
Nata

Client:

LumCAT: 2-1258-N

Luminaire: 92.70.045.00+92.70.059.00

Report No: nata-0100

Voltage(V): 34.1000

Test No: GC2018060101

Current(A): 0.5000

LampCAT: NICHIA NFCWD084B-V3

Power (W): 17.0500

Lamp flux(lm): 2152.5

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 70

Width(mm): 70

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1650.58, Efficiency(%): 76.68% , Luminous Efficacy(lm/W): 96.81

Central intensity(cd): 9666.253, Maximum intensity(cd): 9666.253

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=18.4

[C90/270]Total=18.4

Field angle(10%Imax): [C0/180]Total=36.2

[C90/270]Total=36.2

Maximum s/h(1/2): C0_180=0.32 C90_270=0.32

Maximum s/h(1/4): C0_180=0.30 C90_270=0.30

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 77.10%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.333%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9666.252	9.250	9.25	.430%	.560%
2.0	9538.452	73.007	82.257	3.392%	4.984%
4.0	8966.416	137.173	219.43	6.373%	13.294%
6.0	7786.489	178.501	397.931	8.293%	24.109%
8.0	6009.613	183.429	581.36	8.522%	35.222%
10.0	4010.583	152.737	734.096	7.096%	44.475%
12.0	2597.699	118.449	852.546	5.503%	51.651%
14.0	1725.399	91.544	944.09	4.253%	57.197%
16.0	1227.923	74.229	1018.319	3.448%	61.695%
18.0	974.581	66.049	1084.368	3.068%	65.696%
20.0	798.751	59.914	1144.282	2.783%	69.326%
22.0	669.266	54.984	1199.266	2.554%	72.657%
24.0	568.877	50.745	1250.011	2.357%	75.732%
26.0	488.977	47.011	1297.022	2.184%	78.580%
28.0	415.235	42.753	1339.775	1.986%	81.170%
30.0	350.716	38.458	1378.234	1.787%	83.500%
32.0	293.712	34.135	1412.368	1.586%	85.568%
34.0	247.238	30.321	1442.689	1.409%	87.405%
36.0	206.723	26.648	1469.338	1.238%	89.019%
38.0	175.355	23.677	1493.015	1.100%	90.454%
40.0	149.437	21.066	1514.081	.979%	91.730%
42.0	125.597	18.431	1532.512	.856%	92.847%
44.0	105.997	16.148	1548.661	.750%	93.825%
46.0	88.338	13.936	1562.597	.647%	94.670%
48.0	72.785	11.863	1574.46	.551%	95.388%
50.0	59.179	9.942	1584.402	.462%	95.991%
52.0	49.344	8.528	1592.93	.396%	96.507%
54.0	40.439	7.175	1600.105	.333%	96.942%
56.0	32.896	5.981	1606.086	.278%	97.304%
58.0	26.902	5.003	1611.089	.232%	97.607%
60.0	22.250	4.226	1615.315	.196%	97.863%
62.0	18.465	3.576	1618.891	.166%	98.080%
64.0	15.946	3.143	1622.034	.146%	98.271%
66.0	14.624	2.930	1624.964	.136%	98.448%
68.0	13.716	2.789	1627.753	.130%	98.617%
70.0	12.973	2.673	1630.426	.124%	98.779%
72.0	12.353	2.577	1633.003	.120%	98.935%
74.0	11.885	2.506	1635.509	.116%	99.087%

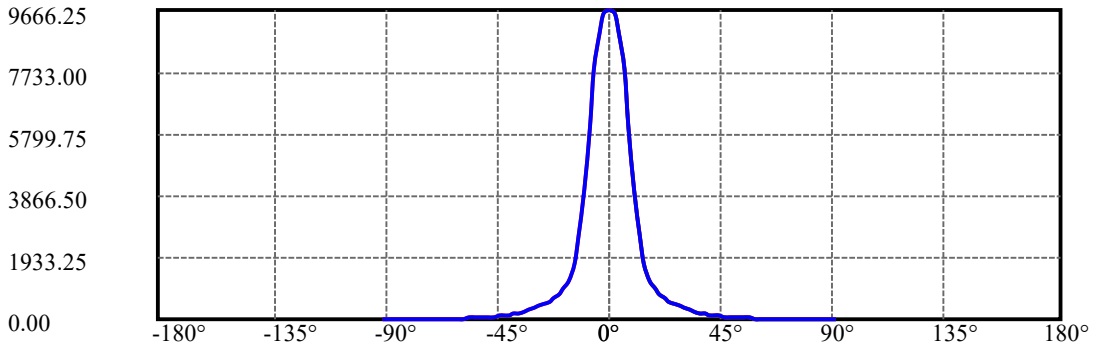
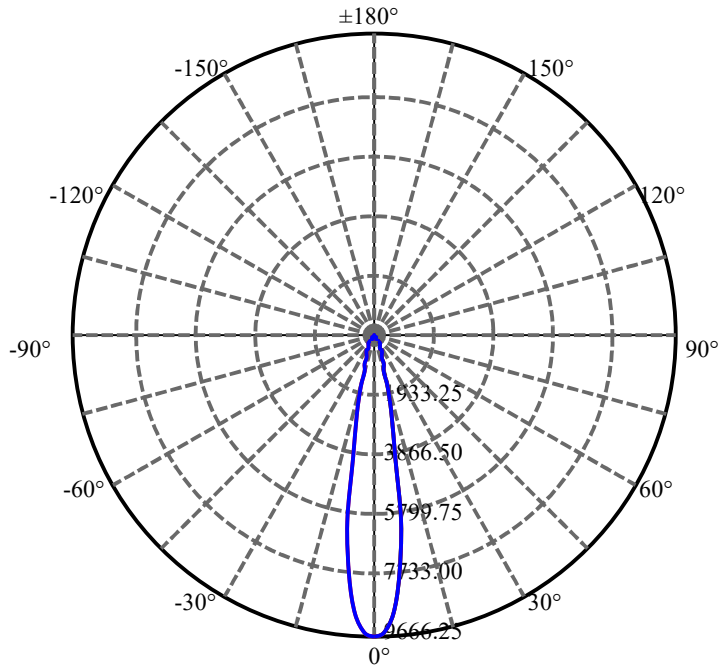
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.438	2.434	1637.943	.113%	99.234%
78.0	10.922	2.343	1640.286	.109%	99.376%
80.0	10.275	2.219	1642.505	.103%	99.511%
82.0	9.539	2.072	1644.576	.096%	99.636%
84.0	8.823	1.924	1646.501	.089%	99.753%
86.0	8.018	1.754	1648.255	.081%	99.859%
88.0	7.206	1.579	1649.834	.073%	99.955%
90.0	6.806	0.746	1650.58	.035%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1378.23	64.03%	83.50%
0-40	1514.08	70.34%	91.73%
0-60	1615.32	75.04%	97.86%
0-90	1649.83	76.65%	99.95%
0-120	1649.83	76.65%	99.95%
0-180	1650.58	76.68%	100.00%
60-90	38.74	1.80%	2.35%
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%
0-27.10	1320.46	61.35%	80.00%

ZONAL LUMEN SUMMARY

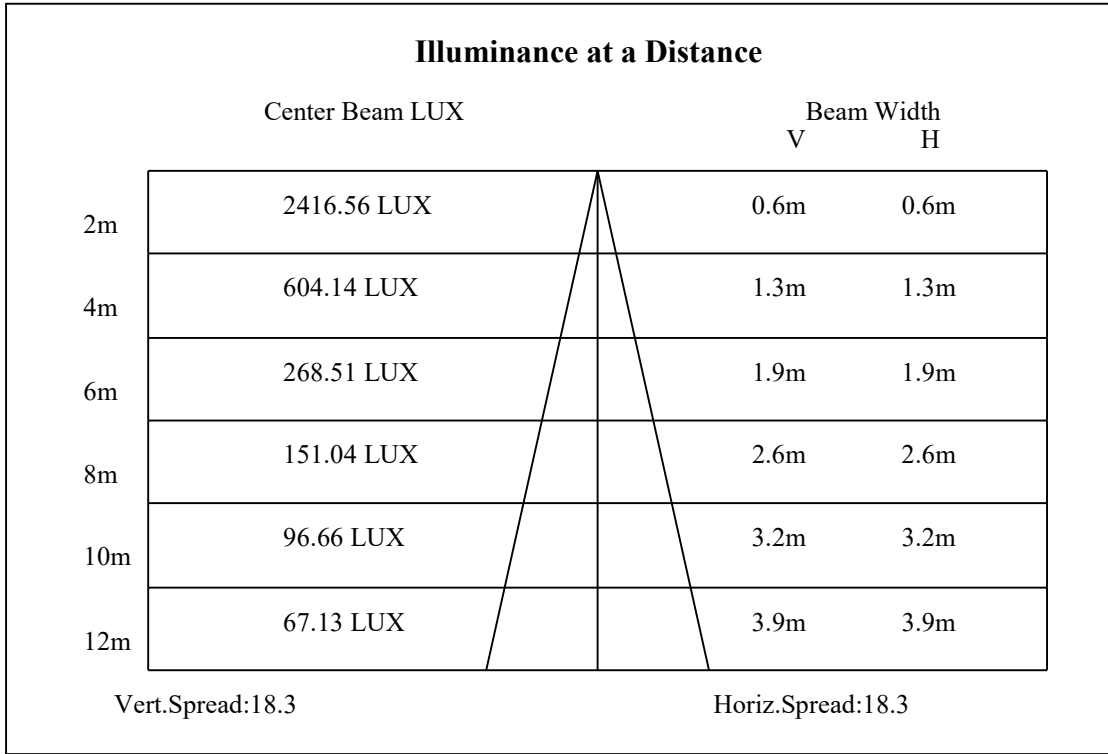
0-10	734.10
10-20	410.19
20-30	233.95
30-40	135.85
40-50	70.32
50-60	30.91
60-70	15.11
70-80	12.08
80-90	7.33
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

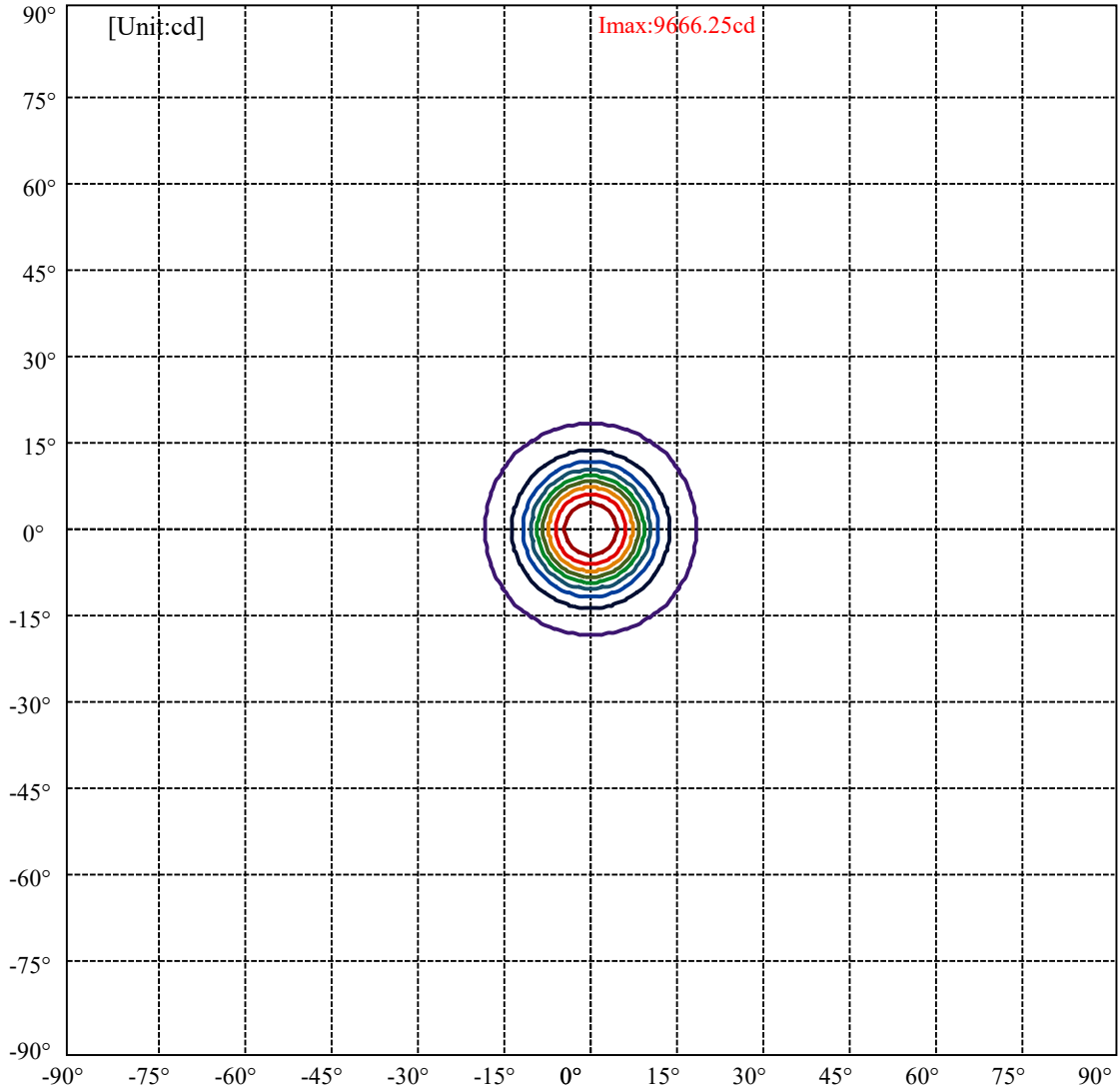


C0(Max): —————
C0/C180: —————
C90/C270: —————

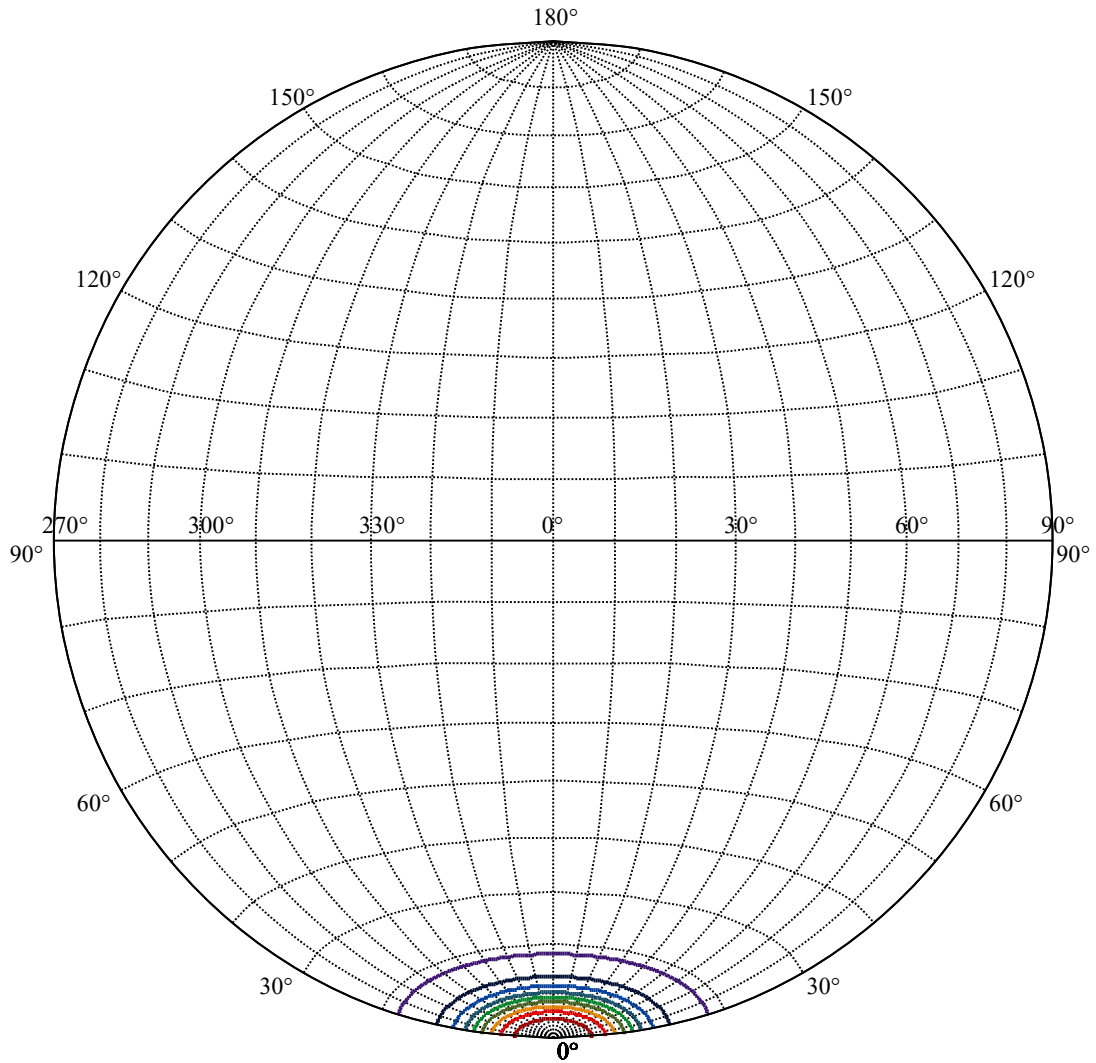
Field angle(10%Imax):C0/180Left:18.1 Right:18.1
:C90/270Left:18.1 Right:18.1

Beam Angle(50%Imax):C0/180Left:9.2 Right:9.2
:C90/270Left:9.2 Right:9.2





(10%Imax) 966.625	—
(20%Imax) 1933.25	—
(30%Imax) 2899.88	—
(40%Imax) 3866.5	—
(50%Imax) 4833.13	—
(60%Imax) 5799.75	—
(70%Imax) 6766.38	—
(80%Imax) 7733	—
(90%Imax) 8699.63	—



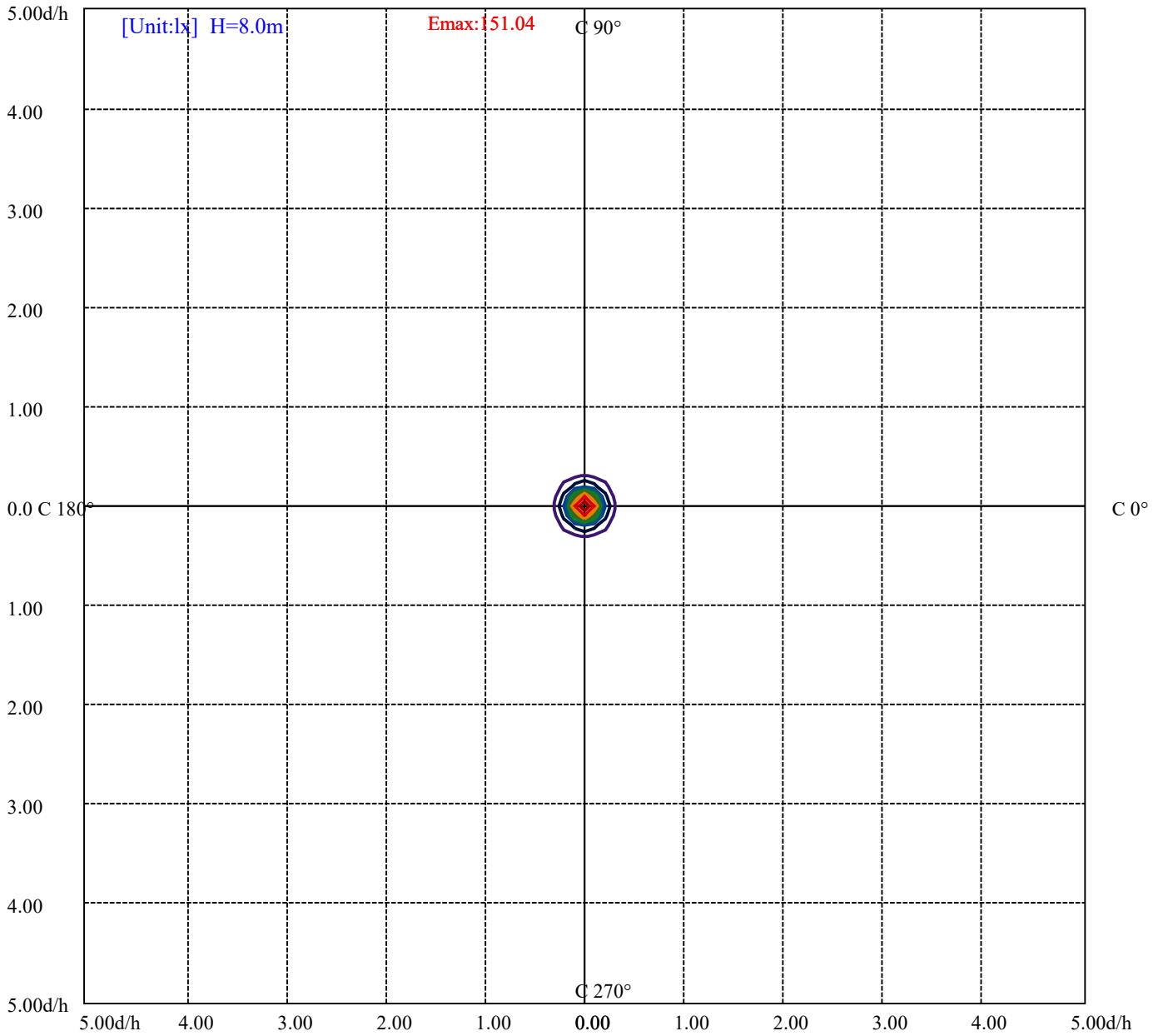
House

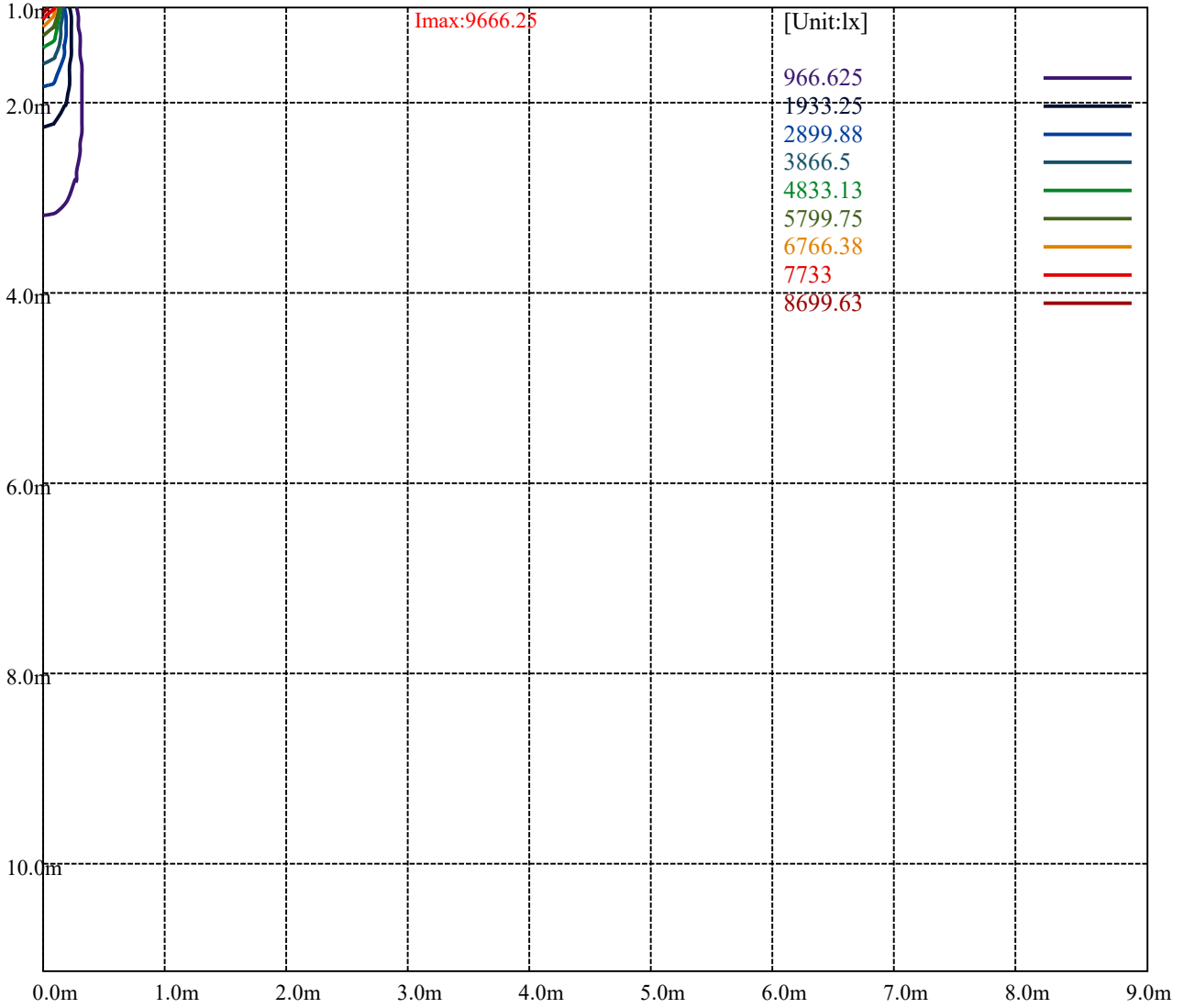
[Unit:cd]

Road

Imax:9666.25

(10%Imax)	966.625	—
(20%Imax)	1933.25	—
(30%Imax)	2899.88	—
(40%Imax)	3866.5	—
(50%Imax)	4833.13	—
(60%Imax)	5799.75	—
(70%Imax)	6766.38	—
(80%Imax)	7733	—
(90%Imax)	8699.63	—





Luminance Table

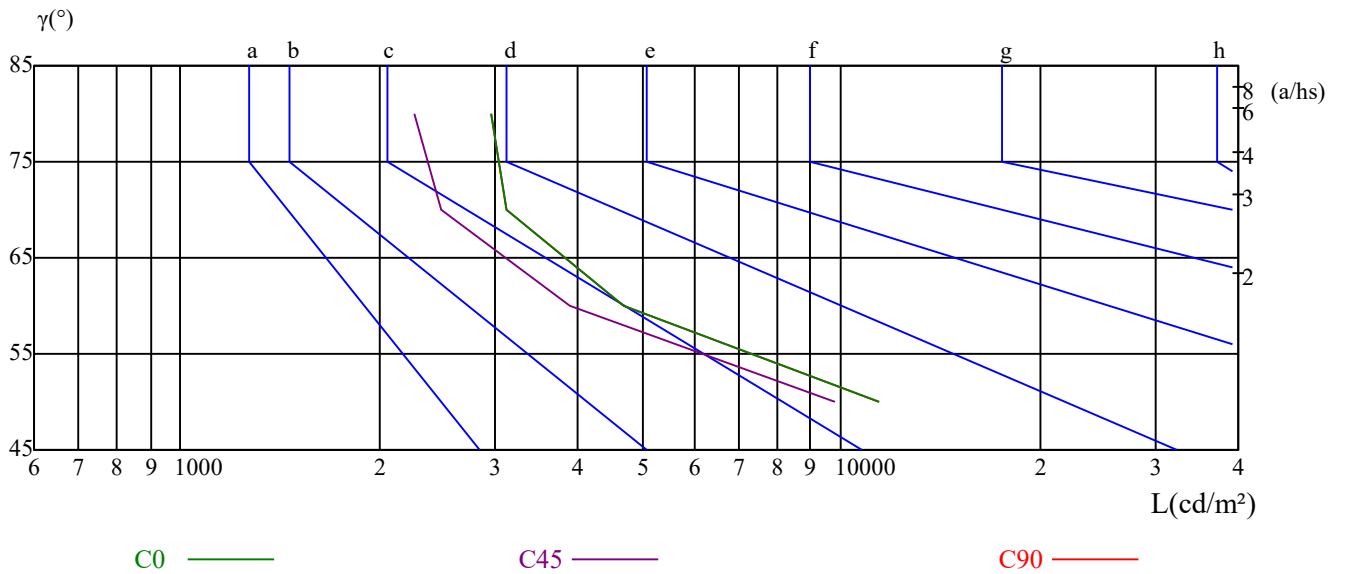
γ	45	50	55	60	65	70	75	80	85
C0	0	11408	0	4681	0	3107	0	2961	0
C45	0	9812	0	3898	0	2490	0	2255	0
C90	0	11408	0	4681	0	3107	0	2961	0

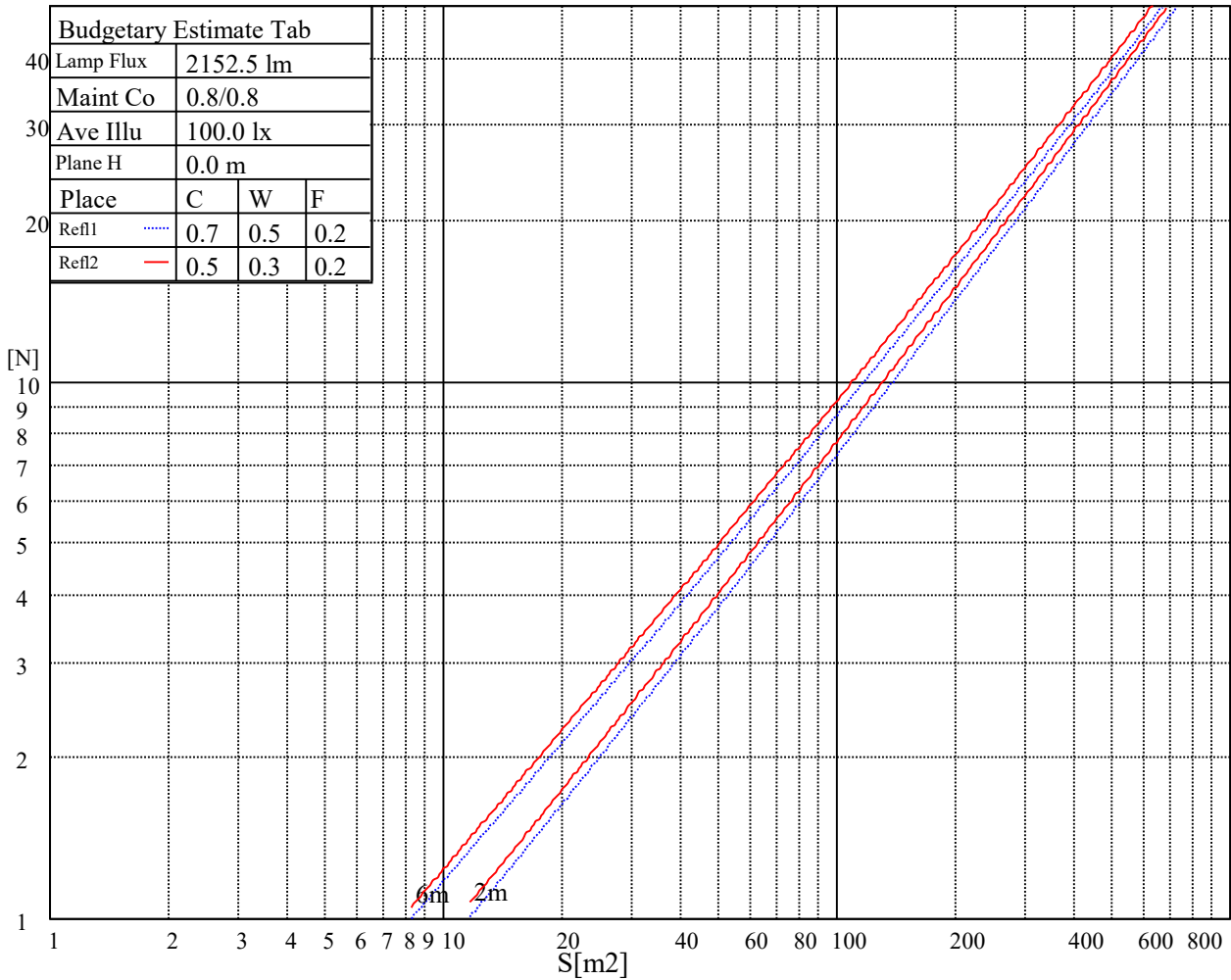
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1938	1938	1938	3120	3120	3120	9202	9202	9202

Glare Table

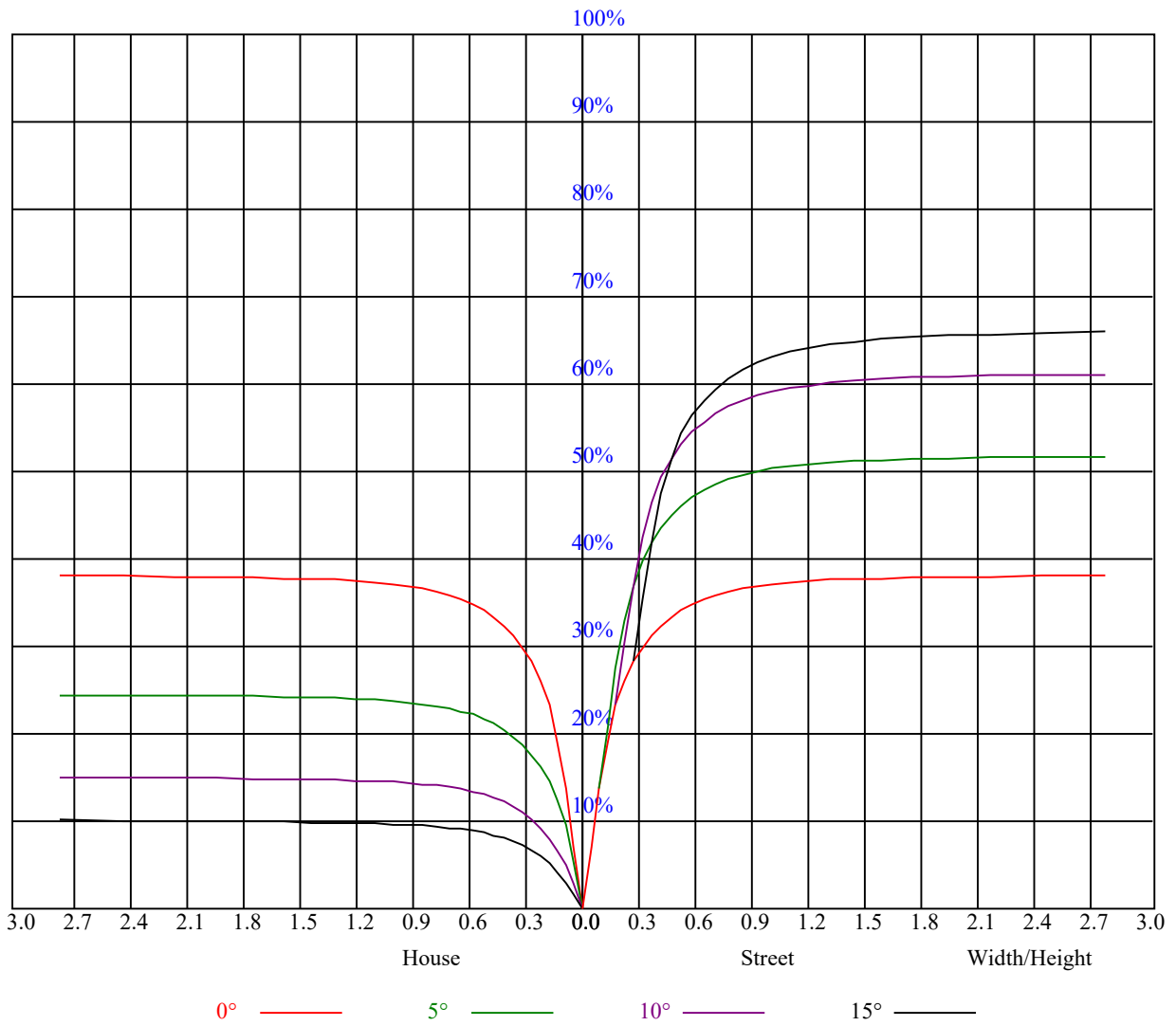
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

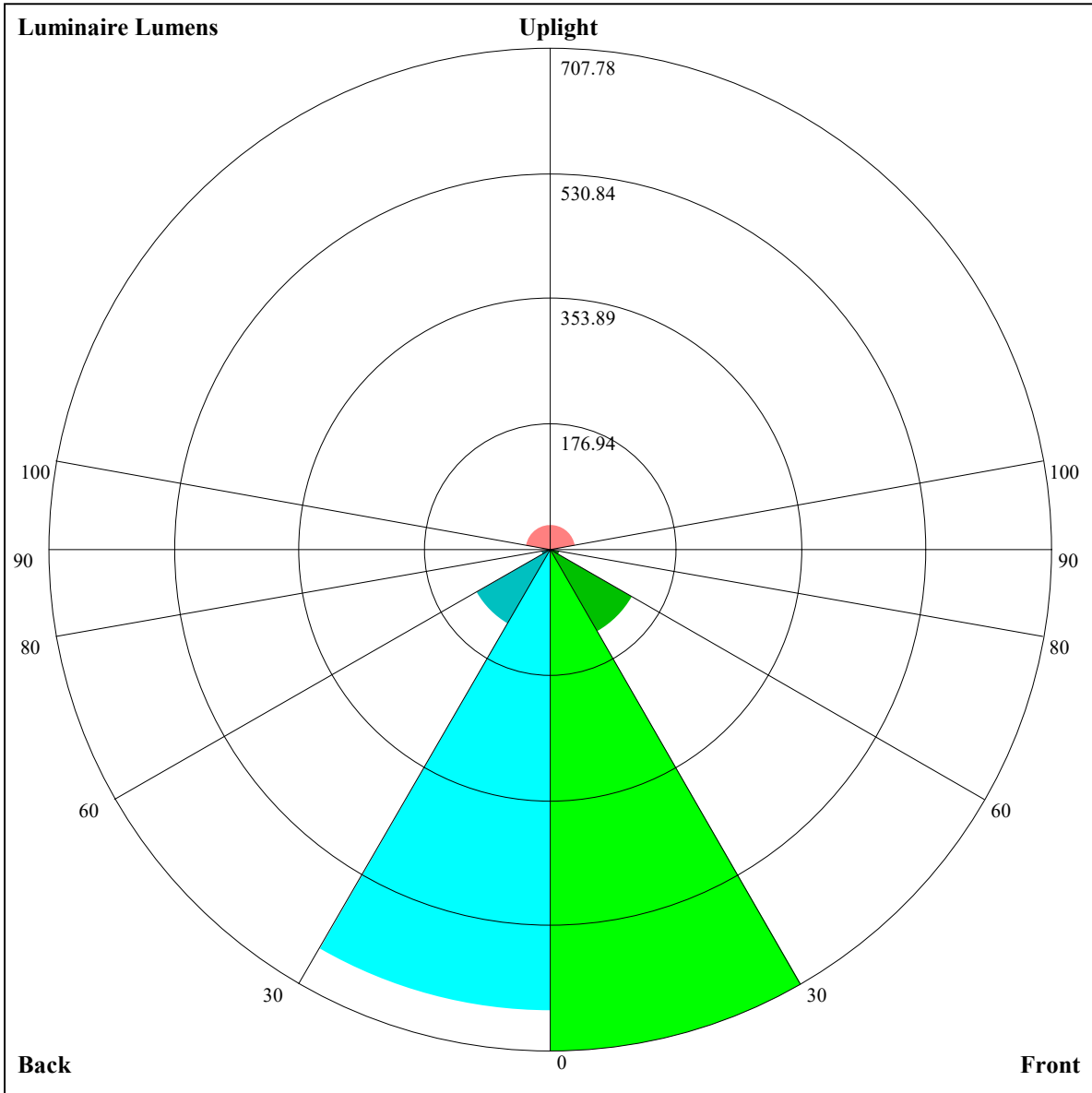
Luminance Limiting Curve





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	0.92	0.92	0.92	0.90	0.90	0.90	0.86	0.86	0.86	0.82	0.82	0.82	0.79	0.79	0.79	0.77
1	0.86	0.84	0.82	0.84	0.83	0.81	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74	0.73
2	0.81	0.79	0.76	0.80	0.77	0.75	0.77	0.75	0.74	0.75	0.74	0.72	0.73	0.72	0.71	0.70
3	0.77	0.74	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.73	0.71	0.69	0.71	0.69	0.68	0.67
4	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.70	0.68	0.66	0.69	0.67	0.65	0.64
5	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.68	0.65	0.63	0.67	0.65	0.63	0.62
6	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.65	0.63	0.61	0.60
7	0.66	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.61	0.59	0.63	0.61	0.59	0.58
8	0.64	0.60	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.62	0.59	0.58	0.61	0.59	0.57	0.57
9	0.62	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.60	0.58	0.56	0.55
10	0.60	0.57	0.55	0.60	0.57	0.55	0.60	0.57	0.55	0.59	0.56	0.55	0.59	0.56	0.54	0.54





Luminaire Lumens:

FL=707.78,FM=132.65,FH=14.41,FVH=4.69

BL=651.33,BM=122.41,BH=13.9,BVH=4.51

UL=7.43,UH=35.34

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	9672.86	9615.05	9263.24	8230.38	6825.89	4666.03	3031.41	2043.69	1418.80
45.0	9649.74	9648.08	9395.37	8584.94	7176.60	5121.35	3308.34	2127.93	1474.41
90.0	9669.56	9602.94	9145.97	8216.07	6422.33	4312.02	2810.08	1789.88	1289.97
135.0	9672.86	9620.00	9192.22	8104.85	6496.10	4423.78	2802.92	1832.83	1302.08
180.0	9672.86	9477.41	8789.75	7394.63	5293.12	3436.07	2208.31	1505.79	1098.32
225.0	9649.74	9362.89	8399.40	6868.29	4737.60	2946.62	1971.57	1369.25	1032.91
270.0	9669.56	9492.27	8815.63	7345.62	5540.33	3553.89	2265.57	1535.52	1115.99
315.0	9672.86	9488.97	8729.74	7547.13	5584.92	3624.91	2383.39	1598.29	1090.89
360.0	9672.86	9615.05	9263.24	8230.38	6825.89	4666.03	3031.41	2043.69	1418.80
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1100.58	903.48	740.51	618.83	533.50	450.36	379.89	320.98	279.69
45.0	1142.97	906.78	754.82	634.25	550.01	467.98	403.01	336.95	280.24
90.0	995.36	815.83	684.41	593.89	506.13	437.64	366.18	304.35	256.01
135.0	1006.98	818.69	684.90	575.89	499.91	423.38	355.11	297.30	246.60
180.0	893.07	733.24	616.52	528.10	448.65	379.23	316.52	264.49	225.24
225.0	829.42	695.36	586.90	507.79	432.08	364.80	313.44	261.96	216.43
270.0	884.76	739.96	632.05	539.00	466.88	391.45	331.44	279.14	231.46
315.0	943.50	776.68	654.01	553.26	474.64	407.03	340.14	284.53	242.25
360.0	1100.58	903.48	740.51	618.83	533.50	450.36	379.89	320.98	279.69
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	225.02	190.27	163.19	135.60	116.39	96.62	79.67	65.24	53.96
45.0	233.99	195.23	167.92	142.10	120.41	99.98	83.36	67.39	55.66
90.0	212.74	180.75	155.31	131.14	109.67	92.66	75.43	61.17	51.37
135.0	206.68	174.80	149.86	125.20	107.14	89.36	74.00	61.00	50.87
180.0	188.79	161.37	136.93	114.46	96.24	81.54	66.84	54.40	46.14
225.0	185.32	159.33	130.65	112.09	93.32	76.80	63.04	51.64	42.94
270.0	198.37	168.03	143.59	119.58	100.75	82.53	69.26	55.33	45.81
315.0	202.88	173.04	148.05	124.59	104.06	87.21	70.69	57.26	48.01
360.0	225.02	190.27	163.19	135.60	116.39	96.62	79.67	65.24	53.96
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	43.94	36.01	29.29	23.84	19.93	16.57	15.03	14.04	13.21
45.0	45.86	37.60	30.34	25.11	20.70	17.18	15.42	14.26	13.43
90.0	42.06	34.52	28.19	23.23	19.10	16.41	14.87	13.93	13.21
135.0	41.62	33.86	27.64	22.52	18.94	16.02	14.76	13.82	13.05
180.0	37.55	29.95	24.83	20.54	16.90	15.14	14.04	13.32	12.61
225.0	35.40	28.85	23.51	19.82	16.63	15.03	13.93	13.21	12.50
270.0	37.93	30.61	25.38	21.36	17.73	15.53	14.48	13.60	12.94
315.0	39.15	31.77	26.04	21.58	17.78	15.69	14.48	13.54	12.83
360.0	43.94	36.01	29.29	23.84	19.93	16.57	15.03	14.04	13.21
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	12.50	12.11	11.73	11.29	10.74	9.97	9.25	8.59	7.43
45.0	12.77	12.22	11.78	11.29	10.74	9.91	9.19	8.48	7.54
90.0	12.55	12.00	11.51	11.07	10.41	9.74	9.03	8.04	7.32
135.0	12.33	11.84	11.34	10.74	10.19	9.41	8.64	7.87	7.21
180.0	12.00	11.56	11.12	10.57	9.86	9.08	8.31	7.54	6.99
225.0	12.00	11.56	11.12	10.57	9.80	9.08	8.37	7.54	6.94
270.0	12.33	11.89	11.40	10.85	10.19	9.47	8.81	7.93	7.05
315.0	12.33	11.89	11.51	11.01	10.30	9.63	8.97	8.15	7.16
360.0	12.50	12.11	11.73	11.29	10.74	9.97	9.25	8.59	7.43

Intensity data(cd)

C/ γ (°)	90.0
0.0	6.83
45.0	6.94
90.0	6.77
135.0	6.77
180.0	6.77
225.0	6.83
270.0	6.77
315.0	6.77
360.0	6.83