



Shenzhen Belling Efficiency Testing Laboratory Co.,Ltd.
www.bellingeel.com

Tel:0755-21038430

Address:Rm. 108, No.1 Building, Meibaohe industrial park, No.14 Shilongzi Road, Dalang street, Longhua district, Shenzhen, China

Client:

LumCAT:

Luminaire:

Report No:

Ballast type:

Test No:

Voltage(V): 120.21

LampCAT:

Current(A): 1.9680

Lamp flux(lm): -1.0

Power (W): 236.03

Number of Lamps: 1

PF: 0.9976

Length(mm): 320

Width(mm): 320

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 33439.94, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 141.68

Central intensity(cd): 24749.440, Maximum intensity(cd): 26836.820

Angle of maximum intensity: C=180.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=66.2

[C90/270]Total=65.4

Field angle(10%Imax): [C0/180]Total=121.5

[C90/270]Total=117.5

Maximum s/h(1/2): C0_180=1.05 C90_270=0.82

Maximum s/h(1/4): C0_180=1.07 C90_270=0.94

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 0.00%

Up flux rate of LUM(%): 0.23%

Down flux rate of LUM(%): 99.77%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 92.975%

Equipment: GMS-3000
Temperature(°C): 25

Date:
Humidity(%): 58%

Operator: Sam

Zonal flux distribution table

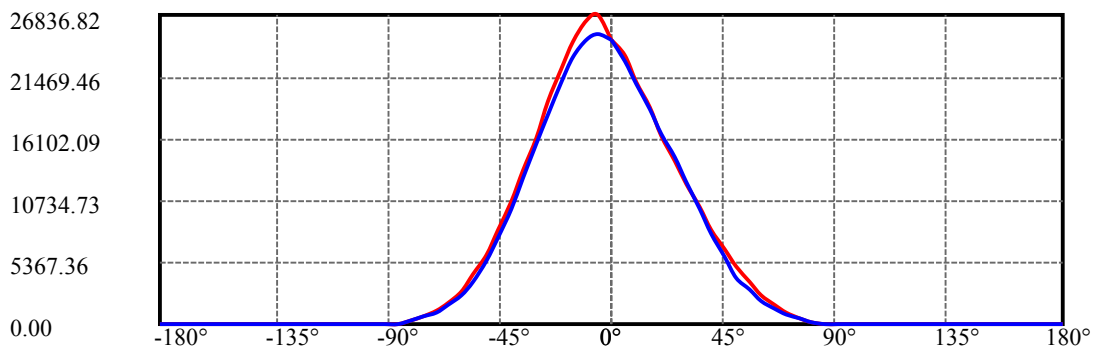
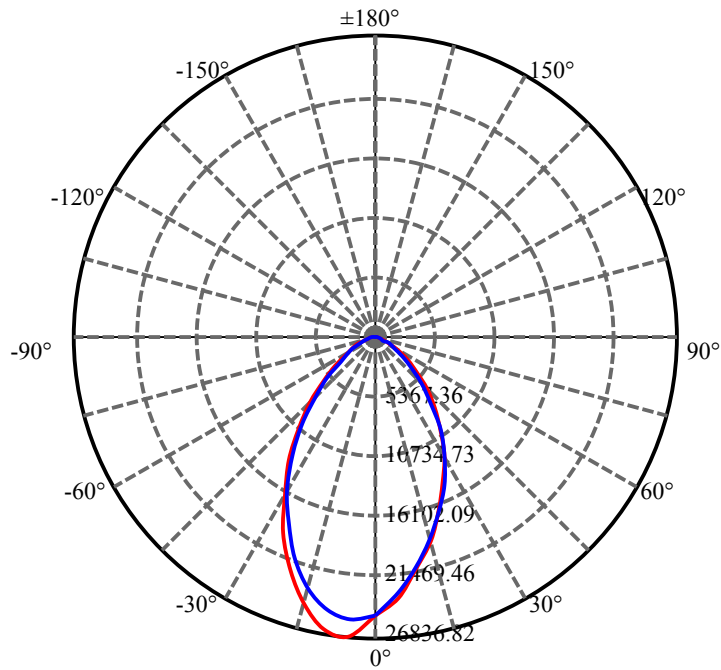
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	24749.439	0.000	0	0.00%	0.00%
5.0	24217.535	586.712	586.712	0.00%	1.75%
10.0	22915.715	1696.052	2282.763	0.00%	6.83%
15.0	20911.238	2620.329	4903.092	0.00%	14.66%
20.0	18678.506	3292.577	8195.669	0.00%	24.51%
25.0	16254.813	3699.599	11895.268	0.00%	35.57%
30.0	13750.780	3833.063	15728.331	0.00%	47.03%
35.0	11198.944	3706.988	19435.319	0.00%	58.12%
40.0	8833.191	3371.471	22806.791	0.00%	68.20%
45.0	6605.966	2882.724	25689.515	0.00%	76.82%
50.0	4746.312	2311.531	28001.046	0.00%	83.74%
55.0	3357.256	1774.376	29775.423	0.00%	89.04%
60.0	2298.254	1315.344	31090.767	0.00%	92.97%
65.0	1528.423	934.862	32025.628	0.00%	95.77%
70.0	956.788	632.185	32657.813	0.00%	97.66%
75.0	579.156	404.248	33062.061	0.00%	98.87%
80.0	232.721	220.089	33282.15	0.00%	99.53%
85.0	26.755	72.087	33354.237	0.00%	99.74%
90.0	2.866	8.400	33362.637	0.00%	99.77%
95.0	3.016	1.604	33364.24	0.00%	99.77%
100.0	2.891	1.598	33365.839	0.00%	99.78%
105.0	3.241	1.639	33367.478	0.00%	99.78%
110.0	4.217	1.938	33369.416	0.00%	99.79%
115.0	5.619	2.475	33371.89	0.00%	99.80%
120.0	7.421	3.150	33375.04	0.00%	99.81%
125.0	9.798	3.951	33378.992	0.00%	99.82%
130.0	12.677	4.846	33383.838	0.00%	99.83%
135.0	16.080	5.763	33389.6	0.00%	99.85%
140.0	19.860	6.597	33396.197	0.00%	99.87%
145.0	24.014	7.252	33403.449	0.00%	99.89%
150.0	28.281	7.629	33411.078	0.00%	99.91%
155.0	32.236	7.591	33418.669	0.00%	99.94%
160.0	35.314	7.032	33425.701	0.00%	99.96%
165.0	37.291	5.948	33431.648	0.00%	99.98%
170.0	38.555	4.479	33436.128	0.00%	99.99%
175.0	40.445	2.815	33438.942	0.00%	100.00%
180.0	42.836	0.994	33439.936	0.00%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	15728.33	N.A.	47.03%
0-40	22806.79	N.A.	68.20%
0-60	31090.77	N.A.	92.97%
0-90	33362.64	N.A.	99.77%
0-120	33375.04	N.A.	99.81%
0-180	33439.94	N.A.	100.00%
60-90	2271.87	N.A.	6.79%
90-120	12.40	N.A.	0.04%
90-130	21.20	N.A.	0.06%
90-150	48.44	N.A.	0.14%
90-180	76.31	N.A.	0.23%
0-47.30	26751.95	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	2282.76
10-20	5912.91
20-30	7532.66
30-40	7078.46
40-50	5194.26
50-60	3089.72
60-70	1567.05
70-80	624.34
80-90	80.49
90-100	3.20
100-110	3.58
110-120	5.62
120-130	8.80
130-140	12.36
140-150	14.88
150-160	14.62
160-170	10.43
170-180	2.81

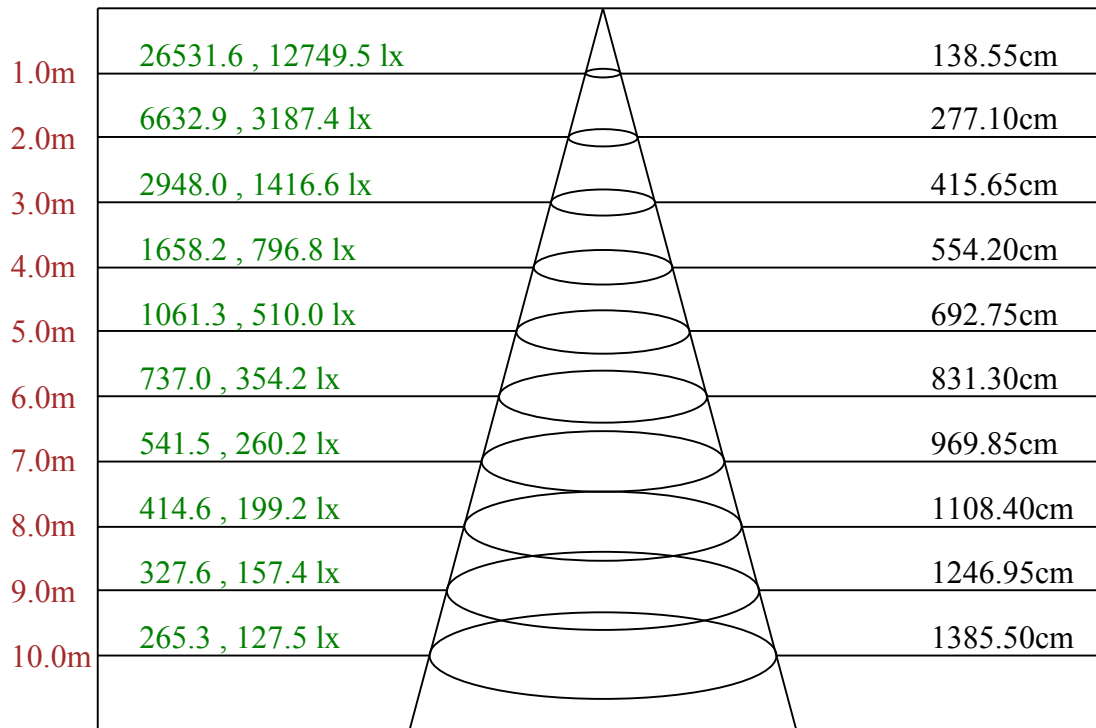


C0/C180: —

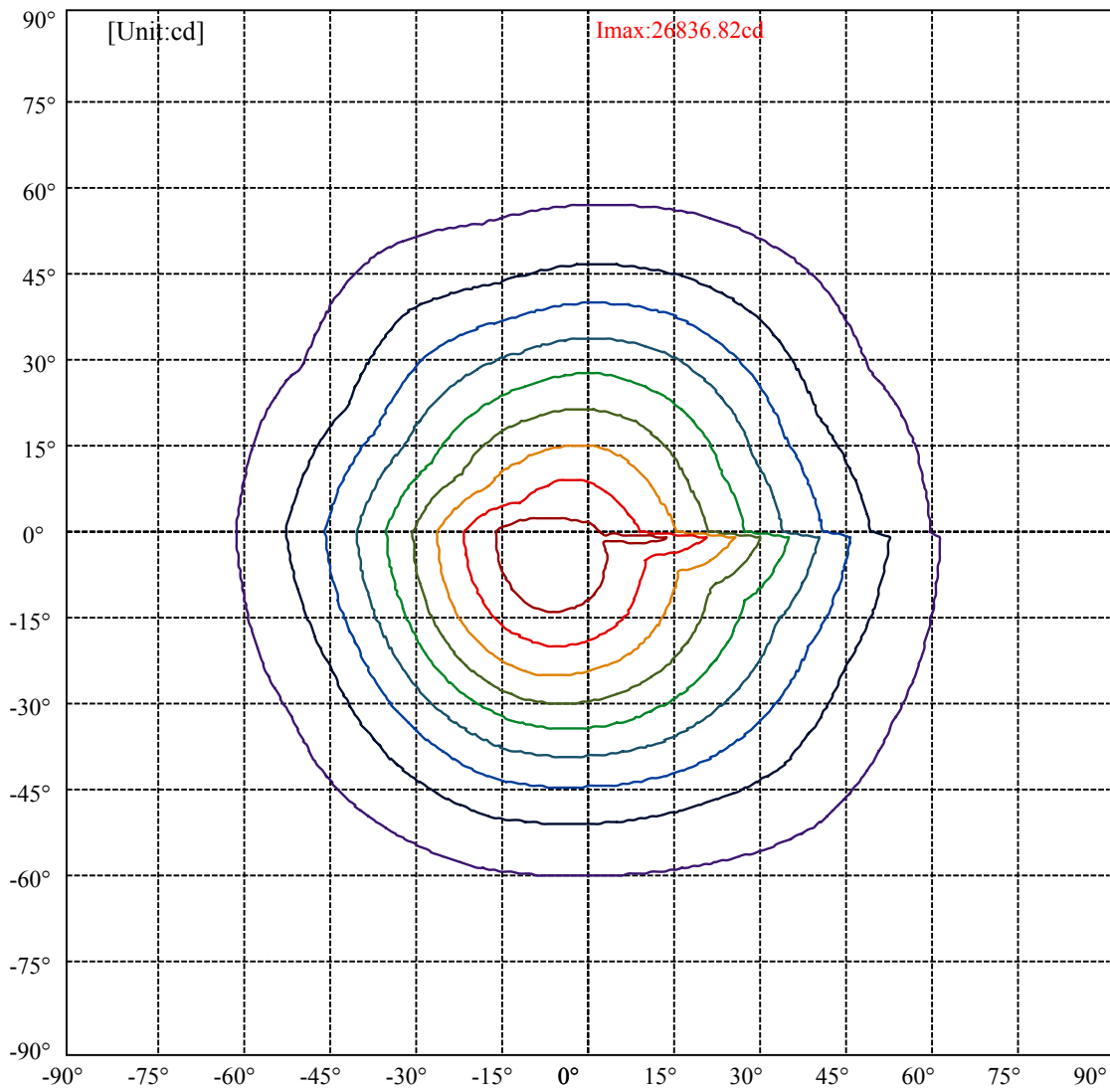
C90/C270: —

Field angle(10%Imax):C0/180Left:61.7 Right:59.8
 :C90/270Left:60.1 Right:57.4

Beam Angle(50%Imax):C0/180Left:36.7 Right:29.5
 :C90/270Left:35.6 Right:29.8



Max , Ave Beam angle of C180 plane 69.42

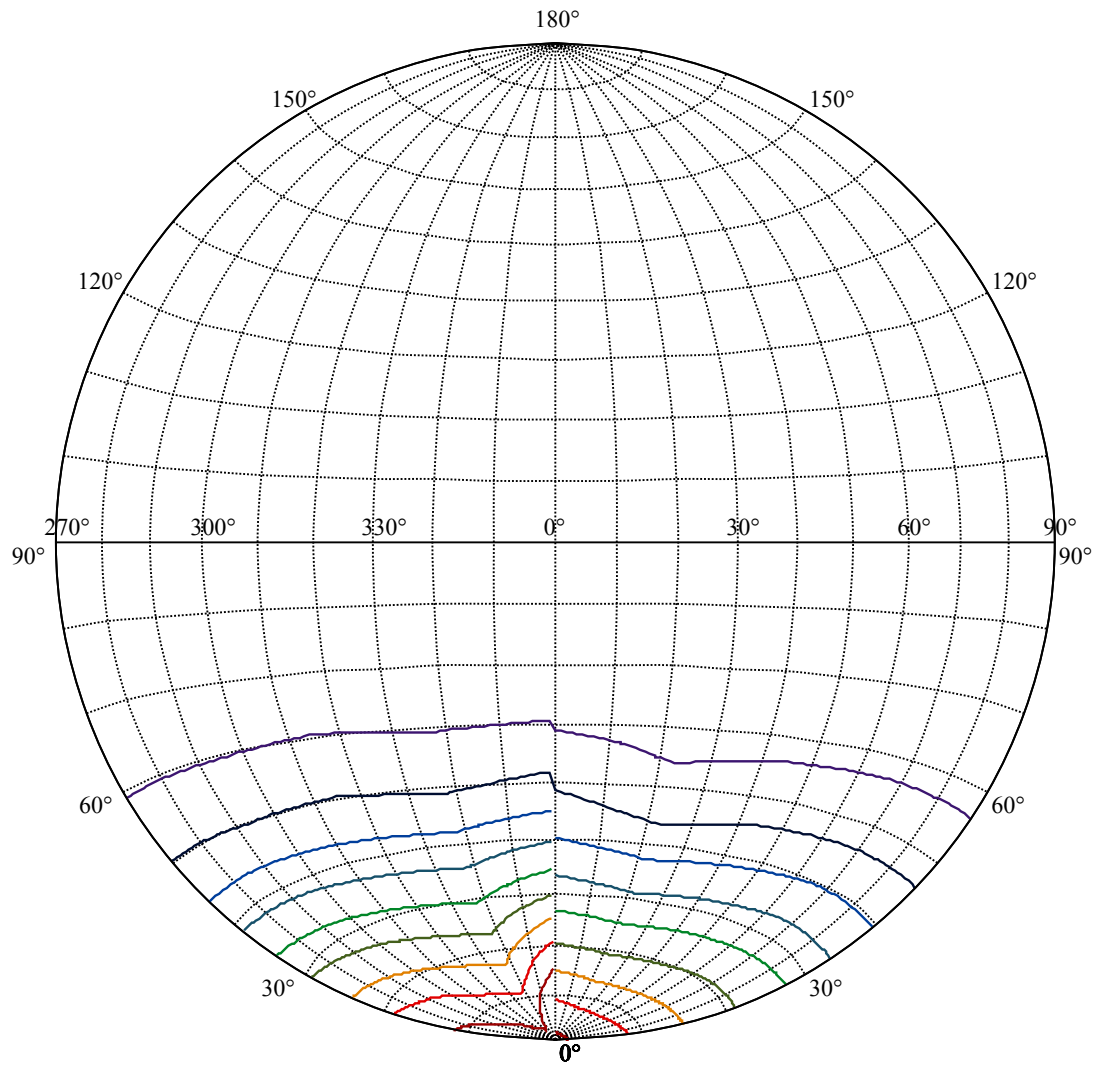


(10%Imax) 2683.68	—
(20%Imax) 5367.36	—
(30%Imax) 8051.05	—
(40%Imax) 10734.7	—
(50%Imax) 13418.4	—
(60%Imax) 16102.1	—
(70%Imax) 18785.8	—
(80%Imax) 21469.5	—
(90%Imax) 24153.1	—

Equipment: GMS-3000
Temperature(°C): 25

Date:
Humidity(%): 58%

Operator: Sam



House

[Unit:cd]

Road

I_{max}:26836.82

(10%I _{max}) 2683.68	—
(20%I _{max}) 5367.36	—
(30%I _{max}) 8051.05	—
(40%I _{max}) 10734.7	—
(50%I _{max}) 13418.4	—
(60%I _{max}) 16102.1	—
(70%I _{max}) 18785.8	—
(80%I _{max}) 21469.5	—
(90%I _{max}) 24153.1	—

Luminance Limiting Curve(no luminous side)

Luminance Table

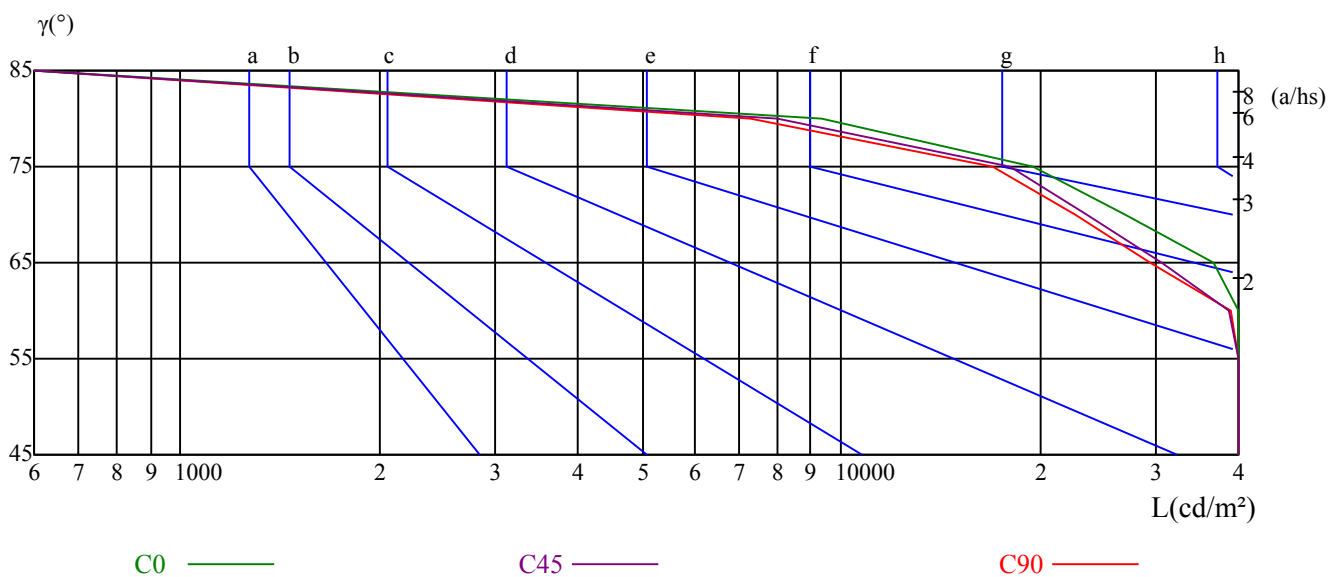
γ	45	50	55	60	65	70	75	80	85
C0	89441	75819	61215	47631	36703	27030	19597	9380	404
C45	77218	60519	49444	38703	30550	23496	18063	8006	381
C90	79818	60613	49999	38946	29435	22593	16983	7319	404

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
39206	33629	35085	23151	20840	21826	2277	3332	3416

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	22.75	24.06	23.11	24.38	24.70	23.16	24.48	23.52	24.79	25.12
	3H	23.70	24.88	24.09	25.22	25.57	23.83	25.01	24.22	25.35	25.70
	4H	23.95	25.04	24.35	25.40	25.77	24.00	25.09	24.40	25.45	25.82
	6H	24.02	25.02	24.44	25.40	25.80	24.03	25.03	24.44	25.41	25.81
	8H	23.97	24.94	24.39	25.32	25.73	23.97	24.94	24.39	25.32	25.73
	12H	23.92	24.83	24.34	25.23	25.65	23.91	24.83	24.34	25.23	25.65
4H	2H	23.00	24.09	23.40	24.45	24.82	23.36	24.45	23.76	24.81	25.18
	3H	24.07	24.98	24.50	25.37	25.79	24.17	25.08	24.59	25.47	25.89
	4H	24.43	25.23	24.87	25.65	26.10	24.44	25.23	24.88	25.66	26.10
	6H	24.50	25.20	24.97	25.65	26.10	24.45	25.15	24.92	25.60	26.06
	8H	24.48	25.13	24.96	25.59	26.06	24.42	25.07	24.90	25.53	26.00
	12H	24.44	25.05	24.93	25.50	26.01	24.38	24.99	24.87	25.44	25.95
8H	4H	24.43	25.08	24.91	25.54	26.01	24.44	25.09	24.92	25.54	26.02
	6H	24.51	25.05	25.01	25.52	26.04	24.46	25.00	24.96	25.47	25.98
	8H	24.54	25.01	25.07	25.53	26.02	24.47	24.94	25.00	25.46	25.96
	12H	24.50	24.88	25.04	25.40	25.92	24.43	24.81	24.97	25.33	25.85
12H	4H	24.40	25.00	24.89	25.45	25.97	24.41	25.01	24.89	25.46	25.98
	6H	24.51	24.98	25.04	25.50	26.00	24.46	24.93	24.99	25.45	25.95
	8H	24.51	24.89	25.04	25.41	25.93	24.44	24.82	24.98	25.34	25.86
Variation with the observer position at spacings:											
S = 1.0H	0.6/-1.1					0.5/-1.0					
S = 1.5H	1.3/-2.3					1.3/-1.7					
S = 2.0H	3.8/-3.2					3.8/-2.8					
Standard tables:	BK2					BK2					
Uncorrected UGR	7.9					7.9					

UGR calculation is based on CIE Publ. 117 ,S/H = 1

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	24749.44	23288.88	21026.36	18823.92	16347.16	14250.84	12182.54	10122.25	8204.12
22.5	24749.44	22670.19	20325.59	18115.13	15640.38	13461.96	11165.41	9041.05	6784.54
45.0	24749.44	22504.01	20215.46	18155.18	15898.67	13832.37	11714.02	9525.59	7437.26
67.5	24749.44	22602.12	20477.76	18425.47	16387.21	14118.69	12150.50	10036.15	7909.79
90.0	24749.44	22828.37	20884.21	18719.80	16545.39	14485.10	12276.64	9996.11	7781.65
112.5	24749.44	23172.75	21338.71	18984.10	16889.77	14344.94	12022.36	9711.79	7487.32
135.0	24749.44	23641.27	21859.29	19500.67	17562.52	14847.50	12426.81	10194.33	8164.07
157.5	24749.44	24265.96	22750.28	20475.75	18305.34	15556.29	13003.45	10514.68	7967.85
180.0	24749.44	26836.82	26376.31	24556.29	22195.66	19306.45	16186.99	13281.76	10656.84
202.5	24749.44	26416.35	26564.52	24734.49	22257.73	19696.89	16289.10	12899.33	10088.21
225.0	24749.44	26114.02	26276.20	24880.65	22361.85	19778.98	16633.48	13225.70	10256.40
247.5	24749.44	25633.48	25697.56	24157.84	21979.42	19476.64	16613.46	13255.73	10544.72
270.0	24749.44	25221.03	24696.44	23170.75	20962.29	18221.25	15716.46	12717.13	10006.12
292.5	24749.44	24646.39	23621.25	21965.41	19584.76	17342.27	14733.37	12118.47	9787.88
315.0	24749.44	24021.69	22656.18	20383.65	18345.38	16140.93	13794.33	11517.80	9313.35
337.5	24749.44	23617.24	21885.32	19530.70	17592.55	15215.91	13103.56	11025.25	8940.94
360.0	24749.44	23288.88	21026.36	18823.92	16347.16	14250.84	12182.54	10122.25	8204.12

C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	6476.20	4990.55	3595.40	2438.71	1588.37	946.65	519.38	166.79	3.60
22.5	4802.34	3363.14	2524.21	1958.58	1344.09	834.93	508.17	163.38	3.40
45.0	5591.21	3983.43	2904.03	1981.60	1322.07	822.91	478.73	142.36	3.40
67.5	5849.50	3989.03	3026.96	2076.51	1349.30	809.90	458.71	128.74	3.20
90.0	5779.42	3989.63	2936.66	1994.02	1273.82	791.28	450.10	130.15	3.60
112.5	5328.92	3845.27	2712.21	1932.15	1316.86	816.11	453.70	130.35	3.20
135.0	6211.90	4606.12	3208.17	2085.32	1317.46	831.32	449.10	127.54	3.40
157.5	5601.22	3863.69	2658.96	1852.46	1219.56	781.87	436.69	117.33	3.20
180.0	8178.09	6081.76	4327.81	2826.14	1805.01	1098.22	707.79	319.56	37.04
202.5	7257.06	4808.34	3212.57	2231.48	1586.76	1016.13	663.94	309.14	35.44
225.0	7591.44	5390.99	3689.10	2373.64	1558.73	1008.12	649.52	299.13	41.25
247.5	8015.91	5787.43	3957.40	2633.93	1720.91	1082.20	673.35	293.53	36.24
270.0	7511.35	5473.08	3745.16	2487.76	1636.82	1044.16	654.53	319.56	55.86
292.5	7423.25	5312.90	3683.09	2563.85	1756.95	1120.25	710.79	356.80	56.46
315.0	7249.06	5529.14	4021.47	2798.11	1875.08	1168.30	736.42	366.81	73.88
337.5	6828.59	4926.47	3512.90	2537.82	1782.98	1136.26	715.60	352.39	64.87
360.0	6476.20	4990.55	3595.40	2438.71	1588.37	946.65	519.38	166.79	3.60

C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	2.80	3.80	2.80	3.80	4.81	6.61	8.41	11.61	14.82
22.5	2.80	3.40	2.60	3.40	4.61	6.21	8.21	11.21	15.02
45.0	3.00	2.80	2.80	3.40	4.41	5.81	8.21	11.01	14.42
67.5	2.60	2.60	2.60	3.40	4.41	6.21	8.61	11.01	14.42
90.0	2.80	2.80	2.60	3.60	4.61	6.01	8.21	11.01	14.42
112.5	2.80	3.40	3.00	3.80	4.61	6.21	8.21	10.61	14.02
135.0	2.40	4.41	3.20	3.60	4.81	6.41	8.21	10.81	13.82
157.5	2.60	4.21	3.20	3.80	4.81	6.21	8.21	10.61	13.42
180.0	3.20	2.60	3.20	3.20	4.00	5.41	7.01	9.01	11.41
202.5	2.80	2.60	2.60	2.80	4.00	5.01	6.61	8.61	11.21
225.0	3.00	3.00	2.60	3.00	3.80	5.01	6.21	8.21	10.61
247.5	3.00	2.40	2.20	2.60	3.80	5.01	6.41	8.41	10.81
270.0	3.00	2.60	2.40	2.80	4.00	5.01	6.61	8.41	11.01
292.5	2.80	2.80	2.60	2.80	3.60	4.81	6.41	8.61	10.81
315.0	3.20	2.20	4.00	3.00	3.60	4.81	6.61	8.61	11.21
337.5	3.00	2.60	3.80	2.80	3.60	5.21	6.61	9.01	11.41
360.0	2.80	3.80	2.80	3.80	4.81	6.61	8.41	11.61	14.82

Intensity data(cd)

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	18.82	23.83	29.23	34.64	39.44	42.45	43.85	44.05	46.45
22.5	19.02	23.83	29.03	33.44	37.64	40.04	41.25	41.65	44.05
45.0	18.62	23.03	27.83	32.44	35.84	38.64	39.84	40.45	42.65
67.5	18.62	22.63	27.23	31.64	35.04	37.44	38.44	39.44	41.65
90.0	18.22	22.02	26.43	30.63	34.24	36.84	38.04	38.84	41.05
112.5	17.22	21.22	25.23	29.63	33.24	35.84	37.44	38.24	40.45
135.0	17.22	20.82	24.83	28.83	32.84	35.44	37.24	38.04	40.85
157.5	16.42	20.02	23.63	27.63	31.64	34.64	37.04	38.04	40.65
180.0	14.62	18.02	22.02	26.23	30.83	34.84	37.44	39.64	40.85
202.5	14.22	17.62	21.42	25.43	29.63	33.04	35.84	37.84	39.44
225.0	13.62	17.02	20.62	24.83	28.83	32.24	35.04	37.04	38.64
247.5	13.62	16.82	20.22	24.03	28.03	31.64	34.44	36.64	38.04
270.0	13.82	17.22	20.82	24.83	28.43	31.64	34.24	36.04	38.04
292.5	14.22	17.62	21.62	25.43	29.03	32.44	34.44	36.04	37.64
315.0	14.22	17.62	21.62	26.03	30.03	33.44	35.44	37.24	38.04
337.5	14.82	18.42	22.43	26.83	31.03	34.44	36.64	37.64	38.64
360.0	18.82	23.83	29.23	34.64	39.44	42.45	43.85	44.05	46.45
C/γ(°)	180.0								
0.0	42.84								
22.5	42.84								
45.0	42.84								
67.5	42.84								
90.0	42.84								
112.5	42.84								
135.0	42.84								
157.5	42.84								
180.0	42.84								
202.5	42.84								
225.0	42.84								
247.5	42.84								
270.0	42.84								
292.5	42.84								
315.0	42.84								
337.5	42.84								
360.0	42.84								