



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: 3-2440-A
Luminaire: 92.70.153.00
Report No: NATA0100 Voltage(V): 33.9100
Test No: GC2019111413 Current(A): 0.4270
LampCAT: PHILIPS SLM92757 TWL152024 Power (W): 14.4700
Lamp flux(lm): 1410.0 PF: 1.0000
Number of Lamps: 1 Ballast type: DC
Length(mm): 0 Width(mm): 0
Phm Type: C Height(mm): 0

Photometric Results

Lumens(lm): 1162.51
Efficiency(%): 82.45%
Lumens(lm)/Power(W): 80.34
Central intensity(cd): 5572.828
Maximum intensity(cd): 5572.828
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=19.0
[C90/270]Total=19.0
Field angle(10%Imax): [C0/180]Total=45.1
[C90/270]Total=45.1
Maximum s/h(1/2): C0_180=0.33 C90_270=0.33
Maximum s/h(1/4): C0_180=0.34 C90_270=0.34
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.45%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.275%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5572.828	0.000	0	.000%	.000%
1.0	5526.281	5.311	5.311	.377%	.457%
2.0	5396.133	15.677	20.988	1.112%	1.805%
3.0	5179.711	25.294	46.282	1.794%	3.981%
4.0	4901.836	33.746	80.028	2.393%	6.884%
5.0	4577.414	40.779	120.807	2.892%	10.392%
6.0	4191.328	46.082	166.889	3.268%	14.356%
7.0	3783.375	49.499	216.388	3.511%	18.614%
8.0	3403.547	51.435	267.823	3.648%	23.038%
9.0	2995.102	51.858	319.681	3.678%	27.499%
10.0	2580.539	50.458	370.138	3.579%	31.840%
11.0	2244.375	48.211	418.349	3.419%	35.987%
12.0	1928.109	45.611	463.96	3.235%	39.910%
13.0	1614.656	42.044	506.004	2.982%	43.527%
14.0	1373.421	38.247	544.251	2.713%	46.817%
15.0	1177.305	35.018	579.269	2.484%	49.829%
16.0	1023.272	32.245	611.513	2.287%	52.603%
17.0	908.740	30.087	641.6	2.134%	55.191%
18.0	815.231	28.425	670.025	2.016%	57.636%
19.0	736.699	27.000	697.025	1.915%	59.959%
20.0	673.650	25.813	722.838	1.831%	62.179%
21.0	621.162	24.863	747.701	1.763%	64.318%
22.0	575.719	24.052	771.753	1.706%	66.387%
23.0	541.723	23.447	795.2	1.663%	68.404%
24.0	510.321	23.001	818.201	1.631%	70.382%
25.0	482.513	22.575	840.776	1.601%	72.324%
26.0	461.841	22.292	863.068	1.581%	74.242%
27.0	442.673	22.129	885.197	1.569%	76.145%
28.0	424.645	21.959	907.156	1.557%	78.034%
29.0	410.323	21.845	929.001	1.549%	79.914%
30.0	397.280	21.805	950.806	1.546%	81.789%
31.0	381.094	21.661	972.467	1.536%	83.653%
32.0	361.800	21.283	993.75	1.509%	85.483%
33.0	337.556	20.603	1014.353	1.461%	87.256%
34.0	308.714	19.558	1033.911	1.387%	88.938%
35.0	275.055	18.130	1052.041	1.286%	90.498%
36.0	238.106	16.339	1068.38	1.159%	91.903%
37.0	199.013	14.256	1082.637	1.011%	93.129%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	164.011	12.117	1094.754	.859%	94.172%
39.0	130.802	10.063	1104.817	.714%	95.037%
40.0	100.540	8.068	1112.885	.572%	95.731%
41.0	77.288	6.332	1119.217	.449%	96.276%
42.0	57.698	4.904	1124.122	.348%	96.698%
43.0	40.936	3.654	1127.775	.259%	97.012%
44.0	29.524	2.659	1130.435	.189%	97.241%
45.0	20.763	1.933	1132.367	.137%	97.407%
46.0	13.887	1.355	1133.722	.096%	97.524%
47.0	9.710	0.939	1134.661	.067%	97.605%
48.0	7.713	0.704	1135.365	.050%	97.665%
49.0	7.080	0.608	1135.973	.043%	97.717%
50.0	6.919	0.584	1136.556	.041%	97.768%
51.0	6.820	0.581	1137.138	.041%	97.818%
52.0	6.729	0.581	1137.719	.041%	97.868%
53.0	6.666	0.583	1138.302	.041%	97.918%
54.0	6.588	0.584	1138.886	.041%	97.968%
55.0	6.539	0.586	1139.472	.042%	98.018%
56.0	6.504	0.589	1140.061	.042%	98.069%
57.0	6.462	0.593	1140.654	.042%	98.120%
58.0	6.434	0.596	1141.25	.042%	98.171%
59.0	6.420	0.601	1141.851	.043%	98.223%
60.0	6.384	0.605	1142.456	.043%	98.275%
61.0	6.384	0.609	1143.066	.043%	98.328%
62.0	6.377	0.615	1143.681	.044%	98.380%
63.0	6.370	0.620	1144.3	.044%	98.434%
64.0	6.363	0.625	1144.925	.044%	98.488%
65.0	6.363	0.630	1145.555	.045%	98.542%
66.0	6.363	0.635	1146.19	.045%	98.596%
67.0	6.356	0.640	1146.83	.045%	98.651%
68.0	6.356	0.644	1147.474	.046%	98.707%
69.0	6.349	0.648	1148.122	.046%	98.763%
70.0	6.342	0.652	1148.774	.046%	98.819%
71.0	6.349	0.656	1149.43	.047%	98.875%
72.0	6.356	0.661	1150.09	.047%	98.932%
73.0	6.335	0.664	1150.754	.047%	98.989%
74.0	6.356	0.667	1151.421	.047%	99.046%
75.0	6.356	0.672	1152.093	.048%	99.104%

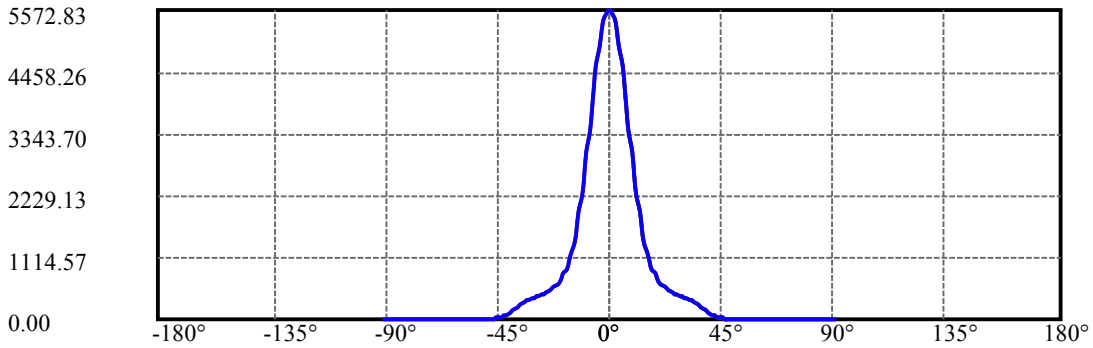
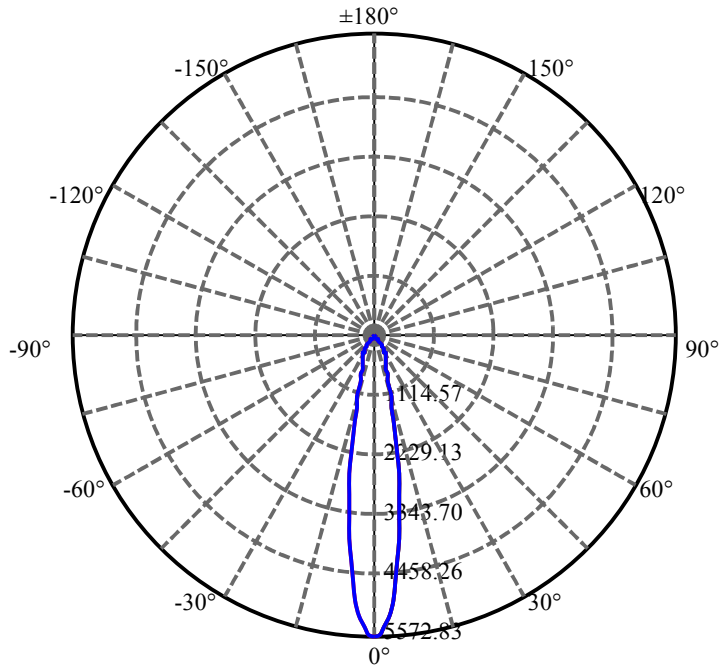
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	6.342	0.674	1152.767	.048%	99.162%
77.0	6.342	0.676	1153.443	.048%	99.220%
78.0	6.349	0.679	1154.123	.048%	99.279%
79.0	6.377	0.684	1154.806	.048%	99.338%
80.0	6.398	0.689	1155.495	.049%	99.397%
81.0	6.434	0.694	1156.189	.049%	99.456%
82.0	6.504	0.702	1156.891	.050%	99.517%
83.0	6.673	0.716	1157.607	.051%	99.578%
84.0	7.151	0.753	1158.36	.053%	99.643%
85.0	8.037	0.829	1159.189	.059%	99.715%
86.0	8.037	0.879	1160.068	.062%	99.790%
87.0	5.428	0.737	1160.804	.052%	99.853%
88.0	5.161	0.580	1161.384	.041%	99.903%
89.0	5.112	0.563	1161.948	.040%	99.952%
90.0	5.105	0.560	1162.508	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	950.81	67.43%	81.79%
0-40	1112.88	78.93%	95.73%
0-60	1142.46	81.03%	98.28%
0-90	1161.95	82.41%	99.95%
0-120	1161.95	82.41%	99.95%
0-180	1162.51	82.45%	100.00%
60-90	20.10	1.43%	1.73%
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%
0-29.05	930.01	65.96%	80.00%

ZONAL LUMEN SUMMARY

0-10	370.14
10-20	352.70
20-30	227.97
30-40	162.08
40-50	23.67
50-60	5.90
60-70	6.32
70-80	6.72
80-90	6.45
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



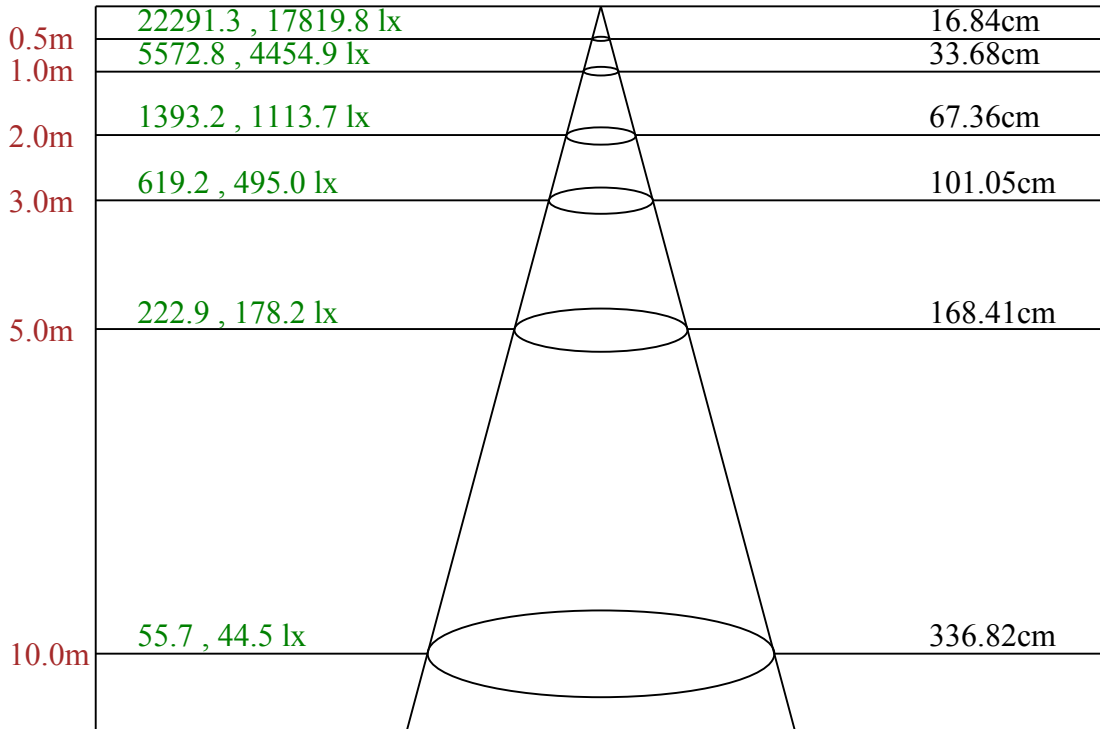
C0(Max): —————

C0/C180: —————

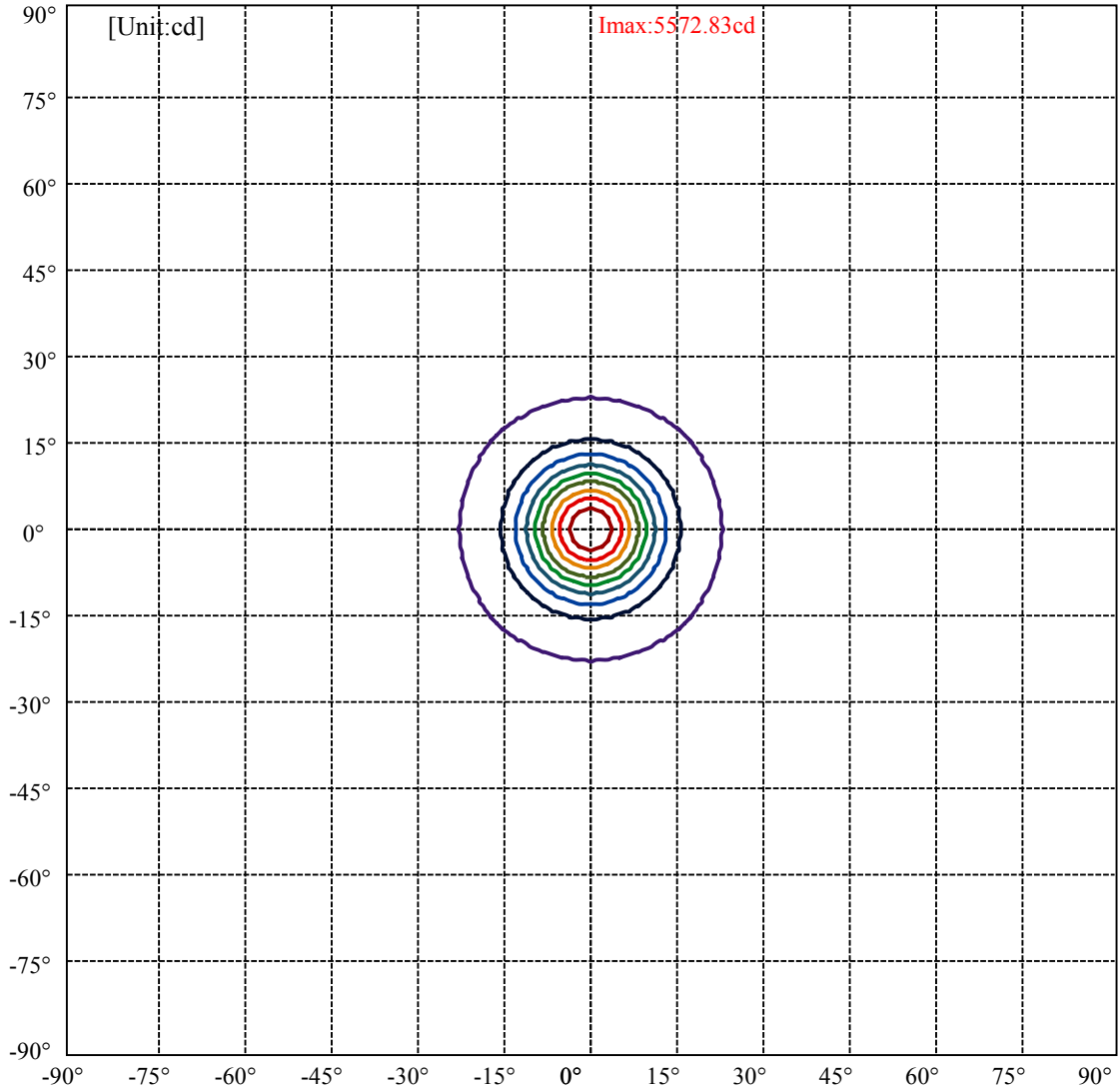
C90/C270: —————

Field angle(10%Imax):C0/180Left:22.5 Right:22.5
:C90/270Left:22.5 Right:22.5

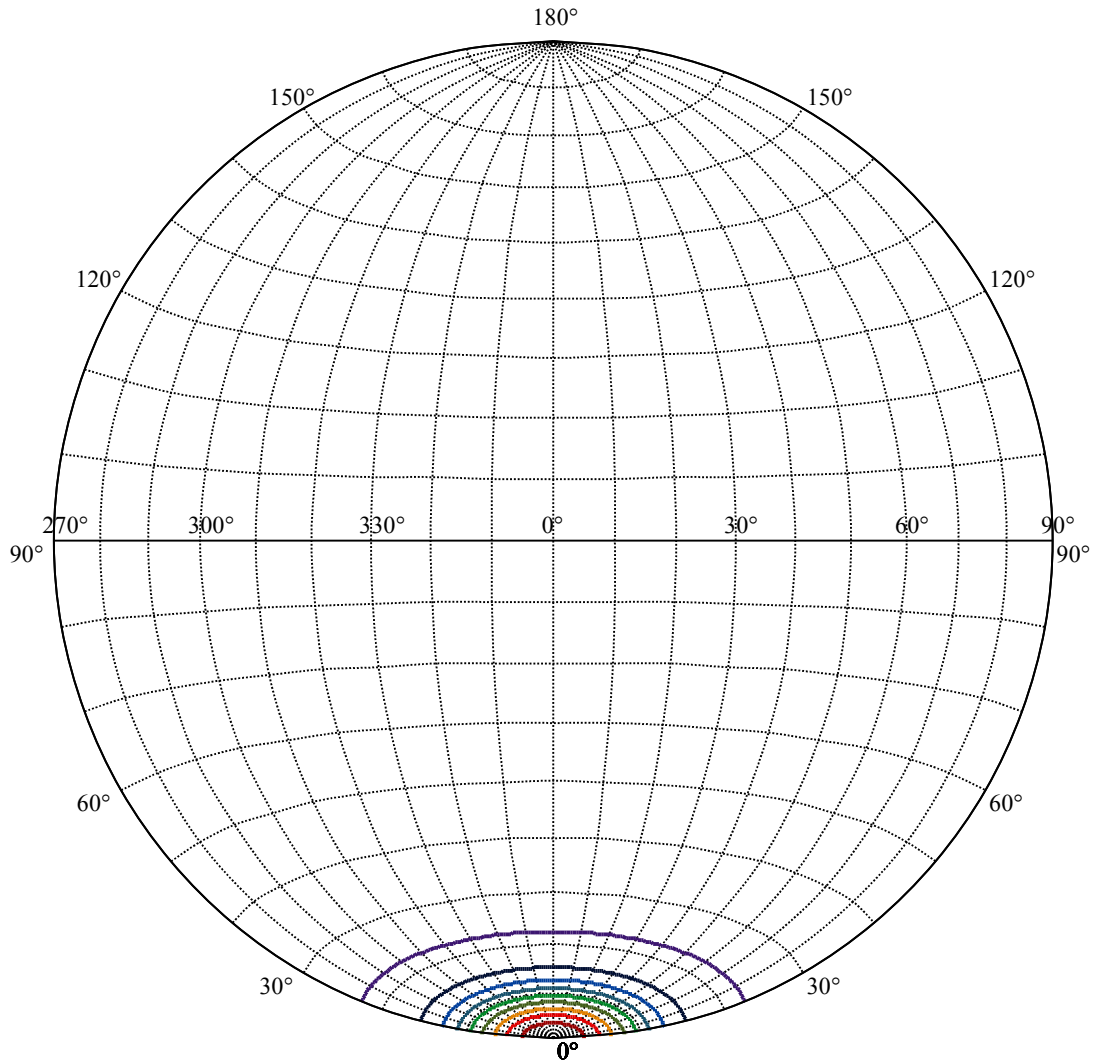
Beam Angle(50%Imax):C0/180Left:9.5 Right:9.5
:C90/270Left:9.5 Right:9.5



Max , Ave Beam angle of C0 plane 19.12



(10%Imax) 557.283	—
(20%Imax) 1114.57	—
(30%Imax) 1671.85	—
(40%Imax) 2229.13	—
(50%Imax) 2786.41	—
(60%Imax) 3343.7	—
(70%Imax) 3900.98	—
(80%Imax) 4458.26	—
(90%Imax) 5015.54	—



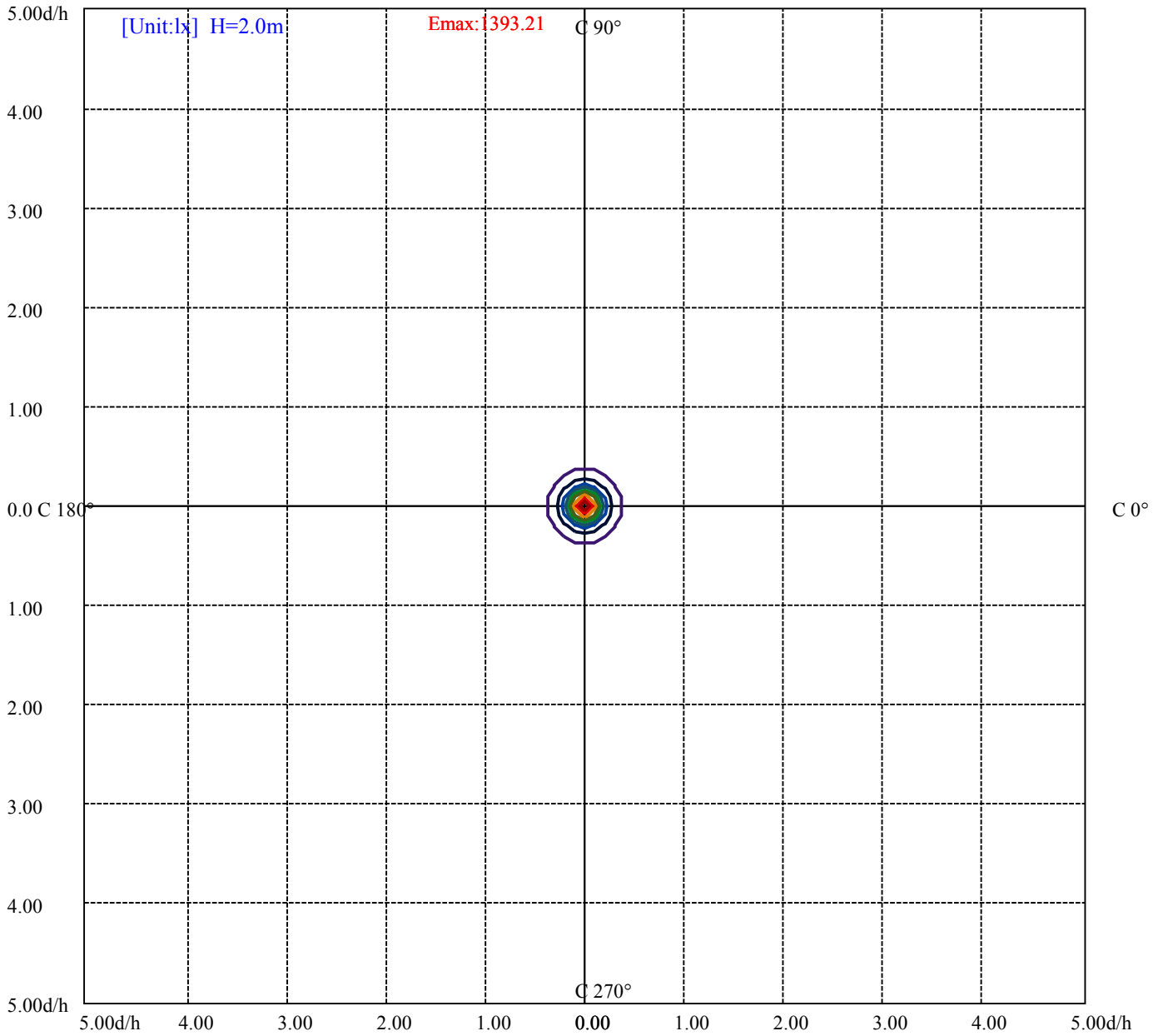
House

[Unit:cd]

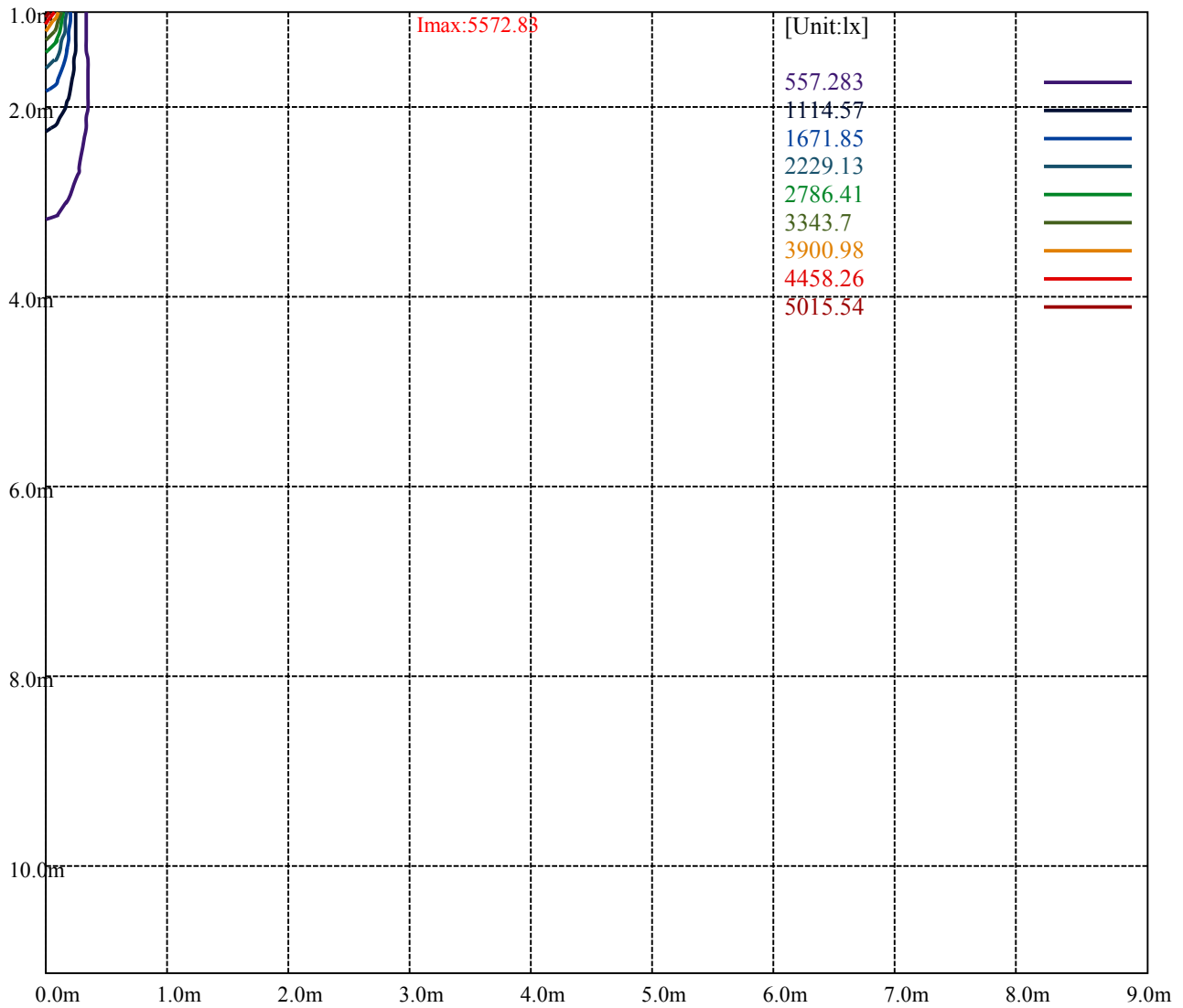
Road

Imax:5572.83

(10%Imax) 557.283	—
(20%Imax) 1114.57	—
(30%Imax) 1671.85	—
(40%Imax) 2229.13	—
(50%Imax) 2786.41	—
(60%Imax) 3343.7	—
(70%Imax) 3900.98	—
(80%Imax) 4458.26	—
(90%Imax) 5015.54	—



(10%Emax) 139.3205	—
(20%Emax) 278.64	—
(30%Emax) 417.9625	—
(40%Emax) 557.2825	—
(50%Emax) 696.6025	—
(60%Emax) 835.9225	—
(70%Emax) 975.2425	—
(80%Emax) 1114.565	—
(90%Emax) 1253.885	—



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

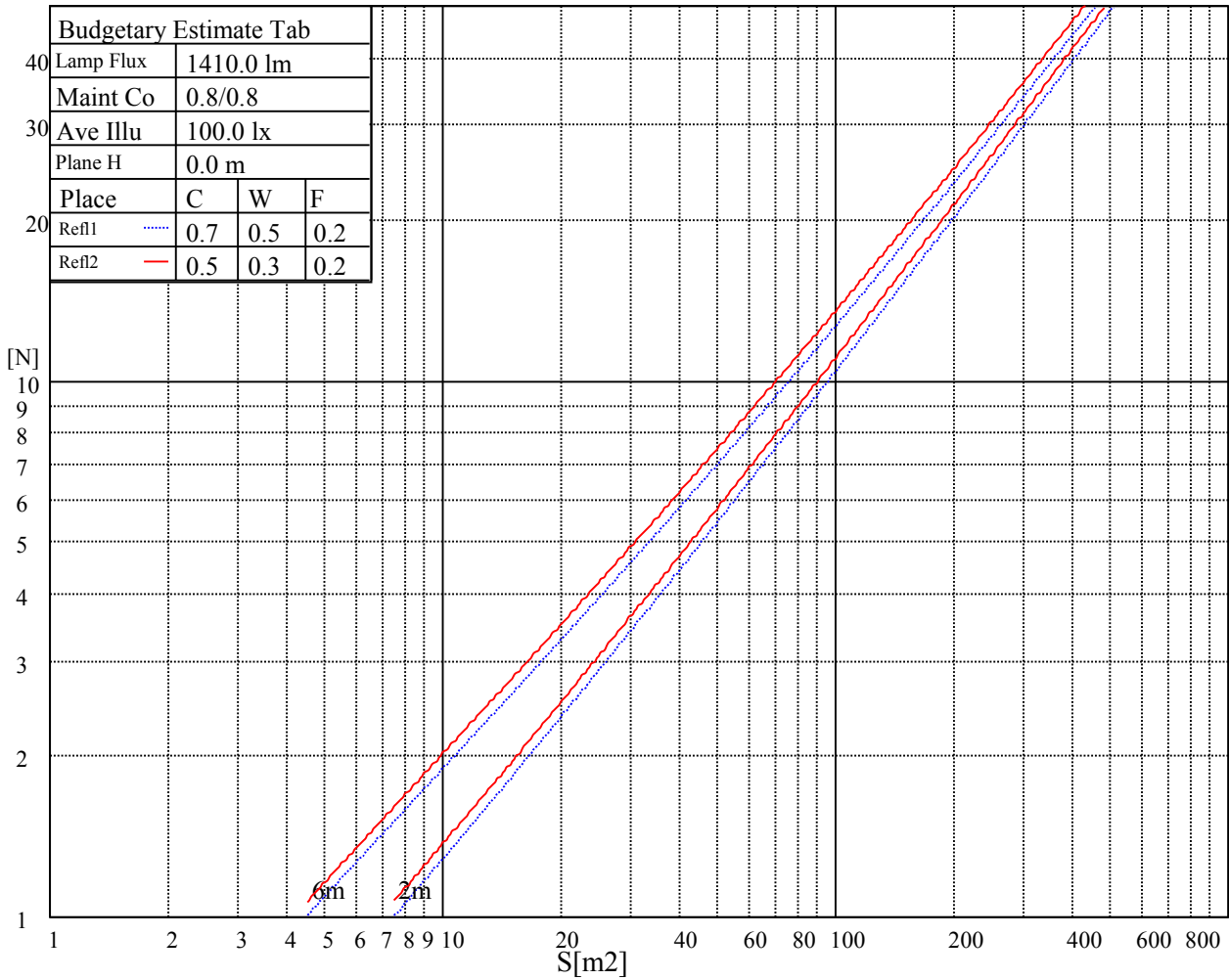
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

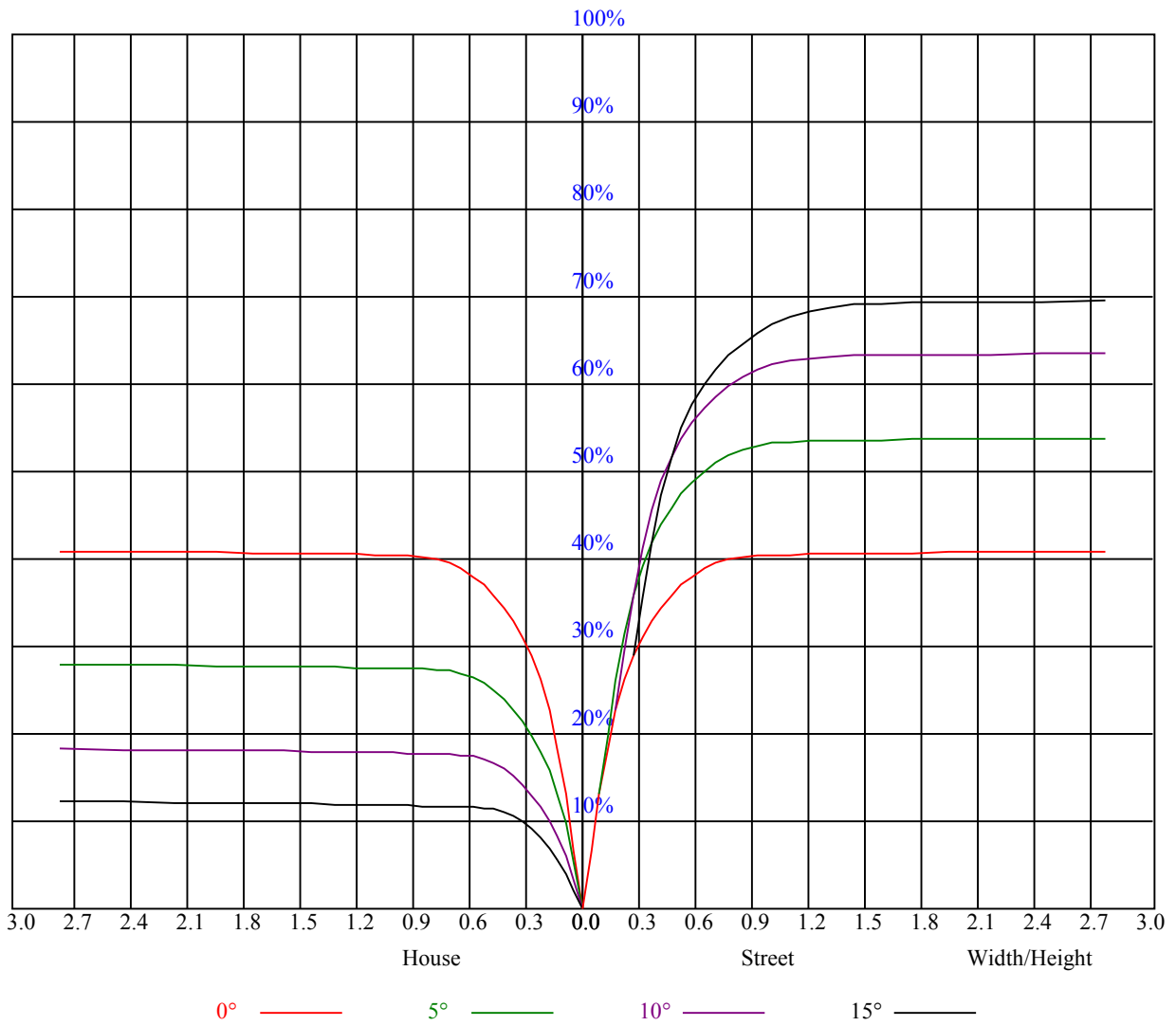
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	0.98	0.98	0.98	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.82
1	0.92	0.90	0.89	0.90	0.89	0.87	0.87	0.86	0.84	0.84	0.83	0.82	0.81	0.80	0.80	0.78
2	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.79	0.80	0.79	0.77	0.78	0.77	0.76	0.74
3	0.82	0.79	0.76	0.81	0.78	0.76	0.79	0.77	0.74	0.77	0.75	0.73	0.75	0.74	0.72	0.71
4	0.78	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.74	0.72	0.70	0.73	0.71	0.69	0.68
5	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.71	0.69	0.67	0.70	0.68	0.66	0.65
6	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62
7	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.60
8	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.58
9	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.56
10	0.62	0.58	0.55	0.61	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.60	0.57	0.55	0.54



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	5570.44	5517.00	5367.94	5133.94	4863.38	4503.94	4106.81	3736.69	3359.81
45.0	5594.63	5496.19	5309.44	5107.50	4743.56	4398.19	4017.38	3513.38	3115.69
90.0	5558.06	5433.19	5245.31	4959.00	4604.63	4245.19	3807.56	3358.13	2966.06
135.0	5568.19	5538.38	5410.69	5195.25	4947.19	4610.25	4226.06	3860.44	3488.63
180.0	5570.44	5538.38	5428.13	5222.25	4944.94	4648.50	4313.25	3855.38	3475.69
225.0	5594.63	5591.81	5501.81	5295.38	5091.75	4805.44	4344.75	4021.88	3636.00
270.0	5558.06	5588.44	5530.50	5374.13	5160.94	4853.25	4493.25	4140.56	3769.31
315.0	5568.19	5506.88	5375.25	5150.25	4858.31	4554.56	4221.56	3780.56	3417.19
360.0	5570.44	5517.00	5367.94	5133.94	4863.38	4503.94	4106.81	3736.69	3359.81
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2898.00	2541.94	2207.25	1863.56	1568.25	1345.50	1144.69	988.31	881.44
45.0	2736.56	2295.00	1978.31	1701.00	1413.56	1230.75	1084.50	954.00	848.25
90.0	2594.25	2172.38	1874.25	1616.63	1372.50	1118.31	1034.61	907.76	815.74
135.0	3030.75	2669.63	2322.00	1956.38	1631.81	1386.00	1166.06	1001.81	889.31
180.0	3098.25	2644.31	2304.00	1991.25	1672.88	1404.56	1106.16	1052.04	903.43
225.0	3249.56	2783.25	2431.13	2110.50	1762.31	1530.56	1337.06	1121.68	1014.24
270.0	3299.06	2928.94	2575.13	2246.06	1879.31	1624.50	1432.69	1187.44	1051.31
315.0	3054.38	2608.88	2262.94	1939.50	1616.63	1347.19	1112.68	973.13	866.19
360.0	2898.00	2541.94	2207.25	1863.56	1568.25	1345.50	1144.69	988.31	881.44
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	786.94	719.44	657.00	604.69	567.56	534.94	500.63	477.56	457.88
45.0	767.81	695.25	633.94	590.06	547.31	518.06	490.50	467.44	449.44
90.0	731.81	664.65	615.99	570.49	533.08	505.58	481.95	456.75	439.14
135.0	787.50	717.75	653.06	601.31	561.94	529.88	496.13	473.63	453.38
180.0	811.86	738.51	671.63	616.78	575.94	537.64	508.56	480.83	457.26
225.0	912.26	816.47	745.26	677.53	621.23	578.81	539.33	507.43	484.03
270.0	939.38	838.13	754.88	700.88	637.31	595.13	559.13	521.44	495.56
315.0	784.29	703.41	657.45	607.56	561.38	533.76	506.36	475.03	458.04
360.0	786.94	719.44	657.00	604.69	567.56	534.94	500.63	477.56	457.88
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	435.94	420.75	407.81	394.31	380.25	361.13	335.25	306.56	286.88
45.0	433.13	416.25	402.75	389.25	365.63	340.31	308.25	285.19	228.43
90.0	423.73	406.29	393.58	379.63	356.06	327.38	297.68	260.61	226.35
135.0	432.00	417.38	403.31	389.81	376.88	364.50	339.75	311.63	285.75
180.0	439.09	421.31	405.45	393.08	381.32	363.21	344.08	320.18	288.00
225.0	463.67	441.79	427.28	413.61	398.08	378.17	353.98	321.53	284.91
270.0	473.06	450.00	433.69	421.31	404.44	388.69	369.56	342.56	309.94
315.0	440.78	423.39	408.71	397.24	386.10	371.03	351.90	321.47	290.19
360.0	435.94	420.75	407.81	394.31	380.25	361.13	335.25	306.56	286.88
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	229.50	194.96	157.05	122.34	95.68	73.46	51.41	37.86	27.34
45.0	197.44	157.67	129.15	98.10	73.07	55.29	40.16	28.18	19.97
90.0	187.82	151.03	121.11	91.80	67.78	51.19	38.31	25.88	18.51
135.0	248.18	206.33	168.02	141.19	103.78	79.48	60.13	41.06	30.09
180.0	252.56	219.21	181.86	146.08	116.66	87.92	67.16	48.49	34.20
225.0	250.93	212.51	178.20	141.30	109.24	84.83	64.74	45.17	33.24
270.0	285.75	235.74	196.26	162.06	126.96	99.90	74.48	54.28	40.39
315.0	252.68	214.65	180.45	143.55	111.15	86.23	65.19	46.58	32.46
360.0	229.50	194.96	157.05	122.34	95.68	73.46	51.41	37.86	27.34

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	17.83	12.38	8.78	7.26	6.98	6.86	6.75	6.64	6.58
45.0	13.89	9.00	7.43	7.03	6.86	6.75	6.69	6.64	6.58
90.0	12.99	8.66	7.37	7.09	6.98	6.86	6.81	6.75	6.69
135.0	21.71	13.78	9.79	7.65	7.09	6.98	6.86	6.81	6.75
180.0	24.58	17.33	11.03	8.04	7.09	6.92	6.81	6.75	6.64
225.0	23.79	15.02	10.35	7.99	7.14	6.92	6.81	6.69	6.64
270.0	28.24	18.96	12.94	9.00	7.37	7.09	6.98	6.81	6.75
315.0	23.06	15.98	10.01	7.65	7.14	6.98	6.86	6.75	6.69
360.0	17.83	12.38	8.78	7.26	6.98	6.86	6.75	6.64	6.58
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	6.53	6.47	6.41	6.36	6.36	6.30	6.30	6.30	6.30
45.0	6.53	6.47	6.47	6.41	6.41	6.41	6.36	6.41	6.36
90.0	6.64	6.58	6.58	6.53	6.53	6.53	6.53	6.53	6.53
135.0	6.69	6.64	6.58	6.58	6.53	6.53	6.47	6.47	6.47
180.0	6.58	6.53	6.53	6.47	6.41	6.41	6.36	6.36	6.36
225.0	6.53	6.47	6.41	6.36	6.30	6.30	6.30	6.24	6.24
270.0	6.64	6.58	6.53	6.53	6.47	6.47	6.41	6.41	6.41
315.0	6.58	6.58	6.53	6.47	6.47	6.41	6.36	6.36	6.36
360.0	6.53	6.47	6.41	6.36	6.36	6.30	6.30	6.30	6.30
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.30	6.24	6.24	6.24	6.24	6.24	6.19	6.19	6.19
45.0	6.36	6.36	6.36	6.36	6.36	6.41	6.36	6.36	6.36
90.0	6.53	6.53	6.53	6.58	6.58	6.53	6.58	6.53	6.53
135.0	6.47	6.47	6.47	6.47	6.47	6.47	6.41	6.41	6.47
180.0	6.30	6.30	6.30	6.30	6.24	6.24	6.24	6.24	6.19
225.0	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24
270.0	6.41	6.41	6.41	6.41	6.41	6.41	6.47	6.47	6.53
315.0	6.36	6.36	6.36	6.30	6.30	6.30	6.30	6.30	6.30
360.0	6.30	6.24	6.24	6.24	6.24	6.24	6.19	6.19	6.19
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	6.19	6.13	6.19	6.19	6.13	6.13	6.13	6.13	6.13
45.0	6.36	6.36	6.36	6.36	6.36	6.36	6.36	6.36	6.47
90.0	6.53	6.53	6.58	6.58	6.58	6.64	6.64	6.81	6.86
135.0	6.41	6.47	6.41	6.41	6.36	6.36	6.41	6.41	6.41
180.0	6.24	6.19	6.19	6.19	6.19	6.13	6.13	6.13	6.13
225.0	6.24	6.19	6.24	6.24	6.24	6.24	6.24	6.24	6.24
270.0	6.58	6.53	6.58	6.58	6.58	6.58	6.58	6.58	6.58
315.0	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.36	6.36
360.0	6.19	6.13	6.19	6.19	6.13	6.13	6.13	6.13	6.13
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.13	6.13	6.13	6.08	6.08	5.96	5.40	5.12	5.12
45.0	6.58	6.75	7.09	7.88	8.94	6.13	5.29	5.12	5.12
90.0	6.92	6.92	7.03	7.76	8.89	5.74	5.23	5.12	5.06
135.0	6.53	6.75	7.26	8.66	10.74	12.66	5.40	5.18	5.12
180.0	6.08	6.08	6.08	6.02	5.96	5.85	5.34	5.12	5.06
225.0	6.24	6.30	6.36	6.53	7.14	8.66	5.68	5.18	5.12
270.0	6.64	6.69	6.75	7.03	7.93	8.78	5.74	5.29	5.18
315.0	6.36	6.41	6.69	7.26	8.61	10.52	5.34	5.18	5.12
360.0	6.13	6.13	6.13	6.08	6.08	5.96	5.40	5.12	5.12

Intensity data(cd)

C/γ(°)	90.0
0.0	5.06
45.0	5.12
90.0	5.12
135.0	5.12
180.0	5.06
225.0	5.12
270.0	5.12
315.0	5.12
360.0	5.06