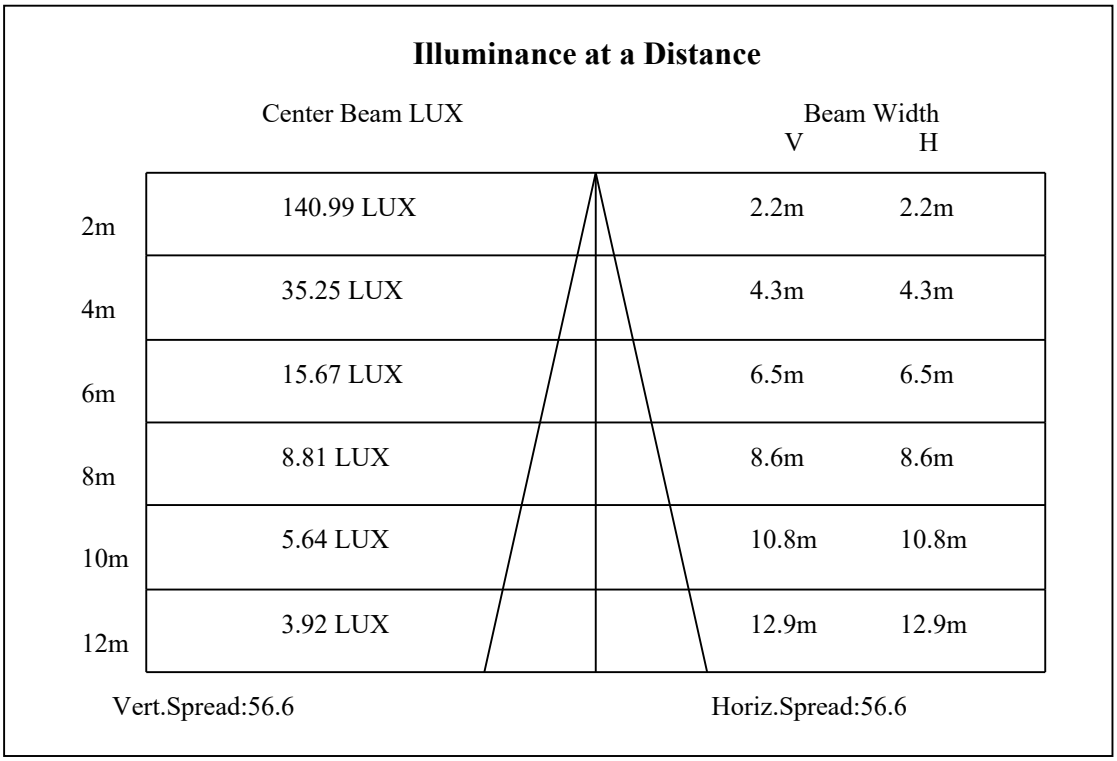
C90/C270:

Field angle(10%Imax):C0/180Left:41.8 Right:41.8
:C90/270Left:41.8 Right:41.8

Beam Angle(50%Imax):C0/180Left:28.3 Right:28.3
:C90/270Left:28.3 Right:28.3

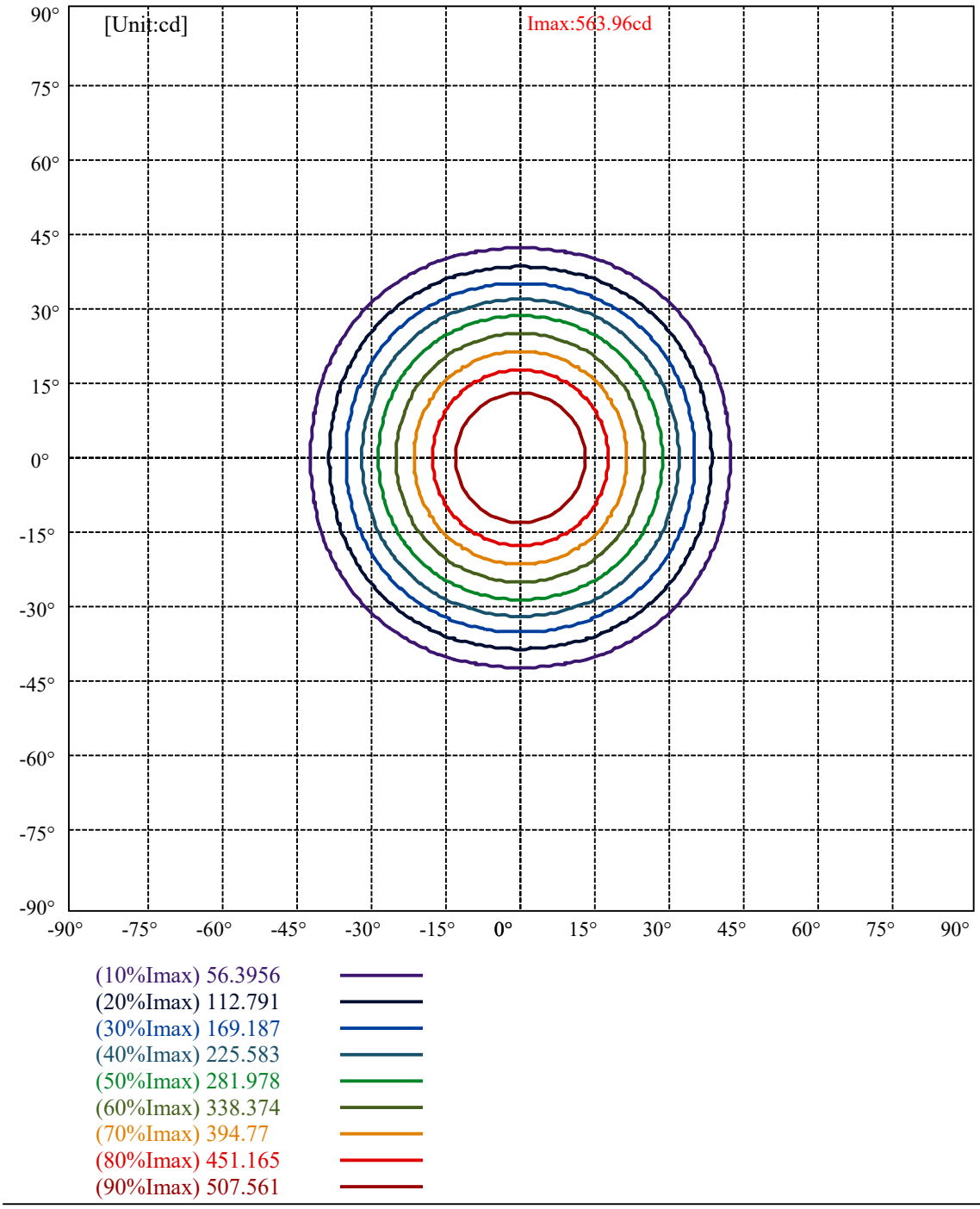
Equipment: GMS1980	Date: 2016-4-13	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 80.0%	Distance(m): 7.42

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)



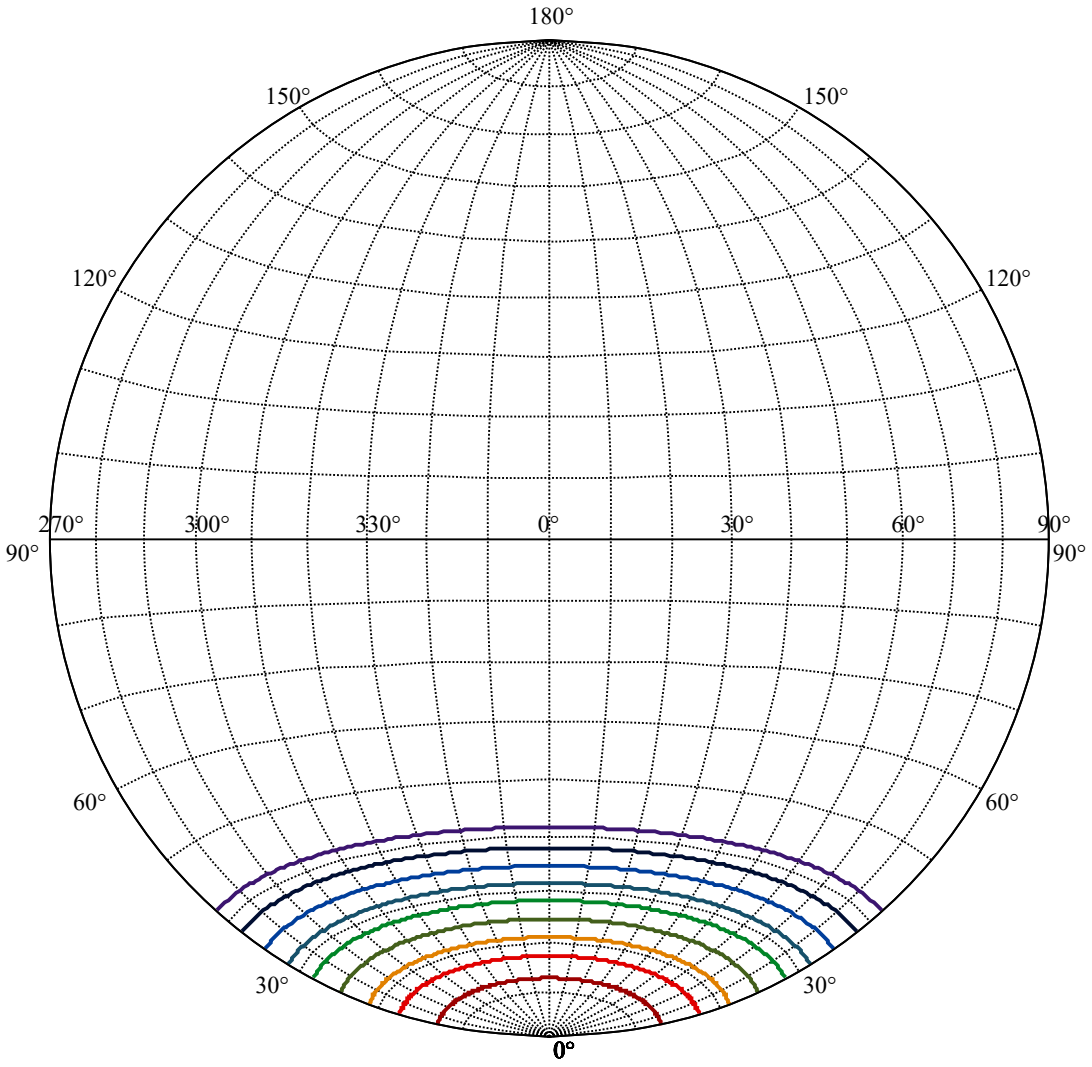
(10%Imax) 56.3956
(20%Imax) 112.791
(30%Imax) 169.187
(40%Imax) 225.583
(50%Imax) 281.978
(60%Imax) 338.374
(70%Imax) 394.77
(80%Imax) 451.165
(90%Imax) 507.561

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



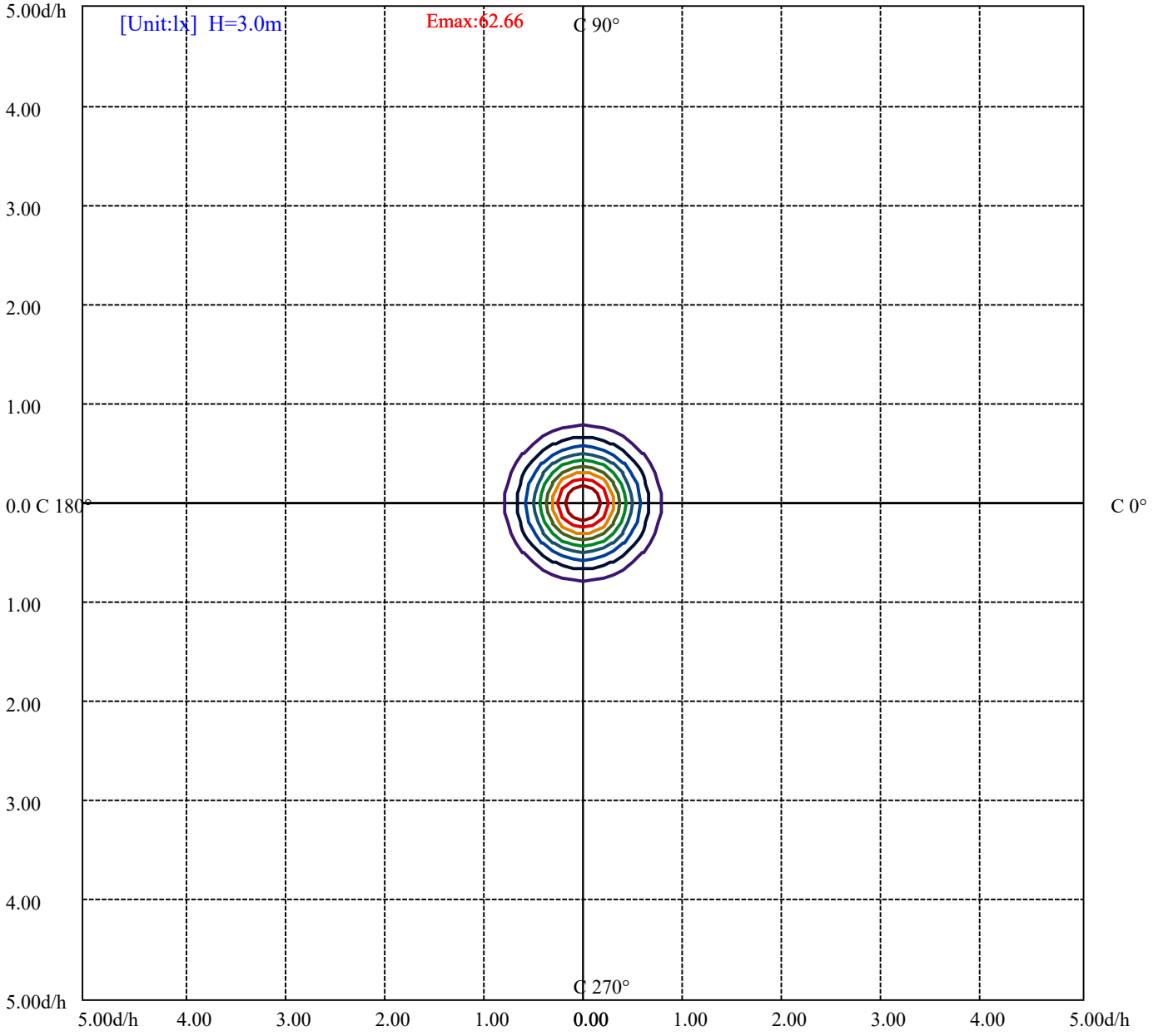
House [Unit:cd] Road

Imax:563.96

(10%Imax) 56.3956
(20%Imax) 112.791
(30%Imax) 169.187
(40%Imax) 225.583
(50%Imax) 281.978
(60%Imax) 338.374
(70%Imax) 394.77
(80%Imax) 451.165
(90%Imax) 507.561

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

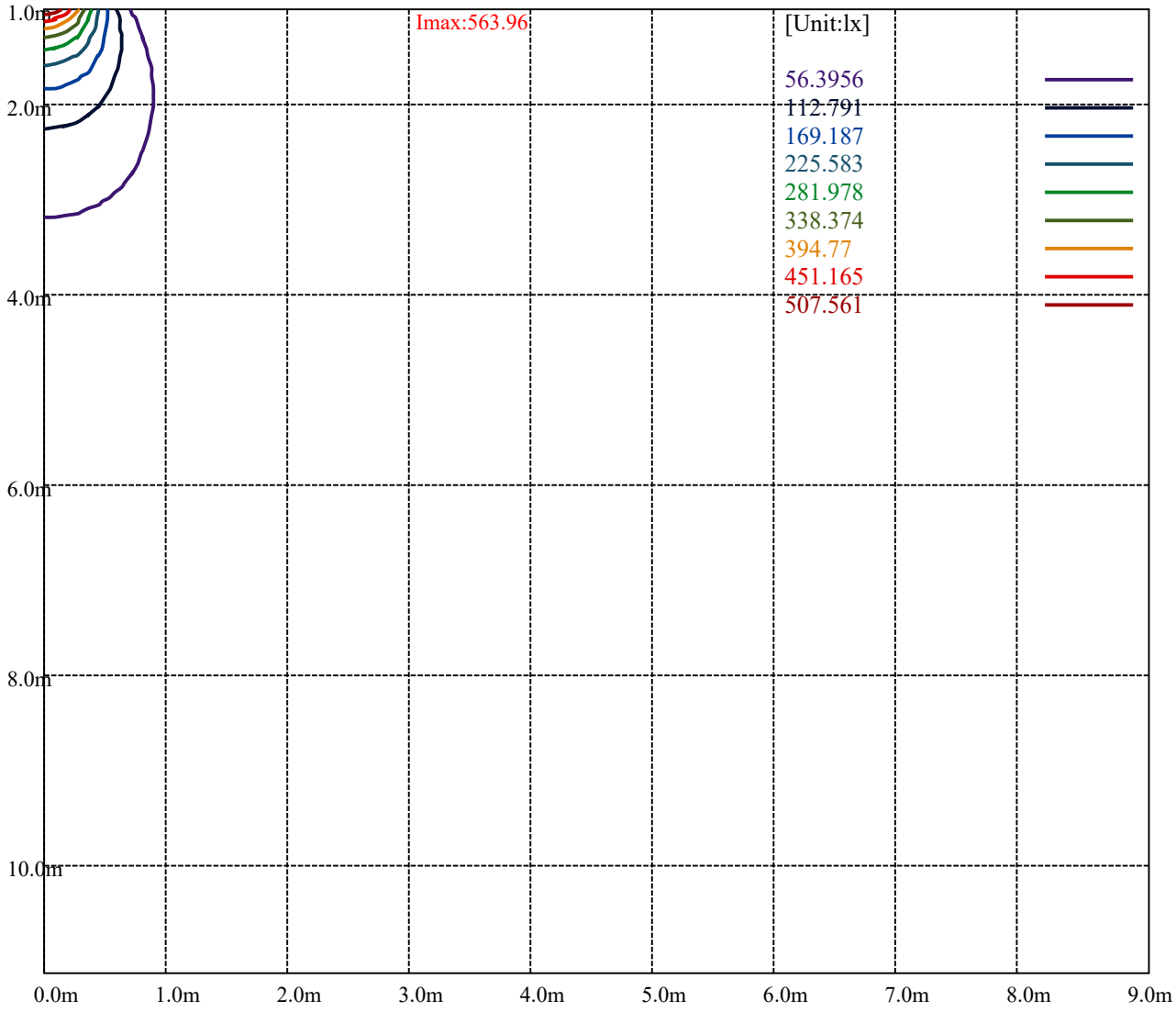
ISO illuminance diagram



(10%Emax) 6.266178
(20%Emax) 12.53233
(30%Emax) 18.79856
(40%Emax) 25.06478
(50%Emax) 31.33089
(60%Emax) 37.59711
(70%Emax) 43.86333
(80%Emax) 50.12944
(90%Emax) 56.39567

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

Nata 1497-E

Luminance Limitting Curve(no luminous side)

Luminance Table

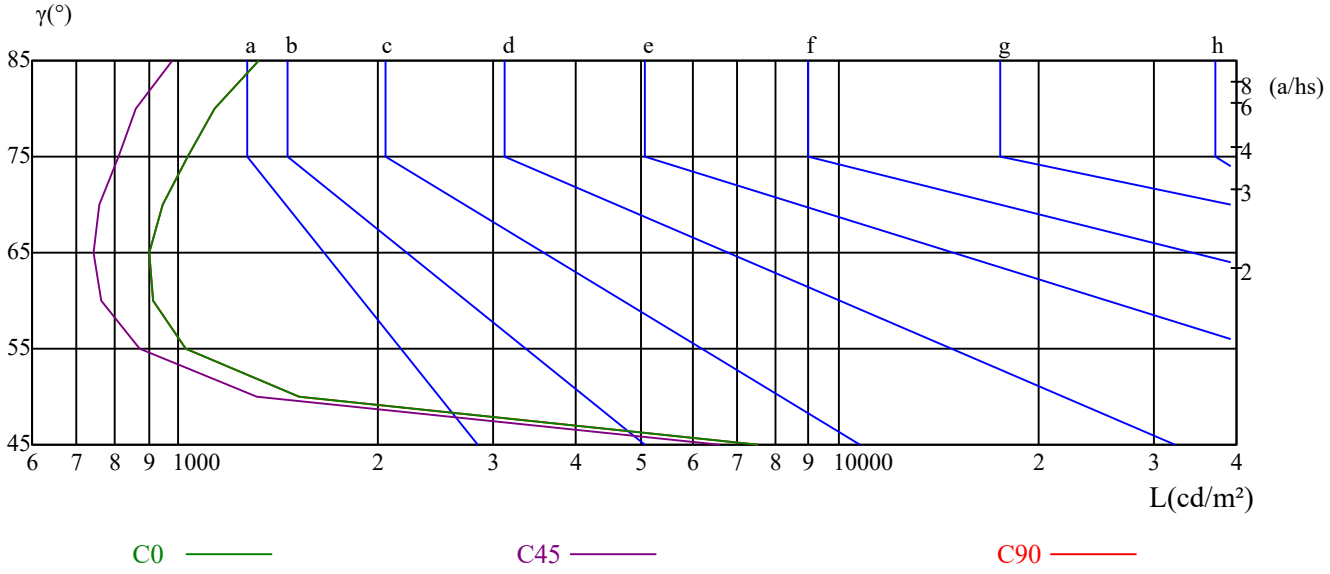
γ	45	50	55	60	65	70	75	80	85
C0	7544	1526	1027	912	904	946	1032	1131	1324
C45	6606	1317	872	762	742	760	810	863	977
C90	7544	1526	1027	912	904	946	1032	1131	1324

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1916	1916	1916	3041	3041	3041	9217	9217	9217

Glare Table

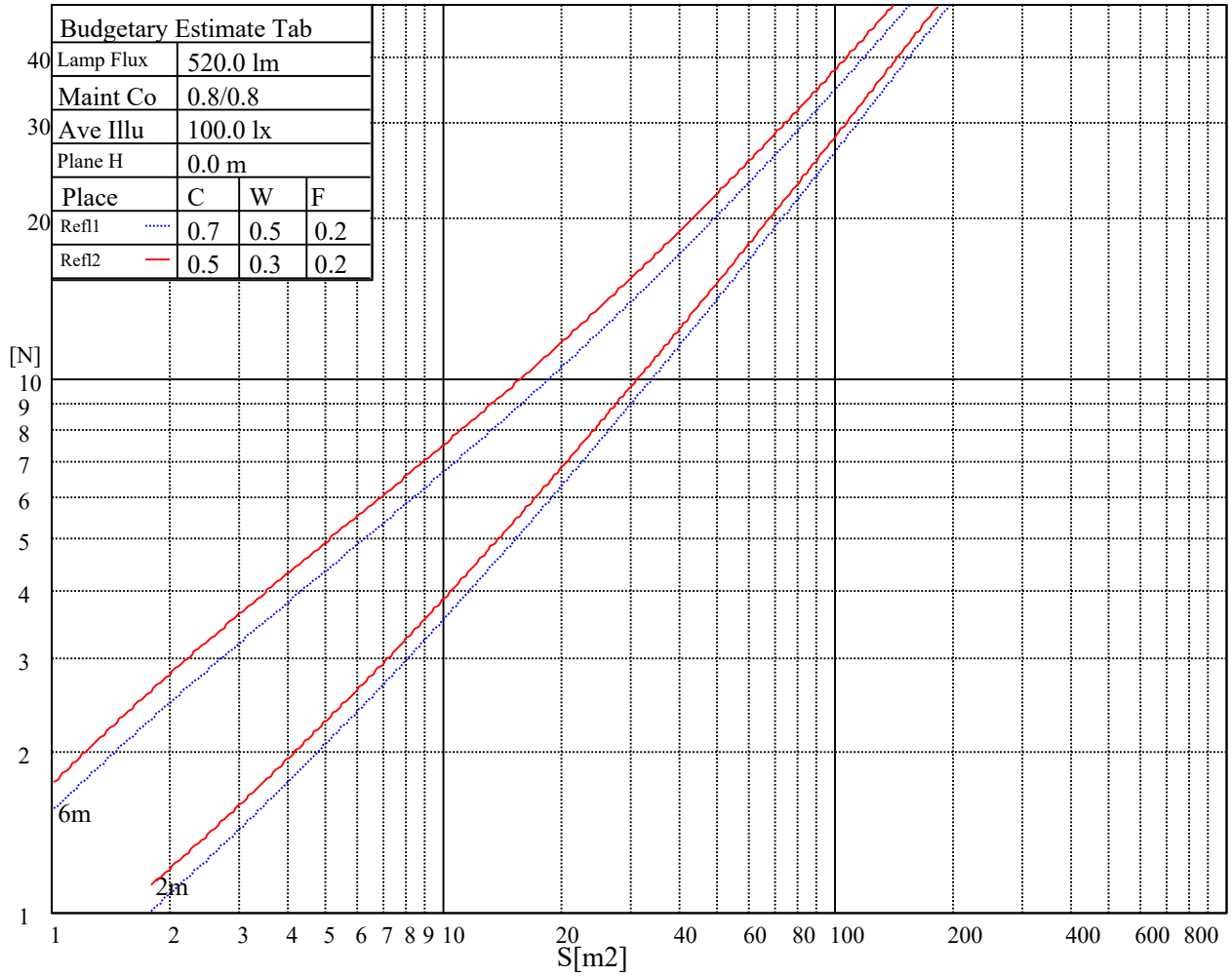
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	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	1.00	0.97	0.95	0.98	0.96	0.94	0.94	0.92	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.84
2	0.93	0.89	0.86	0.91	0.88	0.85	0.88	0.86	0.83	0.86	0.83	0.82	0.83	0.81	0.80	0.78
3	0.87	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.76	0.74	0.73
4	0.81	0.76	0.72	0.80	0.76	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.68
5	0.76	0.71	0.67	0.75	0.70	0.67	0.74	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.64
6	0.72	0.66	0.62	0.71	0.66	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.60
7	0.67	0.62	0.58	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.60	0.57	0.64	0.60	0.57	0.56
8	0.64	0.58	0.55	0.63	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.57	0.54	0.53
9	0.60	0.55	0.51	0.60	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.53	0.51	0.49
10	0.57	0.52	0.48	0.56	0.52	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.51	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	562.73	561.63	560.25	557.94	554.42	550.67	545.77	541.09	535.09
45.0	564.88	565.15	564.77	564.05	562.07	559.48	556.29	552.22	546.82
90.0	565.26	566.31	566.53	566.42	565.37	563.34	560.64	557.45	553.43
135.0	562.95	564.27	565.15	565.70	565.15	563.94	562.40	560.14	556.68
180.0	562.73	563.17	562.90	562.35	561.08	559.37	556.68	553.92	549.96
225.0	564.88	564.16	562.35	560.42	558.16	554.20	551.17	547.10	541.15
270.0	565.26	563.34	561.63	558.93	555.02	551.22	546.93	541.48	534.93
315.0	562.95	560.64	558.27	555.41	551.94	546.38	541.48	536.30	528.05
360.0	562.73	561.63	560.25	557.94	554.42	550.67	545.77	541.09	535.09

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	528.21	521.22	513.07	501.34	490.66	478.77	464.62	449.21	435.72
45.0	541.92	536.30	530.30	522.65	513.40	504.32	493.58	478.33	465.12
90.0	548.97	544.23	539.22	531.95	525.13	516.04	506.68	493.86	479.71
135.0	553.48	549.68	544.78	539.00	533.17	525.29	517.14	507.51	493.91
180.0	545.11	540.43	535.20	526.78	520.56	512.24	500.68	489.73	477.67
225.0	535.92	529.81	521.88	512.74	503.71	492.37	480.86	467.04	452.23
270.0	528.65	520.39	512.35	502.17	490.88	479.38	465.89	450.86	437.86
315.0	521.27	512.58	503.49	491.76	478.72	466.88	453.28	434.39	422.12
360.0	528.21	521.22	513.07	501.34	490.66	478.77	464.62	449.21	435.72

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	419.92	403.89	391.62	373.17	358.86	342.95	327.04	312.67	298.19
45.0	450.69	432.58	417.99	403.23	385.84	368.71	353.74	336.89	322.08
90.0	465.78	451.63	431.15	418.37	403.45	384.13	368.66	353.46	336.28
135.0	481.69	466.77	451.79	437.86	422.78	403.51	387.65	372.13	354.95
180.0	462.86	449.70	433.79	417.71	402.96	387.65	369.10	354.23	339.31
225.0	439.30	425.15	407.31	392.61	377.74	361.28	344.60	330.72	314.87
270.0	423.88	406.15	391.62	377.36	361.34	345.64	329.62	315.97	302.09
315.0	407.69	391.34	375.04	360.95	343.33	331.27	315.47	300.00	286.07
360.0	419.92	403.89	391.62	373.17	358.86	342.95	327.04	312.67	298.19

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	279.69	264.44	249.02	230.91	212.08	193.14	176.62	160.54	140.94
45.0	307.49	289.16	274.13	260.80	237.29	220.72	205.47	183.94	166.66
90.0	321.20	304.02	286.90	271.48	253.81	235.15	218.24	201.18	180.09
135.0	337.83	321.20	305.73	290.70	271.54	256.29	240.32	220.50	201.51
180.0	322.69	306.28	291.58	275.01	257.83	241.70	222.59	205.80	186.81
225.0	300.77	282.88	267.74	251.72	231.13	213.95	196.55	177.12	158.29
270.0	284.04	268.95	253.26	234.98	215.99	199.14	180.47	163.85	145.68
315.0	271.26	251.72	235.81	219.18	197.98	181.19	165.11	147.17	128.94
360.0	279.69	264.44	249.02	230.91	212.08	193.14	176.62	160.54	140.94

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	125.58	110.39	91.17	76.47	63.15	49.22	34.36	21.86	11.12
45.0	151.02	133.35	116.17	98.88	84.73	71.13	54.40	41.57	28.74
90.0	163.35	147.55	130.32	113.20	97.84	80.82	66.23	48.84	35.24
135.0	185.26	165.28	147.83	131.36	114.02	98.72	82.14	67.39	53.90
180.0	168.31	152.23	134.56	117.60	102.79	86.05	71.79	56.60	41.07
225.0	141.72	122.17	108.96	92.66	77.46	63.87	50.05	33.03	20.98
270.0	128.23	113.03	96.40	80.27	66.67	53.79	36.94	24.72	15.75
315.0	113.31	97.06	83.03	65.96	53.24	40.25	27.53	14.09	8.26
360.0	125.58	110.39	91.17	76.47	63.15	49.22	34.36	21.86	11.12

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	6.44	5.07	4.29	3.69	3.03	2.64	2.42	2.26	2.15
45.0	14.98	7.60	5.12	4.35	3.58	3.14	2.59	2.42	2.26
90.0	23.34	12.28	6.22	4.84	4.02	3.41	2.75	2.48	2.31
135.0	38.87	23.18	12.94	7.43	5.40	4.62	4.02	3.30	3.08
180.0	27.91	16.35	7.10	5.29	4.40	3.63	3.14	2.86	2.53
225.0	11.67	6.66	5.45	4.68	3.91	3.36	2.97	2.70	2.48
270.0	7.98	5.95	5.01	4.13	3.58	3.08	2.75	2.53	2.31
315.0	6.22	5.34	4.46	3.74	3.36	3.03	2.70	2.59	2.42
360.0	6.44	5.07	4.29	3.69	3.03	2.64	2.42	2.26	2.15

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	2.04	1.98	1.93	1.87	1.87	1.82	1.76	1.76	1.71
45.0	2.15	2.09	2.04	1.98	1.87	1.87	1.82	1.76	1.76
90.0	2.20	2.09	2.04	1.93	1.87	1.82	1.76	1.76	1.76
135.0	2.81	2.64	2.53	2.37	2.26	2.15	2.04	1.93	1.87
180.0	2.37	2.20	2.09	1.98	1.93	1.93	1.87	1.87	1.82
225.0	2.26	2.15	2.04	1.98	1.93	1.87	1.82	1.82	1.76
270.0	2.15	2.04	1.98	1.93	1.87	1.82	1.76	1.76	1.76
315.0	2.31	2.20	2.15	2.09	1.98	1.93	1.87	1.87	1.76
360.0	2.04	1.98	1.93	1.87	1.87	1.82	1.76	1.76	1.71

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.65	1.65
45.0	1.76	1.71	1.71	1.71	1.71	1.71	1.65	1.71	1.71
90.0	1.71	1.71	1.71	1.65	1.65	1.65	1.65	1.65	1.65
135.0	1.82	1.76	1.76	1.71	1.71	1.71	1.65	1.60	1.60
180.0	1.82	1.76	1.71	1.71	1.71	1.71	1.71	1.65	1.65
225.0	1.76	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71
270.0	1.71	1.71	1.71	1.71	1.71	1.65	1.71	1.71	1.71
315.0	1.76	1.76	1.71	1.71	1.71	1.65	1.65	1.65	1.65
360.0	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.65	1.65

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.60
45.0	1.71	1.71	1.71	1.71	1.65	1.65	1.65	1.65	1.65
90.0	1.65	1.65	1.60	1.65	1.65	1.65	1.65	1.65	1.65
135.0	1.65	1.65	1.65	1.65	1.65	1.65	1.60	1.65	1.65
180.0	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
225.0	1.65	1.65	1.65	1.71	1.65	1.65	1.65	1.65	1.65
270.0	1.71	1.71	1.65	1.65	1.71	1.65	1.65	1.65	1.71
315.0	1.65	1.65	1.65	1.65	1.65	1.65	1.60	1.60	1.60
360.0	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.60

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.65	1.65	1.65	1.65	1.65	1.60	1.60	1.60	1.60
45.0	1.65	1.65	1.65	1.65	1.65	1.65	1.60	1.65	1.65
90.0	1.60	1.65	1.65	1.65	1.60	1.60	1.60	1.60	1.60
135.0	1.60	1.65	1.60	1.65	1.65	1.60	1.60	1.60	1.60
180.0	1.65	1.65	1.71	1.71	1.71	1.65	1.65	1.65	1.65
225.0	1.65	1.71	1.71	1.76	1.82	1.65	1.60	1.65	1.65
270.0	1.71	1.65	1.76	1.82	1.87	1.93	1.76	1.65	1.65
315.0	1.65	1.71	1.76	1.82	1.65	1.65	1.60	1.60	1.65
360.0	1.65	1.65	1.65	1.65	1.65	1.60	1.60	1.60	1.60

Intensity data(cd)

C/γ(°)	90.0
0.0	1.60
45.0	1.65
90.0	1.65
135.0	1.60
180.0	1.65
225.0	1.60
270.0	1.65
315.0	1.60
360.0	1.60