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: 1-0871-A
Luminaire: 92.70.043.00

Report No: NATA0100	Voltage(V): 34.3900
Test No: GC2019092607	Current(A): 0.0970
LampCAT: BRIDGELUX V4HD LES5.2	Power (W): 3.3400
Lamp flux(lm): 356.5	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 322.39
Efficiency(%): 90.42%
Lumens(lm)/Power(W): 96.52
Central intensity(cd): 5053.359
Maximum intensity(cd): 5053.359
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=8.8
[C90/270]Total=8.8
Field angle(10%Imax): [C0/180]Total=18.4
[C90/270]Total=18.4
Maximum s/h(1/2): C0_180=0.15 C90_270=0.15
Maximum s/h(1/4): C0_180=0.16 C90_270=0.16
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.42%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.413%

Equipment: GMS1980	Date: 2019/9/26	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5053.359	0.000	0	.000%	.000%
1.0	4908.023	4.766	4.766	1.337%	1.478%
2.0	4359.445	13.302	18.068	3.731%	5.604%
3.0	3639.797	19.132	37.199	5.366%	11.539%
4.0	2824.538	21.638	58.838	6.069%	18.251%
5.0	2065.310	21.036	79.874	5.900%	24.776%
6.0	1483.748	18.651	98.525	5.231%	30.561%
7.0	1012.317	15.493	114.018	4.345%	35.367%
8.0	696.319	12.228	126.246	3.430%	39.160%
9.0	531.991	9.955	136.201	2.792%	42.248%
10.0	408.354	8.510	144.711	2.387%	44.887%
11.0	334.884	7.426	152.137	2.083%	47.191%
12.0	289.927	6.830	158.967	1.916%	49.310%
13.0	252.218	6.434	165.401	1.805%	51.305%
14.0	231.609	6.193	171.594	1.737%	53.226%
15.0	212.133	6.092	177.686	1.709%	55.116%
16.0	200.292	6.043	183.729	1.695%	56.990%
17.0	191.130	6.096	189.825	1.710%	58.881%
18.0	182.672	6.163	195.988	1.729%	60.793%
19.0	176.752	6.253	202.241	1.754%	62.732%
20.0	171.162	6.368	208.609	1.786%	64.708%
21.0	166.788	6.489	215.098	1.820%	66.721%
22.0	162.155	6.610	221.708	1.854%	68.771%
23.0	156.572	6.688	228.396	1.876%	70.845%
24.0	151.200	6.729	235.125	1.887%	72.933%
25.0	145.891	6.755	241.88	1.895%	75.028%
26.0	141.026	6.773	248.653	1.900%	77.129%
27.0	136.245	6.783	255.437	1.903%	79.233%
28.0	131.428	6.777	262.214	1.901%	81.335%
29.0	127.252	6.768	268.981	1.898%	83.434%
30.0	123.012	6.757	275.738	1.895%	85.530%
31.0	117.626	6.697	282.435	1.878%	87.608%
32.0	109.934	6.519	288.954	1.828%	89.630%
33.0	98.269	6.134	295.088	1.720%	91.532%
34.0	82.434	5.469	300.557	1.534%	93.229%
35.0	62.677	4.507	305.063	1.264%	94.627%
36.0	40.915	3.298	308.362	.925%	95.650%
37.0	24.827	2.144	310.506	.601%	96.315%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	13.359	1.275	311.78	.357%	96.710%
39.0	6.504	0.678	312.458	.190%	96.920%
40.0	4.191	0.373	312.831	.105%	97.036%
41.0	3.523	0.275	313.106	.077%	97.121%
42.0	3.199	0.244	313.35	.068%	97.197%
43.0	3.066	0.232	313.582	.065%	97.269%
44.0	2.981	0.228	313.811	.064%	97.340%
45.0	2.946	0.228	314.038	.064%	97.410%
46.0	2.932	0.230	314.268	.064%	97.482%
47.0	2.918	0.233	314.501	.065%	97.554%
48.0	2.883	0.234	314.735	.066%	97.627%
49.0	2.820	0.234	314.97	.066%	97.699%
50.0	2.721	0.231	315.201	.065%	97.771%
51.0	2.573	0.224	315.425	.063%	97.840%
52.0	2.461	0.216	315.641	.061%	97.907%
53.0	2.355	0.210	315.85	.059%	97.972%
54.0	2.285	0.205	316.055	.057%	98.036%
55.0	2.264	0.203	316.258	.057%	98.099%
56.0	2.215	0.202	316.46	.057%	98.162%
57.0	2.215	0.203	316.663	.057%	98.225%
58.0	2.180	0.203	316.866	.057%	98.288%
59.0	2.159	0.203	317.069	.057%	98.350%
60.0	2.109	0.202	317.27	.057%	98.413%
61.0	2.060	0.199	317.469	.056%	98.475%
62.0	2.018	0.197	317.666	.055%	98.536%
63.0	2.025	0.197	317.862	.055%	98.597%
64.0	2.032	0.199	318.061	.056%	98.658%
65.0	1.969	0.198	318.259	.056%	98.720%
66.0	1.891	0.193	318.452	.054%	98.780%
67.0	1.786	0.185	318.637	.052%	98.837%
68.0	1.723	0.178	318.815	.050%	98.892%
69.0	1.666	0.173	318.988	.048%	98.946%
70.0	1.631	0.169	319.157	.048%	98.998%
71.0	1.617	0.168	319.325	.047%	99.050%
72.0	1.582	0.166	319.491	.047%	99.102%
73.0	1.568	0.165	319.656	.046%	99.153%
74.0	1.561	0.164	319.82	.046%	99.204%
75.0	1.554	0.165	319.985	.046%	99.255%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.554	0.165	320.15	.046%	99.306%
77.0	1.540	0.165	320.315	.046%	99.357%
78.0	1.519	0.164	320.479	.046%	99.408%
79.0	1.533	0.164	320.643	.046%	99.459%
80.0	1.512	0.164	320.807	.046%	99.510%
81.0	1.484	0.162	320.969	.045%	99.560%
82.0	1.463	0.160	321.128	.045%	99.610%
83.0	1.477	0.160	321.288	.045%	99.659%
84.0	1.463	0.160	321.448	.045%	99.709%
85.0	1.448	0.159	321.607	.045%	99.758%
86.0	1.434	0.158	321.765	.044%	99.807%
87.0	1.434	0.157	321.922	.044%	99.856%
88.0	1.413	0.156	322.078	.044%	99.904%
89.0	1.406	0.155	322.232	.043%	99.952%
90.0	1.406	0.154	322.387	.043%	100.000%

Zonal flux distribution table

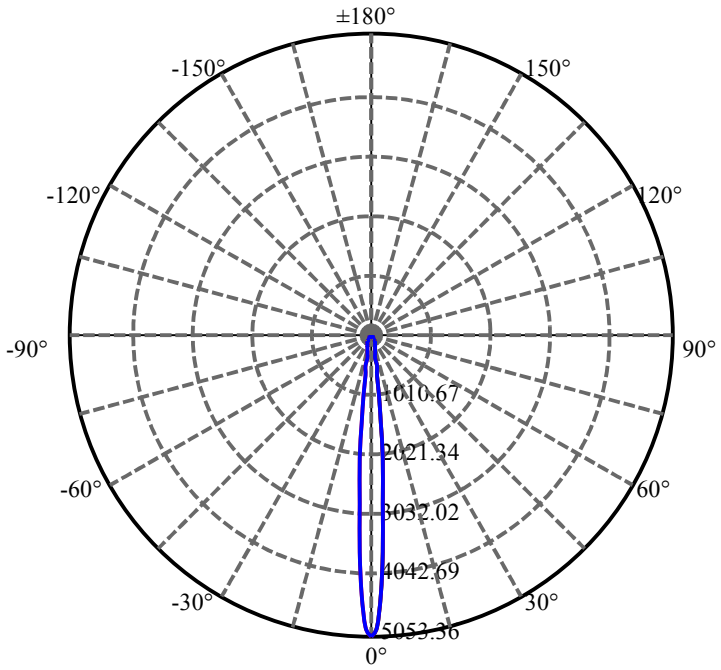
ZONAL LUMEN SUMMARY

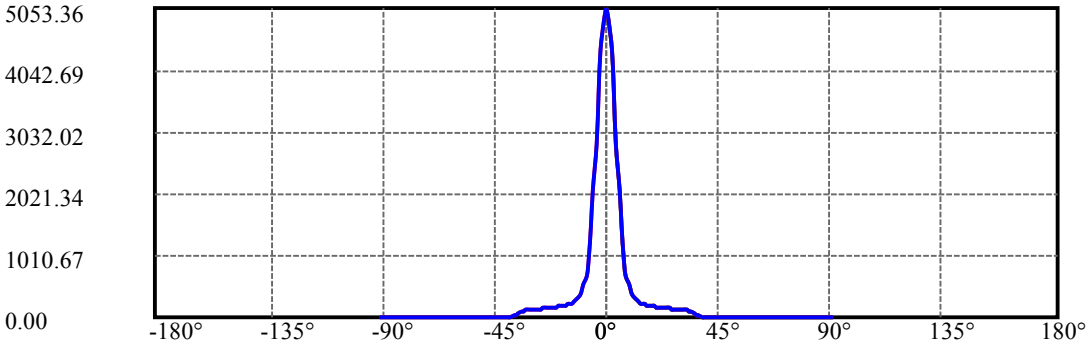
Zone	Lumens	%Lamp	%Fixt
0-30	275.74	77.34%	85.53%
0-40	312.83	87.74%	97.04%
0-60	317.27	88.99%	98.41%
0-90	322.23	90.38%	99.95%
0-120	322.23	90.38%	99.95%
0-180	322.39	90.42%	100.00%
60-90	5.16	1.45%	1.60%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.36	257.91	72.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	144.71
10-20	63.90
20-30	67.13
30-40	37.09
40-50	2.37
50-60	2.07
60-70	1.89
70-80	1.65
80-90	1.43
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):

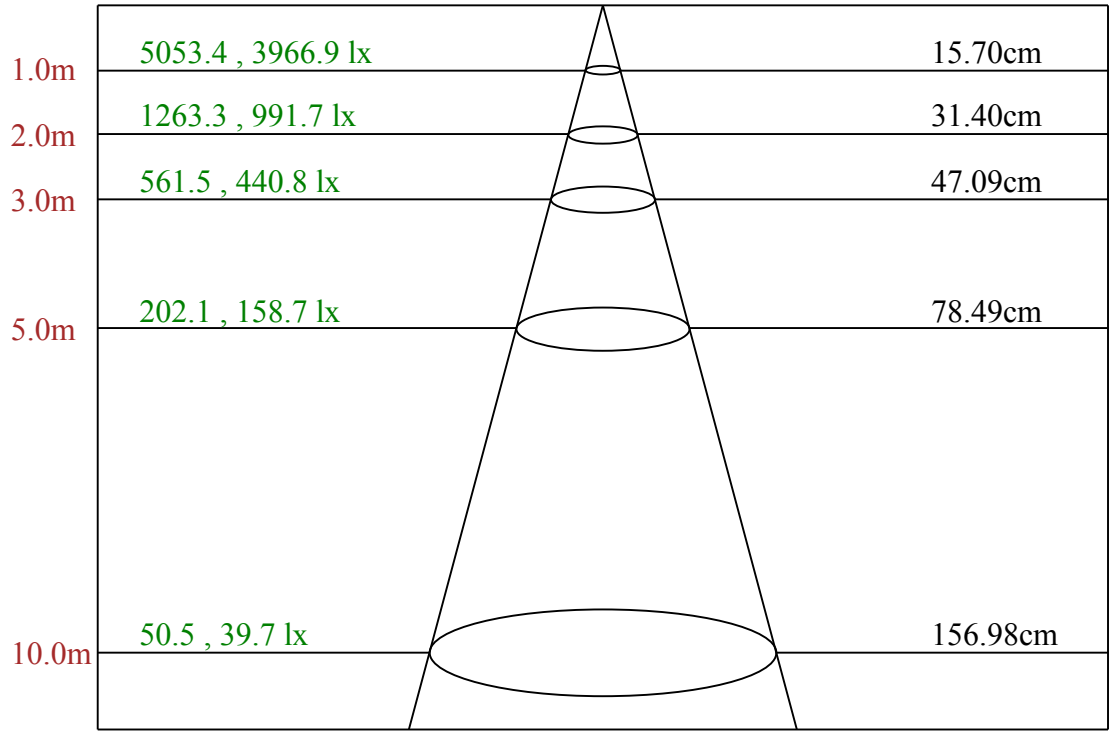
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:9.2 Right:9.2
:C90/270Left:9.2 Right:9.2

Beam Angle(50%Imax):C0/180Left:4.4 Right:4.4
:C90/270Left:4.4 Right:4.4

Lux distance Curve

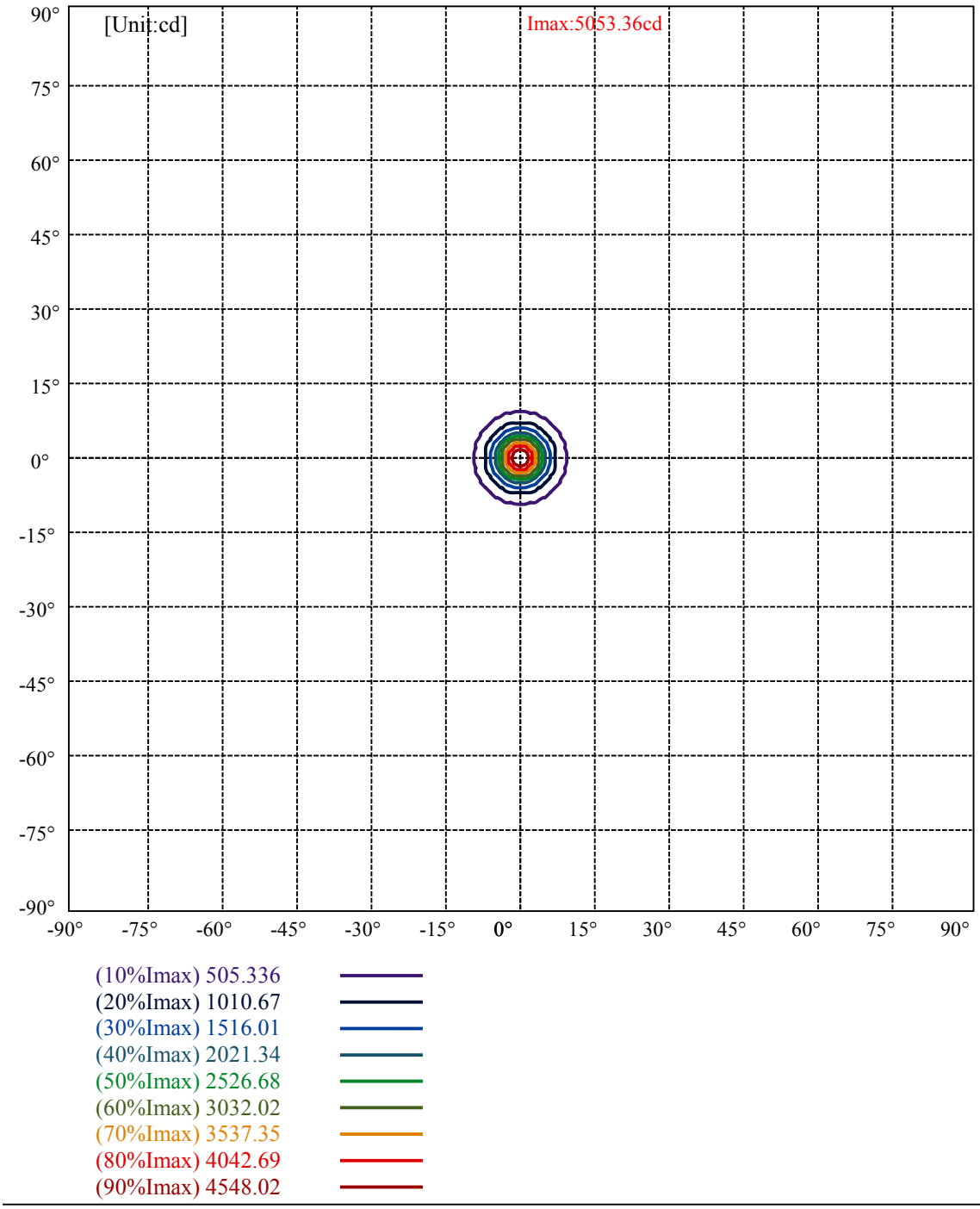


Max , Ave

Beam angle of C0 plane 8.98

Equipment: GMS1980	Date: 2019/9/26	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

ISO-Intensity(V-H)

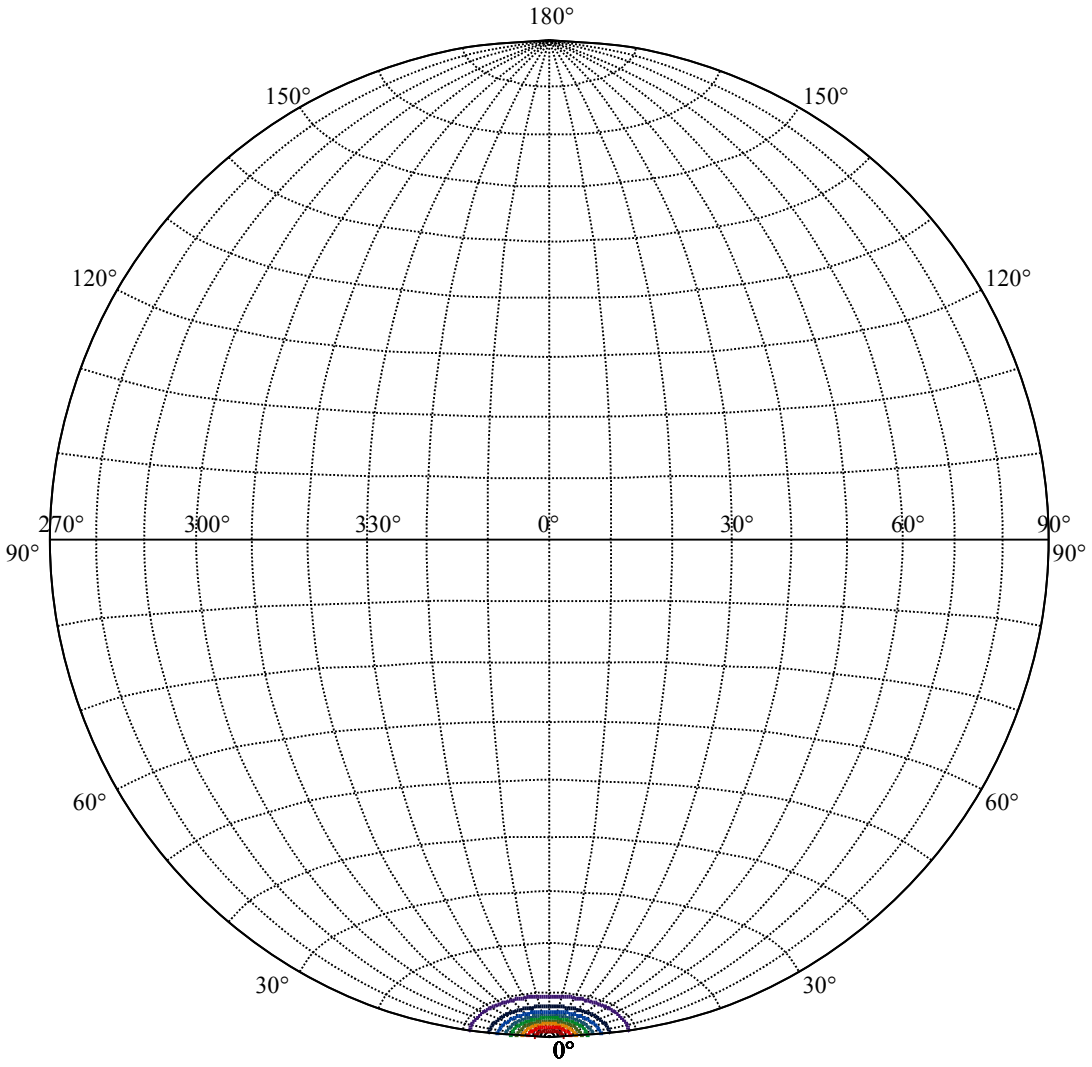


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:5053.36

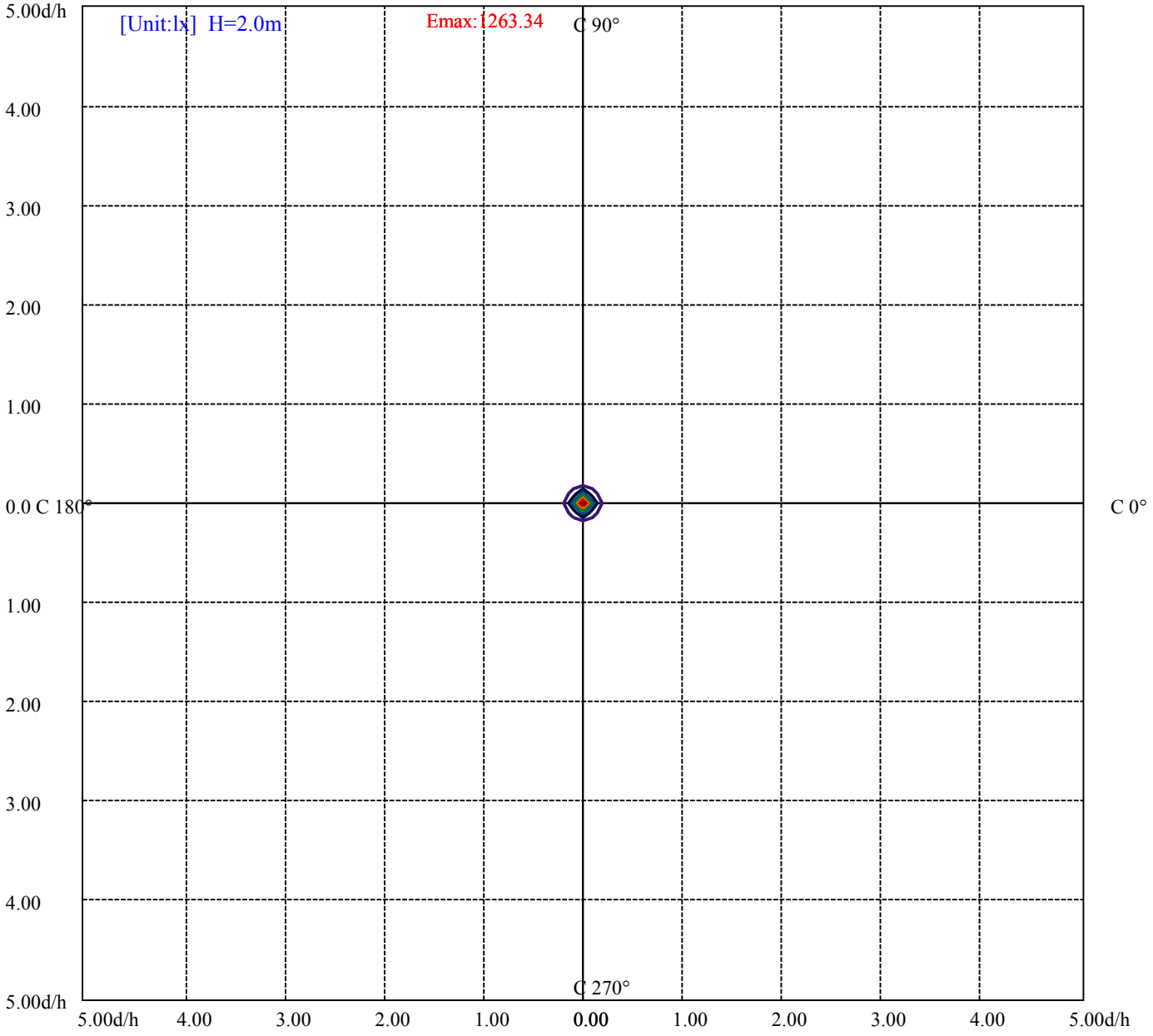
(10%Imax) 505.336
(20%Imax) 1010.67
(30%Imax) 1516.01
(40%Imax) 2021.34
(50%Imax) 2526.68
(60%Imax) 3032.02
(70%Imax) 3537.35
(80%Imax) 4042.69
(90%Imax) 4548.02

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO illuminance diagram

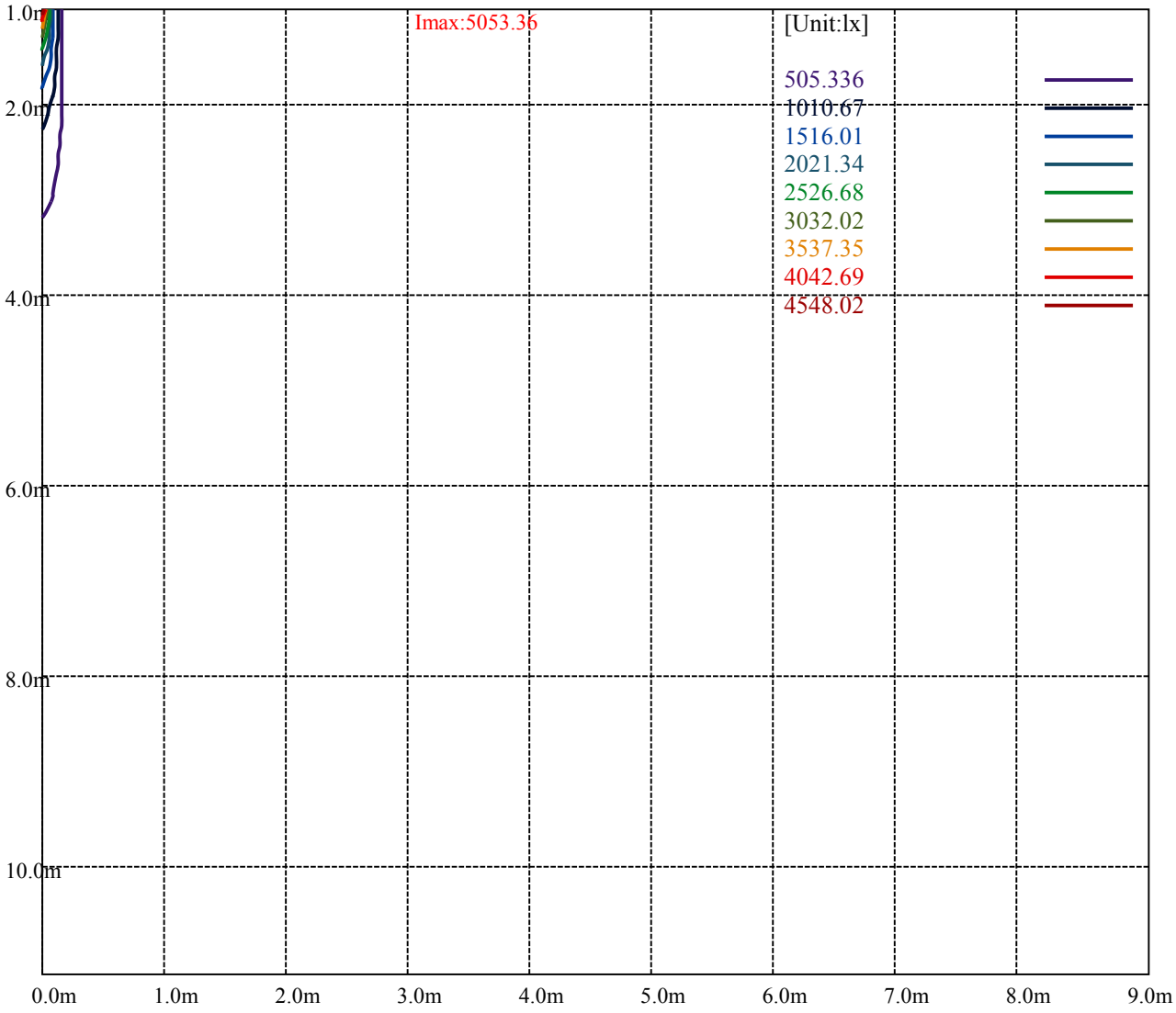


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

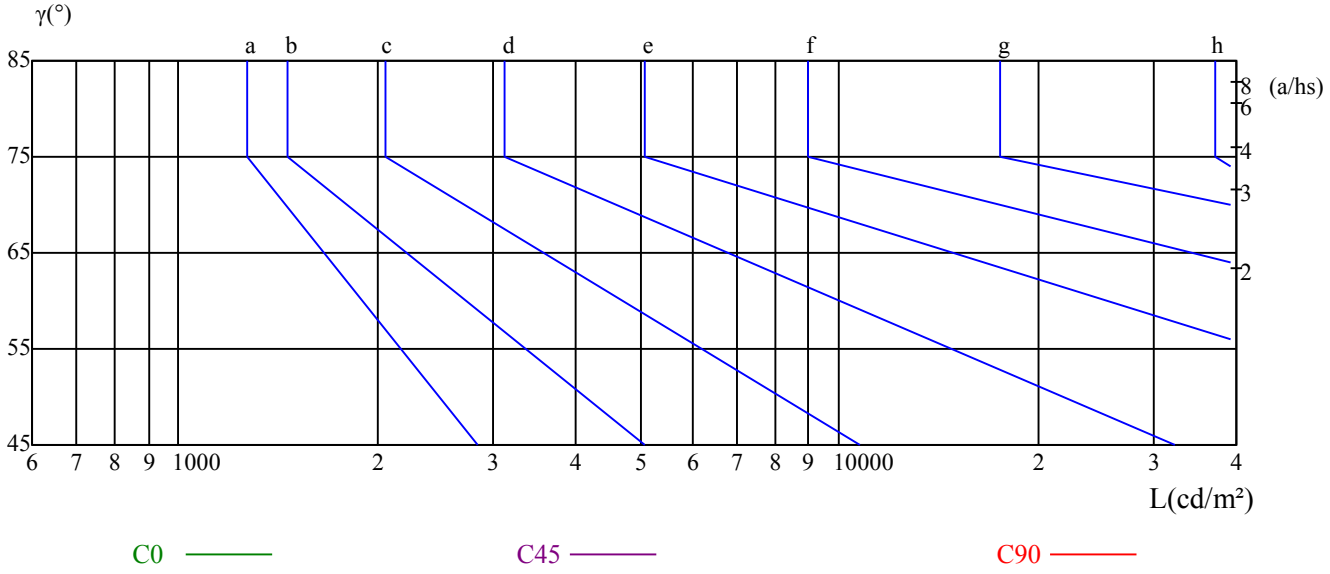
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

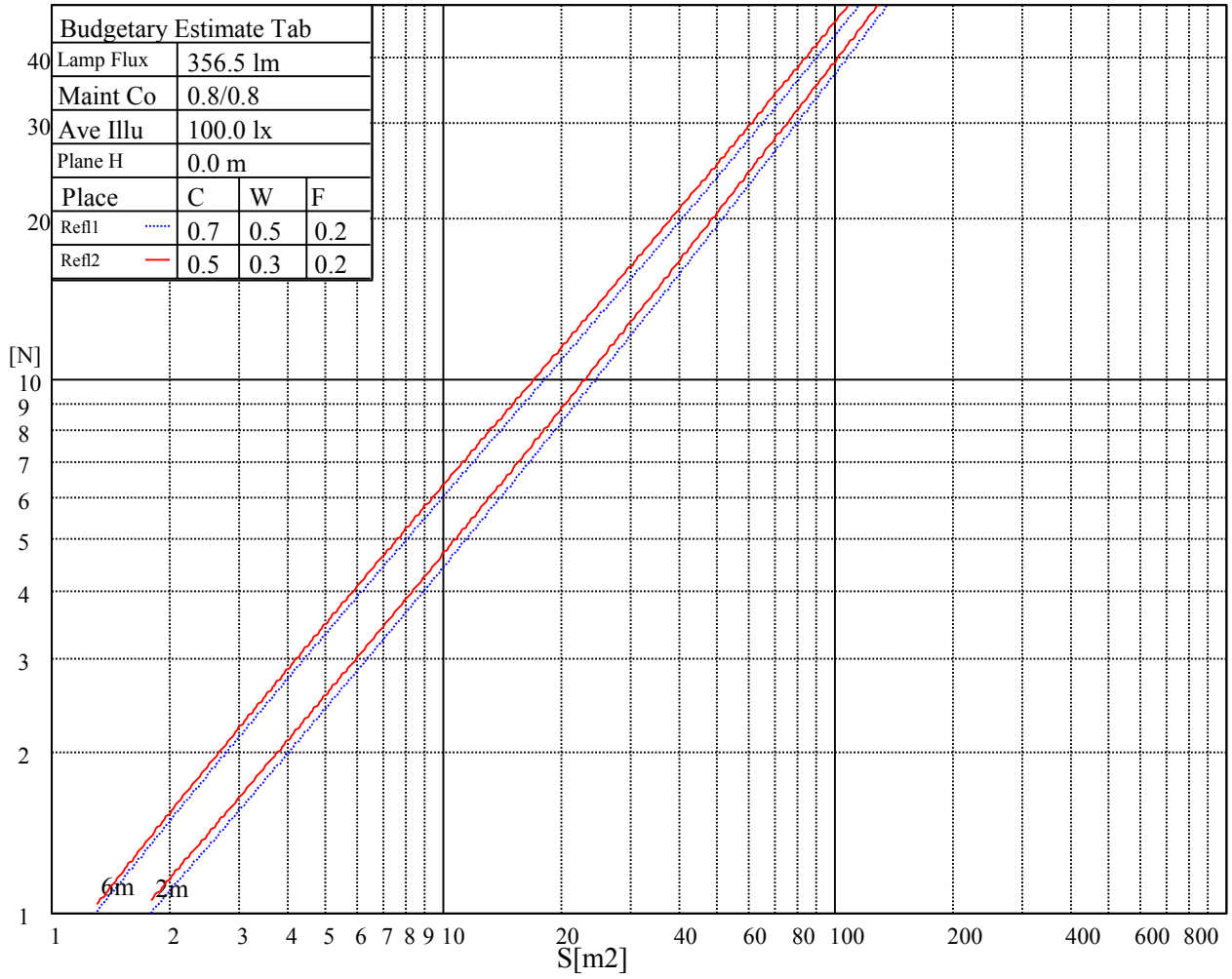
Glare Table

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

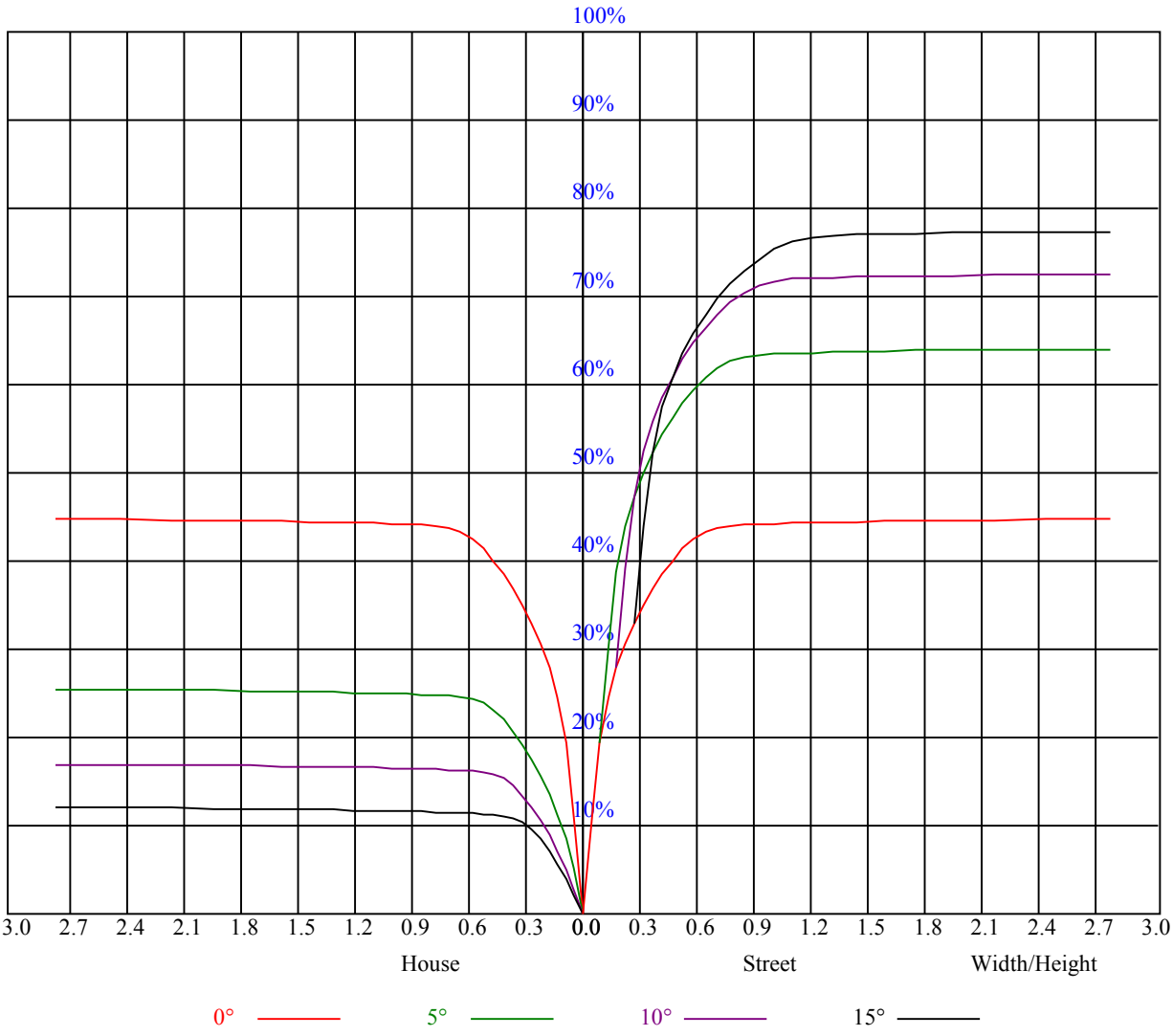


Equipment: GMS1980 Date: 2019/9/26 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.08	1.08	1.08	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	1.01	1.00	0.98	1.00	0.98	0.96	0.96	0.95	0.93	0.93	0.92	0.91	0.90	0.89	0.88	0.87
2	0.96	0.93	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.89	0.88	0.86	0.87	0.86	0.84	0.83
3	0.92	0.88	0.86	0.91	0.87	0.85	0.88	0.86	0.84	0.86	0.84	0.82	0.84	0.83	0.81	0.80
4	0.88	0.84	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.82	0.80	0.78	0.77
5	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
6	0.81	0.77	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.76	0.73	0.77	0.75	0.73	0.72
7	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.73	0.71	0.70
8	0.76	0.72	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.68
9	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.66
10	0.72	0.68	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/9/26	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	5101.31	4518.56	3214.69	2280.38	1629.56	961.88	675.00	520.88	393.75
45.0	5259.38	4763.81	3836.25	2795.63	2000.25	1341.56	907.88	664.88	513.00
90.0	5011.31	4682.81	3996.56	3093.75	2338.31	1635.19	1119.21	805.78	575.94
135.0	4841.44	5130.00	5074.88	4704.19	4083.19	3069.56	2304.56	1663.88	1131.75
180.0	5101.31	5455.13	5531.06	5262.19	4717.13	3789.00	2840.06	1923.19	1044.34
225.0	5259.38	5441.63	5336.44	4826.25	3738.94	2863.69	2004.19	1099.63	884.98
270.0	5011.31	5056.31	4635.56	3905.44	2986.88	1900.69	1304.44	918.56	664.31
315.0	4841.44	4215.94	3250.13	2250.56	1102.05	960.92	714.66	501.75	362.48
360.0	5101.31	4518.56	3214.69	2280.38	1629.56	961.88	675.00	520.88	393.75

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	331.88	298.69	284.63	242.49	224.66	212.63	205.43	201.04	195.64
45.0	404.44	348.19	307.13	284.63	239.18	225.84	215.78	207.73	201.04
90.0	456.64	373.22	317.14	279.06	248.23	223.76	211.89	202.73	193.39
135.0	786.38	582.75	434.81	352.69	296.44	286.88	231.69	210.38	195.41
180.0	868.67	593.89	449.94	358.03	309.49	272.70	245.87	229.16	214.59
225.0	639.39	446.79	359.78	310.39	279.34	247.56	227.25	212.29	202.33
270.0	464.63	365.06	302.06	286.31	235.69	218.14	195.86	175.73	164.42
315.0	303.92	258.24	223.59	205.82	184.73	165.38	163.29	163.29	162.23
360.0	331.88	298.69	284.63	242.49	224.66	212.63	205.43	201.04	195.64

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	189.45	183.66	176.85	171.62	165.94	159.86	153.73	148.56	142.82
45.0	193.11	186.08	178.31	171.23	164.08	157.89	151.09	146.14	141.24
90.0	185.63	179.61	173.25	168.53	164.42	159.02	154.01	148.39	142.82
135.0	185.63	177.24	168.81	162.90	158.01	152.83	147.49	143.49	138.04
180.0	199.58	189.06	180.90	173.14	167.51	162.51	157.44	152.61	148.73
225.0	196.20	191.76	186.75	180.79	175.61	168.41	161.83	153.84	149.40
270.0	155.81	151.48	149.51	149.91	149.79	148.28	145.97	141.86	136.63
315.0	155.98	155.14	154.91	156.21	151.88	143.78	138.04	132.24	128.53
360.0	189.45	183.66	176.85	171.62	165.94	159.86	153.73	148.56	142.82

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	137.48	132.81	128.42	122.96	114.58	94.73	73.80	49.50	25.37
45.0	135.96	132.02	128.53	124.43	119.08	112.50	94.05	68.68	43.99
90.0	138.66	133.82	129.26	125.61	121.78	116.38	106.88	88.20	64.63
135.0	134.44	129.43	126.68	122.12	117.06	114.30	108.90	104.79	90.45
180.0	144.34	140.12	135.73	130.78	126.45	122.85	118.63	114.19	104.23
225.0	144.17	137.76	132.19	127.63	123.36	118.52	114.02	102.49	81.34
270.0	130.89	126.11	123.36	119.81	116.21	113.63	103.84	82.97	62.55
315.0	124.03	119.36	113.85	110.76	102.49	86.57	66.04	48.66	28.86
360.0	137.48	132.81	128.42	122.96	114.58	94.73	73.80	49.50	25.37

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	9.90	3.94	3.04	2.76	2.59	2.42	2.31	2.25	2.14
45.0	22.50	8.04	3.04	2.64	2.42	2.31	2.19	2.08	2.03
90.0	39.99	19.13	6.64	3.32	2.93	2.64	2.53	2.48	2.36
135.0	69.36	50.96	29.64	13.33	6.24	5.12	4.05	3.66	3.38
180.0	79.82	58.61	37.29	15.08	6.53	4.33	3.77	3.60	3.54
225.0	55.24	32.40	14.68	5.91	4.67	4.05	3.83	3.71	3.66
270.0	38.81	19.58	7.59	4.84	4.39	3.94	3.71	3.71	3.71
315.0	11.70	5.96	4.95	4.16	3.77	3.38	3.21	3.04	3.04
360.0	9.90	3.94	3.04	2.76	2.59	2.42	2.31	2.25	2.14

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	2.08	1.97	1.91	1.86	1.86	1.80	1.80	1.80	1.80
45.0	1.97	1.91	1.86	1.80	1.74	1.74	1.69	1.74	1.69
90.0	2.36	2.36	2.31	2.19	2.14	2.03	1.91	1.86	1.80
135.0	3.09	2.93	2.81	2.70	2.64	2.59	2.59	2.53	2.53
180.0	3.60	3.71	3.83	3.94	3.99	3.88	3.60	3.21	2.81
225.0	3.66	3.66	3.54	3.38	3.04	2.70	2.36	2.14	2.03
270.0	3.77	3.88	4.05	4.22	4.28	4.28	3.99	3.77	3.49
315.0	3.04	3.04	3.04	2.98	2.87	2.76	2.64	2.64	2.70
360.0	2.08	1.97	1.91	1.86	1.86	1.80	1.80	1.80	1.80

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	1.80	1.80	1.74	1.74	1.74	1.74	1.80	1.80	1.74
45.0	1.63	1.63	1.63	1.63	1.63	1.69	1.63	1.63	1.63
90.0	1.80	1.80	1.74	1.80	1.80	1.80	1.91	2.03	2.19
135.0	2.64	2.76	2.87	2.98	3.04	3.09	2.81	2.48	2.25
180.0	2.48	2.25	2.14	2.03	1.97	1.91	1.91	1.86	1.80
225.0	1.91	1.91	1.86	1.86	1.80	1.80	1.80	1.74	1.74
270.0	3.15	2.81	2.48	2.31	2.14	2.03	1.97	2.03	2.08
315.0	2.87	3.15	3.26	3.38	3.32	3.21	3.04	2.93	2.70
360.0	1.80	1.80	1.74	1.74	1.74	1.74	1.80	1.80	1.74

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.69	1.69	1.63	1.63	1.58	1.58	1.58	1.58	1.58
45.0	1.63	1.63	1.63	1.63	1.58	1.58	1.58	1.58	1.58
90.0	2.25	2.19	2.03	1.91	1.80	1.74	1.74	1.69	1.69
135.0	2.25	2.36	2.42	2.25	1.97	1.80	1.74	1.69	1.69
180.0	1.80	1.86	2.03	2.19	2.19	2.03	1.80	1.63	1.58
225.0	1.80	1.86	1.91	1.91	1.80	1.74	1.69	1.69	1.63
270.0	2.31	2.36	2.19	1.86	1.69	1.63	1.58	1.58	1.58
315.0	2.48	2.31	1.91	1.74	1.69	1.69	1.63	1.63	1.63
360.0	1.69	1.69	1.63	1.63	1.58	1.58	1.58	1.58	1.58

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.46
45.0	1.58	1.52	1.52	1.52	1.52	1.52	1.46	1.52	1.46
90.0	1.69	1.69	1.69	1.63	1.63	1.58	1.58	1.58	1.58
135.0	1.63	1.63	1.63	1.63	1.69	1.63	1.58	1.63	1.58
180.0	1.58	1.58	1.52	1.52	1.52	1.52	1.52	1.52	1.52
225.0	1.58	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
270.0	1.52	1.52	1.52	1.52	1.46	1.52	1.46	1.46	1.46
315.0	1.58	1.58	1.58	1.58	1.58	1.52	1.52	1.52	1.52
360.0	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.46

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.46	1.41	1.46	1.46	1.41	1.41	1.41	1.35	1.41
45.0	1.46	1.41	1.46	1.46	1.46	1.41	1.41	1.41	1.35
90.0	1.52	1.52	1.46	1.46	1.41	1.41	1.46	1.41	1.41
135.0	1.58	1.52	1.58	1.46	1.46	1.46	1.41	1.41	1.41
180.0	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.41
225.0	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
270.0	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.41	1.46
315.0	1.46	1.46	1.46	1.46	1.46	1.41	1.41	1.41	1.35
360.0	1.46	1.41	1.46	1.46	1.41	1.41	1.41	1.35	1.41

Intensity data(cd)

C/γ(°)	90.0
0.0	1.35
45.0	1.41
90.0	1.41
135.0	1.41
180.0	1.41
225.0	1.46
270.0	1.41
315.0	1.41
360.0	1.35