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: LN01D02824DA-N
Luminaire: 92.70.307.00

Report No: 211113-B002	Voltage(V): 21.5000
Test No: 211113-C002	Current(A): 0.1200
LampCAT: CITIZEN CLU7B2 CLU7B2 LES3	Power (W): 2.5800
Lamp flux(lm): 268.6	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 111	Width(mm): 111
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 171.23
Efficiency(%): 63.74%
Lumens(lm)/Power(W): 66.37
Central intensity(cd): 632.679
Maximum intensity(cd): 632.679
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=23.7
[C90/270]Total=23.7
Field angle(10%Imax): [C0/180]Total=48.6
[C90/270]Total=48.6
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 63.74%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.280%

Equipment: GMS1980	Date: 2021/11/13	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	632.679	0.000	0	.000%	.000%
1.0	629.482	0.604	0.604	.225%	.353%
2.0	620.243	1.794	2.398	.668%	1.400%
3.0	605.035	2.930	5.328	1.091%	3.112%
4.0	585.474	3.985	9.313	1.483%	5.439%
5.0	559.982	4.928	14.241	1.834%	8.317%
6.0	528.910	5.722	19.963	2.130%	11.659%
7.0	496.106	6.362	26.325	2.368%	15.374%
8.0	461.143	6.851	33.176	2.550%	19.375%
9.0	422.767	7.164	40.34	2.667%	23.559%
10.0	384.002	7.301	47.641	2.718%	27.822%
11.0	347.299	7.307	54.948	2.720%	32.090%
12.0	311.694	7.204	62.152	2.682%	36.297%
13.0	275.887	6.973	69.125	2.596%	40.369%
14.0	242.716	6.638	75.763	2.471%	44.246%
15.0	213.759	6.267	82.03	2.333%	47.905%
16.0	187.236	5.876	87.905	2.187%	51.337%
17.0	162.640	5.449	93.354	2.028%	54.519%
18.0	141.405	5.013	98.367	1.866%	57.446%
19.0	124.338	4.623	102.99	1.721%	60.147%
20.0	108.414	4.260	107.25	1.586%	62.634%
21.0	94.395	3.894	111.145	1.450%	64.909%
22.0	83.535	3.576	114.72	1.331%	66.997%
23.0	74.011	3.306	118.026	1.231%	68.927%
24.0	65.168	3.043	121.069	1.133%	70.704%
25.0	58.274	2.807	123.876	1.045%	72.344%
26.0	52.351	2.611	126.487	.972%	73.869%
27.0	46.816	2.426	128.913	.903%	75.286%
28.0	42.103	2.251	131.164	.838%	76.600%
29.0	38.100	2.098	133.263	.781%	77.826%
30.0	34.500	1.960	135.223	.730%	78.970%
31.0	31.325	1.832	137.055	.682%	80.040%
32.0	28.584	1.716	138.771	.639%	81.043%
33.0	26.082	1.610	140.382	.599%	81.983%
34.0	23.939	1.514	141.895	.563%	82.867%
35.0	21.974	1.426	143.321	.531%	83.700%
36.0	20.174	1.342	144.663	.500%	84.484%
37.0	18.710	1.268	145.931	.472%	85.224%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	17.336	1.203	147.135	.448%	85.927%
39.0	15.999	1.138	148.272	.424%	86.591%
40.0	14.856	1.076	149.349	.401%	87.220%
41.0	13.885	1.023	150.372	.381%	87.818%
42.0	12.914	0.974	151.346	.362%	88.386%
43.0	12.048	0.925	152.27	.344%	88.926%
44.0	11.331	0.882	153.153	.328%	89.441%
45.0	10.614	0.843	153.996	.314%	89.934%
46.0	9.964	0.805	154.801	.300%	90.404%
47.0	9.404	0.770	155.571	.287%	90.854%
48.0	8.896	0.740	156.311	.275%	91.286%
49.0	8.358	0.709	157.019	.264%	91.700%
50.0	7.895	0.678	157.697	.252%	92.095%
51.0	7.447	0.649	158.346	.242%	92.474%
52.0	7.081	0.623	158.969	.232%	92.838%
53.0	6.715	0.600	159.57	.223%	93.189%
54.0	6.341	0.575	160.145	.214%	93.525%
55.0	6.020	0.552	160.697	.205%	93.847%
56.0	5.736	0.531	161.228	.198%	94.157%
57.0	5.423	0.510	161.738	.190%	94.455%
58.0	5.161	0.489	162.228	.182%	94.741%
59.0	4.907	0.471	162.698	.175%	95.016%
60.0	4.653	0.452	163.15	.168%	95.280%
61.0	4.414	0.433	163.583	.161%	95.533%
62.0	4.205	0.415	163.998	.155%	95.775%
63.0	4.003	0.399	164.397	.149%	96.008%
64.0	3.809	0.383	164.781	.143%	96.232%
65.0	3.608	0.367	165.148	.137%	96.447%
66.0	3.458	0.353	165.5	.131%	96.652%
67.0	3.286	0.339	165.839	.126%	96.851%
68.0	3.144	0.326	166.165	.121%	97.041%
69.0	2.988	0.313	166.478	.116%	97.223%
70.0	2.853	0.300	166.778	.112%	97.399%
71.0	2.711	0.288	167.066	.107%	97.567%
72.0	2.577	0.275	167.341	.102%	97.727%
73.0	2.465	0.264	167.604	.098%	97.881%
74.0	2.345	0.253	167.857	.094%	98.029%
75.0	2.263	0.243	168.101	.091%	98.171%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.308	0.243	168.343	.090%	98.313%
77.0	2.547	0.259	168.602	.096%	98.464%
78.0	2.831	0.288	168.89	.107%	98.632%
79.0	2.928	0.309	169.199	.115%	98.813%
80.0	2.853	0.312	169.511	.116%	98.995%
81.0	2.808	0.306	169.817	.114%	99.174%
82.0	2.532	0.290	170.107	.108%	99.343%
83.0	2.203	0.257	170.364	.096%	99.493%
84.0	1.882	0.223	170.587	.083%	99.623%
85.0	1.389	0.179	170.765	.066%	99.727%
86.0	0.904	0.125	170.891	.047%	99.800%
87.0	0.814	0.094	170.985	.035%	99.855%
88.0	0.762	0.086	171.071	.032%	99.906%
89.0	0.732	0.082	171.153	.030%	99.954%
90.0	0.717	0.079	171.232	.030%	100.000%

Zonal flux distribution table

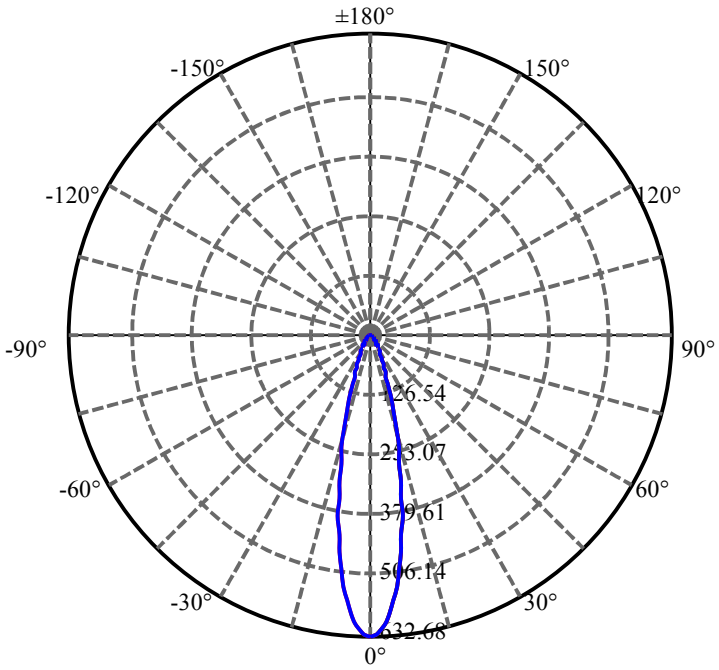
ZONAL LUMEN SUMMARY

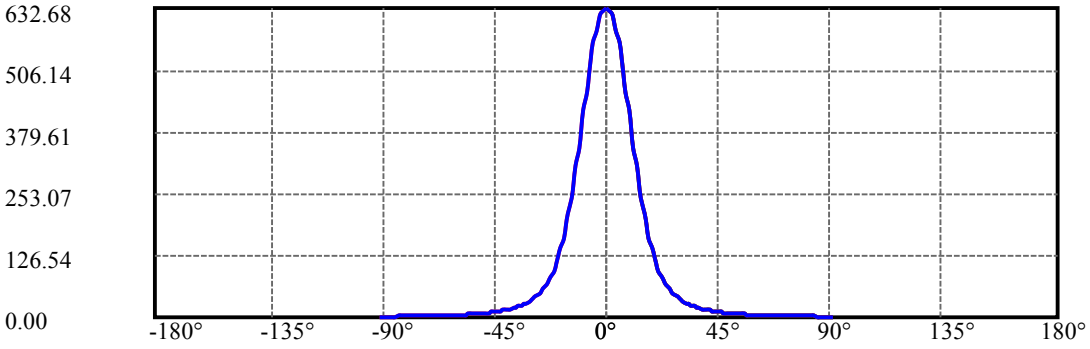
Zone	Lumens	%Lamp	%Fixt
0-30	135.22	50.34%	78.97%
0-40	149.35	55.59%	87.22%
0-60	163.15	60.73%	95.28%
0-90	171.15	63.71%	99.95%
0-120	171.15	63.71%	99.95%
0-180	171.23	63.74%	100.00%
60-90	8.45	3.15%	4.94%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-30.96	136.99	50.99%	80.00%

ZONAL LUMEN SUMMARY

0-10	47.64
10-20	59.61
20-30	27.97
30-40	14.13
40-50	8.35
50-60	5.45
60-70	3.63
70-80	2.73
80-90	1.64
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):

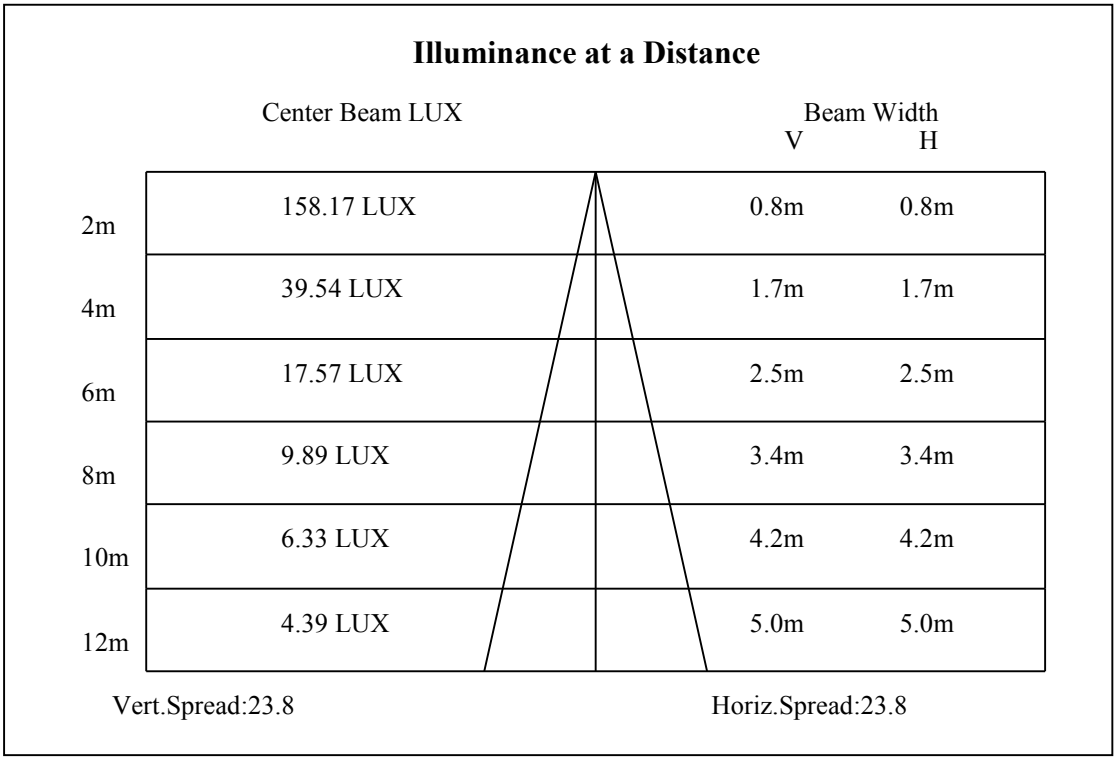
C0/C180:

C90/C270:

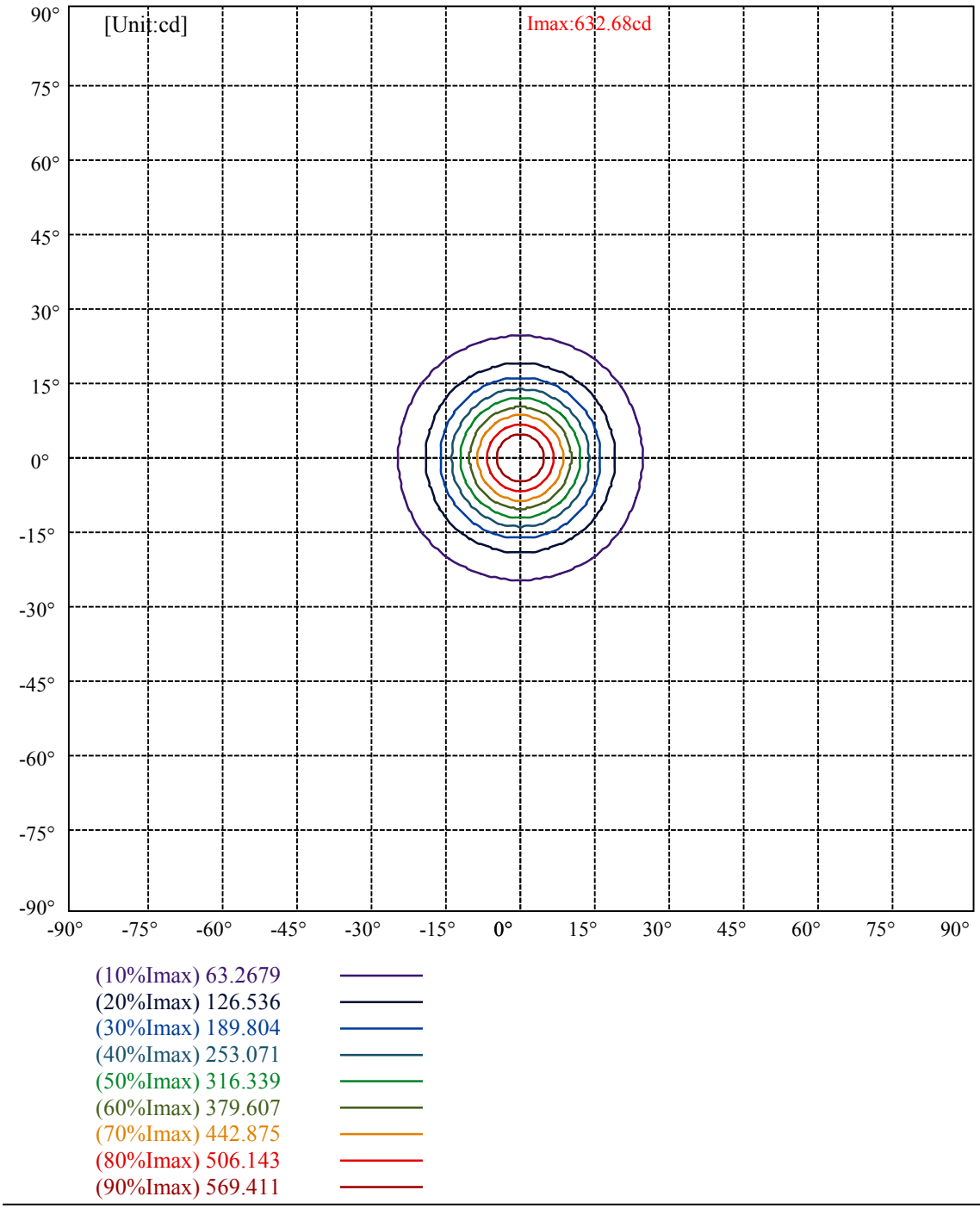
Field angle(10%Imax):C0/180Left:24.3 Right:24.3
:C90/270Left:24.3 Right:24.3

Beam Angle(50%Imax):C0/180Left:11.9 Right:11.9
:C90/270Left:11.9 Right:11.9

Lux distance Curve



ISO-Intensity(V-H)



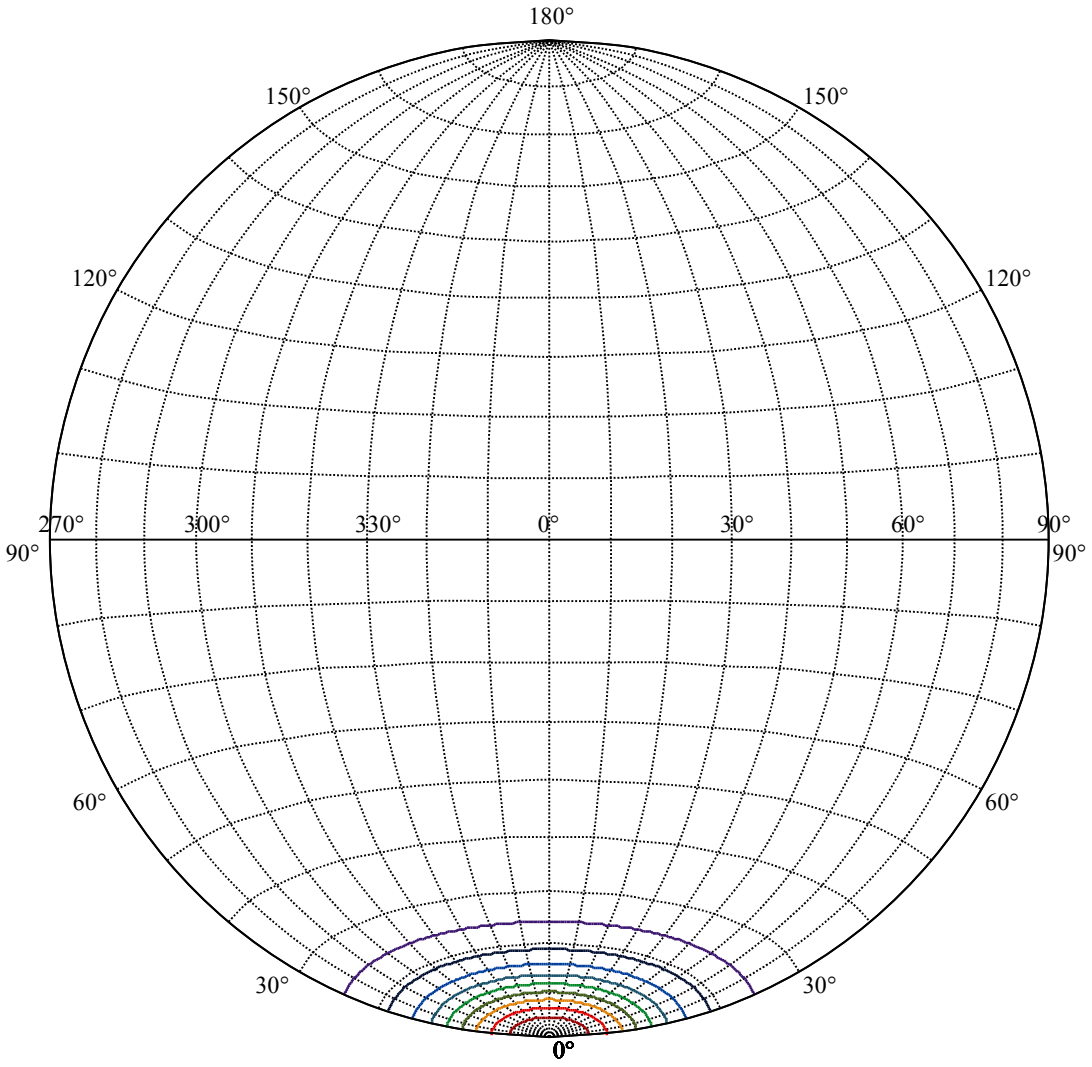
(10%Imax) 63.2679
(20%Imax) 126.536
(30%Imax) 189.804
(40%Imax) 253.071
(50%Imax) 316.339
(60%Imax) 379.607
(70%Imax) 442.875
(80%Imax) 506.143
(90%Imax) 569.411

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/13
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:632.68

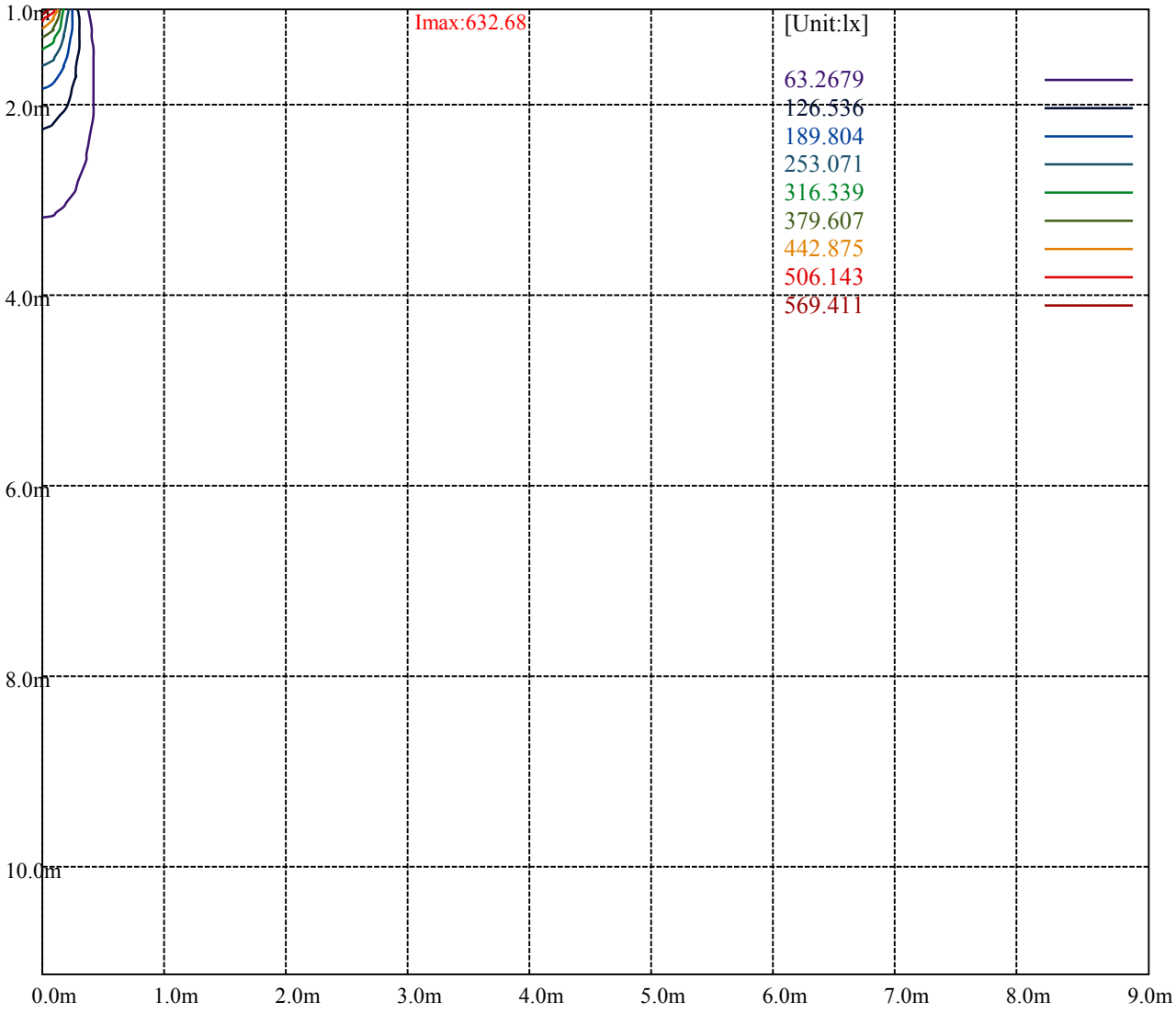
(10%Imax) 63.2679
(20%Imax) 126.536
(30%Imax) 189.804
(40%Imax) 253.071
(50%Imax) 316.339
(60%Imax) 379.607
(70%Imax) 442.875
(80%Imax) 506.143
(90%Imax) 569.411

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/13
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/13
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Nata LN01D02824DA-N

Luminance Limitting Curve(no luminous side)

Luminance Table

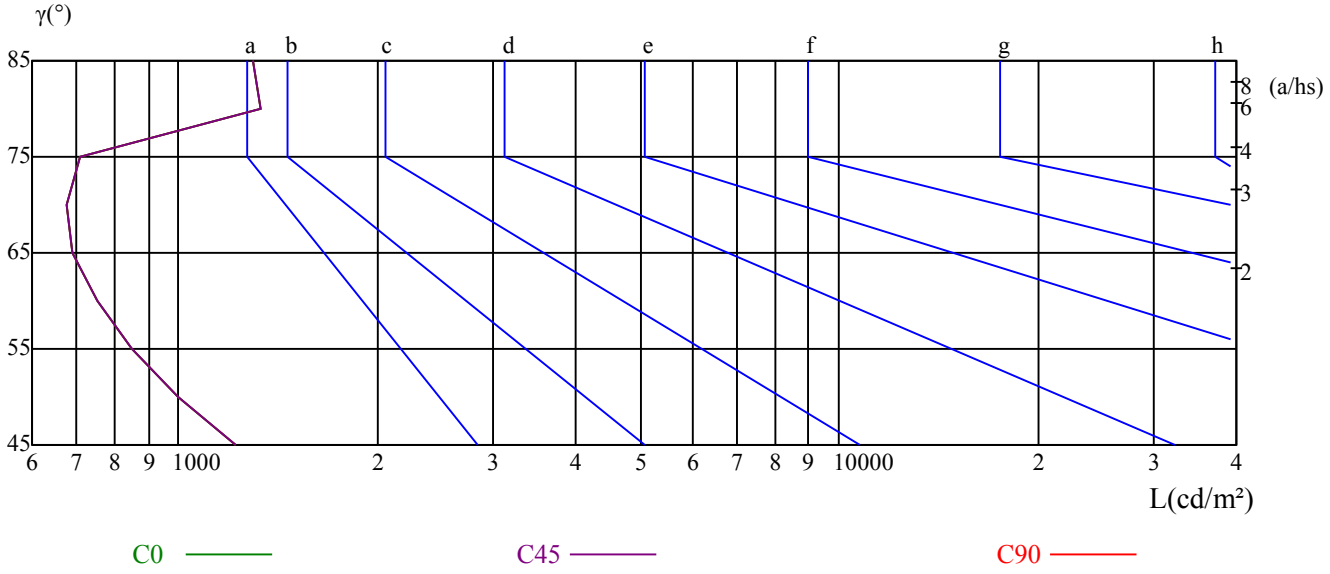
γ	45	50	55	60	65	70	75	80	85
C0	1218	997	852	755	693	677	710	1334	1294
C45	1218	997	852	755	693	677	710	1334	1294
C90	1218	997	852	755	693	677	710	1334	1294

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
693	693	693	710	710	710	1294	1294	1294

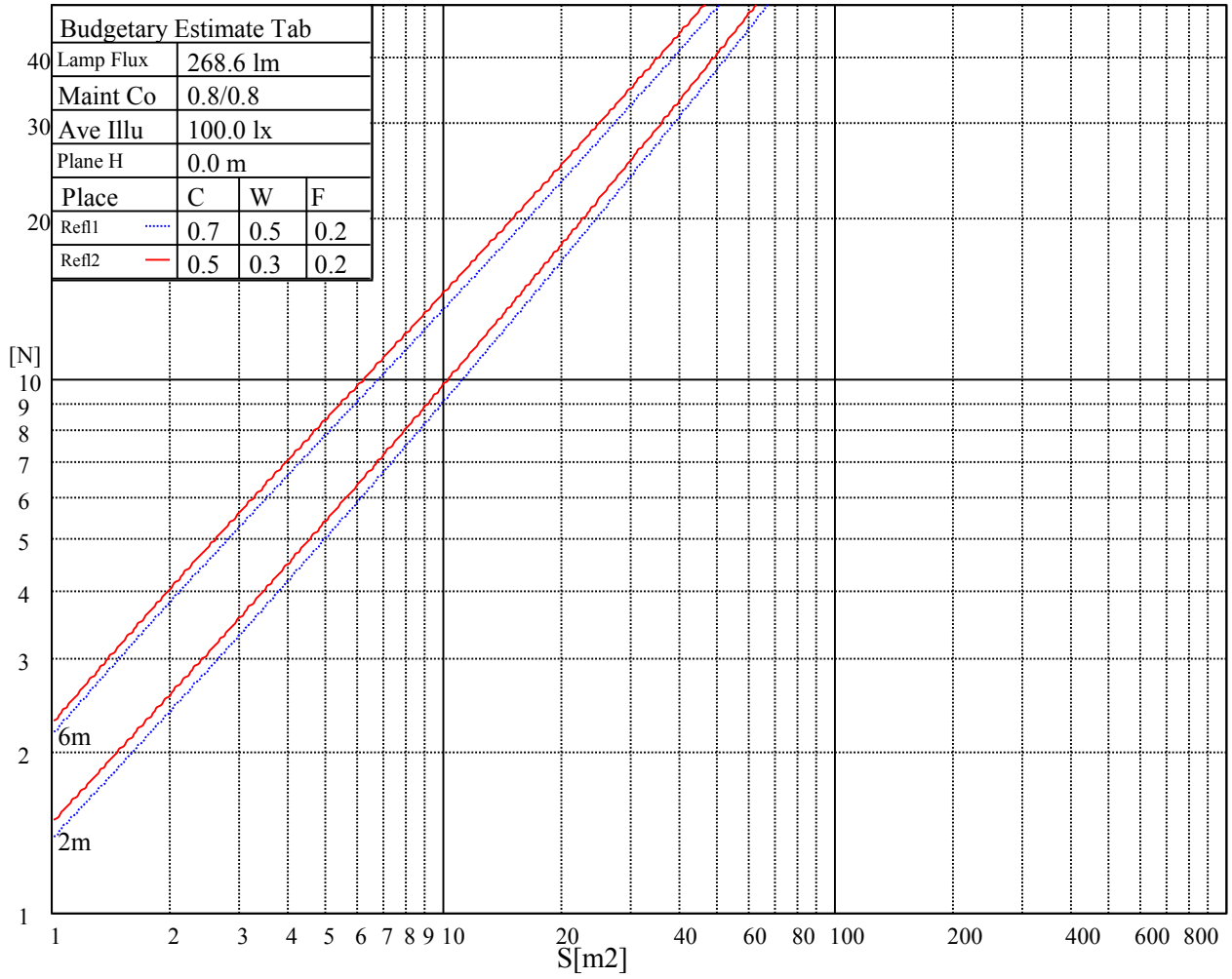
Glare Table

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

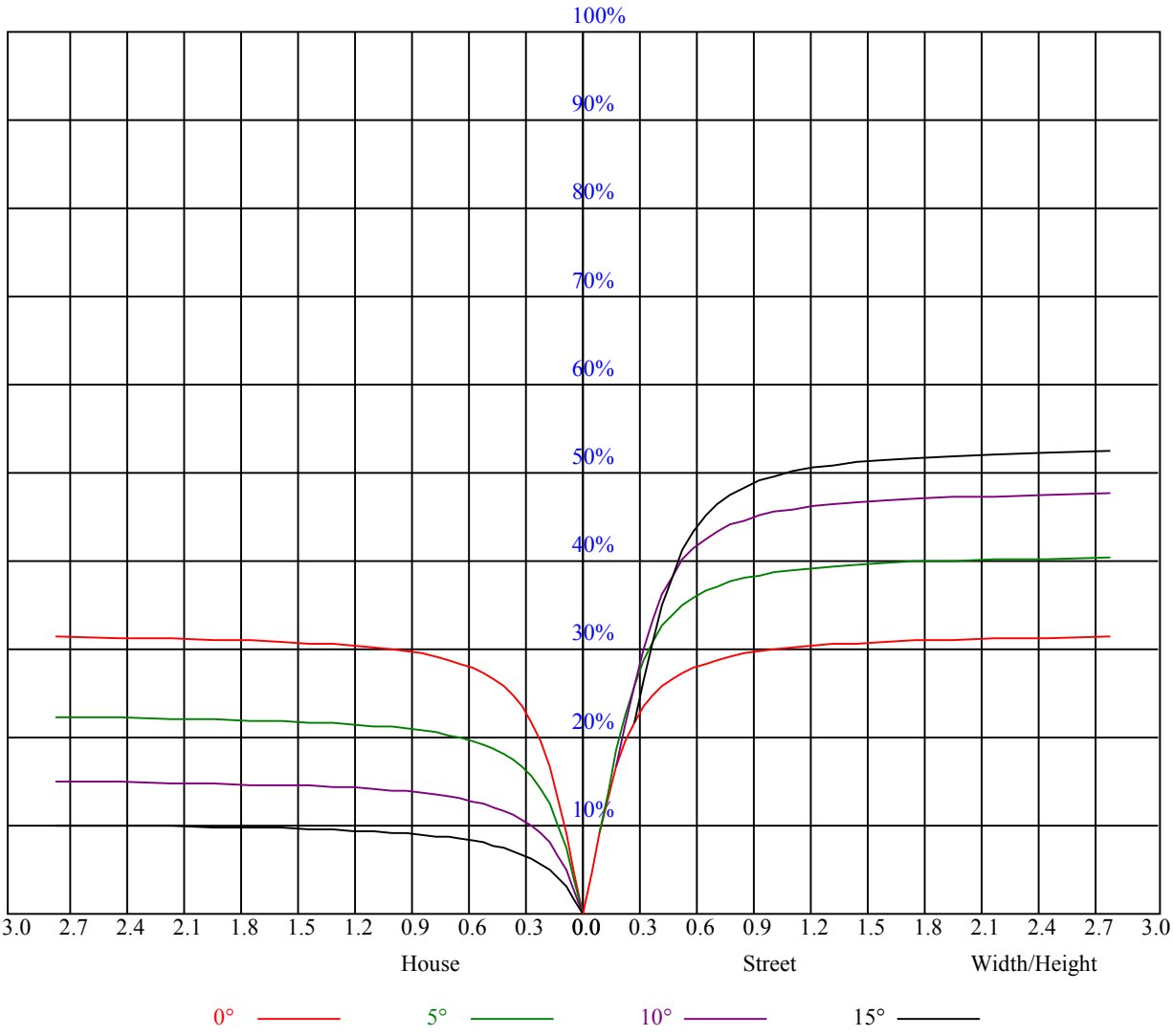


Equipment: GMS1980	Date: 2021/11/13	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

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	0.76	0.76	0.76	0.74	0.74	0.74	0.71	0.71	0.71	0.68	0.68	0.68	0.65	0.65	0.65	0.64
1	0.71	0.69	0.67	0.69	0.68	0.66	0.67	0.65	0.64	0.64	0.63	0.62	0.62	0.61	0.61	0.59
2	0.66	0.64	0.61	0.65	0.63	0.61	0.63	0.61	0.59	0.61	0.59	0.58	0.59	0.58	0.57	0.56
3	0.62	0.59	0.57	0.61	0.59	0.56	0.60	0.57	0.55	0.58	0.56	0.55	0.57	0.55	0.54	0.53
4	0.59	0.56	0.53	0.58	0.55	0.53	0.57	0.54	0.52	0.56	0.53	0.52	0.54	0.53	0.51	0.50
5	0.56	0.53	0.50	0.55	0.52	0.50	0.54	0.52	0.50	0.53	0.51	0.49	0.52	0.50	0.49	0.48
6	0.53	0.50	0.48	0.53	0.50	0.48	0.52	0.49	0.47	0.51	0.49	0.47	0.50	0.48	0.47	0.46
7	0.51	0.48	0.46	0.51	0.48	0.45	0.50	0.47	0.45	0.49	0.47	0.45	0.49	0.46	0.45	0.44
8	0.49	0.46	0.44	0.49	0.46	0.44	0.48	0.45	0.43	0.48	0.45	0.43	0.47	0.45	0.43	0.42
9	0.47	0.44	0.42	0.47	0.44	0.42	0.46	0.44	0.42	0.46	0.43	0.42	0.45	0.43	0.41	0.41
10	0.46	0.43	0.40	0.45	0.42	0.40	0.45	0.42	0.40	0.44	0.42	0.40	0.44	0.42	0.40	0.39

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/11/13	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

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	631.95	637.92	638.16	631.17	619.10	599.14	573.03	545.78	515.43
45.0	636.19	628.48	611.63	592.81	569.68	542.91	503.90	469.78	434.82
90.0	628.72	615.22	594.30	567.77	540.23	505.27	466.55	430.46	389.41
135.0	633.86	620.95	601.59	579.24	549.67	515.97	482.09	441.93	406.20
180.0	631.95	618.92	602.01	577.45	547.93	517.70	484.30	439.72	403.33
225.0	636.19	638.46	634.58	623.94	609.48	587.13	558.93	530.73	495.47
270.0	628.72	636.43	640.25	636.49	628.60	610.26	587.01	565.26	529.83
315.0	633.86	639.48	639.42	631.41	619.10	601.47	575.48	545.19	514.65
360.0	631.95	637.92	638.16	631.17	619.10	599.14	573.03	545.78	515.43

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	473.90	438.65	402.44	361.92	321.77	287.59	251.62	218.82	192.28
45.0	390.07	353.56	318.00	280.36	245.35	216.96	188.10	164.68	143.41
90.0	353.26	313.82	276.84	246.30	214.87	186.61	164.38	144.72	123.33
135.0	365.81	325.53	291.41	259.57	223.36	197.30	174.06	147.77	131.10
180.0	366.88	322.79	289.32	258.01	225.69	196.41	173.22	150.22	132.23
225.0	461.53	416.96	380.75	344.95	305.64	268.65	238.71	211.05	179.80
270.0	493.86	464.10	419.53	383.37	347.22	303.43	270.26	239.67	204.53
315.0	476.83	436.61	400.11	359.06	323.20	284.78	249.71	220.97	194.44
360.0	473.90	438.65	402.44	361.92	321.77	287.59	251.62	218.82	192.28

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	166.23	146.16	126.68	109.95	97.16	84.91	74.51	66.62	59.69
45.0	123.33	109.17	94.71	82.28	73.20	66.45	57.60	52.04	47.62
90.0	108.69	96.08	85.33	73.91	66.21	59.69	52.58	47.62	42.72
135.0	114.67	100.27	87.84	77.44	68.24	60.47	54.85	48.82	44.40
180.0	114.67	99.79	88.49	77.74	68.54	61.61	55.63	49.06	44.52
225.0	158.11	139.16	120.88	105.11	92.98	81.32	71.52	64.00	56.88
270.0	179.92	158.35	135.04	119.03	105.05	91.72	80.37	71.70	63.28
315.0	165.64	145.74	128.35	109.71	96.92	85.92	74.27	66.33	59.69
360.0	166.23	146.16	126.68	109.95	97.16	84.91	74.51	66.62	59.69

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	52.28	47.26	42.78	38.54	34.84	31.91	28.98	26.41	24.38
45.0	42.19	37.94	35.02	31.31	28.38	26.35	23.84	21.99	20.38
90.0	38.96	35.19	31.85	29.22	26.83	24.50	22.41	20.73	18.88
135.0	39.91	35.79	32.74	29.94	26.83	24.74	22.83	20.73	19.24
180.0	40.51	36.09	32.98	30.18	27.13	24.98	23.06	20.91	19.60
225.0	51.39	45.95	41.23	37.52	34.30	30.77	28.26	25.99	23.42
270.0	56.88	50.67	45.29	41.17	37.11	33.58	30.77	28.26	25.51
315.0	52.40	47.92	42.90	38.12	35.19	31.85	28.50	26.47	24.38
360.0	52.28	47.26	42.78	38.54	34.84	31.91	28.98	26.41	24.38

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	22.29	20.61	19.00	17.51	16.37	15.30	14.16	13.27	12.55
45.0	18.58	17.33	16.13	14.82	13.80	12.91	11.89	11.17	10.52
90.0	17.57	16.43	15.30	14.04	13.15	12.31	11.47	10.70	10.04
135.0	17.87	16.61	15.30	14.34	13.27	12.49	11.65	10.88	10.28
180.0	18.11	16.61	15.72	14.70	13.44	12.73	11.95	11.05	10.52
225.0	21.63	20.02	18.46	16.97	15.83	14.64	13.74	12.79	11.89
270.0	23.54	21.69	19.90	18.22	16.97	15.72	14.52	13.56	12.67
315.0	21.81	20.38	18.88	17.39	16.01	15.00	13.92	12.97	12.19
360.0	22.29	20.61	19.00	17.51	16.37	15.30	14.16	13.27	12.55

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	11.65	10.99	10.40	9.92	9.26	8.78	8.31	7.89	7.53
45.0	9.80	9.20	8.66	8.19	7.71	7.29	6.81	6.51	6.09
90.0	9.44	8.84	8.37	7.83	7.41	6.99	6.57	6.21	5.92
135.0	9.62	9.08	8.60	8.19	7.65	7.29	6.93	6.51	6.21
180.0	9.98	9.38	8.90	8.48	8.01	7.59	7.23	6.87	6.63
225.0	11.17	10.40	9.80	9.26	8.72	8.19	7.71	7.35	6.87
270.0	11.89	11.05	10.40	9.80	9.14	8.60	8.07	7.71	7.23
315.0	11.35	10.76	10.10	9.50	8.96	8.43	7.95	7.59	7.23
360.0	11.65	10.99	10.40	9.92	9.26	8.78	8.31	7.89	7.53

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.17	6.87	6.57	6.27	6.04	5.74	5.50	5.26	5.02
45.0	5.74	5.50	5.20	4.90	4.60	4.42	4.12	3.94	3.76
90.0	5.50	5.20	4.96	4.66	4.42	4.18	3.94	3.76	3.59
135.0	5.92	5.56	5.26	5.02	4.72	4.54	4.24	4.06	3.88
180.0	6.27	5.98	5.80	5.56	5.32	5.14	4.96	4.72	4.54
225.0	6.51	6.15	5.80	5.44	5.20	4.90	4.66	4.36	4.12
270.0	6.81	6.45	6.15	5.74	5.50	5.14	4.84	4.54	4.30
315.0	6.81	6.45	6.15	5.80	5.50	5.20	4.96	4.66	4.42
360.0	7.17	6.87	6.57	6.27	6.04	5.74	5.50	5.26	5.02

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.84	4.60	4.42	4.24	4.00	3.88	3.70	3.53	3.41
45.0	3.53	3.35	3.17	3.05	2.93	2.75	2.57	2.45	2.33
90.0	3.41	3.23	3.05	2.87	2.75	2.63	2.45	2.39	2.21
135.0	3.70	3.47	3.35	3.23	3.05	2.93	2.81	2.69	2.57
180.0	4.36	4.18	3.94	3.82	3.64	3.53	3.35	3.23	3.05
225.0	3.88	3.70	3.47	3.35	3.17	2.99	2.87	2.69	2.51
270.0	4.06	3.88	3.64	3.47	3.29	3.11	2.99	2.81	2.69
315.0	4.24	4.06	3.82	3.64	3.47	3.35	3.17	3.05	2.93
360.0	4.84	4.60	4.42	4.24	4.00	3.88	3.70	3.53	3.41

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.29	3.11	2.99	2.87	2.81	2.81	3.05	3.76	5.68
45.0	2.21	2.09	1.97	1.85	1.73	1.79	2.63	2.51	1.61
90.0	2.09	1.97	1.85	1.73	1.67	1.49	1.37	1.31	1.25
135.0	2.45	2.33	2.21	2.09	2.03	1.97	1.85	1.79	1.73
180.0	2.93	2.87	2.87	3.05	4.00	6.45	8.07	8.37	7.29
225.0	2.39	2.27	2.15	1.97	1.91	1.79	1.73	2.03	1.79
270.0	2.51	2.39	2.21	2.09	1.97	1.85	1.79	1.61	1.49
315.0	2.75	2.69	2.51	2.45	2.33	2.21	2.15	2.03	1.97
360.0	3.29	3.11	2.99	2.87	2.81	2.81	3.05	3.76	5.68

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.19	8.90	8.43	6.45	4.18	1.31	1.08	0.96	0.78
45.0	1.25	1.14	1.08	1.02	0.78	0.78	0.72	0.66	0.72
90.0	1.14	1.08	0.96	0.84	0.72	0.72	0.72	0.72	0.72
135.0	1.61	1.55	1.49	1.67	0.96	0.78	0.72	0.72	0.72
180.0	5.50	3.23	1.61	1.31	0.96	0.84	0.72	0.72	0.72
225.0	1.43	1.31	1.20	1.14	1.08	0.84	0.78	0.72	0.72
270.0	1.43	1.31	1.25	1.14	1.02	0.90	0.84	0.78	0.72
315.0	1.91	1.73	1.61	1.49	1.43	1.08	0.96	0.84	0.78
360.0	8.19	8.90	8.43	6.45	4.18	1.31	1.08	0.96	0.78

Intensity data(cd)

C/γ(°)	90.0
0.0	0.72
45.0	0.72
90.0	0.72
135.0	0.72
180.0	0.84
225.0	0.66
270.0	0.66
315.0	0.72
360.0	0.72