



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440219 RIO 10W 4000K 1000lm

Luminaire:

Report No:

Voltage(V): 229.9800

Test No: KYZ-A251011059-04-002

Current(A): 0.0459

LampCAT: LED

Power (W): 10.0000

Lamp flux(lm): -1.0

PF: 0.9467

Number of Lamps: 1

Ballast type:

Length(mm): -126

Width(mm): -126

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1000.00

Efficiency(%): 100.00%

Lumens(lm)/Power(W): 100.00

Central intensity(cd): 505.597

Maximum intensity(cd): 519.229

Angle of maximum intensity: C=45.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=85.2

[C90/270]Total=83.7

Field angle(10%Imax): [C0/180]Total=137.6

[C90/270]Total=141.1

Maximum s/h(1/2): C0_180=1.11 C90_270=1.14

Maximum s/h(1/4): C0_180=1.20 C90_270=1.19

Up flux rate of lamp(%): 1.19%

Down flux rate of lamp(%): 98.81%

Up flux rate of LUM(%): 1.19%

Down flux rate of LUM(%): 98.81%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 86.760%

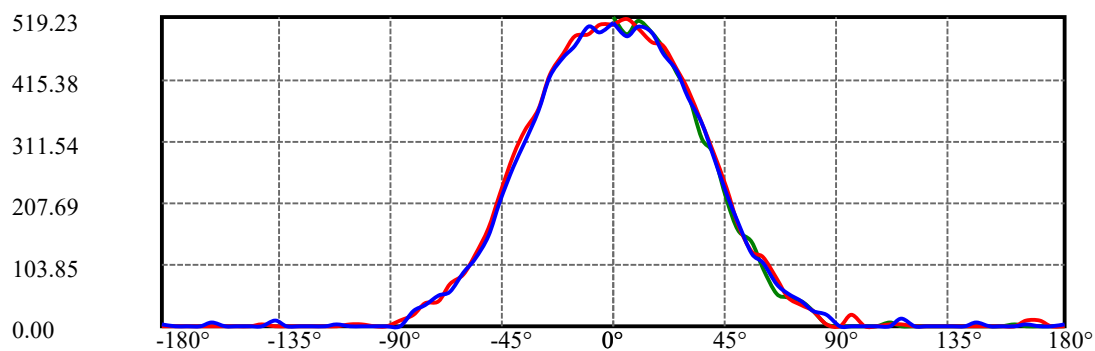
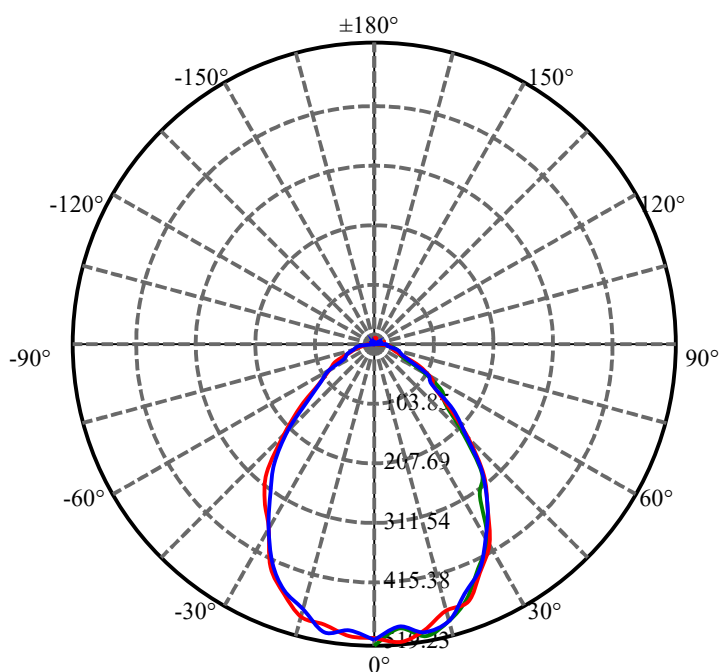
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	505.905	0.000	0	.000%	.000%
5.0	501.410	12.018	12.018	.000%	1.202%
10.0	499.125	35.721	47.739	.000%	4.774%
15.0	485.114	58.268	106.007	.000%	10.601%
20.0	460.908	77.810	183.817	.000%	18.382%
25.0	426.986	92.938	276.755	.000%	27.675%
30.0	382.216	102.201	378.955	.000%	37.895%
35.0	331.620	104.907	483.863	.000%	48.386%
40.0	284.917	102.659	586.522	.000%	58.652%
45.0	221.013	93.490	680.012	.000%	68.001%
50.0	163.538	77.549	757.561	.000%	75.756%
55.0	119.646	61.451	819.012	.000%	81.901%
60.0	90.971	48.586	867.598	.000%	86.760%
65.0	68.875	38.781	906.379	.000%	90.638%
70.0	49.390	29.886	936.265	.000%	93.626%
75.0	38.920	23.037	959.302	.000%	95.930%
80.0	24.256	16.870	976.172	.000%	97.617%
85.0	8.889	8.988	985.161	.000%	98.516%
90.0	1.959	2.964	988.125	.000%	98.812%
95.0	2.913	1.331	989.456	.000%	98.945%
100.0	2.863	1.566	991.022	.000%	99.102%
105.0	1.406	1.140	992.162	.000%	99.216%
110.0	2.160	0.930	993.092	.000%	99.309%
115.0	2.134	1.085	994.177	.000%	99.418%
120.0	0.653	0.676	994.853	.000%	99.485%
125.0	0.100	0.174	995.027	.000%	99.503%
130.0	0.879	0.213	995.239	.000%	99.524%
135.0	2.260	0.633	995.872	.000%	99.587%
140.0	2.837	0.942	996.814	.000%	99.681%
145.0	2.461	0.882	997.696	.000%	99.770%
150.0	0.502	0.435	998.132	.000%	99.813%
155.0	3.214	0.469	998.601	.000%	99.860%
160.0	1.331	0.476	999.077	.000%	99.908%
165.0	3.164	0.370	999.447	.000%	99.945%
170.0	3.365	0.386	999.833	.000%	99.983%
175.0	0.803	0.149	999.982	.000%	99.998%
180.0	0.804	0.019	1000.001	.000%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	378.96	N.A.	37.90%
0-40	586.52	N.A.	58.65%
0-60	867.60	N.A.	86.76%
0-90	988.12	N.A.	98.81%
0-120	994.85	N.A.	99.49%
0-180	1000.00	N.A.	100.00%
60-90	169.11	N.A.	16.91%
90-120	9.69	N.A.	0.97%
90-130	10.08	N.A.	1.01%
90-150	12.97	N.A.	1.30%
90-180	14.82	N.A.	1.48%
0-53.45	800.00	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	47.74
10-20	136.08
20-30	195.14
30-40	207.57
40-50	171.04
50-60	110.04
60-70	68.67
70-80	39.91
80-90	11.95
90-100	2.90
100-110	2.07
110-120	1.76
120-130	0.39
130-140	1.57
140-150	1.32
150-160	0.95
160-170	0.76
170-180	0.15



C45(Max): —————

C0/C180: —————

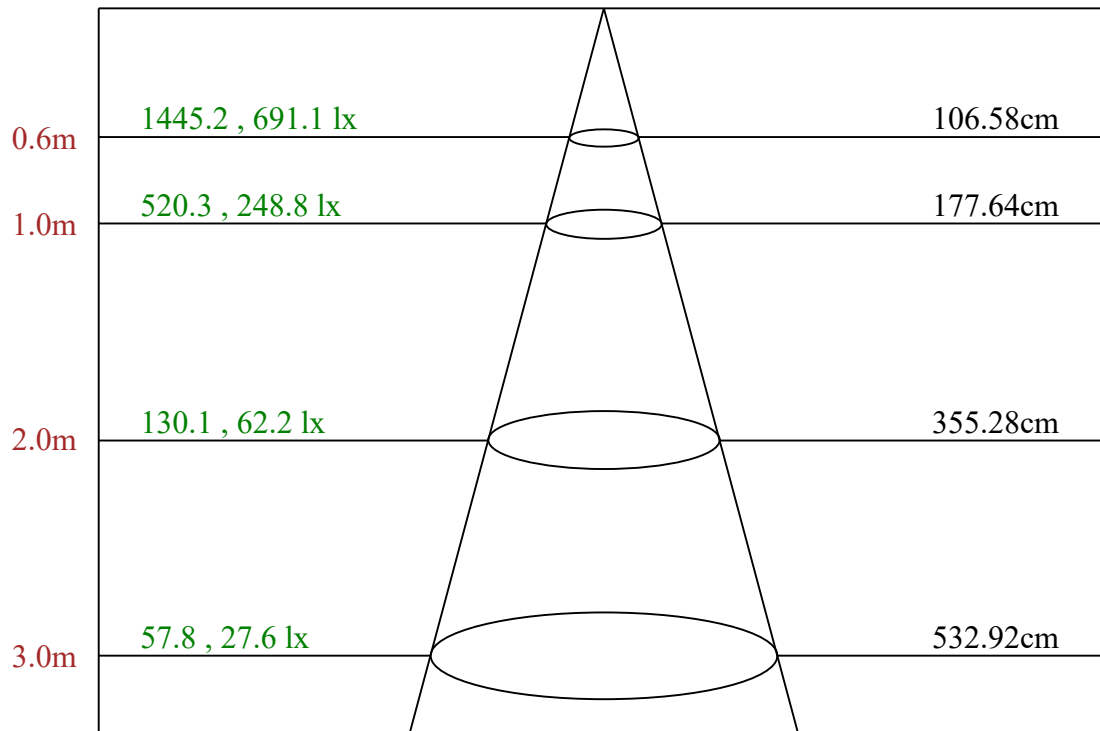
C90/C270: —————

Field angle(10%Imax):C0/180Left:73.2 Right:64.4

:C90/270Left:70.0 Right:71.1

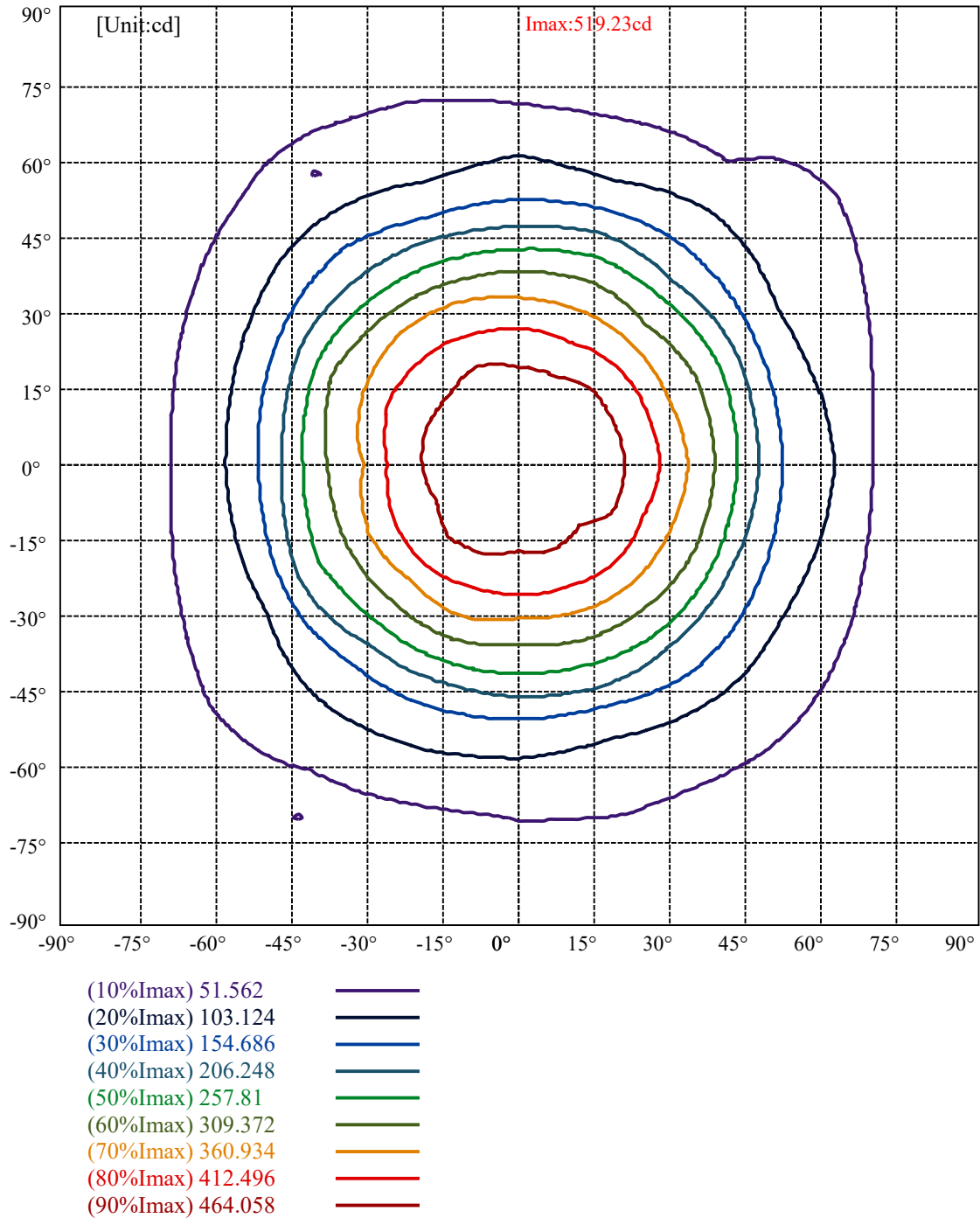
Beam Angle(50%Imax):C0/180Left:47.3 Right:37.9

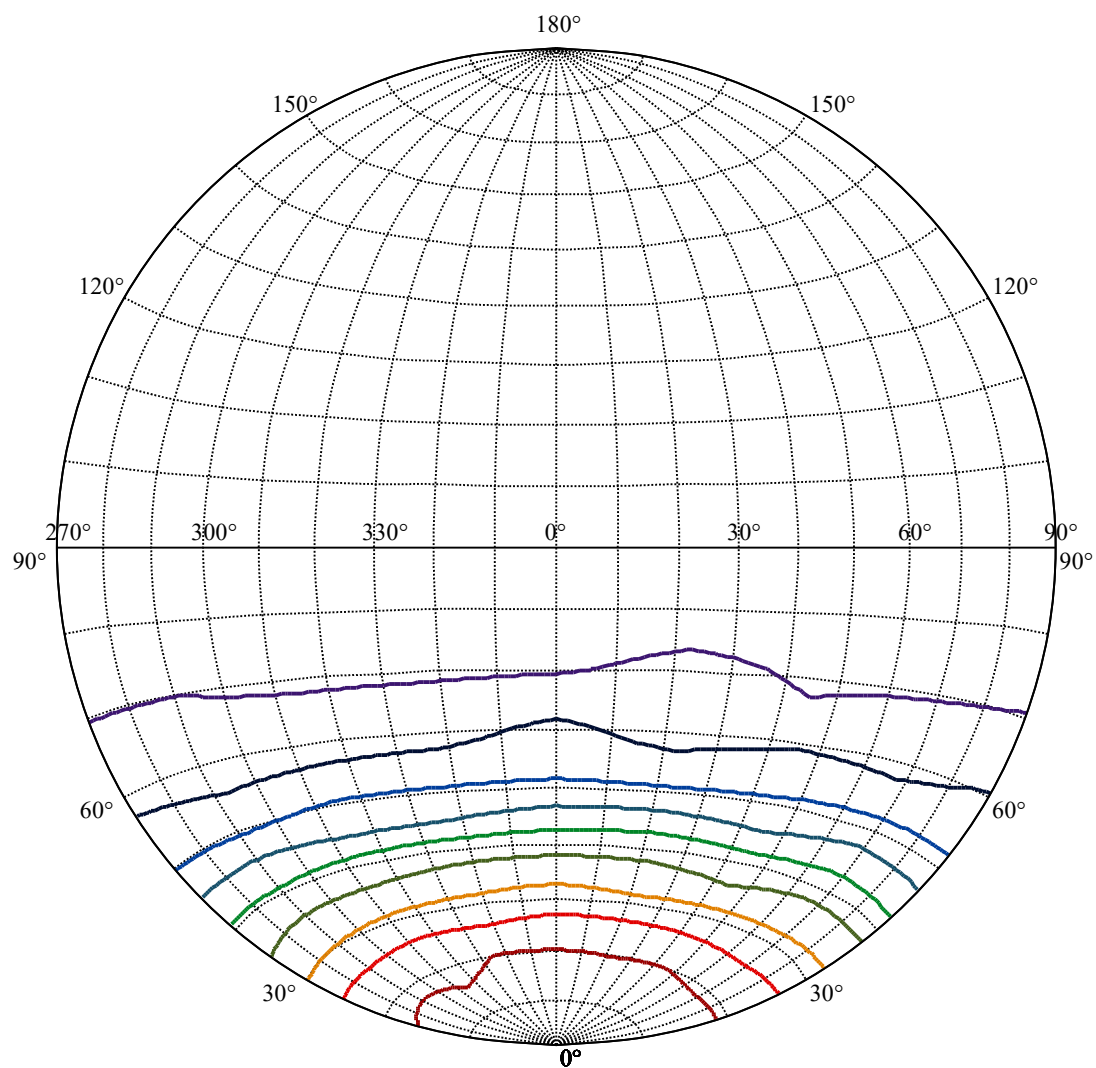
:C90/270Left:41.2 Right:42.5



Max , Ave

Beam angle of C45 plane 83.22





House

[Unit:cd]

Road

Imax:519.23

(10%Imax) 51.81926

(20%Imax) 103.6387

(30%Imax) 155.4581

(40%Imax) 207.2764

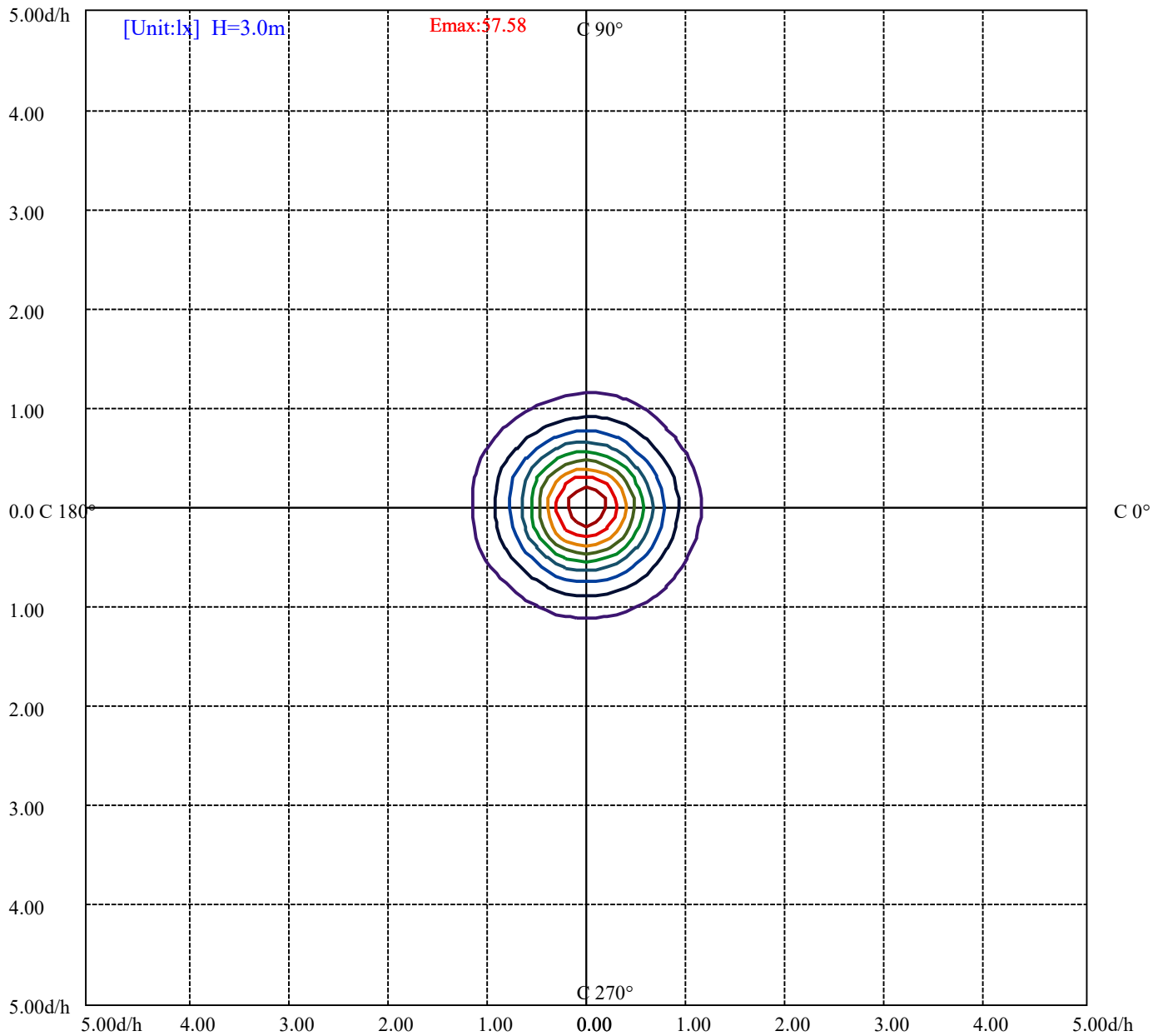
(50%Imax) 259.0958

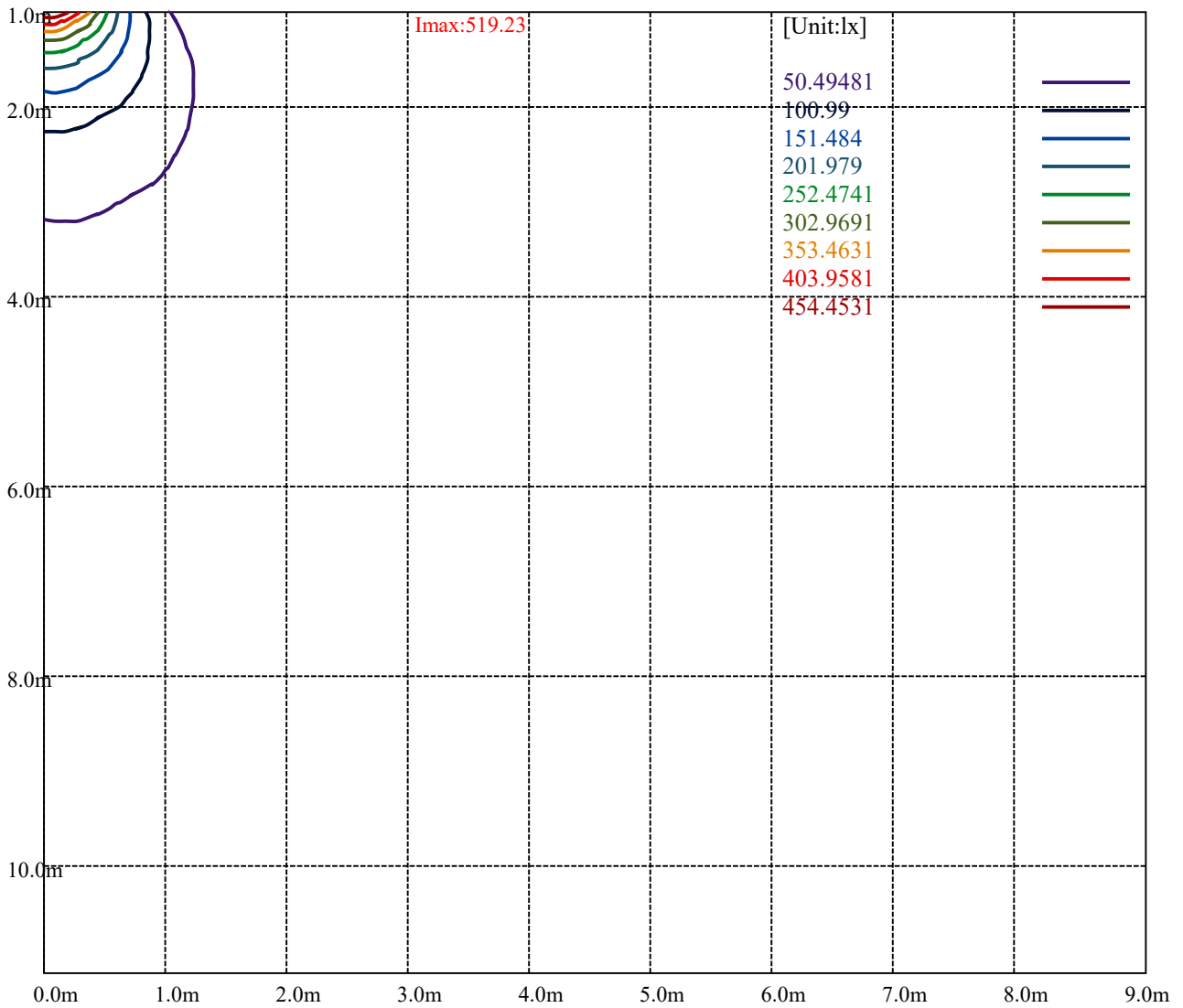
(60%Imax) 310.9152

(70%Imax) 362.7345

(80%Imax) 414.5539

(90%Imax) 466.3733





Luminance Table

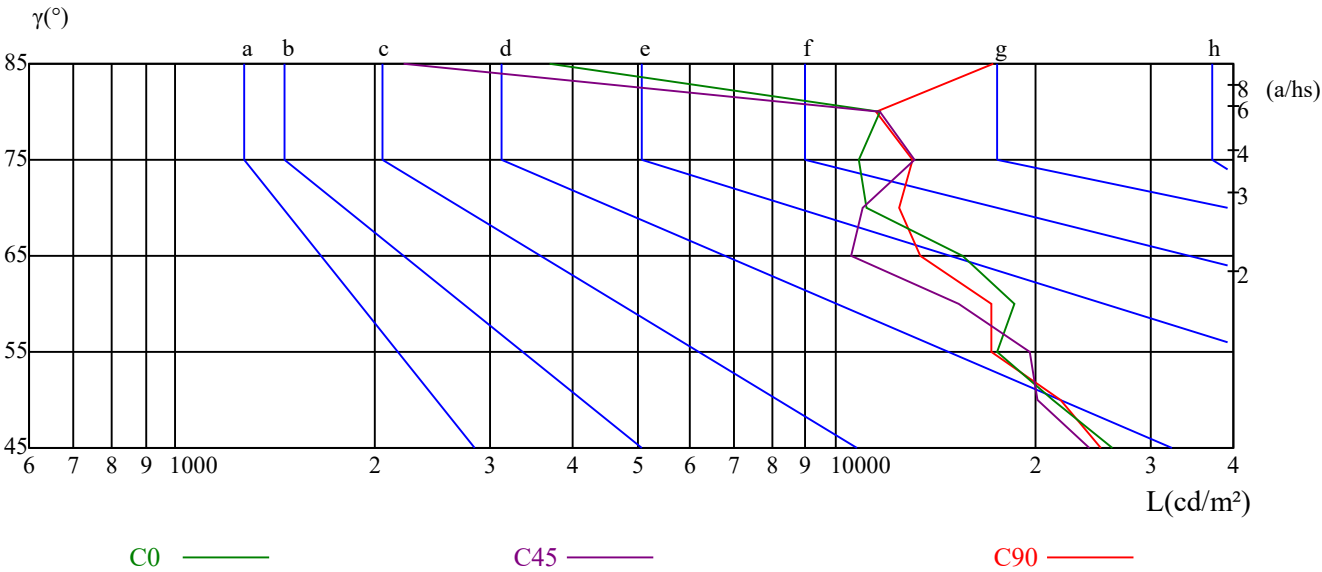
γ	45	50	55	60	65	70	75	80	85
C0	26239	21261	17603	18586	15598	11094	10809	11666	3689
C45	24193	20160	19622	15370	10576	11000	13170	11666	2214
C90	25239	21861	17211	17235	13391	12504	13045	11481	17340

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
14571	12326	10899	11182	12238	11213	6825	9408	1845

Glare Table

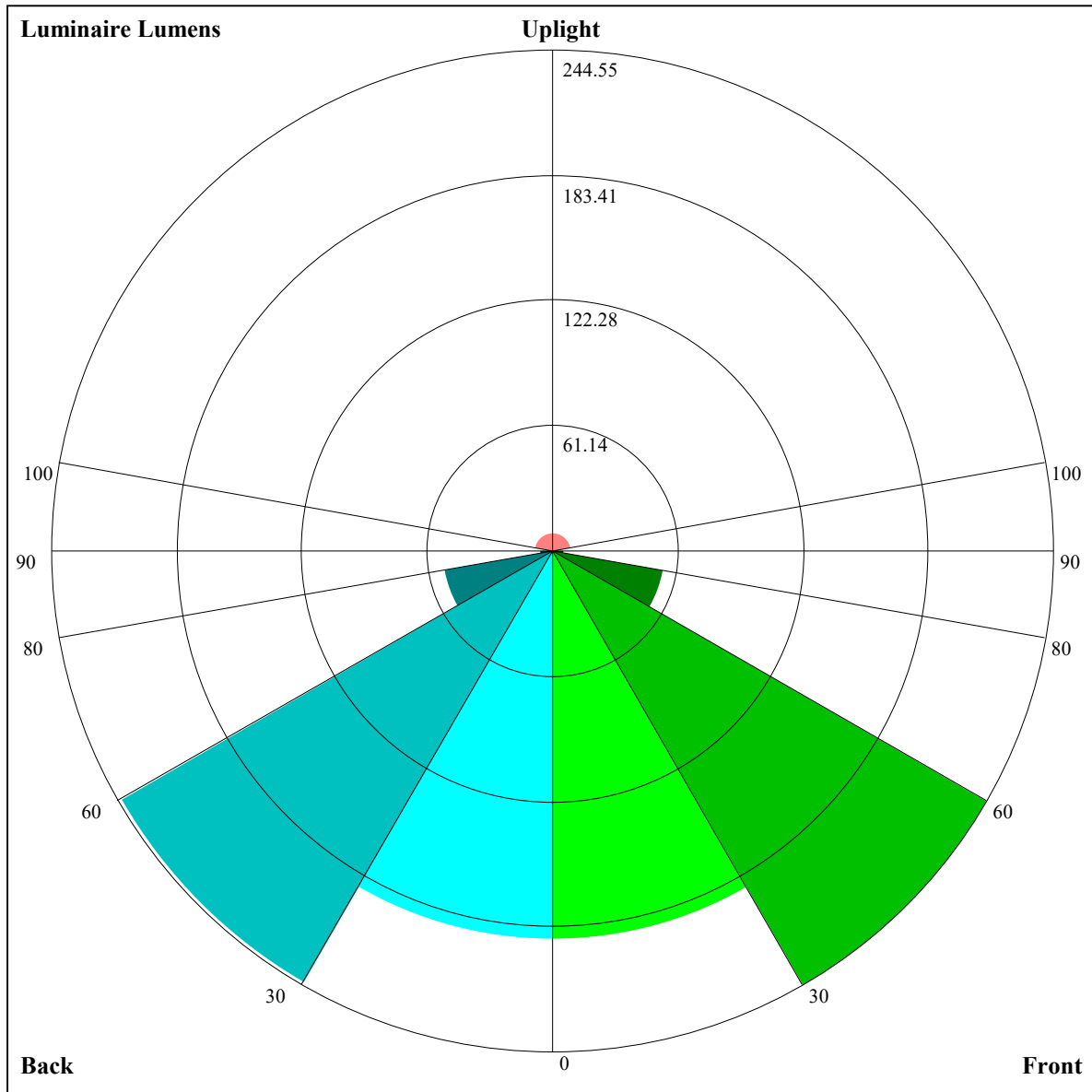
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	17.17	18.59	17.55	18.93	19.28	17.17	18.60	17.55	18.93	19.28
	3H	18.33	19.60	18.73	19.97	20.34	18.10	19.38	18.50	19.74	20.11
	4H	18.74	19.94	19.16	20.32	20.71	18.63	19.83	19.05	20.20	20.60
	6H	19.12	20.23	19.55	20.62	21.04	19.11	20.22	19.54	20.61	21.03
	8H	19.20	20.26	19.63	20.66	21.09	19.29	20.35	19.72	20.75	21.19
	12H	19.18	20.20	19.62	20.61	21.05	19.49	20.50	19.92	20.91	21.35
4H	2H	17.50	18.69	17.91	19.07	19.46	17.48	18.68	17.90	19.06	19.45
	3H	18.90	19.91	19.34	20.32	20.76	18.60	19.61	19.04	20.02	20.46
	4H	19.57	20.46	20.02	20.90	21.37	19.41	20.29	19.86	20.73	21.20
	6H	20.06	20.85	20.54	21.31	21.79	20.08	20.87	20.56	21.33	21.80
	8H	20.20	20.93	20.69	21.41	21.90	20.38	21.11	20.87	21.58	22.07
	12H	20.22	20.91	20.72	21.37	21.90	20.68	21.36	21.18	21.82	22.36
8H	4H	19.78	20.52	20.28	20.99	21.48	19.66	20.39	20.15	20.86	21.35
	6H	20.40	21.01	20.91	21.50	22.03	20.52	21.13	21.03	21.62	22.15
	8H	20.64	21.17	21.18	21.71	22.22	21.00	21.53	21.53	22.06	22.58
	12H	20.68	21.13	21.23	21.66	22.20	21.42	21.87	21.97	22.40	22.94
12H	4H	19.82	20.50	20.32	20.97	21.50	19.67	20.36	20.17	20.82	21.36
	6H	20.50	21.03	21.03	21.56	22.08	20.60	21.14	21.14	21.67	22.19
	8H	20.71	21.16	21.25	21.69	22.23	21.07	21.51	21.61	22.05	22.58
Variation with the observer position at spacings:											
S = 1.0H		0.2/-0.7					0.2/-0.7				
S = 1.5H		0.7/-0.9					0.9/-0.9				
S = 2.0H		1.3/-1.2					1.4/-1.2				
Standard tables:		BK4					BK3				
Uncorrected UGR		7.6					6.8				

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25



Luminaire Lumens:

FL=189.54,FM=244.55,FH=55.09,FVH=5.72

BL=189.32,BM=243.6,BH=53.85,BVH=6.3

UL=2.9,UH=9

BUG Rating:B1-U1-G0

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	505.60	515.62	501.19	475.93	470.31	433.02	395.34	341.21	294.70
22.5	501.99	506.00	514.42	487.95	465.90	435.03	380.10	328.38	299.11
45.0	519.23	491.16	512.01	493.17	467.51	425.41	389.72	317.15	289.08
67.5	511.21	515.62	498.38	493.97	454.68	420.60	380.90	339.20	292.69
90.0	508.80	486.75	503.59	493.97	458.28	427.81	384.91	341.21	286.28
112.5	496.78	501.59	495.97	493.57	472.32	422.20	400.15	348.02	279.06
135.0	502.39	502.79	495.97	485.95	459.09	433.43	394.13	354.44	287.48
157.5	493.17	504.39	500.38	490.36	460.69	439.04	396.54	342.01	311.54
180.0	505.60	505.20	490.36	487.55	457.48	421.80	363.66	330.38	288.28
202.5	501.99	495.57	487.95	475.53	452.67	426.61	383.71	326.77	275.45
225.0	519.23	506.40	487.55	479.94	462.69	430.62	365.67	316.75	263.82
247.5	511.21	495.57	490.76	480.34	457.88	415.78	379.30	323.16	267.43
270.0	508.80	493.17	503.59	471.52	450.67	417.79	361.25	310.33	268.23
292.5	496.78	493.97	505.60	486.35	447.46	418.59	367.67	323.16	269.04
315.0	502.39	496.78	489.16	469.91	452.27	427.41	378.90	321.96	285.07
337.5	493.17	495.97	493.17	480.34	469.91	423.00	381.30	331.18	292.29
360.0	505.60	515.62	501.19	475.93	470.31	433.02	395.34	341.21	294.70
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	231.35	170.40	125.90	115.87	82.19	47.31	34.88	25.26	4.01
22.5	231.75	164.39	117.88	82.19	78.19	64.95	46.91	27.26	4.41
45.0	213.30	161.58	140.33	95.83	55.73	46.91	42.50	25.26	2.41
67.5	234.55	178.82	120.69	89.01	68.96	48.11	48.11	35.28	18.04
90.0	222.53	175.21	123.09	107.45	70.57	53.33	42.10	24.86	18.84
112.5	226.13	161.98	119.08	87.81	75.78	60.95	41.70	23.26	14.03
135.0	225.33	170.80	138.73	88.61	49.72	62.55	21.25	12.03	0.00
157.5	234.15	177.62	115.07	93.42	82.19	40.90	31.27	30.07	18.84
180.0	220.92	163.59	118.68	86.60	71.37	40.50	37.29	20.45	10.83
202.5	244.18	161.98	103.45	82.19	77.38	52.93	35.68	21.25	14.43
225.0	201.68	144.74	125.90	79.39	57.74	45.71	52.52	31.67	0.00
247.5	201.68	152.36	109.06	98.23	72.17	38.89	36.09	24.86	17.64
270.0	210.90	152.36	114.27	91.42	59.34	50.92	36.89	26.06	1.60
292.5	216.11	147.55	105.85	83.80	59.74	51.72	38.09	2.41	0.00
315.0	205.29	163.99	113.47	84.60	66.56	41.30	28.47	24.86	5.61
337.5	209.30	163.99	119.08	86.20	72.17	41.70	47.71	32.48	11.23
360.0	231.35	170.40	125.90	115.87	82.19	47.31	34.88	25.26	4.01
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.00	19.25	0.00	1.60	2.41	4.81	0.00	0.00	0.00
22.5	0.00	0.00	8.02	0.00	0.00	0.00	0.00	0.00	0.00
45.0	0.00	0.00	0.80	0.80	5.21	0.00	0.00	0.00	0.00
67.5	3.61	0.00	0.00	0.00	0.80	0.00	0.00	0.00	1.60
90.0	0.00	1.60	0.00	1.20	0.00	12.83	0.00	0.00	0.00
112.5	0.00	0.00	2.81	0.00	0.00	16.44	7.62	0.00	0.80
135.0	0.00	0.00	0.00	4.41	10.43	0.00	0.00	0.00	4.41
157.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
180.0	0.00	0.00	2.41	4.01	0.00	0.00	0.00	0.00	0.00
202.5	7.22	11.23	10.83	10.02	4.01	0.00	0.00	0.00	4.01
225.0	2.00	0.00	7.22	0.40	2.81	0.00	0.00	0.00	0.00
247.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.00
270.0	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
292.5	9.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41
315.0	9.22	14.43	5.21	0.00	4.81	0.00	0.00	0.00	0.00
337.5	0.00	0.00	8.42	0.00	2.00	0.00	2.81	0.00	0.00
360.0	0.00	19.25	0.00	1.60	2.41	4.81	0.00	0.00	0.00

Intensity data(cd)

Appendix Page: 14 Total:14

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.00	0.00	0.00	0.00	0.00	0.00	8.82	8.42	1.20
22.5	0.00	0.00	8.82	0.00	0.00	0.00	0.00	3.61	3.21
45.0	0.00	0.00	0.00	0.00	0.00	4.81	0.00	0.00	0.00
67.5	1.20	0.00	0.00	0.00	0.00	0.00	0.00	20.05	1.20
90.0	0.00	0.00	6.01	0.00	0.00	0.00	2.00	1.60	0.00
112.5	2.00	0.00	8.42	0.00	17.64	4.81	8.42	1.60	0.00
135.0	0.00	0.00	0.00	0.00	6.42	0.00	0.00	0.00	0.00
157.5	0.00	13.23	7.62	0.00	0.00	0.00	7.22	0.00	0.00
180.0	0.00	3.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202.5	0.00	0.00	0.00	0.00	12.43	0.00	1.60	18.44	0.00
225.0	10.02	9.62	0.00	4.81	8.82	0.00	13.63	0.00	0.00
247.5	0.00	0.00	2.41	3.21	0.00	0.00	0.00	0.00	0.00
270.0	11.23	0.00	0.00	0.00	0.40	7.22	0.00	0.00	1.20
292.5	5.21	8.42	6.01	0.00	0.00	0.00	0.00	0.00	1.20
315.0	0.00	6.82	0.00	0.00	0.00	2.41	8.82	0.00	0.00
337.5	6.42	4.01	0.00	0.00	5.61	2.00	0.00	0.00	4.81
360.0	0.00	0.00	0.00	0.00	0.00	0.00	8.82	8.42	1.20

C/γ(°)	180.0
0.0	0.00
22.5	0.40
45.0	0.00
67.5	0.00
90.0	3.61
112.5	0.00
135.0	2.41
157.5	0.00
180.0	0.00
202.5	0.40
225.0	0.00
247.5	0.00
270.0	3.61
292.5	0.00
315.0	2.41
337.5	0.00
360.0	0.00