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Nata

LumCAT: 3-2115-N	
Luminaire: 92.70.135.00	
Report No: NATA0100	Voltage(V): 33.8000
Test No: GC2018061914	Current(A): 0.4900
LampCAT: NICHIA NFCW108B-V3	Power (W): 16.5620
Lamp flux(lm): 2263.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 81	Width(mm): 81
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1899.69
Efficiency(%): 83.95%
Lumens(lm)/Power(W): 115.38
Central intensity(cd): 11978.900
Maximum intensity(cd): 11978.900
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=15.4
 [C90/270]Total=15.4
Field angle(10%Imax): [C0/180]Total=42.5
 [C90/270]Total=42.5
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
Maximum s/h(1/4): C0_180=0.31 C90_270=0.31
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 84.44%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.485%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11978.896	11.463	11.463	.507%	.603%
2.0	11506.719	88.072	99.535	3.892%	5.240%
4.0	9936.097	152.008	251.543	6.717%	13.241%
6.0	7723.862	177.066	428.608	7.824%	22.562%
8.0	5692.488	173.749	602.357	7.678%	31.708%
10.0	4235.351	161.296	763.654	7.128%	40.199%
12.0	3288.106	149.930	913.584	6.625%	48.091%
14.0	2624.126	139.227	1052.812	6.152%	55.420%
16.0	2012.105	121.634	1174.445	5.375%	61.823%
18.0	1636.964	110.940	1285.385	4.902%	67.663%
20.0	1338.215	100.379	1385.764	4.436%	72.947%
22.0	1110.969	91.273	1477.037	4.033%	77.751%
24.0	946.846	84.461	1561.498	3.732%	82.197%
26.0	803.706	77.269	1638.767	3.414%	86.265%
28.0	652.584	67.191	1705.958	2.969%	89.802%
30.0	477.174	52.325	1758.284	2.312%	92.556%
32.0	288.750	33.558	1791.842	1.483%	94.323%
34.0	134.324	16.473	1808.315	.728%	95.190%
36.0	64.850	8.360	1816.675	.369%	95.630%
38.0	46.819	6.322	1822.996	.279%	95.963%
40.0	36.674	5.170	1828.166	.228%	96.235%
42.0	30.233	4.437	1832.603	.196%	96.468%
44.0	25.918	3.949	1836.551	.174%	96.676%
46.0	23.055	3.637	1840.189	.161%	96.868%
48.0	21.169	3.450	1843.639	.152%	97.049%
50.0	19.634	3.299	1846.937	.146%	97.223%
52.0	18.623	3.218	1850.156	.142%	97.392%
54.0	17.900	3.176	1853.332	.140%	97.559%
56.0	17.384	3.161	1856.493	.140%	97.726%
58.0	16.957	3.154	1859.646	.139%	97.892%
60.0	16.668	3.166	1862.812	.140%	98.059%
62.0	16.483	3.192	1866.004	.141%	98.227%
64.0	16.352	3.223	1869.227	.142%	98.396%
66.0	15.478	3.101	1872.328	.137%	98.559%
68.0	14.273	2.902	1875.231	.128%	98.712%
70.0	13.317	2.744	1877.975	.121%	98.857%
72.0	12.560	2.620	1880.595	.116%	98.995%
74.0	12.085	2.548	1883.142	.113%	99.129%

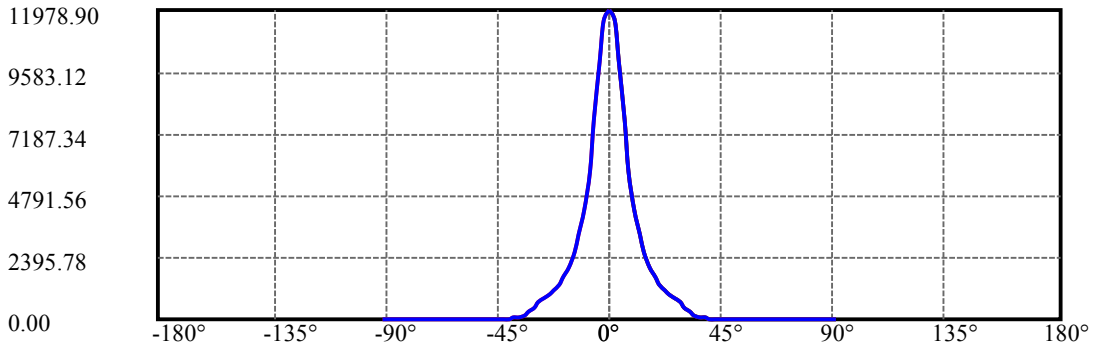
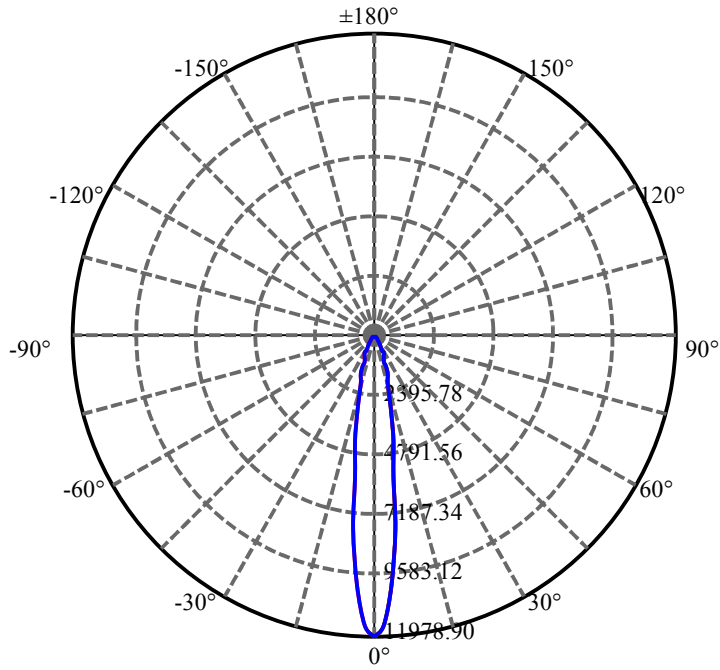
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.624	2.474	1885.616	.109%	99.259%
78.0	11.183	2.399	1888.015	.106%	99.385%
80.0	10.708	2.313	1890.328	.102%	99.507%
82.0	10.282	2.233	1892.561	.099%	99.624%
84.0	9.876	2.154	1894.715	.095%	99.738%
86.0	9.470	2.072	1896.787	.092%	99.847%
88.0	8.995	1.971	1898.758	.087%	99.951%
90.0	8.541	0.937	1899.695	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1758.28	77.70%	92.56%
0-40	1828.17	80.79%	96.23%
0-60	1862.81	82.32%	98.06%
0-90	1898.76	83.90%	99.95%
0-120	1898.76	83.90%	99.95%
0-180	1899.69	83.95%	100.00%
60-90	39.11	1.73%	2.06%
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%
0-23.01	1519.76	67.16%	80.00%

ZONAL LUMEN SUMMARY

0-10	763.65
10-20	622.11
20-30	372.52
30-40	69.88
40-50	18.77
50-60	15.87
60-70	15.16
70-80	12.35
80-90	8.43
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



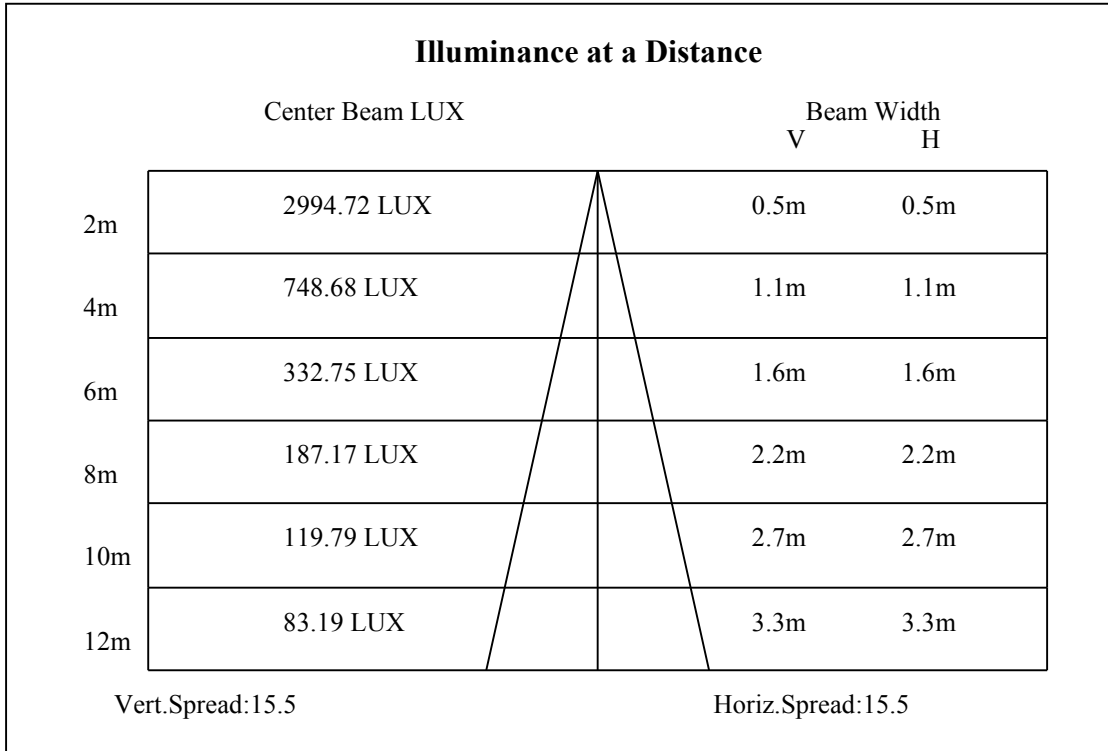
C0(Max): —————

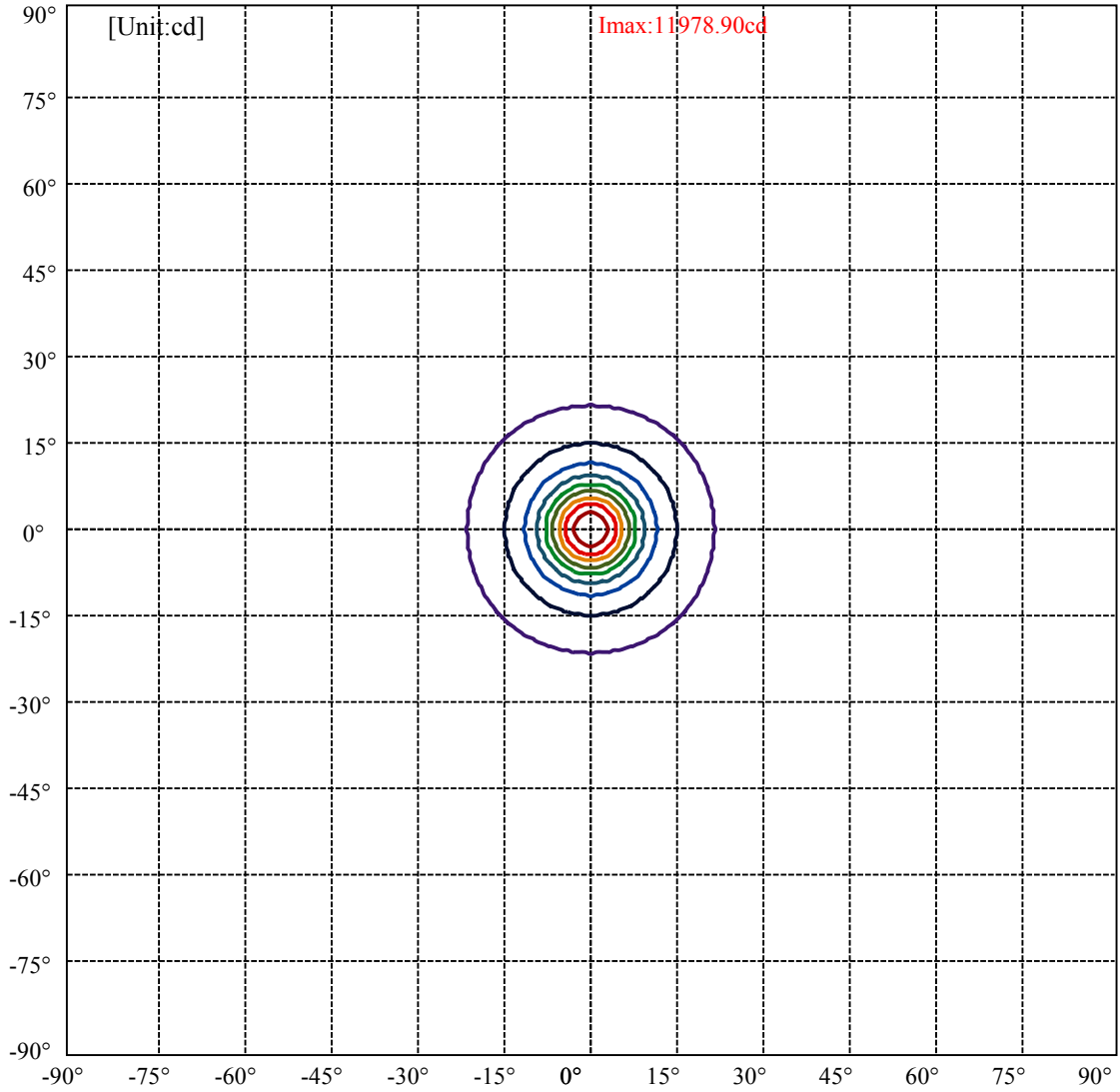
C0/C180: —————

C90/C270: —————

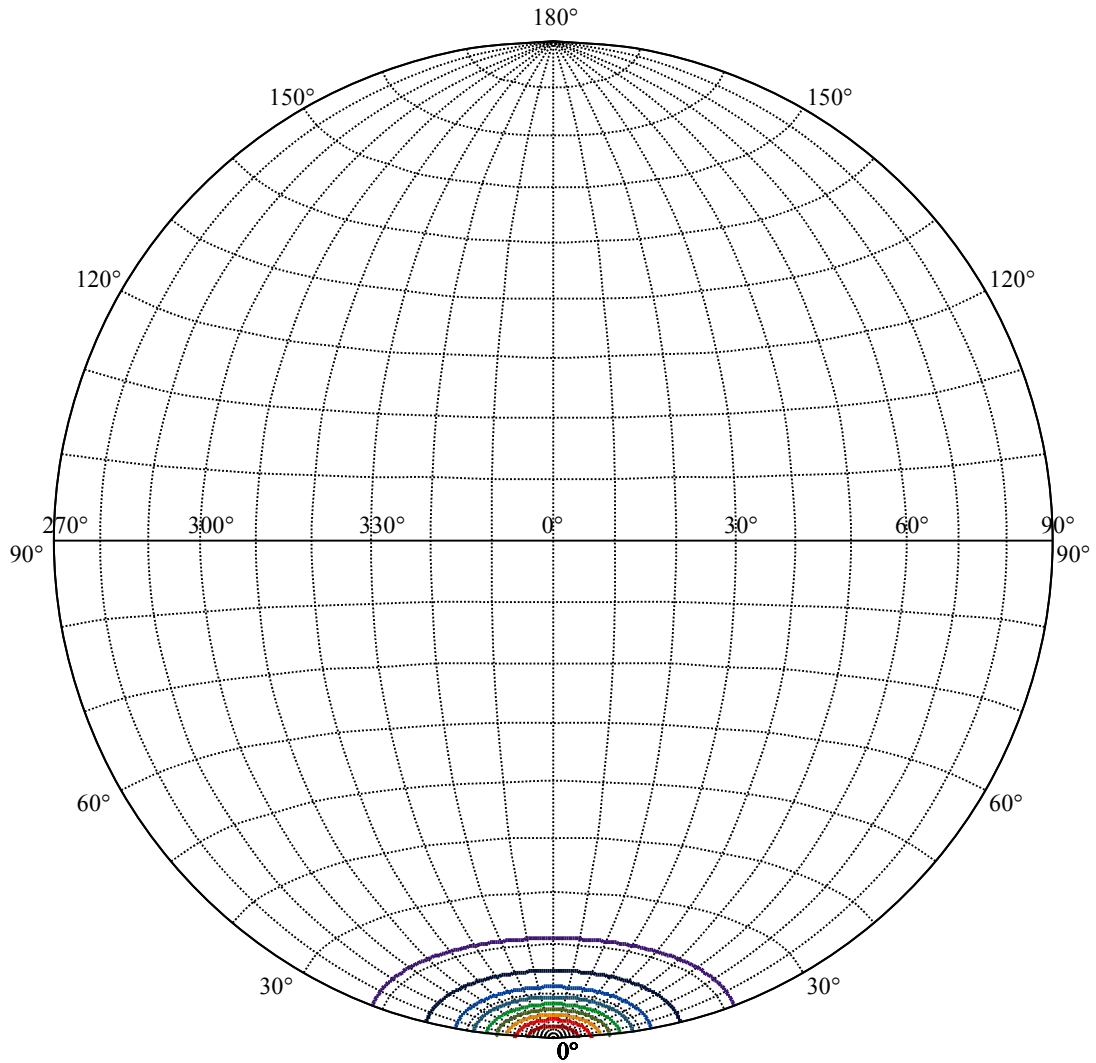
Field angle(10%Imax):C0/180Left:21.2 Right:21.2
:C90/270Left:21.2 Right:21.2

Beam Angle(50%Imax):C0/180Left:7.7 Right:7.7
:C90/270Left:7.7 Right:7.7





(10%Imax) 1197.89	—
(20%Imax) 2395.78	—
(30%Imax) 3593.67	—
(40%Imax) 4791.56	—
(50%Imax) 5989.45	—
(60%Imax) 7187.34	—
(70%Imax) 8385.23	—
(80%Imax) 9583.12	—
(90%Imax) 10781	—



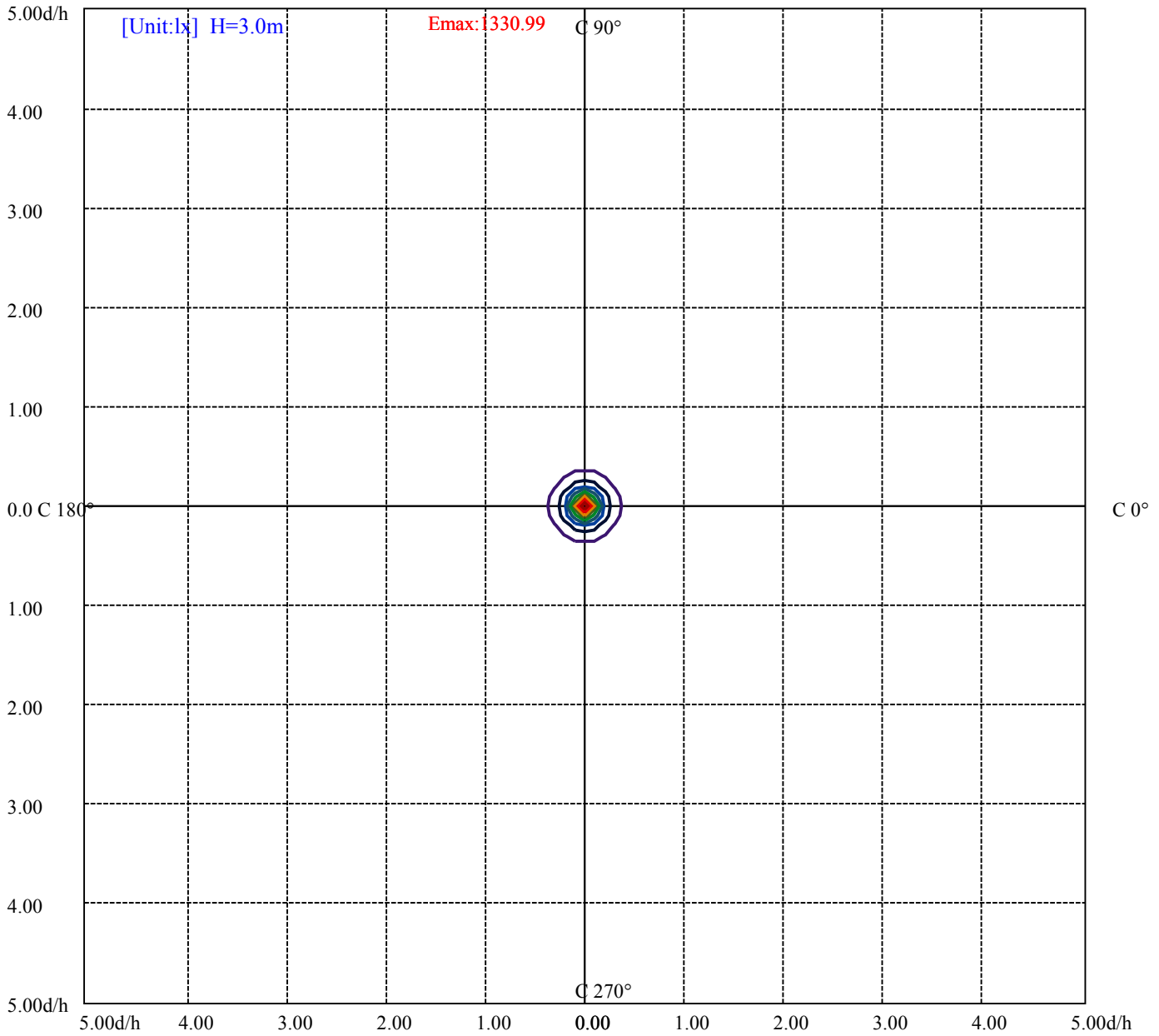
House

[Unit:cd]

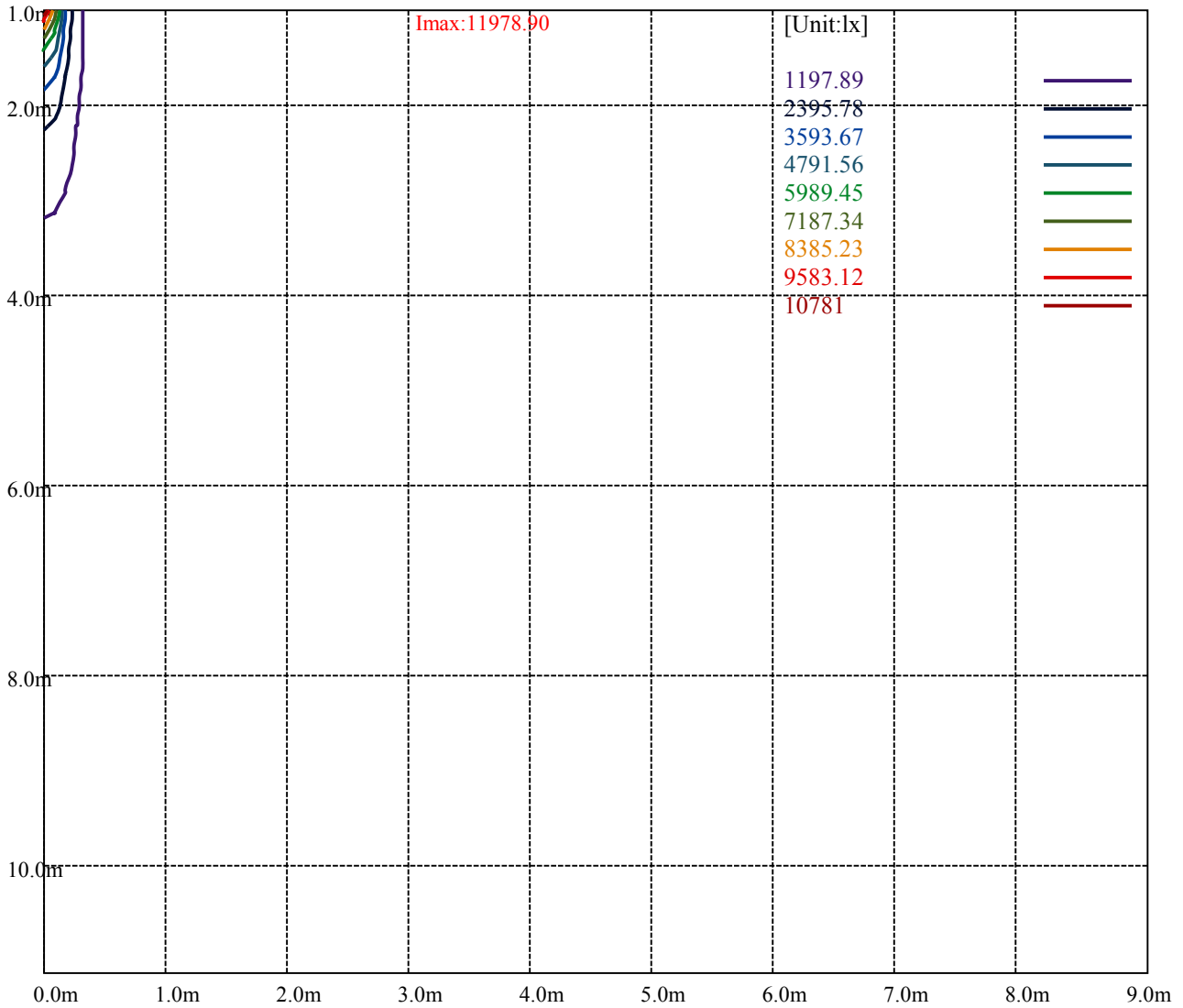
Road

Imax:11978.90

(10%Imax)	1197.89	—
(20%Imax)	2395.78	—
(30%Imax)	3593.67	—
(40%Imax)	4791.56	—
(50%Imax)	5989.45	—
(60%Imax)	7187.34	—
(70%Imax)	8385.23	—
(80%Imax)	9583.12	—
(90%Imax)	10781	—



(10%Emax) 133.0989	—
(20%Emax) 266.1967	—
(30%Emax) 399.2955	—
(40%Emax) 532.3933	—
(50%Emax) 665.4922	—
(60%Emax) 798.5911	—
(70%Emax) 931.6889	—
(80%Emax) 1064.788	—
(90%Emax) 1197.889	—



Luminance Table

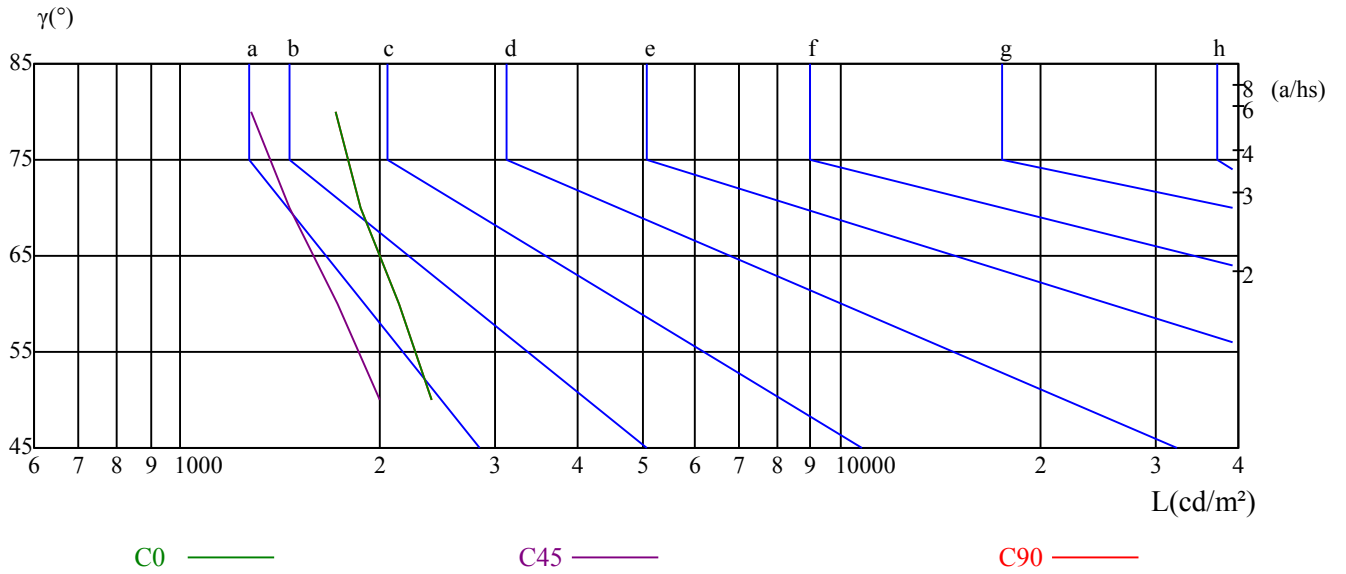
γ	45	50	55	60	65	70	75	80	85
C0	0	2398	0	2145	0	1872	0	1715	0
C45	0	1997	0	1731	0	1458	0	1281	0
C90	0	2398	0	2145	0	1872	0	1715	0

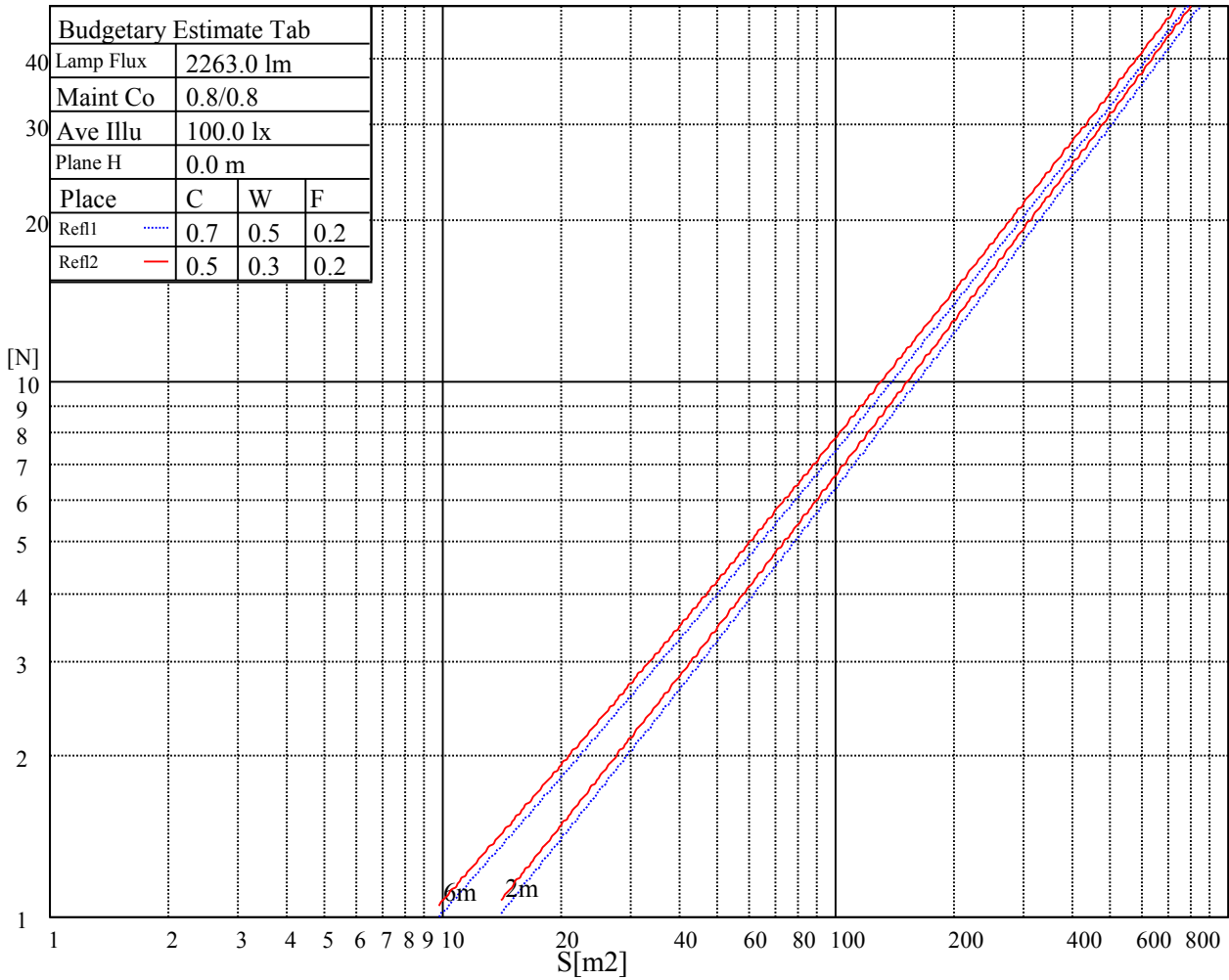
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5108	5108	5108	6792	6792	6792	17343	17343	17343

Glare Table

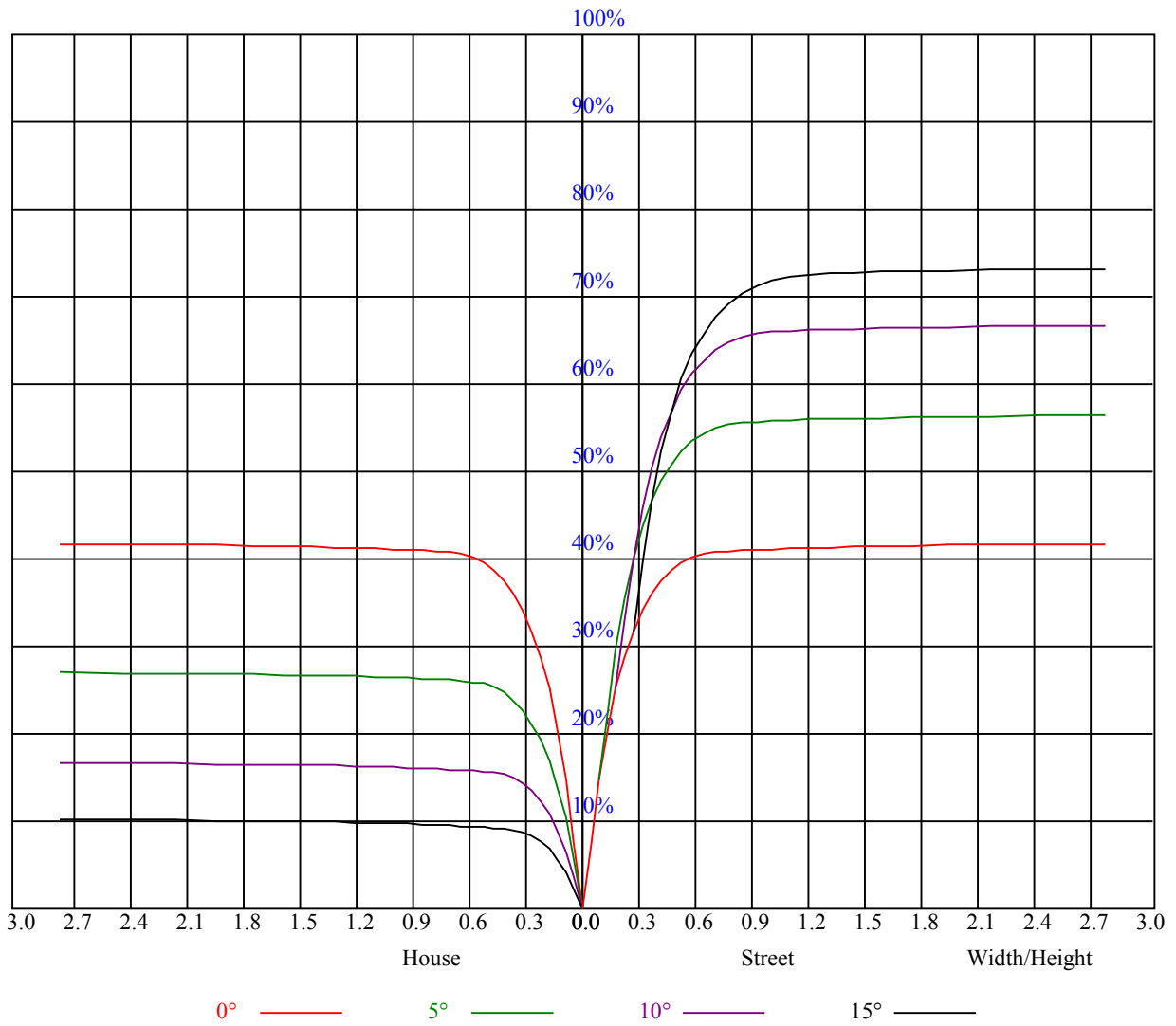
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.01	1.01	1.01	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.84
1	0.94	0.92	0.91	0.92	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.80
2	0.89	0.87	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.80	0.81	0.79	0.78	0.77
3	0.85	0.82	0.79	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.76	0.78	0.77	0.75	0.74
4	0.82	0.78	0.76	0.81	0.78	0.75	0.79	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.73	0.72
5	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.74	0.72	0.70	0.69
6	0.76	0.72	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.72	0.70	0.68	0.67
7	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.70	0.68	0.66	0.65
8	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.69	0.66	0.64	0.64
9	0.69	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.62
10	0.67	0.64	0.62	0.67	0.64	0.62	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.60



Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	11875.67	11859.15	10730.49	8742.96	6419.58	4767.88	3732.82	2857.43	2235.84
45.0	11991.28	11534.32	9976.22	7586.77	5725.87	4255.86	3264.84	2791.36	2033.78
90.0	12024.32	11484.77	9801.14	7680.92	5642.18	4175.48	3248.88	2467.08	1933.58
135.0	12029.82	11616.90	10119.37	7862.05	5841.48	4321.93	3358.44	2807.88	2040.94
180.0	11875.67	10917.13	8895.46	6720.73	4881.85	3681.62	2908.08	2263.92	1818.51
225.0	11991.28	11468.25	9821.51	7625.31	5493.53	4073.62	3185.01	2461.02	1972.67
270.0	12024.32	11660.95	10257.01	7840.03	5902.05	4371.48	3297.88	2796.87	2033.78
315.0	12018.81	11512.29	9887.58	7732.12	5633.37	4234.94	3308.89	2547.46	2027.73
360.0	11875.67	11859.15	10730.49	8742.96	6419.58	4767.88	3732.82	2857.43	2235.84
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1819.61	1478.26	1244.83	1046.62	873.19	732.80	563.78	369.43	188.02
45.0	1663.80	1352.19	1135.81	951.93	830.25	683.80	515.88	317.68	144.69
90.0	1534.97	1249.78	1023.50	882.50	754.93	605.84	441.39	271.59	140.01
135.0	1669.86	1357.69	1142.42	961.84	823.64	682.70	508.17	312.17	132.58
180.0	1477.71	1232.71	1026.64	883.66	748.77	565.59	387.05	196.99	77.57
225.0	1604.89	1334.02	1096.39	944.11	810.65	666.02	466.16	272.20	128.61
270.0	1679.77	1338.97	1124.25	939.26	774.09	621.04	460.27	290.15	136.21
315.0	1645.09	1362.10	1093.92	964.86	814.12	662.88	474.70	279.80	126.91
360.0	1819.61	1478.26	1244.83	1046.62	873.19	732.80	563.78	369.43	188.02
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	81.04	51.81	39.92	31.88	26.87	23.73	21.69	19.99	18.83
45.0	66.56	47.18	36.83	30.01	25.88	22.96	21.31	19.88	18.66
90.0	63.87	47.62	37.93	31.66	27.36	24.45	22.30	20.65	19.77
135.0	61.17	45.15	35.73	29.35	25.27	22.24	20.65	19.27	18.39
180.0	54.01	41.13	31.16	26.37	22.90	20.87	19.27	18.06	17.23
225.0	61.33	45.92	36.23	29.79	25.16	22.41	20.37	18.88	18.06
270.0	68.99	49.39	39.15	32.37	28.02	24.89	22.79	20.81	19.49
315.0	61.83	46.36	36.45	30.45	25.88	22.90	20.98	19.55	18.55
360.0	81.04	51.81	39.92	31.88	26.87	23.73	21.69	19.99	18.83
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	17.78	17.23	16.85	16.63	16.52	16.41	15.86	14.76	13.82
45.0	17.95	17.34	16.90	16.63	16.41	16.41	15.64	14.31	13.27
90.0	19.10	18.50	17.78	17.12	16.68	16.24	15.03	13.98	13.21
135.0	17.73	17.23	16.85	16.63	16.52	16.57	15.64	14.37	13.38
180.0	16.74	16.46	16.30	16.30	16.35	15.97	14.92	13.87	12.99
225.0	17.45	17.07	16.74	16.63	16.46	16.46	15.64	14.26	13.21
270.0	18.61	17.95	17.40	16.90	16.57	16.35	15.53	14.31	13.43
315.0	17.84	17.29	16.85	16.52	16.35	16.41	15.58	14.31	13.21
360.0	17.78	17.23	16.85	16.63	16.52	16.41	15.86	14.76	13.82
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	12.88	12.33	11.95	11.51	11.07	10.63	10.24	9.86	9.47
45.0	12.50	12.06	11.56	11.12	10.68	10.24	9.86	9.52	9.03
90.0	12.55	12.11	11.67	11.18	10.63	10.13	9.63	9.14	8.70
135.0	12.61	12.11	11.56	11.18	10.68	10.24	9.91	9.52	9.03
180.0	12.33	11.89	11.45	11.01	10.57	10.24	9.86	9.47	8.81
225.0	12.44	12.00	11.56	11.12	10.68	10.30	9.86	9.52	9.08
270.0	12.72	12.22	11.73	11.29	10.74	10.24	9.80	9.25	8.81
315.0	12.44	11.95	11.51	11.07	10.63	10.24	9.86	9.47	9.03
360.0	12.88	12.33	11.95	11.51	11.07	10.63	10.24	9.86	9.47

Intensity data(cd)

C/ γ (°)	90.0
0.0	8.75
45.0	8.53
90.0	8.48
135.0	8.53
180.0	8.42
225.0	8.59
270.0	8.48
315.0	8.53
360.0	8.75