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Nata

LumCAT: 3-1548-A3
Luminaire: 99.02.73.172+92.76.365.00
Report No: NATA0100
Test No: GC2018082805
LampCAT: BRIDGELUX V13B
Lamp flux(lm): 2575.0
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 34.0000
Current(A): 0.5000
Power (W): 17.0000
PF: 0.0000
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 2355.03
Efficiency(%): 91.46%
Lumens(lm)/Power(W): 138.53
Central intensity(cd): 19554.660
Maximum intensity(cd): 19554.660
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=13.9
 [C90/270]Total=13.9
Field angle(10%Imax): [C0/180]Total=28.9
 [C90/270]Total=28.9
Maximum s/h(1/2): C0_180=0.24 C90_270=0.24
Maximum s/h(1/4): C0_180=0.25 C90_270=0.25
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.17%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.901%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	19554.656	18.713	18.713	.727%	.795%
2.0	18401.225	140.842	159.555	5.470%	6.775%
4.0	15465.343	236.597	396.152	9.188%	16.821%
6.0	11443.197	262.330	658.481	10.188%	27.961%
8.0	8015.111	244.641	903.123	9.501%	38.349%
10.0	4845.789	184.544	1087.667	7.167%	46.185%
12.0	2984.195	136.073	1223.739	5.284%	51.963%
14.0	2064.821	109.553	1333.292	4.254%	56.615%
16.0	1562.501	94.455	1427.747	3.668%	60.625%
18.0	1277.240	86.561	1514.307	3.362%	64.301%
20.0	1118.195	83.875	1598.183	3.257%	67.862%
22.0	1034.448	84.986	1683.169	3.300%	71.471%
24.0	967.541	86.307	1769.476	3.352%	75.136%
26.0	912.415	87.720	1857.197	3.407%	78.861%
28.0	865.679	89.132	1946.328	3.461%	82.646%
30.0	825.330	90.503	2036.831	3.515%	86.488%
32.0	775.882	90.172	2127.003	3.502%	90.317%
34.0	629.597	77.213	2204.216	2.999%	93.596%
36.0	422.400	54.451	2258.667	2.115%	95.908%
38.0	235.187	31.756	2290.423	1.233%	97.257%
40.0	66.969	9.441	2299.863	.367%	97.657%
42.0	31.272	4.589	2304.452	.178%	97.852%
44.0	20.034	3.052	2307.505	.119%	97.982%
46.0	13.310	2.100	2309.604	.082%	98.071%
48.0	12.181	1.985	2311.59	.077%	98.155%
50.0	11.768	1.977	2313.567	.077%	98.239%
52.0	11.486	1.985	2315.552	.077%	98.324%
54.0	11.204	1.988	2317.54	.077%	98.408%
56.0	10.991	1.998	2319.538	.078%	98.493%
58.0	10.819	2.012	2321.55	.078%	98.578%
60.0	10.688	2.030	2323.58	.079%	98.664%
62.0	10.591	2.051	2325.631	.080%	98.752%
64.0	10.509	2.071	2327.703	.080%	98.840%
66.0	10.433	2.090	2329.793	.081%	98.928%
68.0	10.399	2.115	2331.907	.082%	99.018%
70.0	10.364	2.136	2334.043	.083%	99.109%
72.0	10.323	2.153	2336.197	.084%	99.200%
74.0	10.289	2.169	2338.366	.084%	99.292%

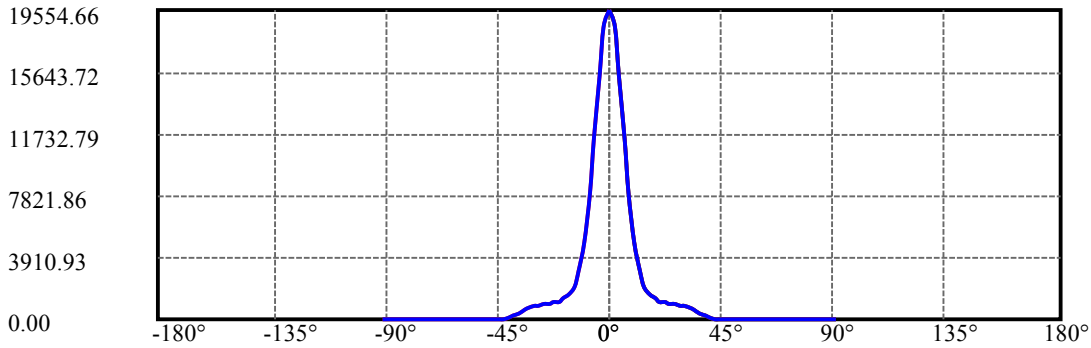
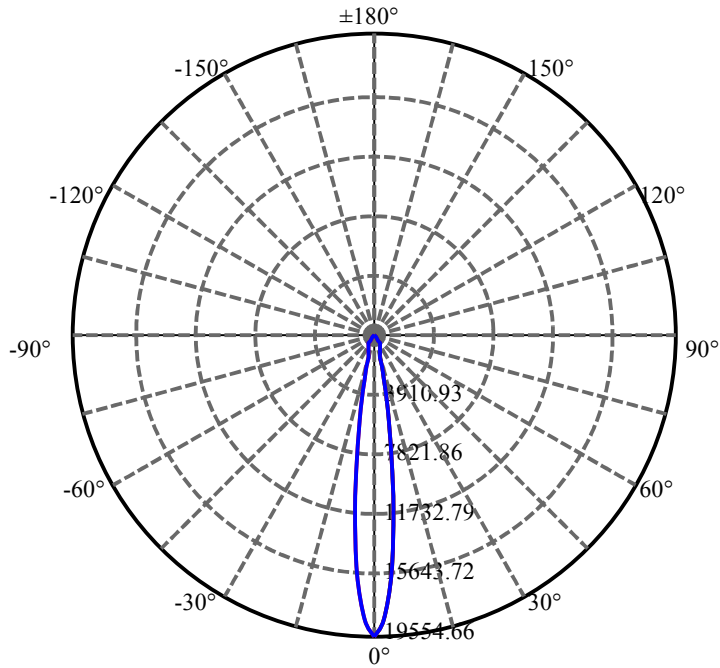
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.261	2.184	2340.549	.085%	99.385%
78.0	10.247	2.198	2342.747	.085%	99.478%
80.0	10.213	2.206	2344.953	.086%	99.572%
82.0	10.268	2.230	2347.183	.087%	99.667%
84.0	10.275	2.241	2349.424	.087%	99.762%
86.0	10.523	2.302	2351.726	.089%	99.860%
88.0	10.055	2.204	2353.93	.086%	99.953%
90.0	10.048	1.102	2355.032	.043%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2036.83	79.10%	86.49%
0-40	2299.86	89.32%	97.66%
0-60	2323.58	90.24%	98.66%
0-90	2353.93	91.41%	99.95%
0-120	2353.93	91.41%	99.95%
0-180	2355.03	91.46%	100.00%
60-90	32.38	1.26%	1.37%
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%
0-26.60	1884.03	73.17%	80.00%

ZONAL LUMEN SUMMARY

0-10	1087.67
10-20	510.52
20-30	438.65
30-40	263.03
40-50	13.70
50-60	10.01
60-70	10.46
70-80	10.91
80-90	8.98
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: —————

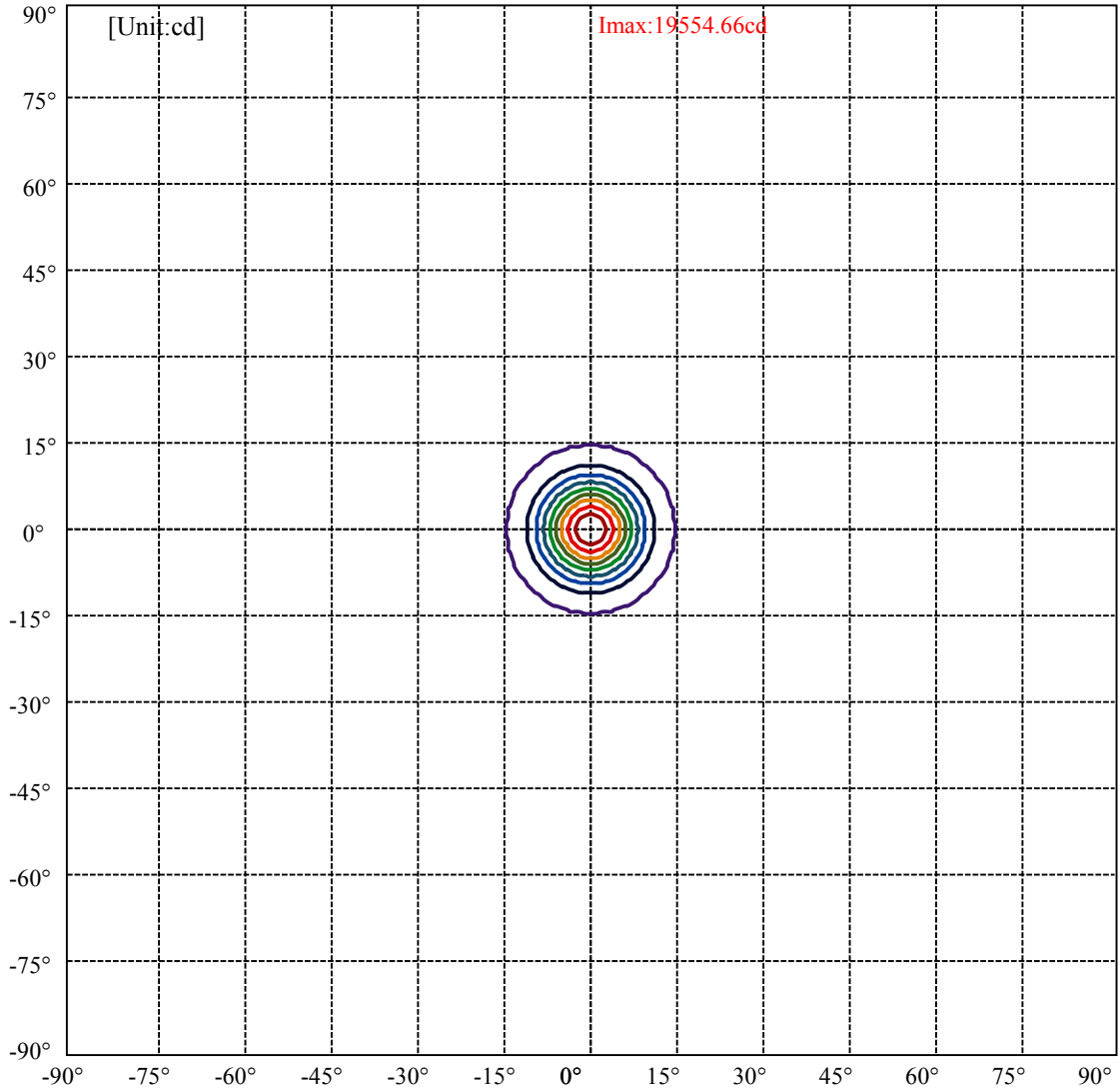
C90/C270: —————

Field angle(10%Imax):C0/180Left:14.4 Right:14.4

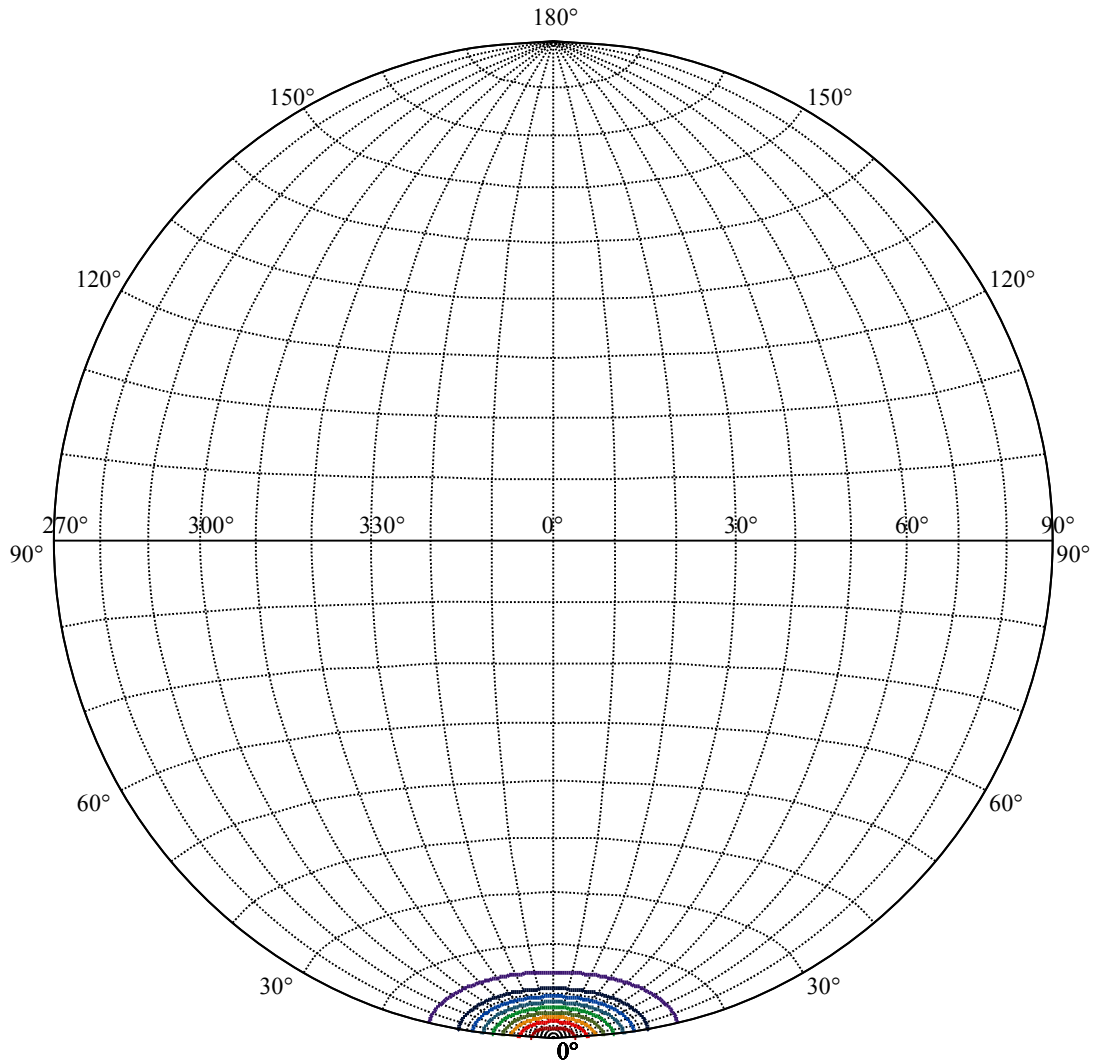
:C90/270Left:14.4 Right:14.4

Beam Angle(50%Imax):C0/180Left:7.0 Right:7.0

:C90/270Left:7.0 Right:7.0



(10%Imax)	1955.47	—
(20%Imax)	3910.93	—
(30%Imax)	5866.4	—
(40%Imax)	7821.86	—
(50%Imax)	9777.33	—
(60%Imax)	11732.8	—
(70%Imax)	13688.3	—
(80%Imax)	15643.7	—
(90%Imax)	17599.2	—



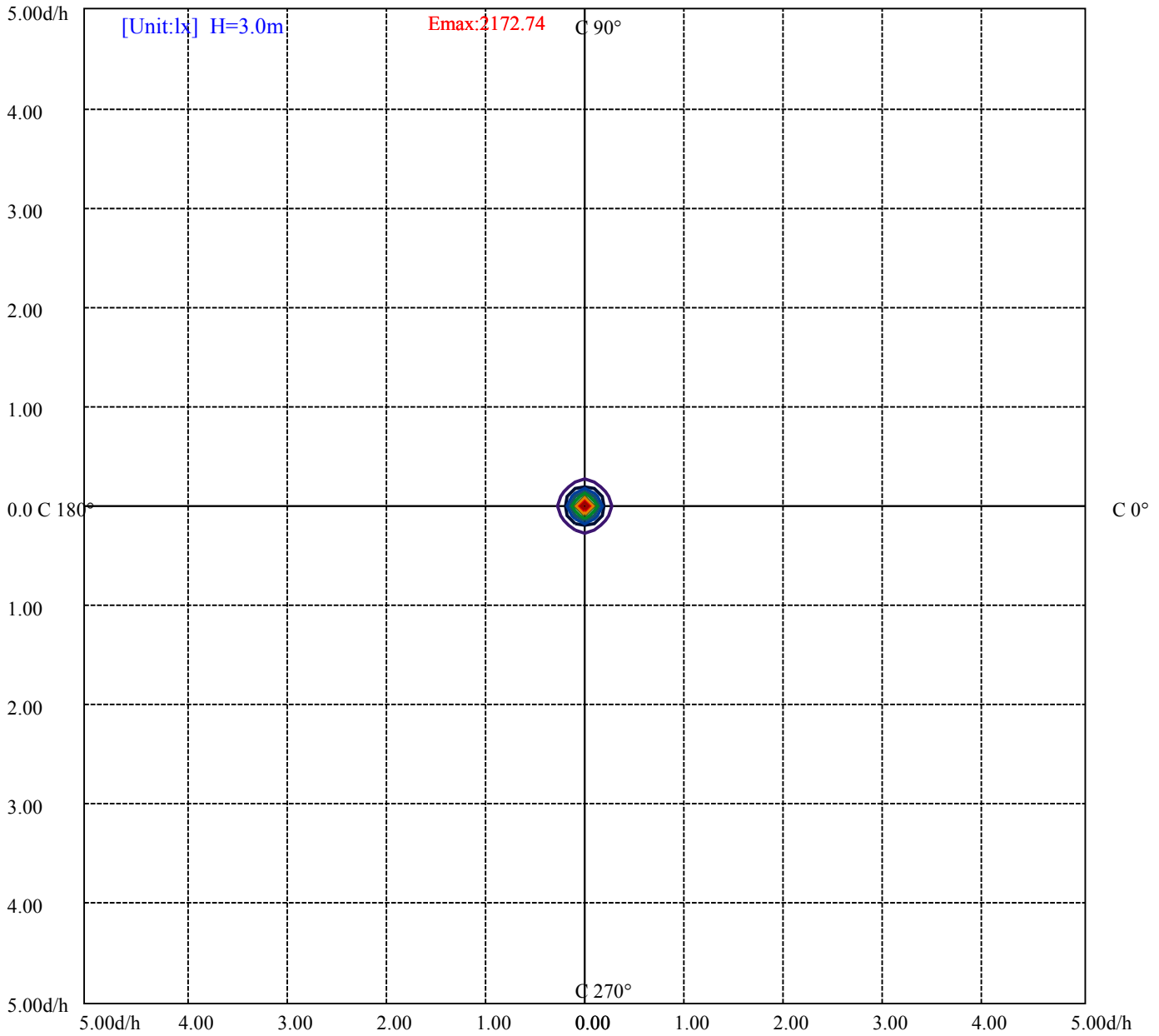
House

[Unit:cd]

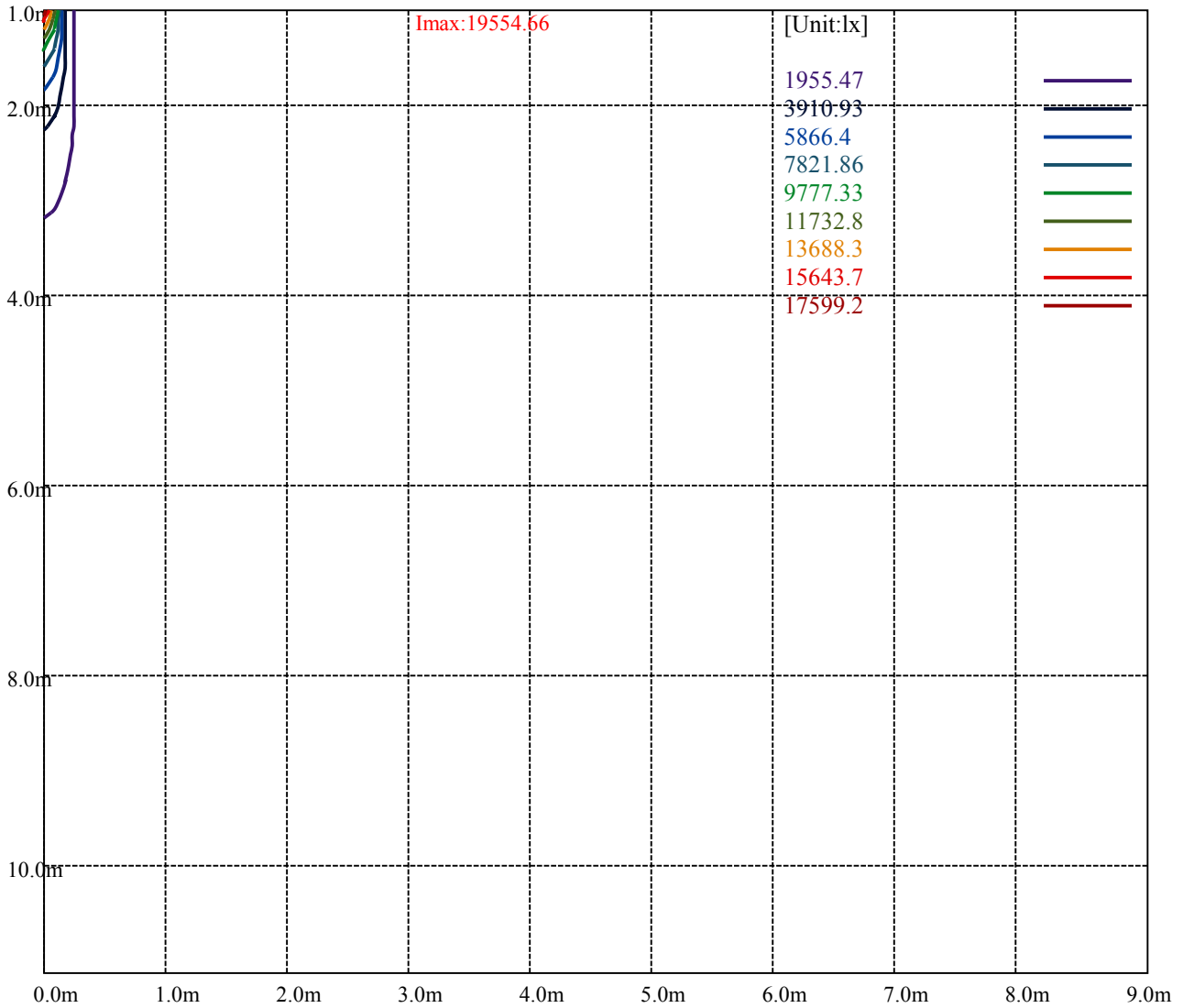
Road

Imax:19554.66

(10%Imax) 1955.47	—
(20%Imax) 3910.93	—
(30%Imax) 5866.4	—
(40%Imax) 7821.86	—
(50%Imax) 9777.33	—
(60%Imax) 11732.8	—
(70%Imax) 13688.3	—
(80%Imax) 15643.7	—
(90%Imax) 17599.2	—



- (10%Emax) 217.2733
- (20%Emax) 434.5455
- (30%Emax) 651.8189
- (40%Emax) 869.0922
- (50%Emax) 1086.365
- (60%Emax) 1303.633
- (70%Emax) 1520.911
- (80%Emax) 1738.189
- (90%Emax) 1955.456



Luminance Table

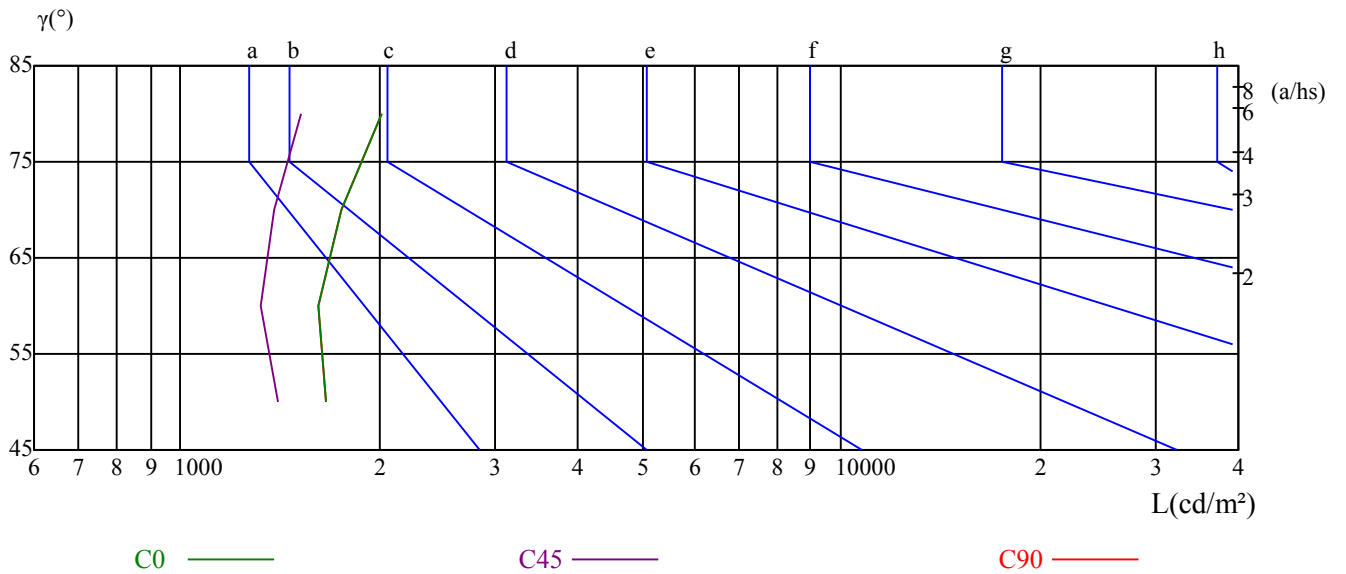
γ	45	50	55	60	65	70	75	80	85
C0	0	1658	0	1617	0	1751	0	2022	0
C45	0	1405	0	1327	0	1384	0	1525	0
C90	0	1658	0	1617	0	1751	0	2022	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4258	4258	4258	6715	6715	6715	19636	19636	19636

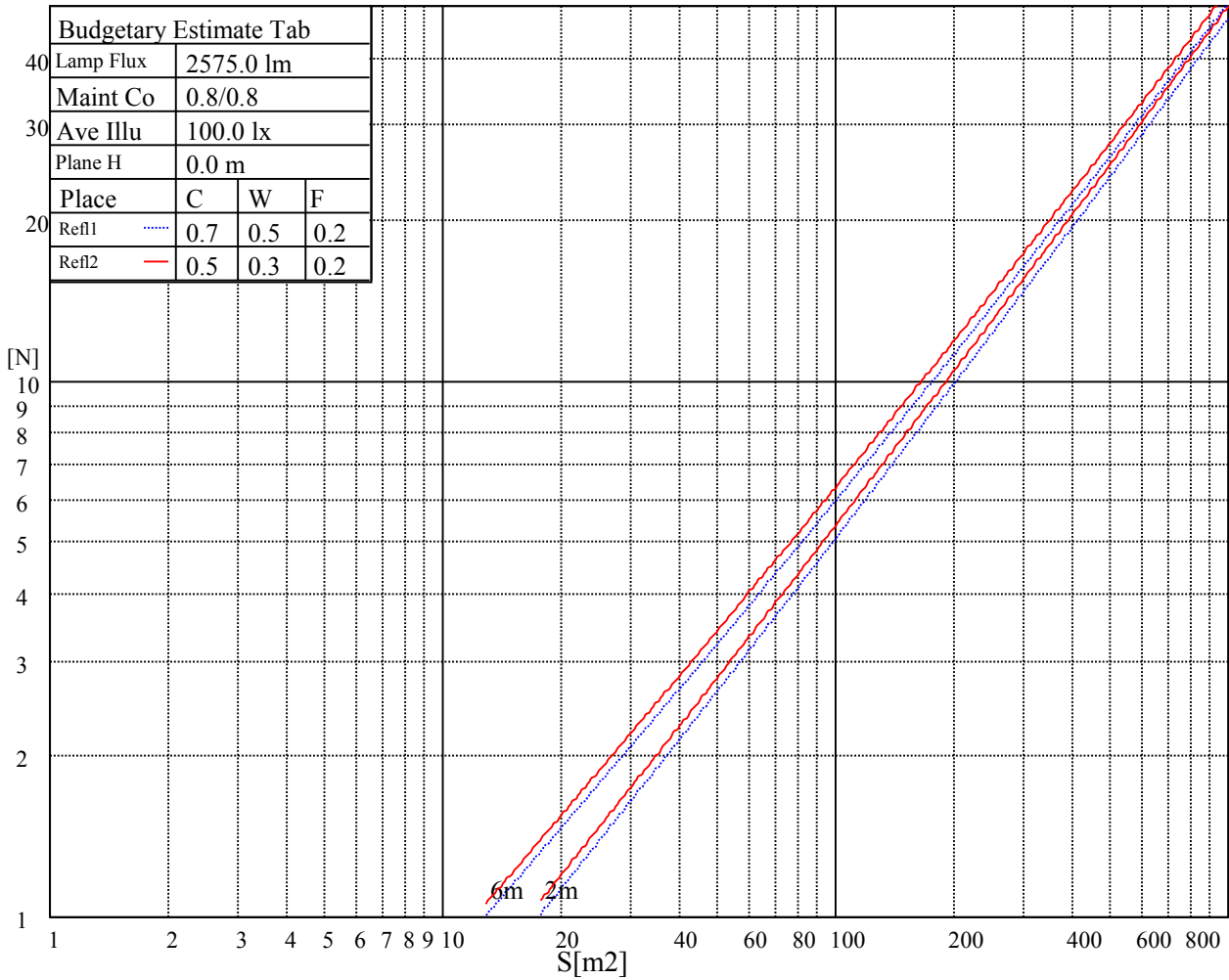
Glare Table

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

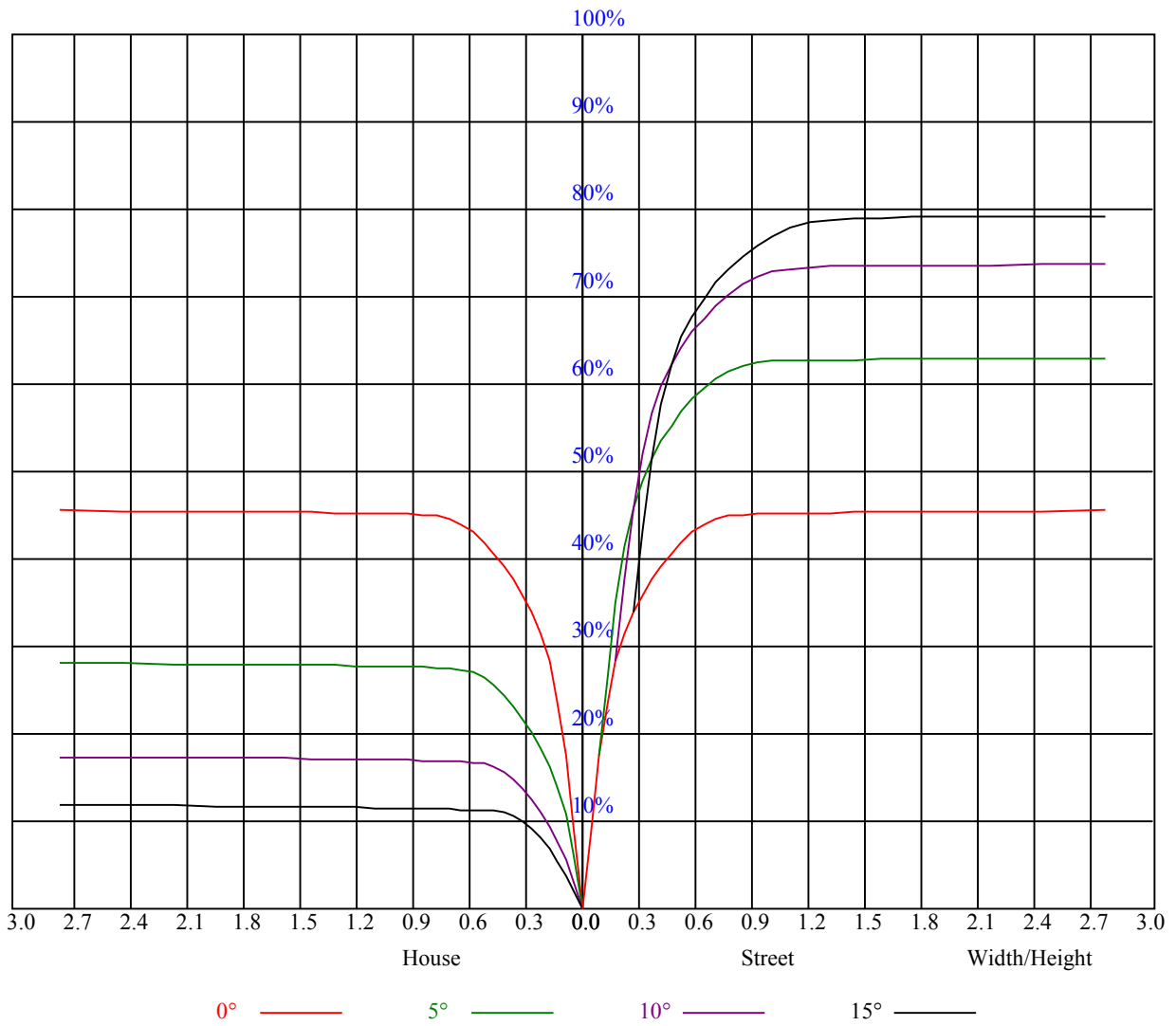
Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	-0.25	0.66	0.12	0.97	1.29	-0.26	0.65	0.10	0.96	1.27
	3H	2.08	2.88	2.46	3.22	3.59	2.07	2.88	2.46	3.21	3.58
	4H	3.35	4.10	3.76	4.45	4.84	3.34	4.09	3.75	4.44	4.83
	6H	4.70	5.38	5.12	5.75	6.15	4.68	5.36	5.10	5.74	6.14
	8H	5.38	6.02	5.82	6.41	6.82	5.36	6.00	5.80	6.39	6.80
	12H	6.45	7.06	6.88	7.44	7.87	6.41	7.02	6.85	7.41	7.84
4H	2H	0.26	1.00	0.66	1.35	1.74	0.24	0.99	0.65	1.34	1.73
	3H	2.88	3.49	3.29	3.90	4.30	2.87	3.48	3.29	3.89	4.30
	4H	4.33	4.87	4.76	5.30	5.75	4.32	4.86	4.76	5.29	5.74
	6H	5.77	6.23	6.24	6.68	7.16	5.75	6.22	6.23	6.67	7.15
	8H	6.56	7.00	7.04	7.45	7.93	6.54	6.98	7.02	7.43	7.91
	12H	7.62	8.00	8.12	8.49	8.96	7.59	7.96	8.08	8.45	8.93
8H	4H	4.77	5.21	5.25	5.66	6.13	4.77	5.20	5.25	5.65	6.13
	6H	6.45	6.79	6.97	7.30	7.79	6.44	6.78	6.95	7.29	7.77
	8H	7.41	7.71	7.94	8.23	8.73	7.39	7.69	7.92	8.21	8.71
	12H	8.60	8.85	9.12	9.35	9.94	8.56	8.82	9.09	9.32	9.90
12H	4H	4.87	5.24	5.36	5.73	6.21	4.86	5.23	5.35	5.72	6.20
	6H	6.83	6.93	7.17	7.41	7.96	6.82	6.92	7.16	7.39	7.94
	8H	7.68	7.94	8.21	8.44	9.02	7.66	7.92	8.19	8.42	9.00
Variation with the observer position at spacings:											
S = 1.0H		5.8/-8.4					5.8/-8.4				
S = 1.5H		8.3/-6.6					8.3/-6.6				
S = 2.0H		9.9/-5.3					9.9/-5.3				
Standard tables:		BK1					BK1				
Uncorrected UGR		-3.0					-3.0				



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	1.10	1.10	1.10	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.03	1.01	0.99	1.01	0.99	0.97	0.97	0.95	0.94	0.94	0.92	0.91	0.90	0.89	0.89	0.87
2	0.98	0.94	0.92	0.96	0.93	0.91	0.93	0.91	0.89	0.90	0.89	0.87	0.88	0.86	0.85	0.84
3	0.93	0.89	0.86	0.92	0.89	0.86	0.90	0.87	0.84	0.87	0.85	0.83	0.85	0.84	0.82	0.81
4	0.89	0.85	0.82	0.88	0.85	0.82	0.86	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.78
5	0.86	0.82	0.79	0.85	0.81	0.78	0.84	0.80	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.75
6	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
7	0.80	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.73	0.78	0.74	0.72	0.77	0.74	0.72	0.71
8	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.75	0.72	0.70	0.69
9	0.75	0.71	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.67
10	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.66



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	19511.99	18873.33	16280.18	12316.12	9001.72	5494.63	3231.81	2257.86	1650.04
45.0	19550.53	18867.83	16280.18	12371.17	8814.53	5417.55	3237.32	2192.35	1646.74
90.0	19611.09	18520.97	15536.92	10798.76	7959.50	4745.86	2989.56	2042.04	1538.83
135.0	19545.02	18735.69	16131.53	12222.52	8649.36	5279.91	3165.74	2214.92	1647.84
180.0	19511.99	17915.35	14611.97	10765.18	7144.67	4315.32	2713.73	1894.49	1483.22
225.0	19550.53	17805.24	14650.51	10783.35	7222.85	4254.21	2728.60	1893.39	1483.22
270.0	19611.09	18410.86	15465.34	11374.65	7950.14	4844.96	2967.54	2066.27	1541.03
315.0	19545.02	18080.52	14766.13	10913.83	7378.11	4413.87	2839.26	1957.26	1509.10
360.0	19511.99	18873.33	16280.18	12316.12	9001.72	5494.63	3231.81	2257.86	1650.04
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1329.61	1155.63	1059.84	989.36	929.35	877.60	833.55	799.42	670.04
45.0	1312.54	1141.87	1041.12	968.44	914.49	864.94	822.54	789.51	661.23
90.0	1262.44	1095.35	1017.88	954.18	897.47	855.52	812.85	766.16	624.12
135.0	1318.05	1140.77	1035.61	964.59	912.84	867.14	825.30	792.26	645.81
180.0	1222.25	1091.88	1013.75	947.47	892.85	850.18	810.60	735.44	575.89
225.0	1227.76	1097.00	1030.49	961.12	910.74	865.65	829.59	761.60	601.33
270.0	1283.36	1128.11	1042.77	987.71	934.31	883.66	845.67	795.01	639.20
315.0	1261.89	1094.96	1034.12	967.45	907.27	860.75	822.54	767.65	619.16
360.0	1329.61	1155.63	1059.84	989.36	929.35	877.60	833.55	799.42	670.04
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	477.34	280.24	92.38	31.88	19.32	13.82	12.39	11.89	11.56
45.0	448.16	278.03	80.00	29.40	17.34	13.60	12.44	11.95	11.67
90.0	409.67	209.87	62.87	26.92	16.24	13.16	12.28	11.89	11.56
135.0	436.60	284.09	74.38	30.83	20.76	15.09	12.39	11.95	11.67
180.0	364.31	163.35	48.67	31.27	20.65	12.44	11.89	11.56	11.34
225.0	381.82	181.69	52.08	32.98	21.91	12.39	11.89	11.51	11.23
270.0	458.62	281.89	67.22	35.46	24.11	13.27	12.11	11.73	11.40
315.0	402.68	202.33	58.14	31.44	19.93	12.72	12.06	11.67	11.45
360.0	477.34	280.24	92.38	31.88	19.32	13.82	12.39	11.89	11.56
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	11.29	11.07	10.85	10.74	10.63	10.52	10.46	10.46	10.41
45.0	11.40	11.18	11.01	10.85	10.74	10.68	10.57	10.57	10.52
90.0	11.29	11.07	10.90	10.74	10.68	10.57	10.46	10.41	10.41
135.0	11.29	11.07	10.90	10.74	10.63	10.57	10.46	10.41	10.35
180.0	11.07	10.85	10.68	10.57	10.52	10.41	10.35	10.30	10.30
225.0	11.01	10.85	10.68	10.57	10.46	10.41	10.35	10.30	10.30
270.0	11.18	10.96	10.79	10.68	10.57	10.46	10.41	10.35	10.30
315.0	11.12	10.90	10.74	10.63	10.52	10.46	10.41	10.41	10.35
360.0	11.29	11.07	10.85	10.74	10.63	10.52	10.46	10.46	10.41
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	10.41	10.35	10.35	10.35	10.24	10.24	10.41	10.74	10.08
45.0	10.46	10.41	10.35	10.35	10.30	10.79	10.57	10.96	10.08
90.0	10.35	10.30	10.30	10.24	10.24	10.30	10.30	10.79	10.08
135.0	10.30	10.30	10.24	10.24	10.24	10.19	10.30	10.68	10.02
180.0	10.24	10.24	10.19	10.19	10.13	10.13	10.13	10.13	10.02
225.0	10.24	10.24	10.19	10.19	10.13	10.13	10.19	10.19	10.08
270.0	10.30	10.24	10.24	10.19	10.24	10.19	10.13	10.41	10.08
315.0	10.30	10.24	10.24	10.24	10.19	10.19	10.19	10.30	10.02
360.0	10.41	10.35	10.35	10.35	10.24	10.24	10.41	10.74	10.08

Intensity data(cd)

C/ γ (°)	90.0
0.0	10.02
45.0	10.08
90.0	10.08
135.0	10.02
180.0	10.02
225.0	10.08
270.0	10.08
315.0	10.02
360.0	10.02