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: 3-2441-A
Luminaire: 92.70.153.00
Report No: NATA0100
Test No: GC2019111309
LampCAT: PHILIPS SLM92757 TWL112024 CP
Lamp flux(lm): 1026.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.2000
Current(A): 0.3220
Power (W): 11.0100
PF: 1.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 843.70
Efficiency(%): 82.23%
Lumens(lm)/Power(W): 76.63
Central intensity(cd): 3182.062
Maximum intensity(cd): 3182.062
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Left=11.8 Right=11.8
[C90/270]Left=11.8 Right=11.8
Field angle(10%Imax): [C0/180]Left=27.2 Right=27.2
[C90/270]Left=27.2 Right=27.2
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.40 C90_270=0.40
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.23%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.216%

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2019/11/13
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3182.063	0.000	0	.000%	.000%
1.0	3169.055	3.039	3.039	.296%	.360%
2.0	3123.844	9.032	12.071	.880%	1.431%
3.0	3045.586	14.755	26.826	1.438%	3.180%
4.0	2949.047	20.066	46.892	1.956%	5.558%
5.0	2825.930	24.844	71.736	2.421%	8.503%
6.0	2674.547	28.906	100.642	2.817%	11.929%
7.0	2508.188	32.169	132.812	3.135%	15.742%
8.0	2337.469	34.679	167.491	3.380%	19.852%
9.0	2136.586	36.260	203.751	3.534%	24.150%
10.0	1930.008	36.801	240.552	3.587%	28.512%
11.0	1739.742	36.668	277.22	3.574%	32.858%
12.0	1544.063	35.897	313.117	3.499%	37.112%
13.0	1327.627	34.080	347.197	3.322%	41.152%
14.0	1153.807	31.762	378.959	3.096%	44.916%
15.0	1014.919	29.773	408.732	2.902%	48.445%
16.0	877.184	27.725	436.457	2.702%	51.731%
17.0	757.280	25.453	461.91	2.481%	54.748%
18.0	658.477	23.343	485.252	2.275%	57.515%
19.0	583.594	21.609	506.862	2.106%	60.076%
20.0	520.903	20.215	527.077	1.970%	62.472%
21.0	469.969	19.027	546.104	1.854%	64.727%
22.0	432.752	18.141	564.245	1.768%	66.878%
23.0	401.611	17.507	581.752	1.706%	68.953%
24.0	374.759	16.974	598.726	1.654%	70.964%
25.0	353.327	16.555	615.281	1.614%	72.927%
26.0	336.417	16.281	631.563	1.587%	74.856%
27.0	321.188	16.088	647.651	1.568%	76.763%
28.0	307.561	15.919	663.57	1.552%	78.650%
29.0	296.248	15.797	679.367	1.540%	80.522%
30.0	286.636	15.738	695.105	1.534%	82.388%
31.0	277.685	15.704	710.809	1.531%	84.249%
32.0	262.484	15.475	726.284	1.508%	86.083%
33.0	246.804	15.004	741.288	1.462%	87.862%
34.0	225.359	14.289	755.577	1.393%	89.555%
35.0	197.613	13.136	768.713	1.280%	91.112%
36.0	167.548	11.627	780.34	1.133%	92.490%
37.0	138.185	9.971	790.311	.972%	93.672%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	108.513	8.234	798.545	.803%	94.648%
39.0	80.923	6.466	805.011	.630%	95.415%
40.0	59.435	4.895	809.907	.477%	95.995%
41.0	43.228	3.656	813.562	.356%	96.428%
42.0	31.275	2.707	816.269	.264%	96.749%
43.0	22.760	2.002	818.271	.195%	96.986%
44.0	16.875	1.496	819.767	.146%	97.163%
45.0	12.509	1.129	820.896	.110%	97.297%
46.0	9.274	0.852	821.748	.083%	97.398%
47.0	7.179	0.654	822.402	.064%	97.476%
48.0	6.202	0.541	822.943	.053%	97.540%
49.0	5.738	0.490	823.433	.048%	97.598%
50.0	5.541	0.470	823.904	.046%	97.654%
51.0	5.470	0.466	824.369	.045%	97.709%
52.0	5.407	0.467	824.836	.045%	97.764%
53.0	5.351	0.468	825.304	.046%	97.820%
54.0	5.309	0.470	825.774	.046%	97.876%
55.0	5.273	0.472	826.246	.046%	97.931%
56.0	5.231	0.475	826.721	.046%	97.988%
57.0	5.210	0.477	827.198	.047%	98.044%
58.0	5.175	0.480	827.679	.047%	98.101%
59.0	5.161	0.483	828.162	.047%	98.159%
60.0	5.140	0.487	828.649	.047%	98.216%
61.0	5.126	0.490	829.138	.048%	98.274%
62.0	5.119	0.494	829.632	.048%	98.333%
63.0	5.105	0.497	830.129	.048%	98.392%
64.0	5.091	0.500	830.63	.049%	98.451%
65.0	5.070	0.503	831.132	.049%	98.511%
66.0	5.070	0.506	831.638	.049%	98.571%
67.0	5.063	0.509	832.148	.050%	98.631%
68.0	5.048	0.512	832.66	.050%	98.692%
69.0	5.034	0.514	833.174	.050%	98.753%
70.0	5.034	0.517	833.691	.050%	98.814%
71.0	5.020	0.520	834.211	.051%	98.876%
72.0	5.006	0.521	834.732	.051%	98.937%
73.0	4.992	0.523	835.255	.051%	98.999%
74.0	4.971	0.524	835.779	.051%	99.061%
75.0	4.971	0.525	836.304	.051%	99.124%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.957	0.527	836.831	.051%	99.186%
77.0	4.936	0.527	837.359	.051%	99.249%
78.0	4.922	0.528	837.887	.051%	99.311%
79.0	4.894	0.527	838.414	.051%	99.374%
80.0	4.859	0.526	838.94	.051%	99.436%
81.0	4.838	0.524	839.464	.051%	99.498%
82.0	4.809	0.523	839.987	.051%	99.560%
83.0	4.781	0.521	840.509	.051%	99.622%
84.0	4.683	0.516	841.024	.050%	99.683%
85.0	4.598	0.507	841.531	.049%	99.743%
86.0	4.268	0.485	842.015	.047%	99.801%
87.0	3.945	0.449	842.465	.044%	99.854%
88.0	3.734	0.421	842.885	.041%	99.904%
89.0	3.705	0.408	843.293	.040%	99.952%
90.0	3.684	0.405	843.698	.039%	100.000%

Zonal flux distribution table

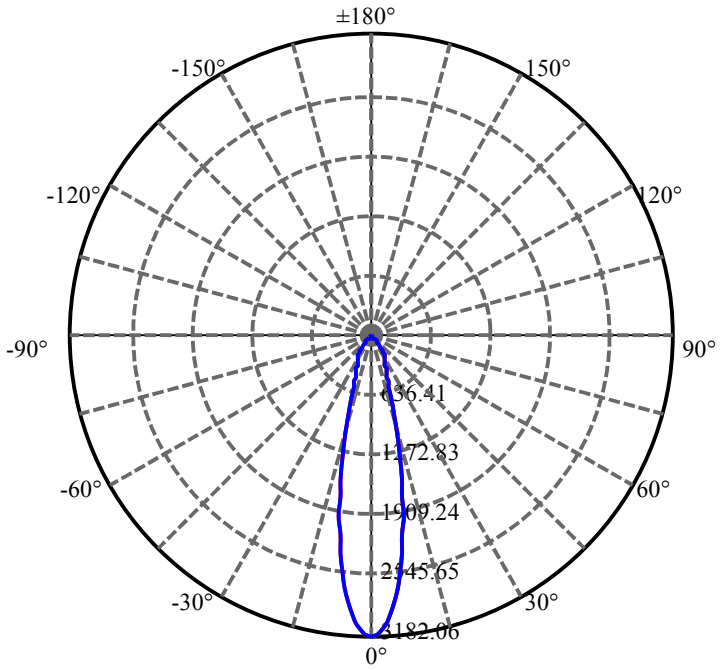
ZONAL LUMEN SUMMARY

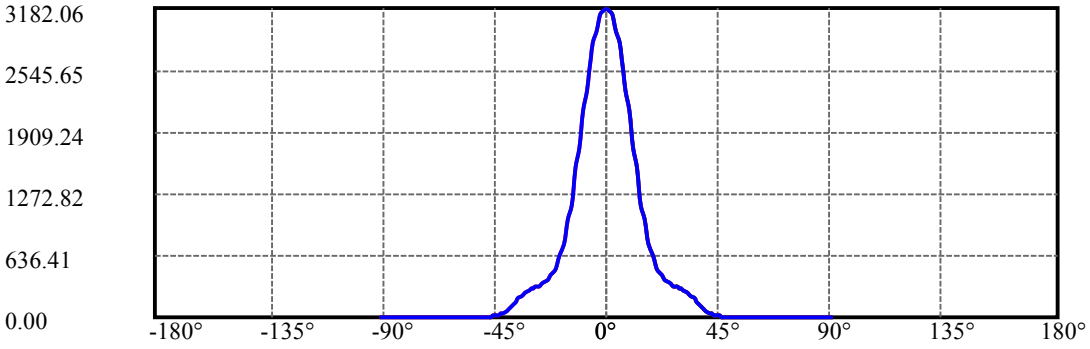
Zone	Lumens	%Lamp	%Fixt
0-30	695.10	67.75%	82.39%
0-40	809.91	78.94%	95.99%
0-60	828.65	80.76%	98.22%
0-90	843.29	82.19%	99.95%
0-120	843.29	82.19%	99.95%
0-180	843.70	82.23%	100.00%
60-90	15.13	1.47%	1.79%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.72	674.96	65.79%	80.00%

ZONAL LUMEN SUMMARY

0-10	240.55
10-20	286.53
20-30	168.03
30-40	114.80
40-50	14.00
50-60	4.74
60-70	5.04
70-80	5.25
80-90	4.35
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:27.2 Right:27.2
:C90/270Left:27.2 Right:27.2

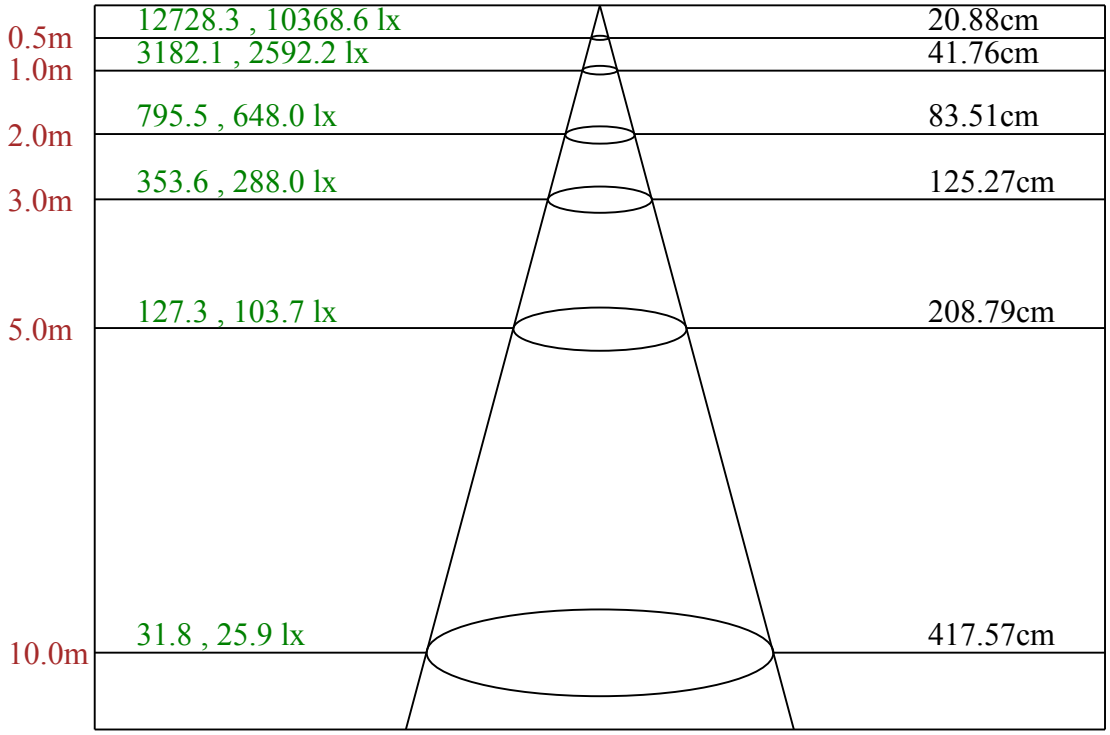
Beam Angle(50%Imax):C0/180Left:11.8 Right:11.8
:C90/270Left:11.8 Right:11.8

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/13
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

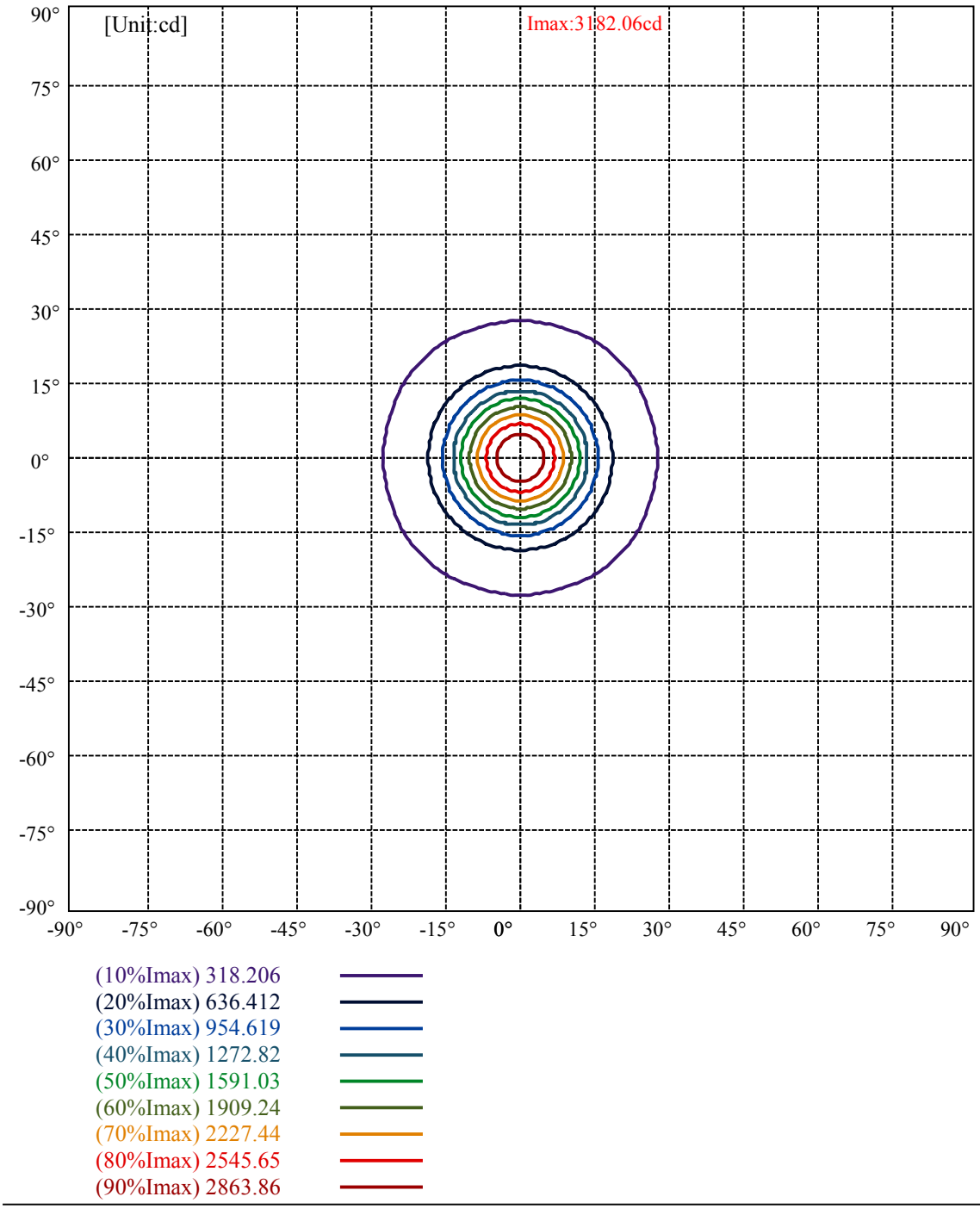
Lux distance Curve



Max , Ave

Beam angle of C0 plane 23.59

ISO-Intensity(V-H)

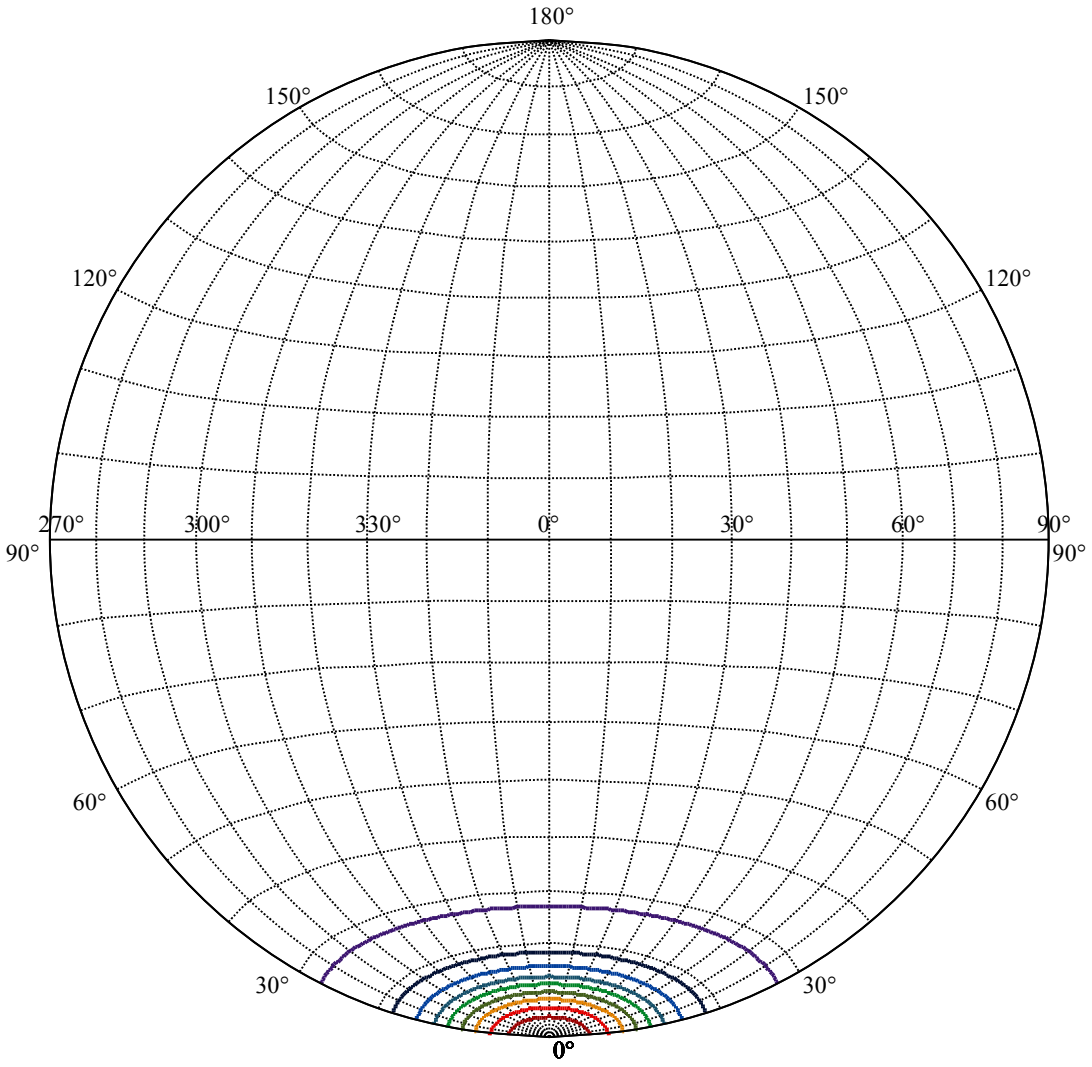


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/13
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:3182.06

(10%Imax) 318.206
(20%Imax) 636.412
(30%Imax) 954.619
(40%Imax) 1272.82
(50%Imax) 1591.03
(60%Imax) 1909.24
(70%Imax) 2227.44
(80%Imax) 2545.65
(90%Imax) 2863.86

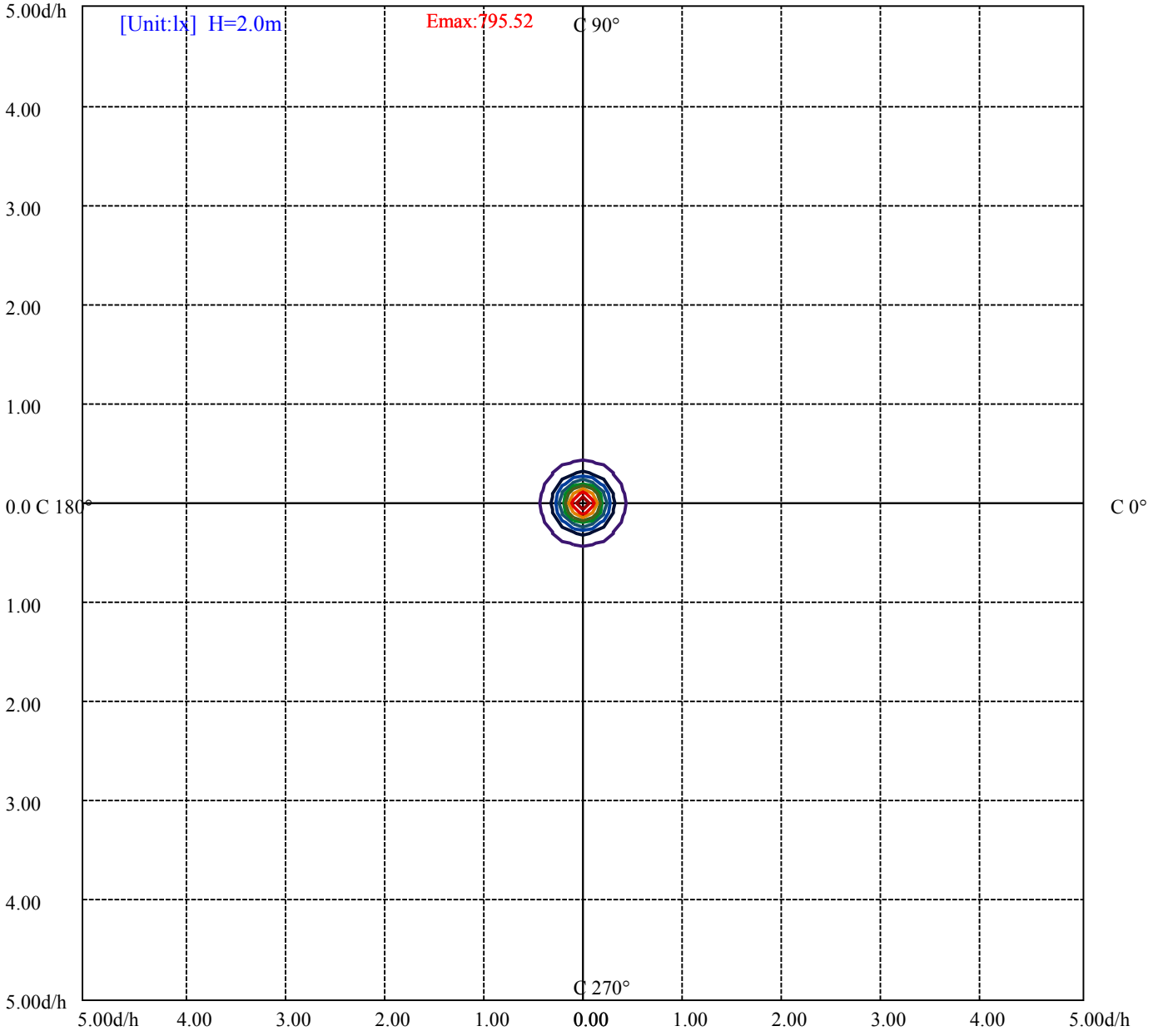
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/13
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata 3-2441-A

ISO illuminance diagram

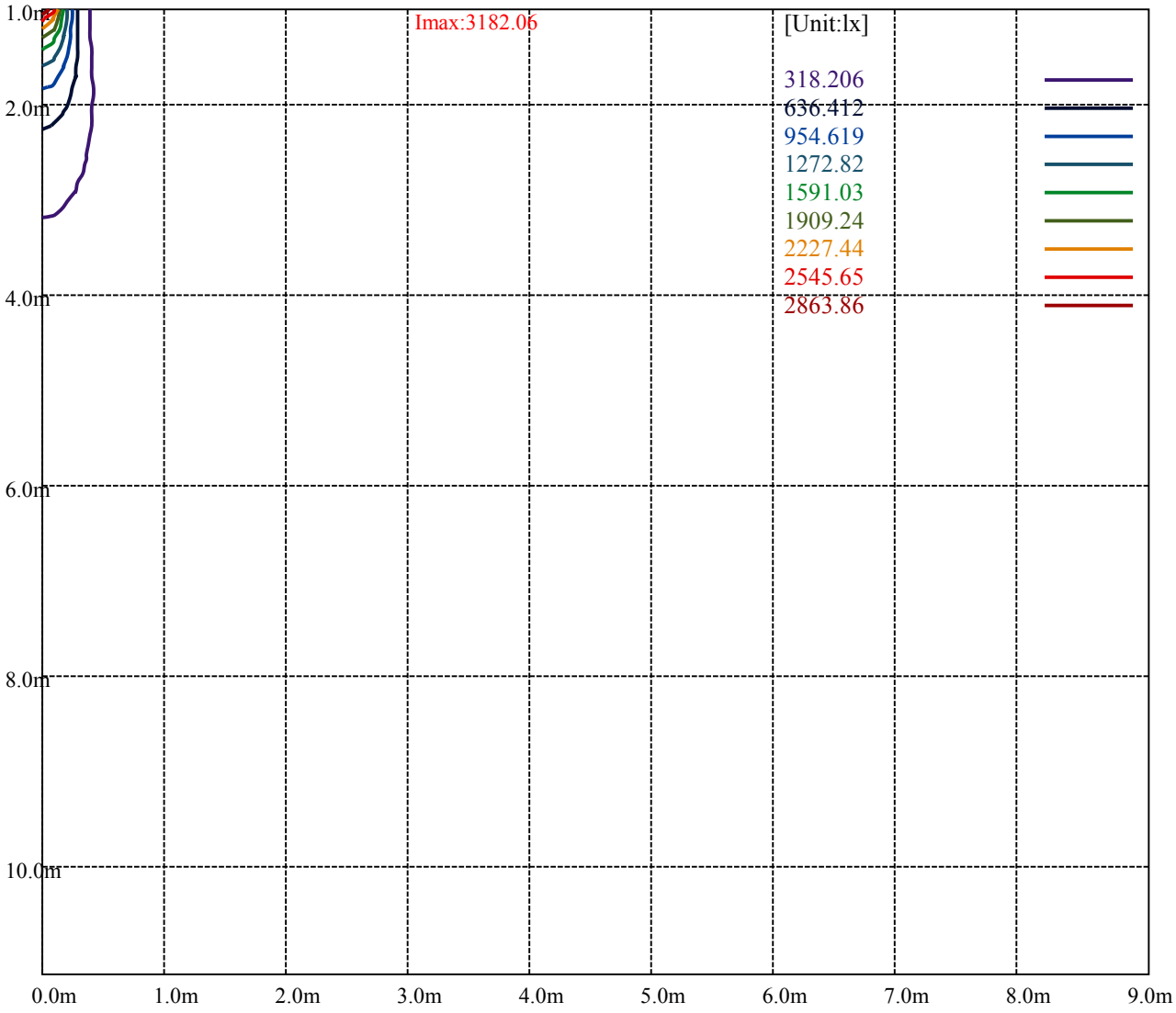


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/13
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/13
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

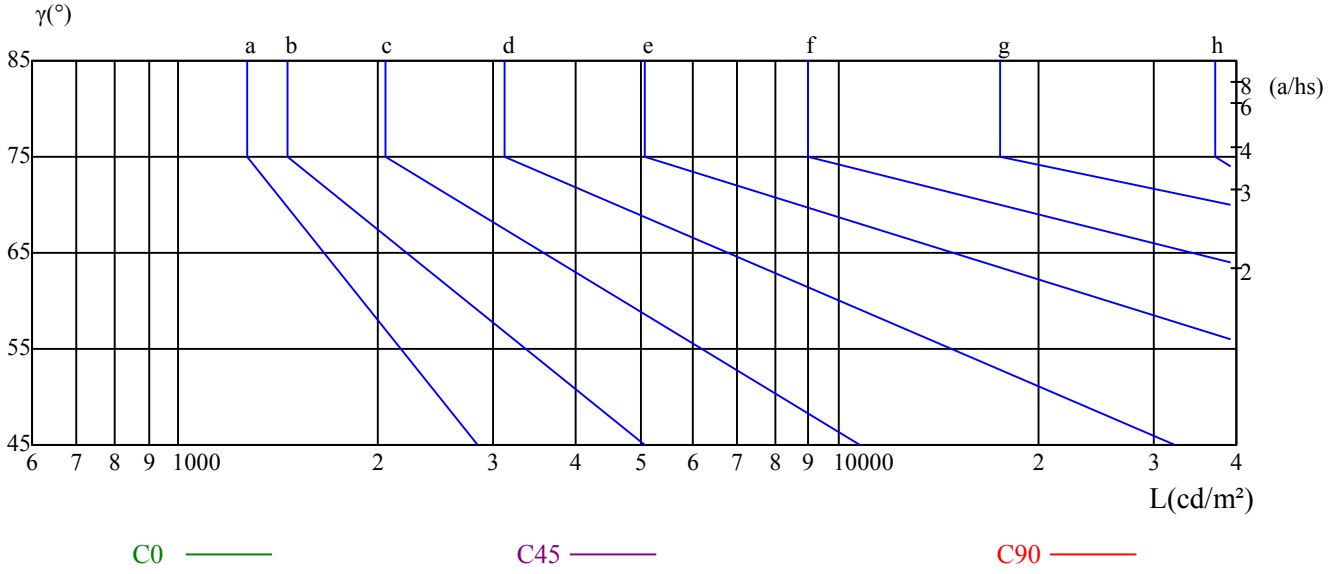
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

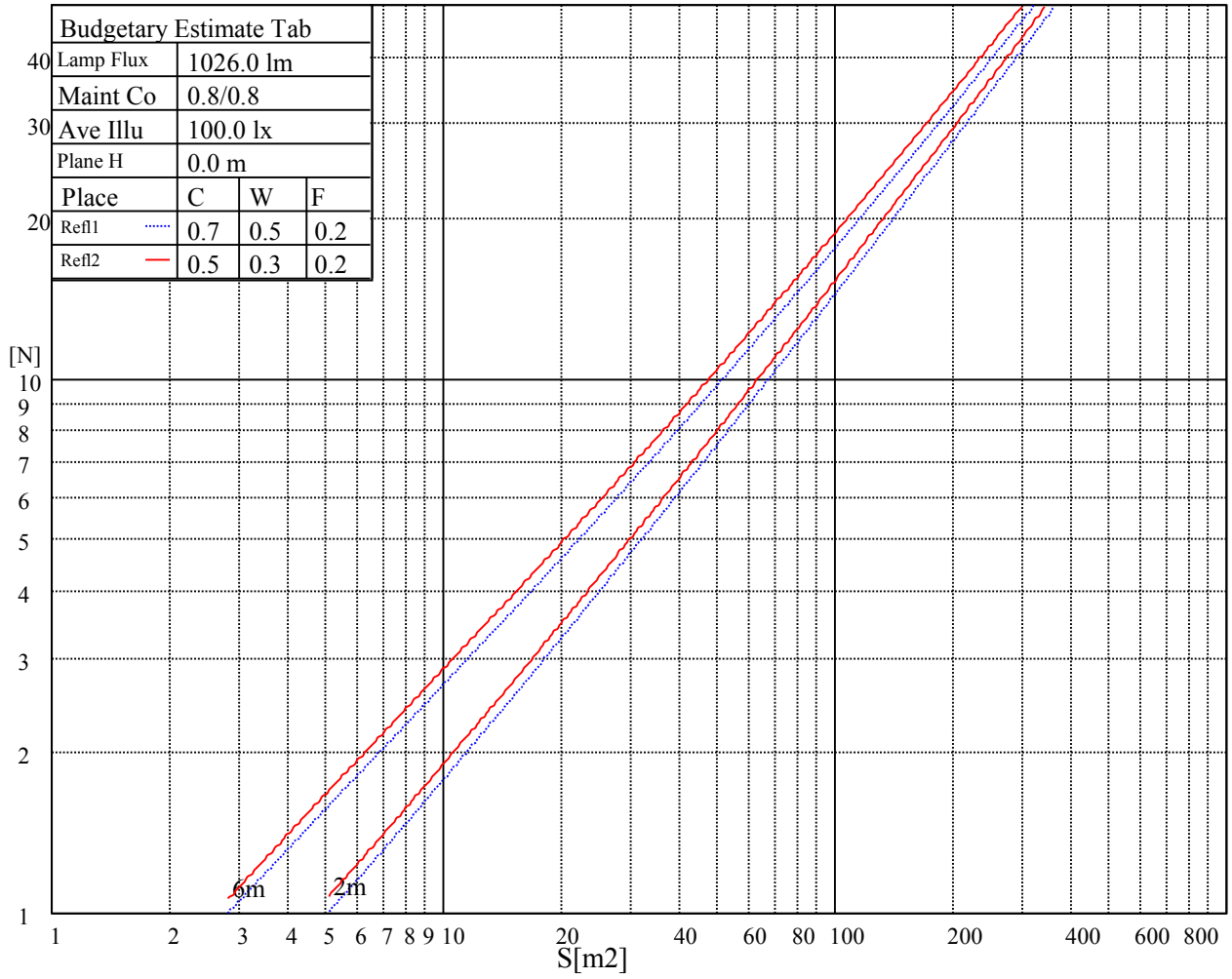
Glare Table

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

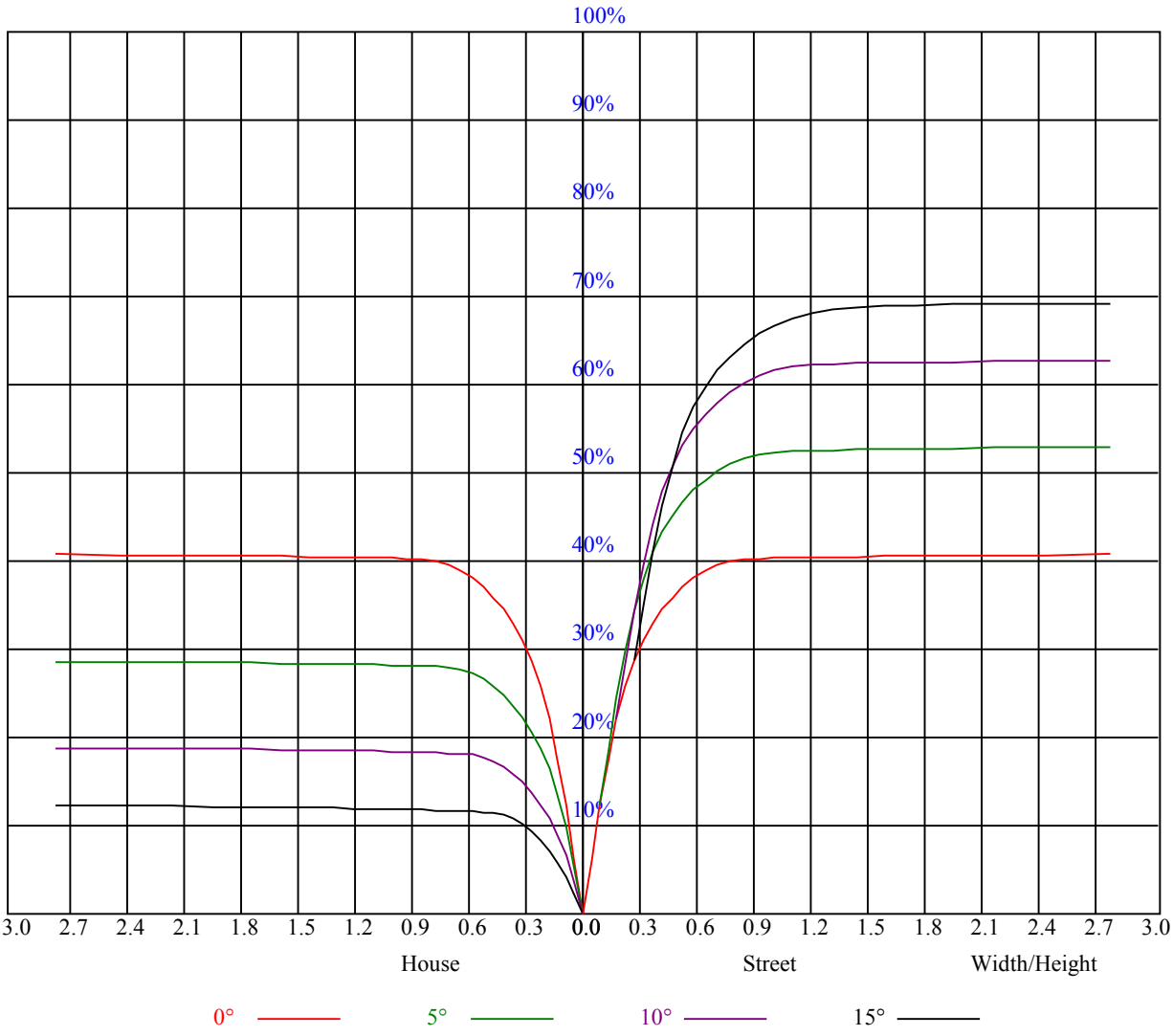


Equipment: GMS1980 Date: 2019/11/13 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	0.98	0.98	0.98	0.96	0.96	0.96	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.82
1	0.92	0.90	0.88	0.90	0.88	0.87	0.87	0.85	0.84	0.84	0.83	0.82	0.81	0.80	0.79	0.78
2	0.87	0.84	0.81	0.85	0.83	0.80	0.83	0.80	0.79	0.80	0.78	0.77	0.78	0.77	0.75	0.74
3	0.82	0.78	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.75	0.73	0.72	0.71
4	0.78	0.74	0.71	0.77	0.74	0.71	0.75	0.72	0.70	0.74	0.71	0.69	0.72	0.70	0.68	0.67
5	0.74	0.70	0.67	0.74	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.67	0.65	0.64
6	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.67	0.65	0.63	0.62
7	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.59
8	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.57
9	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.55
10	0.61	0.57	0.54	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.53

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/11/13	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	3176.44	3176.44	3145.50	3088.13	2994.75	2873.81	2745.00	2579.63	2418.19
45.0	3187.69	3177.56	3129.19	3061.13	2970.00	2842.31	2689.88	2535.19	2346.75
90.0	3180.94	3152.81	3089.25	2993.06	2883.38	2756.25	2571.19	2404.69	2227.50
135.0	3183.19	3167.44	3116.81	3044.81	2936.81	2802.38	2663.44	2488.50	2321.44
180.0	3176.44	3150.56	3096.56	2985.19	2895.75	2774.81	2615.06	2433.94	2260.69
225.0	3187.69	3174.19	3127.50	3049.31	2956.50	2826.56	2676.38	2525.63	2359.13
270.0	3180.94	3183.19	3153.94	3097.69	3003.19	2895.19	2752.88	2588.63	2425.50
315.0	3183.19	3170.25	3132.00	3045.38	2952.00	2836.13	2682.56	2509.31	2340.56
360.0	3176.44	3176.44	3145.50	3088.13	2994.75	2873.81	2745.00	2579.63	2418.19

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2224.69	2018.25	1830.94	1645.31	1420.31	1249.88	1092.94	917.44	799.88
45.0	2145.38	1956.38	1742.06	1554.75	1352.81	1166.63	1020.38	906.75	754.31
90.0	2017.69	1805.63	1621.13	1419.19	1110.26	1074.04	923.23	807.92	698.68
135.0	2123.44	1913.63	1725.75	1540.69	1318.50	1155.38	1010.81	853.31	747.56
180.0	2053.13	1843.31	1659.94	1458.56	1287.56	1108.24	968.23	830.48	725.74
225.0	2160.00	1951.88	1762.88	1553.06	1352.81	1109.48	1018.63	886.73	760.61
270.0	2229.75	2023.31	1837.69	1652.63	1428.19	1257.75	1100.25	941.63	808.31
315.0	2138.63	1927.69	1737.56	1528.31	1350.56	1109.08	984.88	873.23	763.14
360.0	2224.69	2018.25	1830.94	1645.31	1420.31	1249.88	1092.94	917.44	799.88

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	700.31	609.75	538.88	488.25	444.38	410.06	385.31	361.69	344.81
45.0	662.06	597.38	519.19	474.19	442.69	405.56	378.00	360.00	339.75
90.0	610.48	548.49	498.15	448.54	416.98	391.16	364.16	346.28	331.09
135.0	656.44	577.69	516.94	471.94	432.00	399.38	374.63	352.69	336.94
180.0	626.74	548.89	494.78	447.47	410.96	384.98	363.21	340.65	325.58
225.0	659.31	586.01	526.95	469.13	432.39	402.19	371.53	351.56	334.97
270.0	709.88	619.31	548.44	497.81	451.69	418.50	387.56	362.25	343.13
315.0	642.60	581.23	523.91	462.43	430.93	401.06	373.67	351.51	335.08
360.0	700.31	609.75	538.88	488.25	444.38	410.06	385.31	361.69	344.81

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	328.50	314.44	303.75	294.19	284.06	270.68	258.08	236.19	212.23
45.0	325.69	313.88	299.81	291.38	284.06	265.39	249.64	231.02	198.56
90.0	316.29	303.41	293.34	282.99	273.43	256.89	234.39	213.75	183.71
135.0	320.06	306.56	295.31	286.31	277.03	259.59	246.26	220.50	194.29
180.0	312.53	299.64	288.28	278.94	267.75	254.14	237.94	213.86	187.88
225.0	318.83	304.99	294.75	284.51	275.51	262.69	245.87	225.68	196.88
270.0	326.81	310.50	299.25	289.69	284.06	267.64	253.74	236.14	207.45
315.0	320.79	307.07	295.48	285.08	275.57	262.86	248.51	225.73	199.91
360.0	328.50	314.44	303.75	294.19	284.06	270.68	258.08	236.19	212.23

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	184.56	151.82	118.97	92.19	66.77	49.61	35.49	25.54	19.24
45.0	171.84	142.37	110.59	83.31	61.03	42.53	30.49	23.06	16.54
90.0	151.93	124.03	97.82	66.66	50.79	37.13	26.49	18.90	14.06
135.0	165.60	137.48	104.12	80.83	60.47	42.75	30.49	22.84	16.54
180.0	156.21	124.59	98.44	75.60	52.54	39.04	29.19	20.53	15.53
225.0	164.93	136.58	109.18	78.02	58.39	43.31	31.28	22.78	17.27
270.0	180.45	152.27	120.26	90.51	67.84	48.66	34.88	26.16	19.07
315.0	164.87	136.35	108.73	80.27	57.66	42.81	31.89	22.28	16.76
360.0	184.56	151.82	118.97	92.19	66.77	49.61	35.49	25.54	19.24

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	14.06	10.29	7.99	6.64	6.02	5.79	5.68	5.63	5.57
45.0	12.15	8.94	6.86	6.02	5.63	5.46	5.40	5.34	5.29
90.0	10.13	7.54	6.13	5.51	5.29	5.18	5.12	5.06	5.06
135.0	12.09	9.23	7.09	6.19	5.68	5.51	5.46	5.40	5.29
180.0	11.87	9.00	6.98	6.36	5.85	5.74	5.68	5.63	5.57
225.0	12.66	9.34	7.37	6.30	5.85	5.63	5.57	5.46	5.46
270.0	14.40	10.52	7.88	6.41	5.85	5.46	5.34	5.34	5.23
315.0	12.71	9.34	7.14	6.19	5.74	5.57	5.51	5.40	5.34
360.0	14.06	10.29	7.99	6.64	6.02	5.79	5.68	5.63	5.57

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.51	5.46	5.40	5.40	5.34	5.34	5.29	5.29	5.29
45.0	5.23	5.23	5.18	5.18	5.12	5.12	5.06	5.06	5.06
90.0	5.01	4.95	4.95	4.89	4.89	4.89	4.89	4.89	4.89
135.0	5.29	5.23	5.18	5.18	5.18	5.12	5.12	5.06	5.06
180.0	5.57	5.51	5.51	5.46	5.40	5.40	5.40	5.40	5.34
225.0	5.40	5.34	5.29	5.29	5.23	5.23	5.23	5.18	5.18
270.0	5.18	5.18	5.12	5.06	5.06	5.06	5.01	5.01	5.01
315.0	5.29	5.29	5.23	5.23	5.18	5.12	5.12	5.12	5.12
360.0	5.51	5.46	5.40	5.40	5.34	5.34	5.29	5.29	5.29

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	5.29	5.23	5.23	5.23	5.23	5.18	5.18	5.18	5.18
45.0	5.06	5.01	5.01	5.01	5.01	4.95	4.95	4.95	4.95
90.0	4.84	4.89	4.84	4.84	4.84	4.84	4.84	4.84	4.78
135.0	5.06	5.06	5.06	5.06	5.01	5.01	5.01	5.01	5.01
180.0	5.34	5.34	5.29	5.29	5.29	5.29	5.29	5.23	5.23
225.0	5.18	5.12	5.12	5.12	5.12	5.12	5.06	5.12	5.12
270.0	4.95	5.01	4.95	4.95	4.95	4.95	4.95	4.95	4.89
315.0	5.12	5.06	5.06	5.06	5.06	5.06	5.01	5.01	5.01
360.0	5.29	5.23	5.23	5.23	5.23	5.18	5.18	5.18	5.18

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	5.18	5.12	5.12	5.12	5.06	5.01	5.06	5.01	4.95
45.0	4.95	4.95	4.89	4.89	4.89	4.89	4.84	4.84	4.84
90.0	4.78	4.73	4.73	4.73	4.73	4.67	4.61	4.61	4.56
135.0	4.95	4.95	4.95	4.95	4.89	4.89	4.89	4.89	4.84
180.0	5.23	5.23	5.18	5.18	5.18	5.18	5.12	5.12	5.06
225.0	5.06	5.06	5.06	5.06	5.06	5.06	5.06	5.01	5.01
270.0	4.89	4.89	4.89	4.89	4.89	4.84	4.84	4.78	4.78
315.0	5.01	5.01	4.95	4.95	4.95	4.95	4.95	4.89	4.84
360.0	5.18	5.12	5.12	5.12	5.06	5.01	5.06	5.01	4.95

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.95	4.89	4.89	4.78	4.73	4.28	3.94	3.71	3.71
45.0	4.84	4.78	4.78	4.61	4.44	3.99	3.77	3.71	3.71
90.0	4.50	4.50	4.44	4.33	4.22	3.88	3.71	3.66	3.71
135.0	4.78	4.78	4.78	4.67	4.56	4.22	3.88	3.71	3.71
180.0	5.06	5.01	4.95	4.84	4.73	4.33	3.88	3.71	3.66
225.0	5.01	5.01	4.89	4.89	4.89	4.61	4.22	3.83	3.71
270.0	4.73	4.73	4.73	4.61	4.61	4.50	4.22	3.83	3.71
315.0	4.84	4.78	4.78	4.73	4.61	4.33	3.94	3.71	3.71
360.0	4.95	4.89	4.89	4.78	4.73	4.28	3.94	3.71	3.71

Intensity data(cd)

C/γ(°)	90.0
0.0	3.71
45.0	3.71
90.0	3.66
135.0	3.71
180.0	3.66
225.0	3.66
270.0	3.66
315.0	3.71
360.0	3.71