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Nata

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Client:

LumCAT: 2-1793-N

Luminaire: 92.70.135.00

Report No: nata-0100

Test No: GC2018052804

LampCAT: NICHIA NFDWJ130B-V3

Lamp flux(lm): 2340.9

Number of Lamps: 1

Length(mm): 69

Phm Type: C

Voltage(V): 36.3000

Current(A): 0.4900

Power (W): 17.7870

PF: 0.0000

Ballast type: DC

Width(mm): 69

Height(mm): 0

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Photometric Results

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Lumens(lm): 1984.27, Efficiency(%): 84.77% , Luminous Efficacy(lm/W): 111.56

Central intensity(cd): 10723.200, Maximum intensity(cd): 10723.200

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=18.6

[C90/270]Total=18.6

Field angle(10%Imax): [C0/180]Total=45.6

[C90/270]Total=45.6

Maximum s/h(1/2): C0\_180=0.32 C90\_270=0.32

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(%): 85.19%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.766%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10723.197	10.262	10.262	.438%	.517%
2.0	10348.194	79.204	89.466	3.384%	4.509%
4.0	9373.077	143.394	232.86	6.126%	11.735%
6.0	7922.065	181.609	414.47	7.758%	20.888%
8.0	6325.567	193.072	607.542	8.248%	30.618%
10.0	4853.497	184.838	792.379	7.896%	39.933%
12.0	3619.477	165.040	957.42	7.050%	48.250%
14.0	2679.320	142.156	1099.576	6.073%	55.414%
16.0	2119.603	128.132	1227.708	5.474%	61.872%
18.0	1668.140	113.052	1340.76	4.829%	67.569%
20.0	1367.573	102.581	1443.341	4.382%	72.739%
22.0	1142.723	93.882	1537.223	4.011%	77.470%
24.0	976.212	87.081	1624.304	3.720%	81.859%
26.0	837.174	80.486	1704.79	3.438%	85.915%
28.0	685.803	70.611	1775.402	3.016%	89.474%
30.0	511.405	56.079	1831.481	2.396%	92.300%
32.0	339.739	39.484	1870.965	1.687%	94.290%
34.0	189.649	23.258	1894.223	.994%	95.462%
36.0	89.763	11.571	1905.794	.494%	96.045%
38.0	49.764	6.719	1912.513	.287%	96.383%
40.0	38.023	5.360	1917.874	.229%	96.654%
42.0	30.969	4.545	1922.418	.194%	96.883%
44.0	25.911	3.947	1926.366	.169%	97.082%
46.0	21.947	3.462	1929.828	.148%	97.256%
48.0	19.187	3.127	1932.955	.134%	97.414%
50.0	17.446	2.931	1935.886	.125%	97.561%
52.0	16.249	2.808	1938.694	.120%	97.703%
54.0	15.505	2.751	1941.445	.118%	97.842%
56.0	15.065	2.739	1944.184	.117%	97.980%
58.0	14.721	2.738	1946.922	.117%	98.118%
60.0	14.500	2.754	1949.676	.118%	98.256%
62.0	14.322	2.773	1952.45	.118%	98.396%
64.0	14.088	2.777	1955.227	.119%	98.536%
66.0	13.551	2.715	1957.942	.116%	98.673%
68.0	12.952	2.634	1960.575	.113%	98.806%
70.0	12.367	2.549	1963.124	.109%	98.934%
72.0	11.796	2.460	1965.584	.105%	99.058%
74.0	11.342	2.391	1967.975	.102%	99.179%

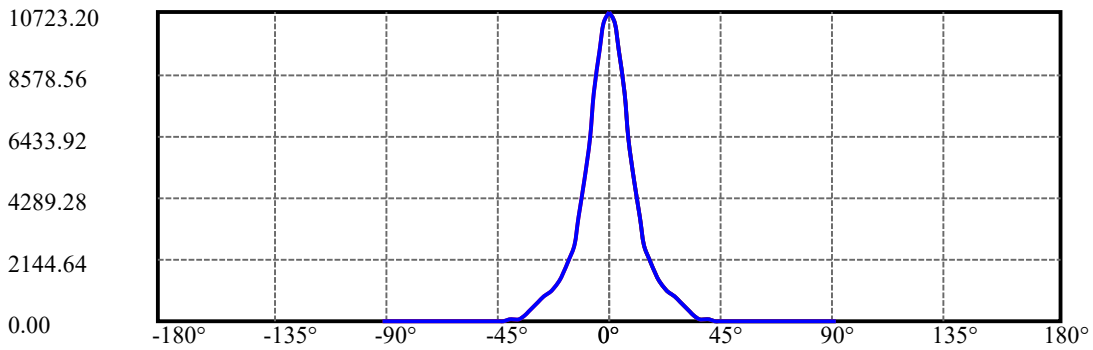
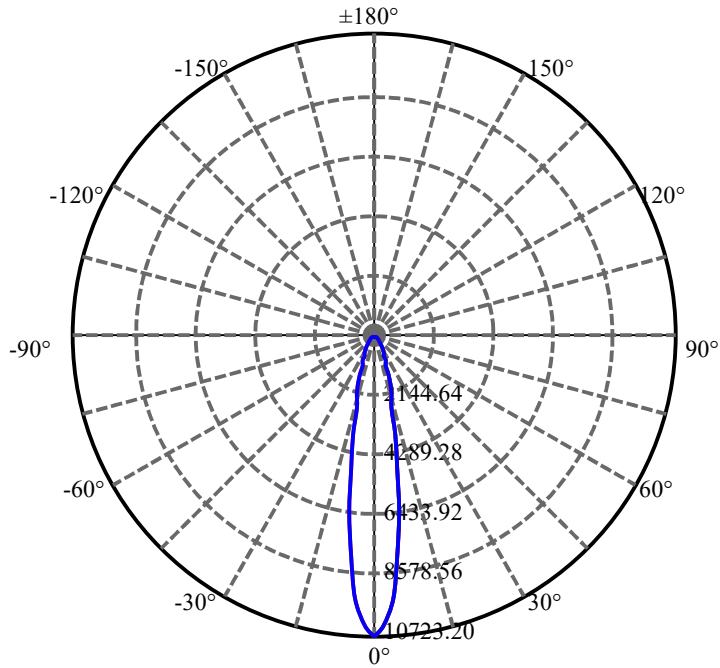
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.908	2.321	1970.297	.099%	99.296%
78.0	10.591	2.272	1972.569	.097%	99.410%
80.0	10.330	2.231	1974.8	.095%	99.522%
82.0	10.323	2.242	1977.042	.096%	99.635%
84.0	10.007	2.183	1979.224	.093%	99.745%
86.0	9.717	2.126	1981.35	.091%	99.853%
88.0	9.015	1.976	1983.326	.084%	99.952%
90.0	8.651	0.949	1984.275	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1831.48	78.24%	92.30%
0-40	1917.87	81.93%	96.65%
0-60	1949.68	83.29%	98.26%
0-90	1983.33	84.73%	99.95%
0-120	1983.33	84.73%	99.95%
0-180	1984.27	84.77%	100.00%
60-90	36.40	1.56%	1.83%
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%
0-23.15	1587.42	67.81%	80.00%

ZONAL LUMEN SUMMARY

0-10	792.38
10-20	650.96
20-30	388.14
30-40	86.39
40-50	18.01
50-60	13.79
60-70	13.45
70-80	11.68
80-90	8.53
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: —————

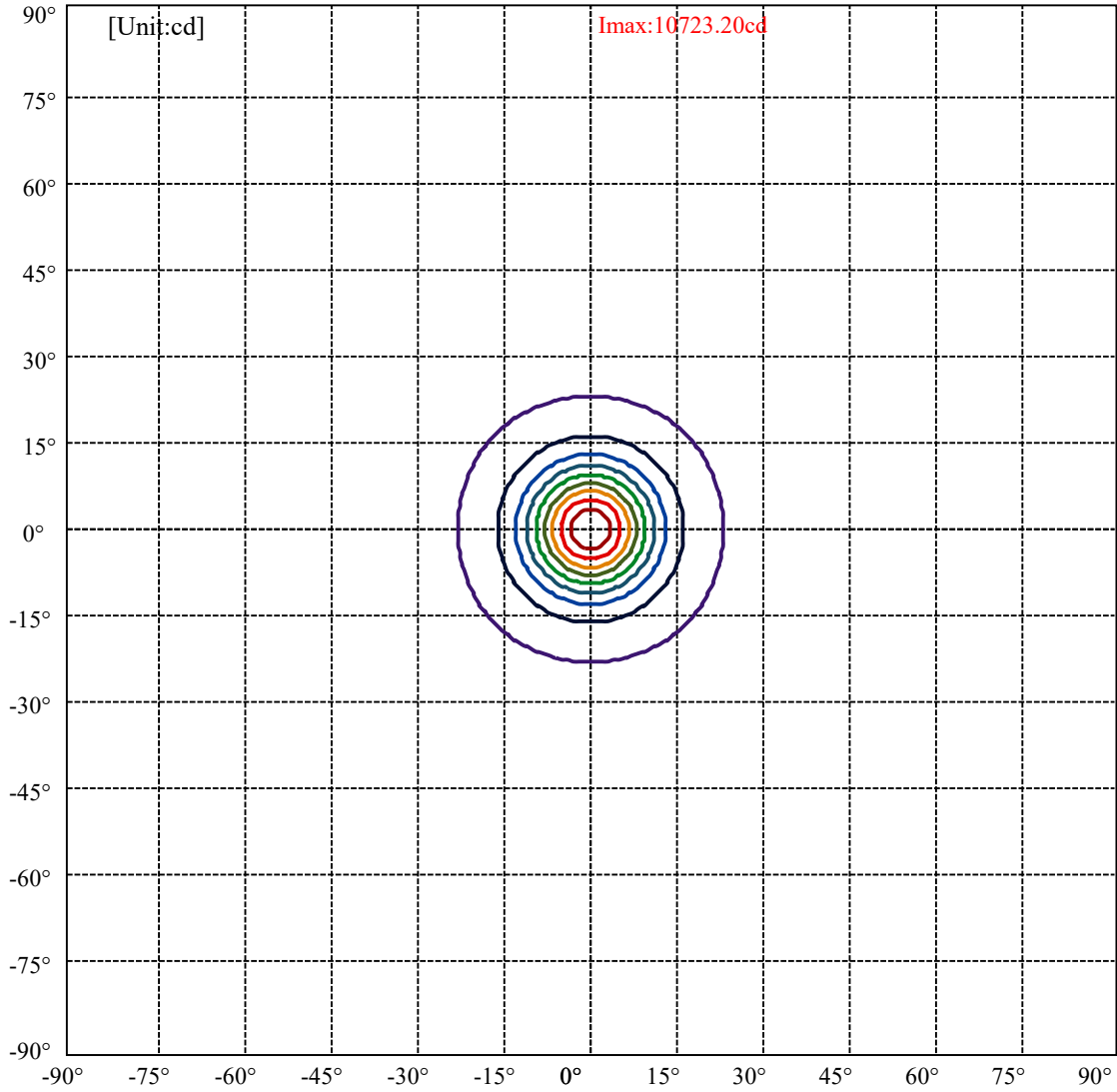
Field angle(10%Imax):C0/180Left:22.8 Right:22.8

:C90/270Left:22.8 Right:22.8

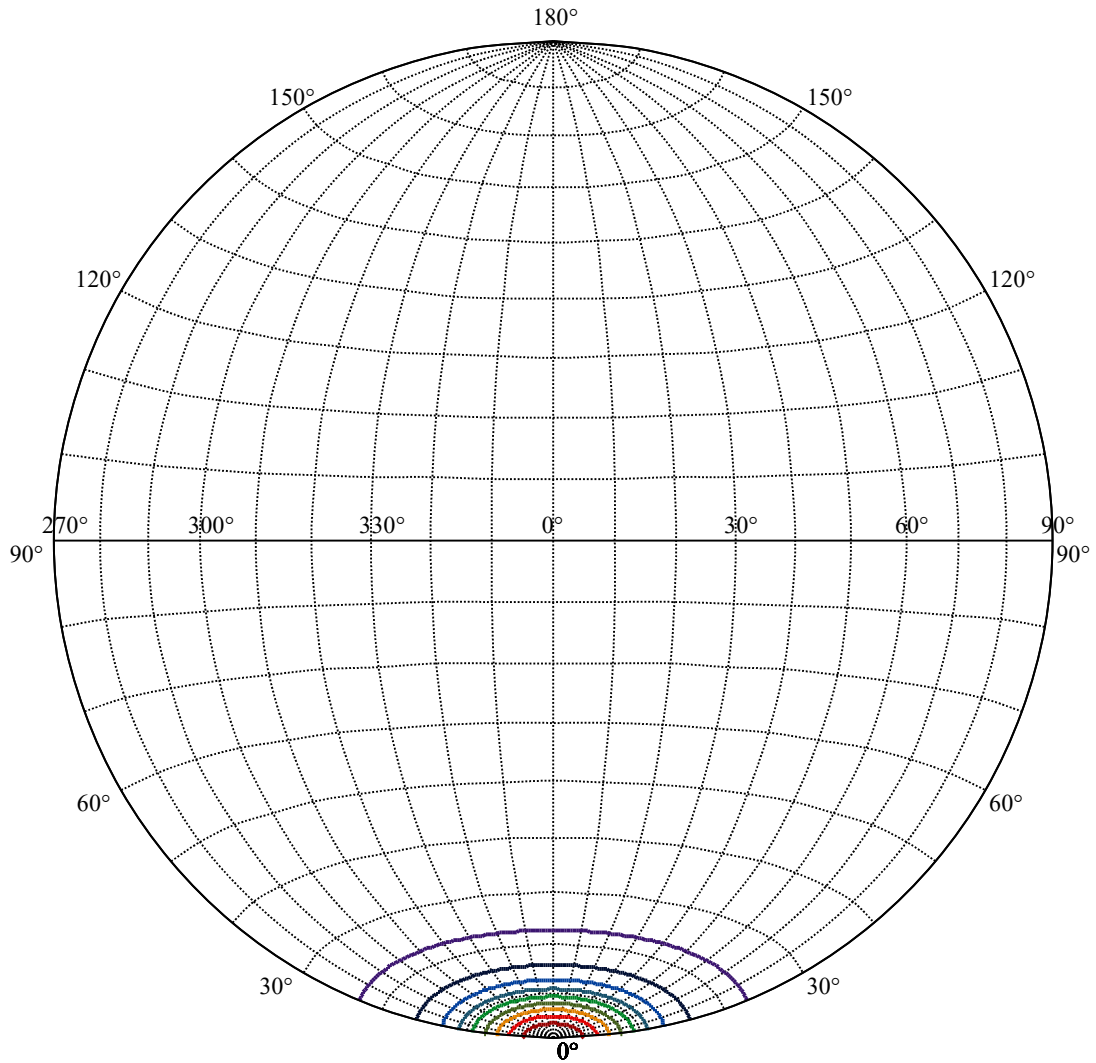
Beam Angle(50%Imax):C0/180Left:9.3 Right:9.3

:C90/270Left:9.3 Right:9.3





(10%Imax) 1072.32	—
(20%Imax) 2144.64	—
(30%Imax) 3216.96	—
(40%Imax) 4289.28	—
(50%Imax) 5361.6	—
(60%Imax) 6433.92	—
(70%Imax) 7506.24	—
(80%Imax) 8578.56	—
(90%Imax) 9650.88	—



House

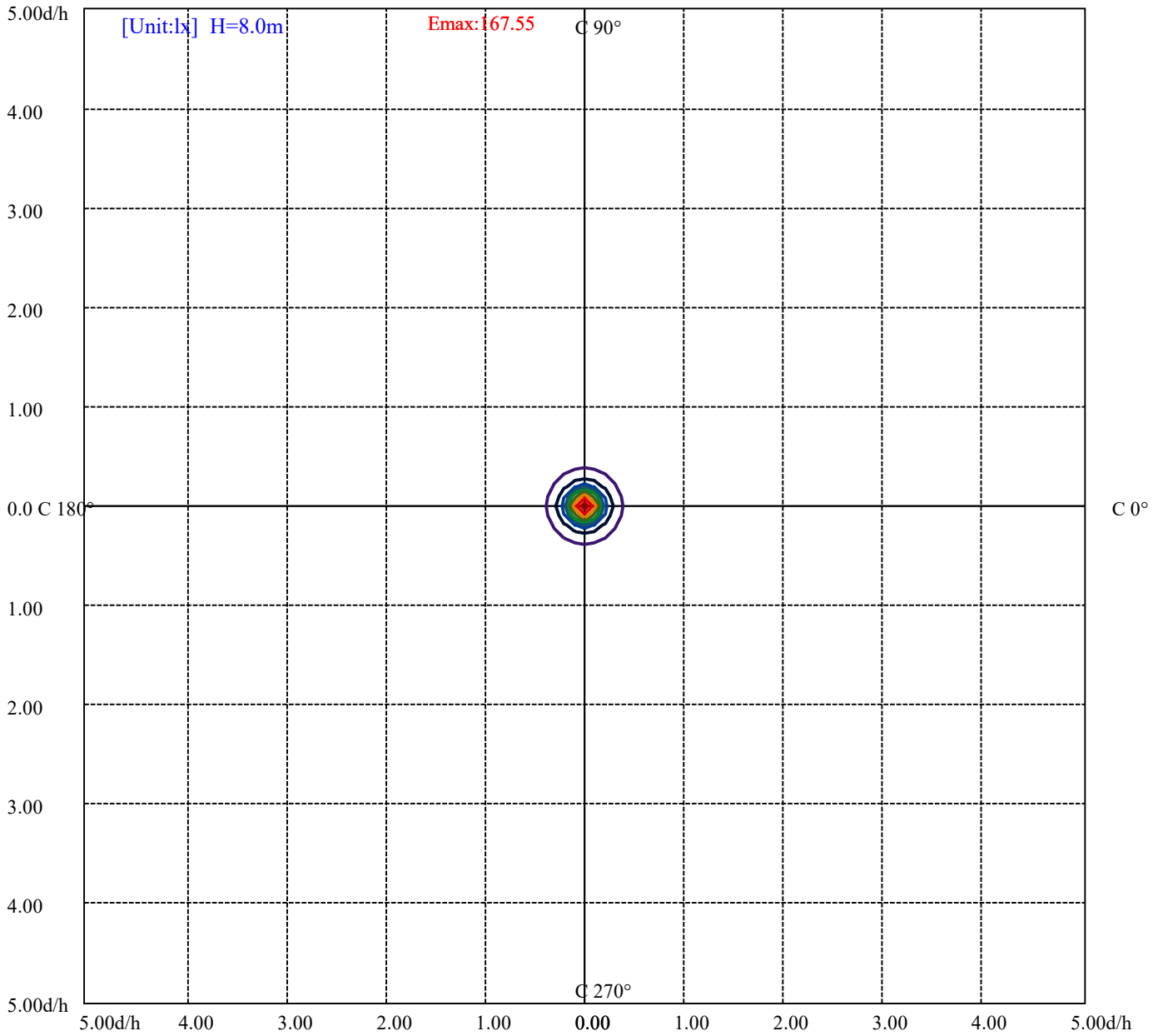
[Unit:cd]

Road

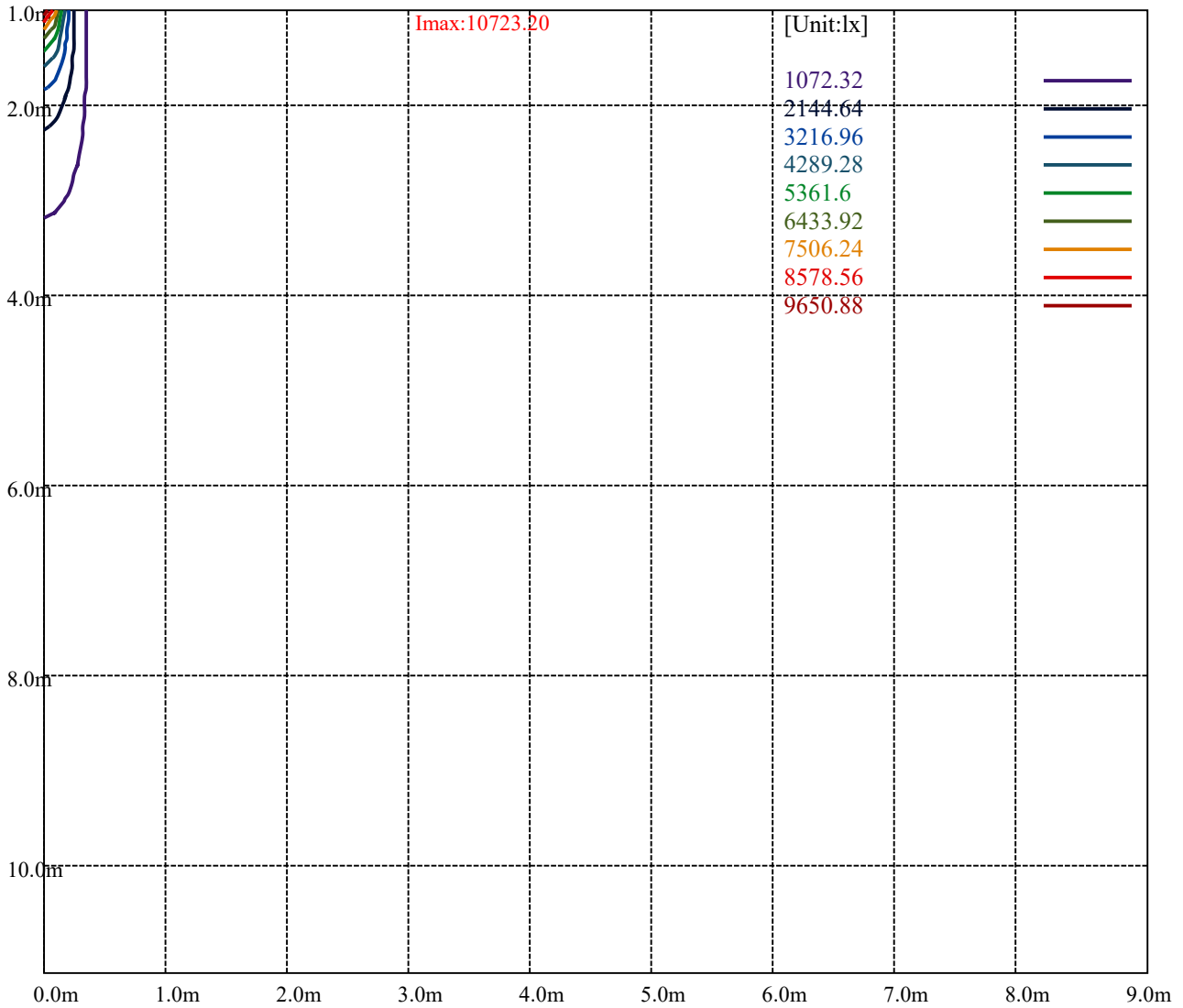
Imax:10723.20

(10%Imax)	1072.32	—
(20%Imax)	2144.64	—
(30%Imax)	3216.96	—
(40%Imax)	4289.28	—
(50%Imax)	5361.6	—
(60%Imax)	6433.92	—
(70%Imax)	7506.24	—
(80%Imax)	8578.56	—
(90%Imax)	9650.88	—





- (10%Emax) 16.755
- (20%Emax) 33.50984
- (30%Emax) 50.26484
- (40%Emax) 67.01984
- (50%Emax) 83.77469
- (60%Emax) 100.5297
- (70%Emax) 117.2847
- (80%Emax) 134.0397
- (90%Emax) 150.7945



Luminance Table

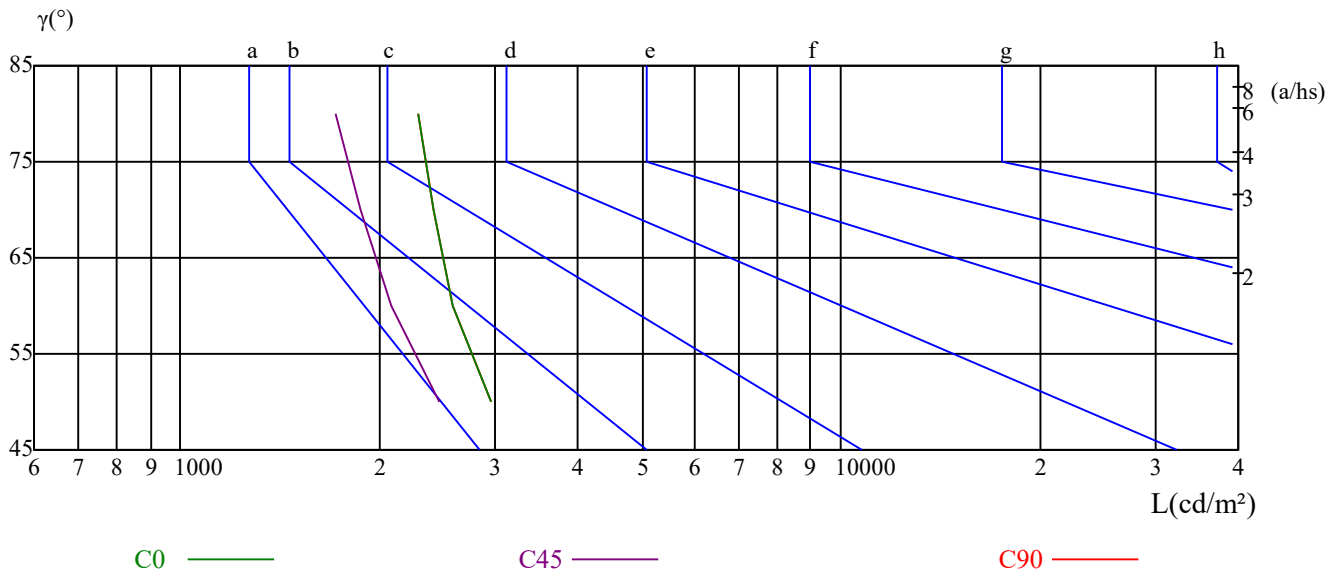
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	2950	0	2586	0	2411	0	2298	0
C45	0	2458	0	2088	0	1880	0	1717	0
C90	0	2950	0	2586	0	2411	0	2298	0

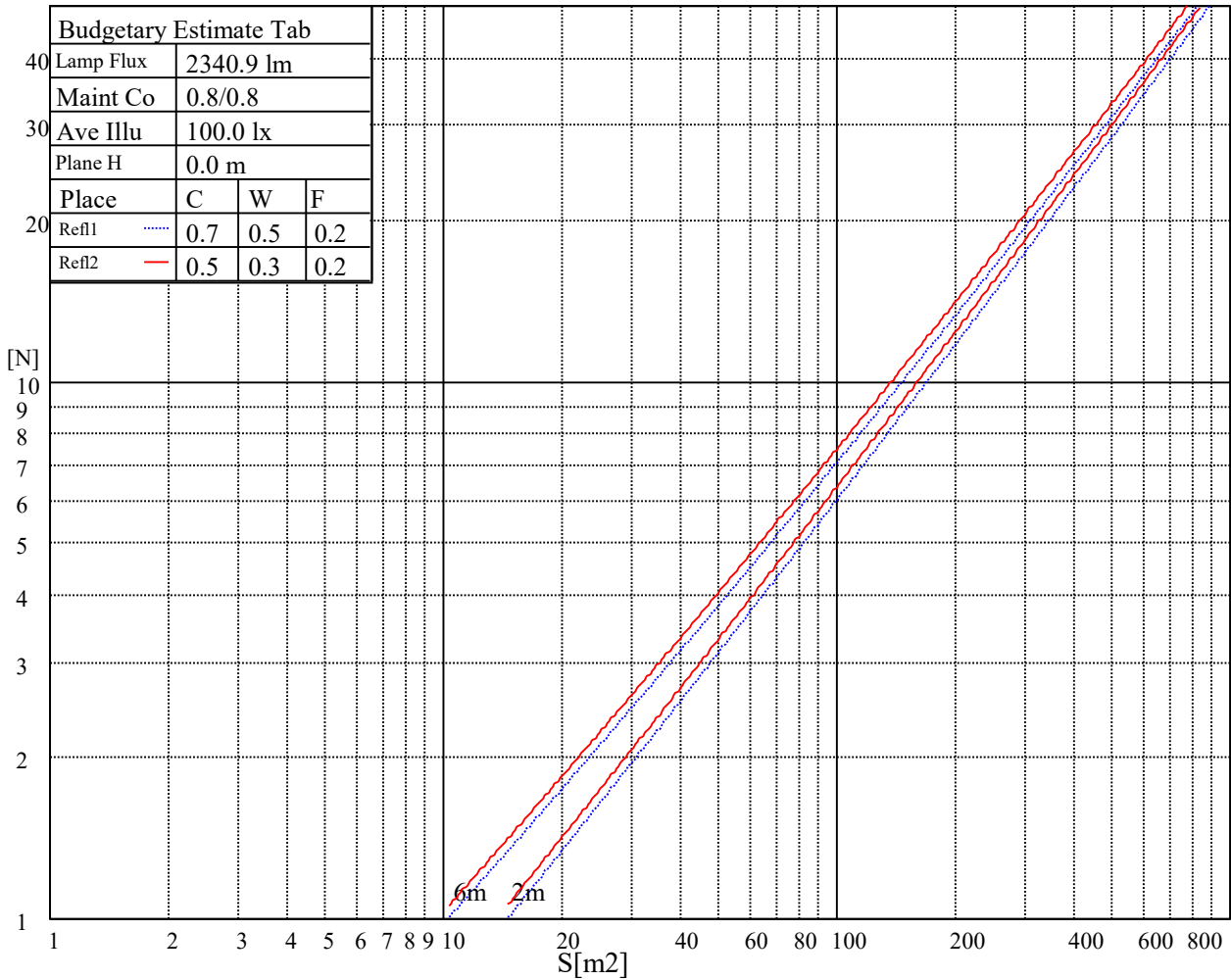
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5821	5821	5821	8685	8685	8685	23137	23137	23137

Glare Table

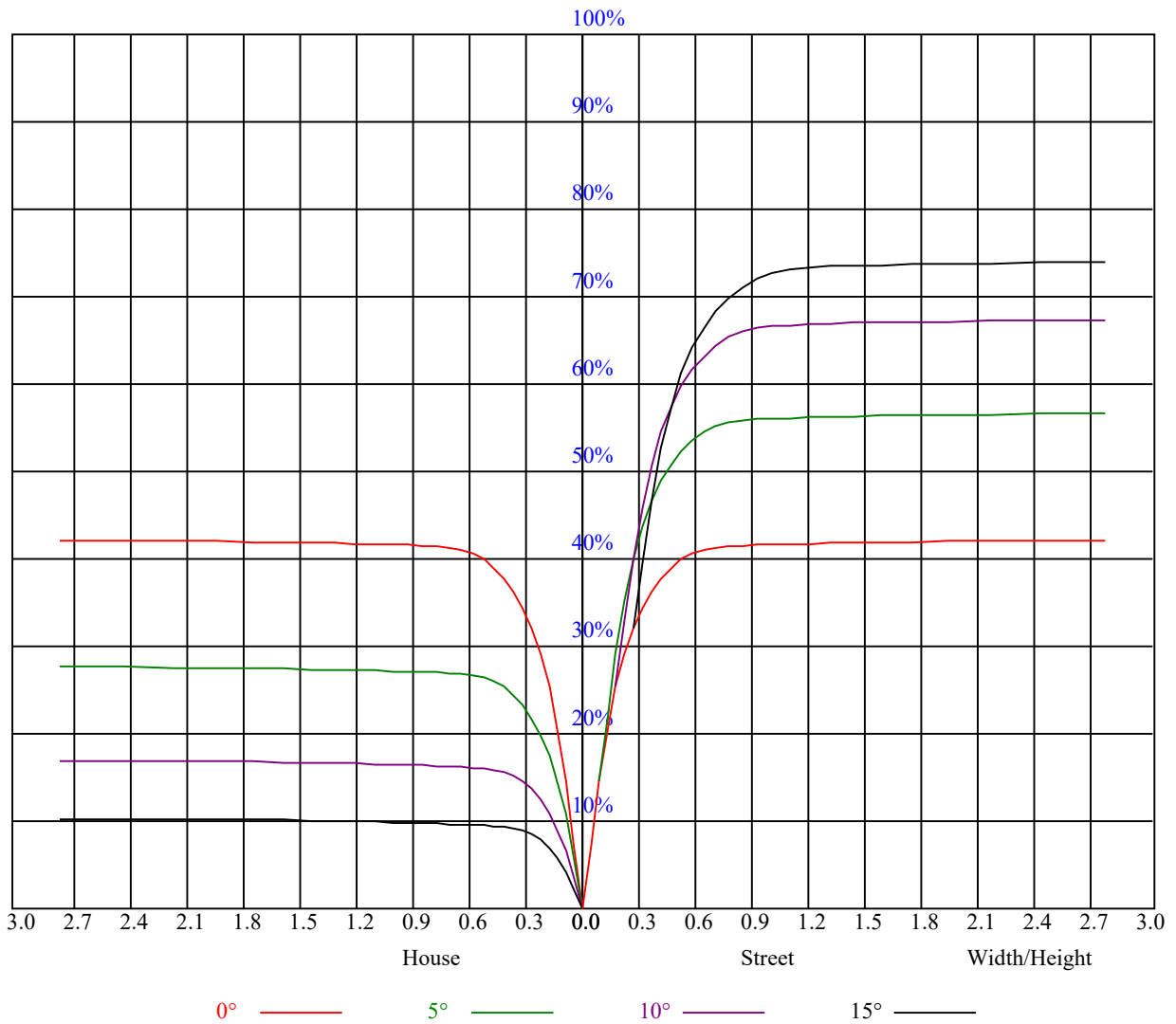
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

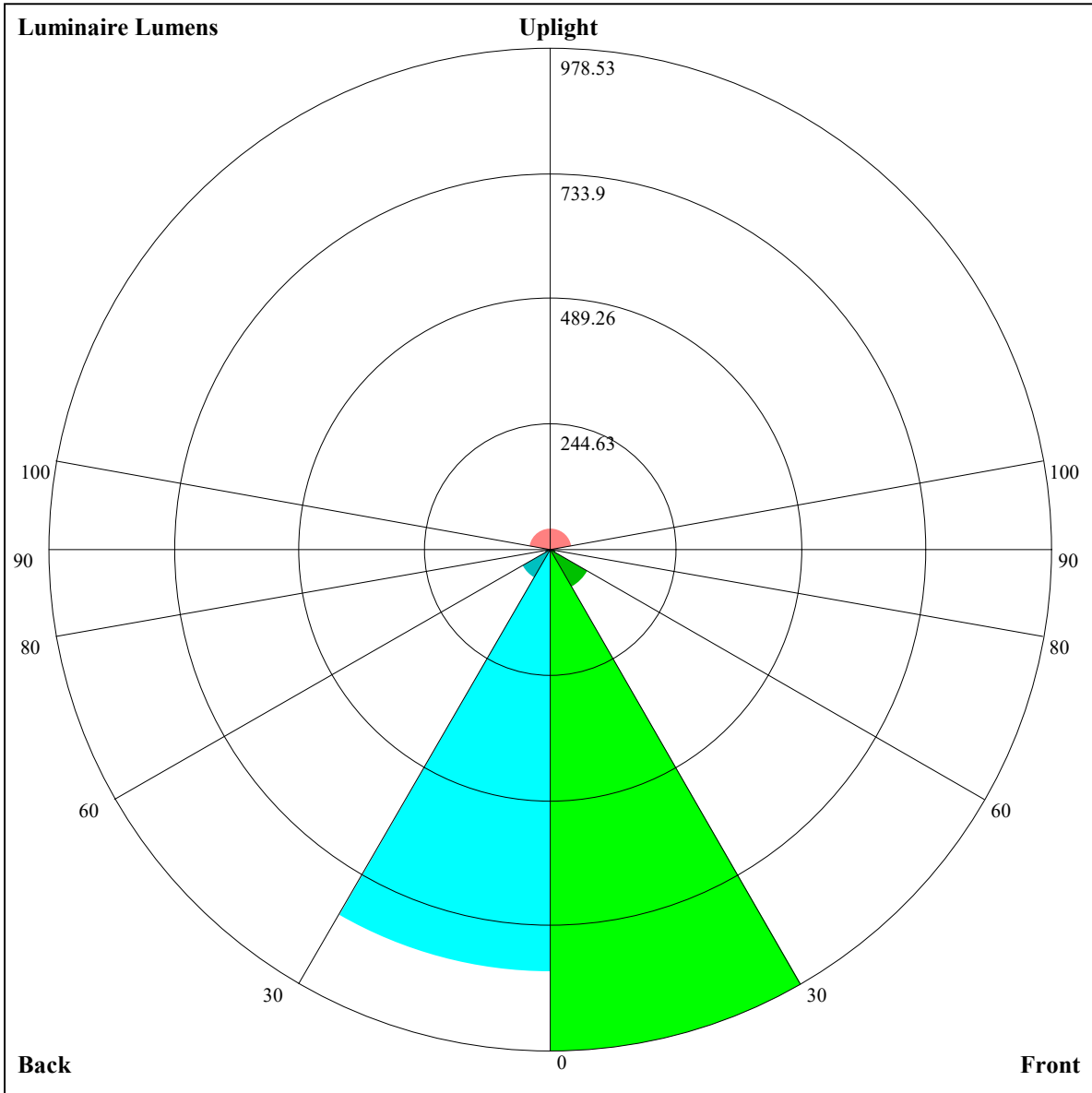
Luminance Limiting Curve





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	1.01	1.01	1.01	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.85
1	0.95	0.93	0.92	0.93	0.92	0.90	0.90	0.89	0.87	0.87	0.86	0.85	0.84	0.83	0.82	0.81
2	0.90	0.88	0.85	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.81	0.82	0.80	0.79	0.78
3	0.86	0.83	0.80	0.85	0.82	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.79	0.78	0.76	0.75
4	0.83	0.79	0.76	0.82	0.79	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
5	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.76	0.74	0.72	0.75	0.73	0.71	0.70
6	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.68
7	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.71	0.69	0.67	0.66
8	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.69	0.67	0.65	0.64
9	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.68	0.65	0.63	0.62
10	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.61





Luminaire Lumens:

FL=978.53,FM=86.12,FH=12.97,FVH=5.45

BL=824.49,BM=62.5,BH=12.38,BVH=5.11

UL=9.44,UH=44.92

BUG Rating:B2-U2-G0

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	10352.81	10877.49	10573.58	9449.33	8003.00	6425.63	4893.41	3572.61	2690.61
45.0	10835.10	11226.00	10686.45	9370.60	7818.01	6177.33	4646.76	3369.45	2802.37
90.0	10978.25	10957.88	10138.09	8775.44	6944.81	5431.86	4008.66	2896.52	2215.47
135.0	10726.64	10282.88	9310.59	7799.29	6224.13	4702.92	3445.98	2538.10	1983.68
180.0	10352.81	9156.43	7788.83	6231.28	4637.40	3420.10	2570.03	1987.54	1630.77
225.0	10835.10	9830.32	8290.39	6686.05	5143.92	3756.50	2803.47	2170.87	1749.14
270.0	10978.25	10124.87	8897.11	7217.89	5626.76	4200.80	3105.18	2328.34	1847.69
315.0	10726.64	10329.68	9299.58	7846.64	6206.51	4712.83	3482.32	2571.13	2037.09
360.0	10352.81	10877.49	10573.58	9449.33	8003.00	6425.63	4893.41	3572.61	2690.61
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	2109.21	1700.69	1428.16	1179.31	984.96	852.82	701.42	515.33	338.05
45.0	2011.21	1625.82	1364.30	1120.40	951.93	823.09	659.03	458.62	303.36
90.0	1716.66	1413.85	1097.66	970.26	854.42	737.43	571.27	403.95	251.88
135.0	1610.95	1324.66	1124.80	954.68	833.55	683.25	508.72	322.08	164.12
180.0	1334.02	1087.69	961.89	839.83	697.95	517.97	327.31	168.64	68.93
225.0	1424.31	1204.63	1003.62	879.09	744.53	554.80	374.11	211.25	88.48
270.0	1515.15	1255.84	1070.30	923.85	797.77	618.83	436.60	295.65	117.27
315.0	1623.61	1327.41	1091.05	942.29	832.29	698.23	512.80	342.40	185.10
360.0	2109.21	1700.69	1428.16	1179.31	984.96	852.82	701.42	515.33	338.05
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	177.28	73.28	49.06	38.59	31.88	26.70	22.57	19.82	17.84
45.0	147.06	64.14	48.39	38.81	32.37	26.37	22.35	19.99	17.89
90.0	115.07	57.37	43.49	36.12	29.73	24.94	21.25	18.99	17.45
135.0	65.57	43.11	34.41	28.08	23.34	19.99	17.84	16.30	15.42
180.0	43.88	34.41	28.46	23.45	19.99	17.78	15.97	14.98	14.42
225.0	47.40	37.22	30.34	25.05	21.36	18.39	16.52	15.53	14.81
270.0	51.70	40.63	32.59	26.04	22.02	18.88	17.29	16.08	15.36
315.0	70.14	47.95	37.44	31.60	26.59	22.52	19.71	17.89	16.79
360.0	177.28	73.28	49.06	38.59	31.88	26.70	22.57	19.82	17.84
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	16.46	15.53	14.98	14.70	14.37	14.26	14.31	13.82	13.16
45.0	16.63	15.86	15.25	14.98	14.76	14.65	14.42	13.98	13.27
90.0	16.24	15.69	15.09	14.53	14.15	14.15	13.54	12.94	12.33
135.0	15.09	14.81	14.76	14.59	14.42	14.20	13.43	12.72	12.00
180.0	14.15	13.87	13.76	13.82	13.71	13.21	12.55	11.95	11.45
225.0	14.53	14.42	14.20	14.15	14.26	13.87	13.21	12.55	12.11
270.0	15.20	15.03	14.87	14.70	14.59	14.09	13.38	12.72	12.17
315.0	15.75	15.31	14.87	14.53	14.31	14.26	13.54	12.94	12.44
360.0	16.46	15.53	14.98	14.70	14.37	14.26	14.31	13.82	13.16
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	12.61	12.17	11.67	11.29	10.96	10.79	11.07	10.41	10.19
45.0	12.61	12.11	11.62	11.18	10.90	10.68	10.41	10.19	9.63
90.0	11.78	11.34	10.79	10.52	10.24	10.02	9.69	9.41	8.97
135.0	11.45	10.90	10.52	10.13	9.91	9.63	9.30	9.08	8.70
180.0	10.90	10.52	10.19	9.91	9.69	9.52	9.41	8.86	8.48
225.0	11.45	10.96	10.57	10.35	10.02	9.86	9.69	9.58	8.70
270.0	11.56	11.12	10.74	10.41	10.19	10.90	9.91	9.91	8.59
315.0	12.00	11.62	11.18	10.96	10.74	11.18	10.57	10.30	8.86
360.0	12.61	12.17	11.67	11.29	10.96	10.79	11.07	10.41	10.19



Intensity data(cd)

C/γ(°)	90.0
0.0	9.14
45.0	9.08
90.0	8.64
135.0	8.42
180.0	8.42
225.0	8.53
270.0	8.48
315.0	8.48
360.0	9.14