



Shenzhen Belling Efficiency Testing Laboratory Co.,Ltd.
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Client:

LumCAT:

Luminaire:

Report No:

Ballast type:

Test No:

Voltage(V): 120.15

LampCAT:

Current(A): 1.6760

Lamp flux(lm): -1.0

Power (W): 200.83

Number of Lamps: 1

PF: 0.9972

Length(mm): 320

Width(mm): 320

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 28621.30, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 142.52

Central intensity(cd): 15122.460, Maximum intensity(cd): 15399.030

Angle of maximum intensity: C=270.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=86.9

[C90/270]Total=89.5

Field angle(10%Imax): [C0/180]Total=125.6

[C90/270]Total=127.6

Maximum s/h(1/2): C0_180=1.18 C90_270=1.20

Maximum s/h(1/4): C0_180=1.26 C90_270=1.26

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 0.00%

Up flux rate of LUM(%): 0.24%

Down flux rate of LUM(%): 99.76%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 92.794%

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

Date:
Humidity(%): 58%

Operator: Sam

Zonal flux distribution table

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$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	15122.460	0.000	0	0.00%	0.00%
5.0	15005.699	360.174	360.174	0.00%	1.26%
10.0	14671.493	1061.647	1421.82	0.00%	4.97%
15.0	14146.429	1709.460	3131.28	0.00%	10.94%
20.0	13527.990	2280.761	5412.041	0.00%	18.91%
25.0	12797.289	2761.036	8173.076	0.00%	28.56%
30.0	11875.263	3122.332	11295.408	0.00%	39.47%
35.0	10705.720	3325.208	14620.616	0.00%	51.08%
40.0	9165.958	3315.439	17936.055	0.00%	62.67%
45.0	7157.910	3022.497	20958.552	0.00%	73.23%
50.0	5051.347	2467.059	23425.611	0.00%	81.85%
55.0	3396.297	1836.799	25262.41	0.00%	88.26%
60.0	2212.619	1296.485	26558.895	0.00%	92.79%
65.0	1389.539	875.691	27434.587	0.00%	95.85%
70.0	840.136	564.568	27999.155	0.00%	97.83%
75.0	454.620	338.428	28337.583	0.00%	99.01%
80.0	158.786	164.130	28501.713	0.00%	99.58%
85.0	14.042	46.961	28548.675	0.00%	99.75%
90.0	2.510	4.532	28553.207	0.00%	99.76%
95.0	2.159	1.278	28554.485	0.00%	99.77%
100.0	2.323	1.218	28555.703	0.00%	99.77%
105.0	2.886	1.394	28557.097	0.00%	99.78%
110.0	3.941	1.785	28558.881	0.00%	99.78%
115.0	5.337	2.349	28561.231	0.00%	99.79%
120.0	7.273	3.066	28564.296	0.00%	99.80%
125.0	9.678	3.918	28568.214	0.00%	99.81%
130.0	12.317	4.782	28572.997	0.00%	99.83%
135.0	15.238	5.568	28578.565	0.00%	99.85%
140.0	18.253	6.201	28584.766	0.00%	99.87%
145.0	21.338	6.605	28591.371	0.00%	99.90%
150.0	24.271	6.716	28598.088	0.00%	99.92%
155.0	26.734	6.455	28604.542	0.00%	99.94%
160.0	28.142	5.755	28610.298	0.00%	99.96%
165.0	28.822	4.695	28614.992	0.00%	99.98%
170.0	29.174	3.440	28618.433	0.00%	99.99%
175.0	30.253	2.126	28620.558	0.00%	100.00%
180.0	31.797	0.742	28621.3	0.00%	100.00%

Equipment: GMS-3000
Temperature($^{\circ}\text{C}$): 25

Date:
Humidity(%): 58%

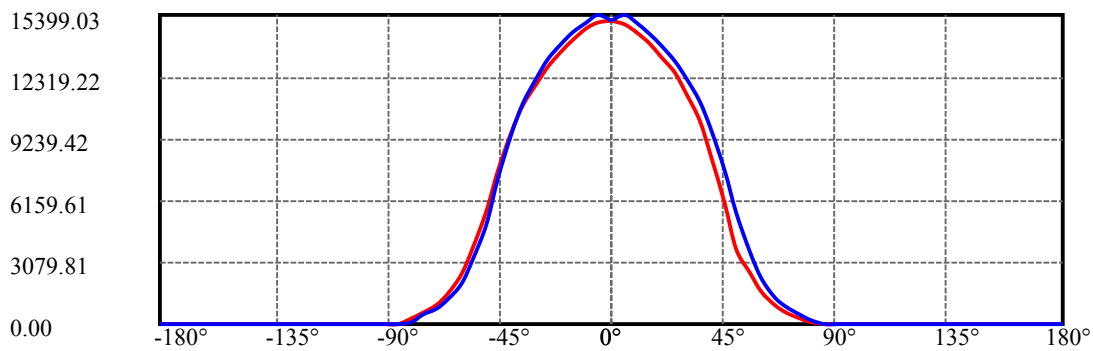
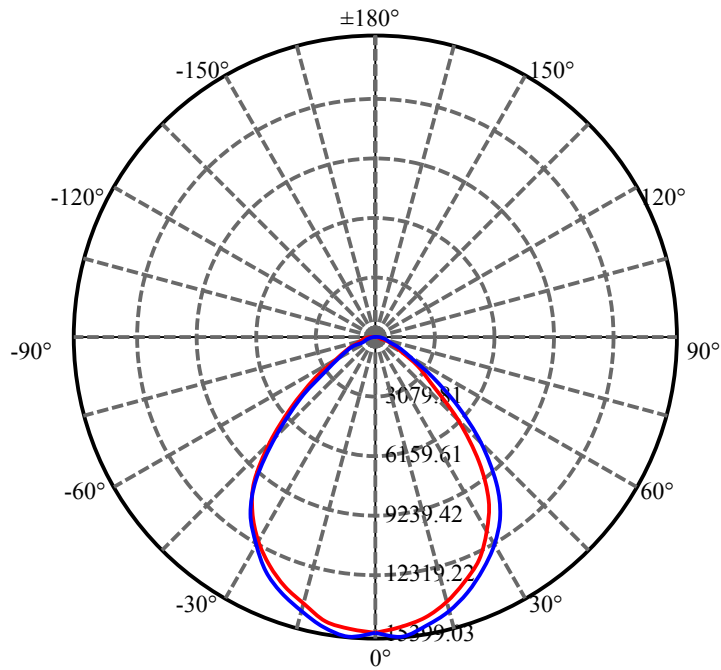
Operator: Sam

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	11295.41	N.A.	39.47%
0-40	17936.06	N.A.	62.67%
0-60	26558.90	N.A.	92.79%
0-90	28553.21	N.A.	99.76%
0-120	28564.30	N.A.	99.80%
0-180	28621.30	N.A.	100.00%
60-90	1994.31	N.A.	6.97%
90-120	11.09	N.A.	0.04%
90-130	19.79	N.A.	0.07%
90-150	44.88	N.A.	0.16%
90-180	67.35	N.A.	0.24%
0-48.93	22897.04	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	1421.82
10-20	3990.22
20-30	5883.37
30-40	6640.65
40-50	5489.56
50-60	3133.28
60-70	1440.26
70-80	502.56
80-90	51.49
90-100	2.50
100-110	3.18
110-120	5.42
120-130	8.70
130-140	11.77
140-150	13.32
150-160	12.21
160-170	8.13
170-180	2.13

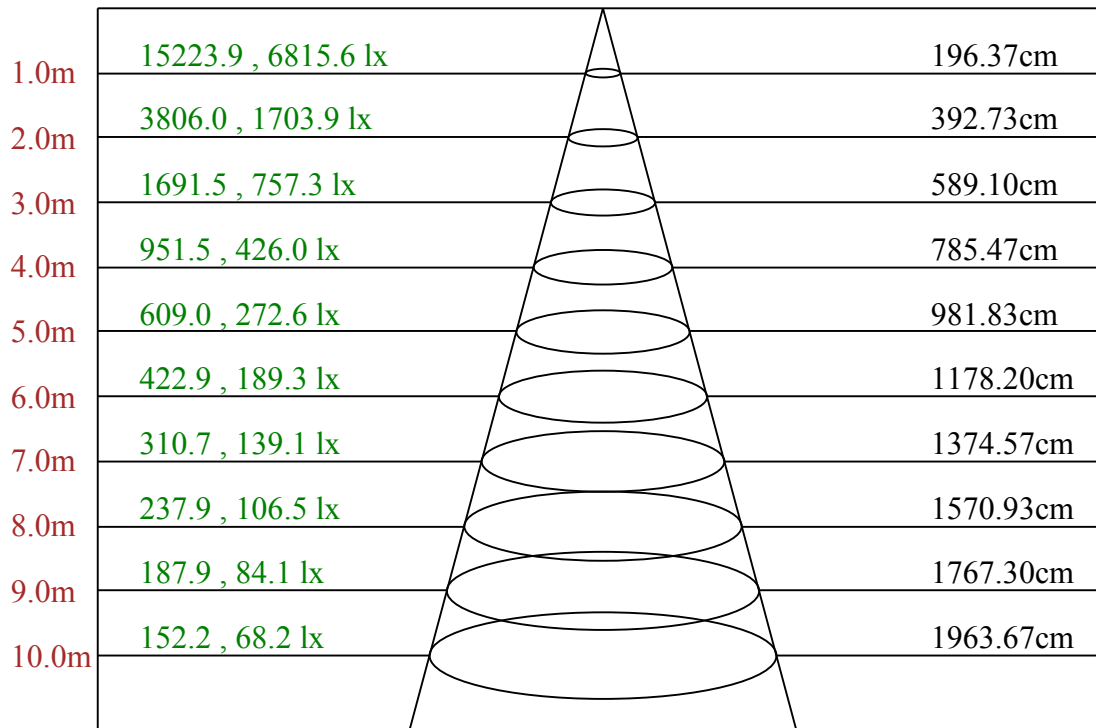


C0/C180: —

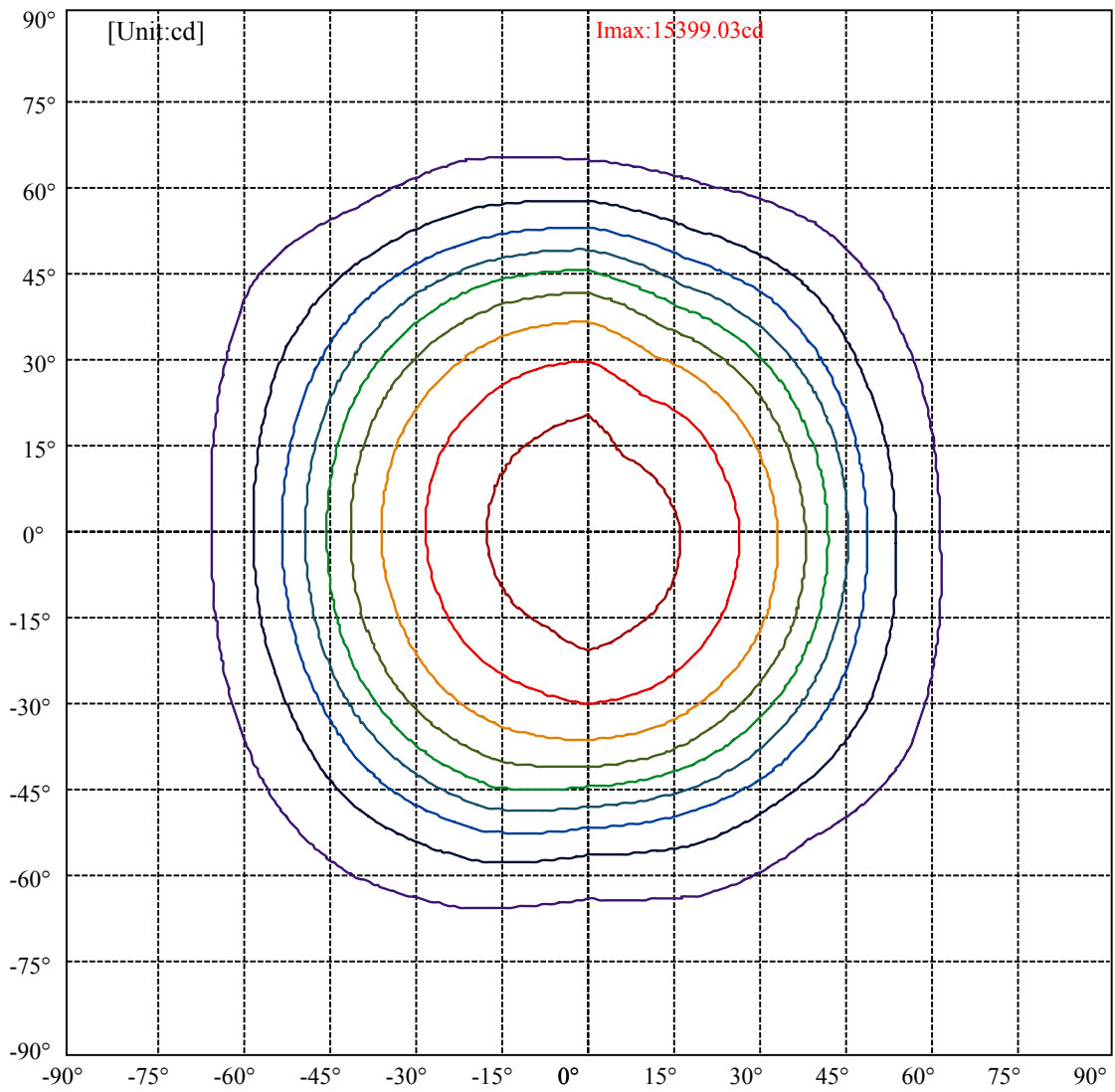
C90/C270: —

Field angle(10%Imax):C0/180Left:64.9 Right:60.7
 :C90/270Left:63.4 Right:64.2

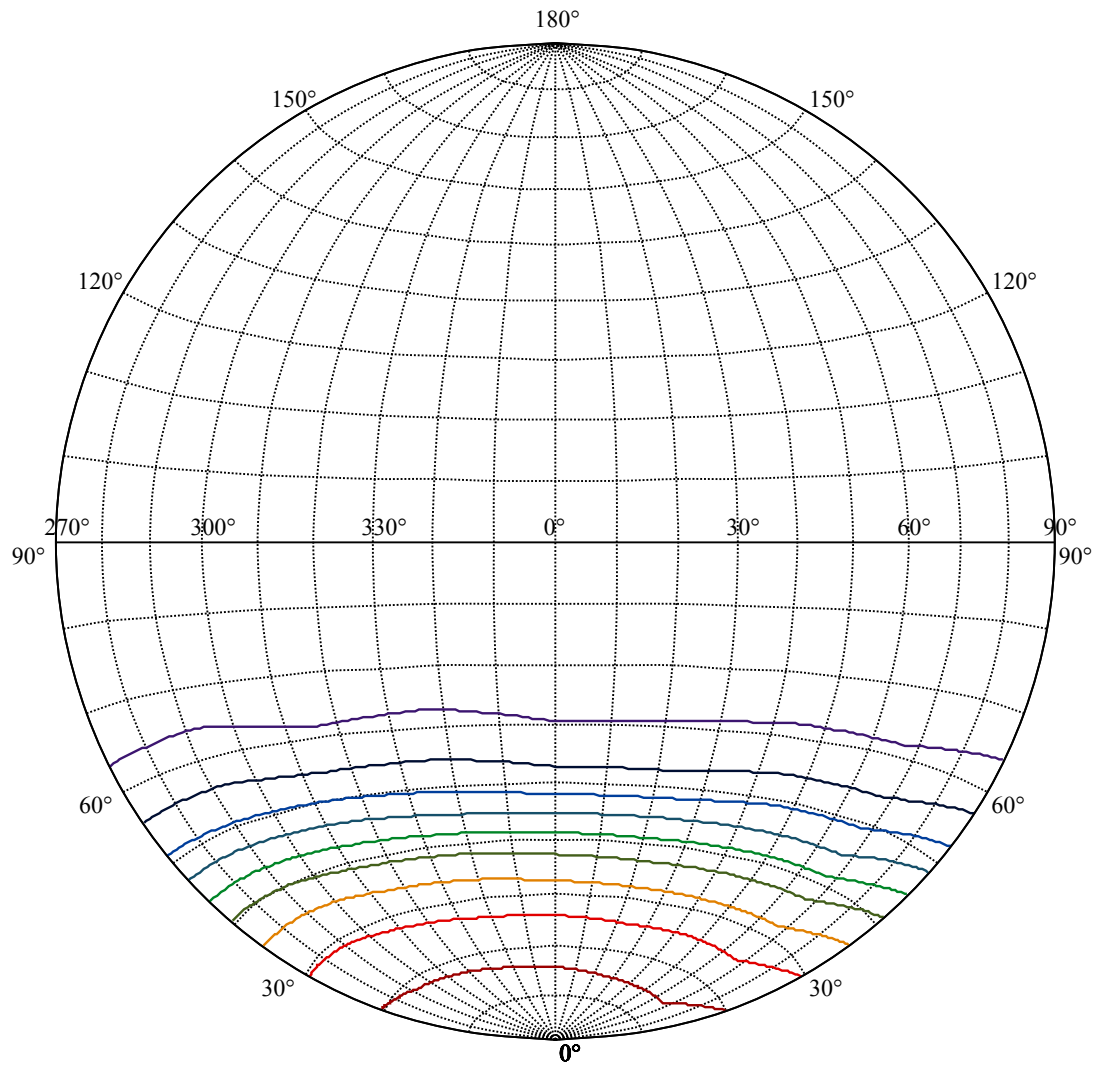
Beam Angle(50%Imax):C0/180Left:45.3 Right:41.6
 :C90/270Left:44.2 Right:45.3



Max , Ave Beam angle of C270 plane 88.95



(10%Imax) 1539.9	—
(20%Imax) 3079.81	—
(30%Imax) 4619.71	—
(40%Imax) 6159.61	—
(50%Imax) 7699.52	—
(60%Imax) 9239.42	—
(70%Imax) 10779.3	—
(80%Imax) 12319.2	—
(90%Imax) 13859.1	—



House

[Unit:cd]

Road

I_{max}:15399.03

(10%I _{max}) 1539.9	—
(20%I _{max}) 3079.81	—
(30%I _{max}) 4619.71	—
(40%I _{max}) 6159.61	—
(50%I _{max}) 7699.52	—
(60%I _{max}) 9239.42	—
(70%I _{max}) 10779.3	—
(80%I _{max}) 12319.2	—
(90%I _{max}) 13859.1	—

Luminance Limiting Curve(no luminous side)

Luminance Table

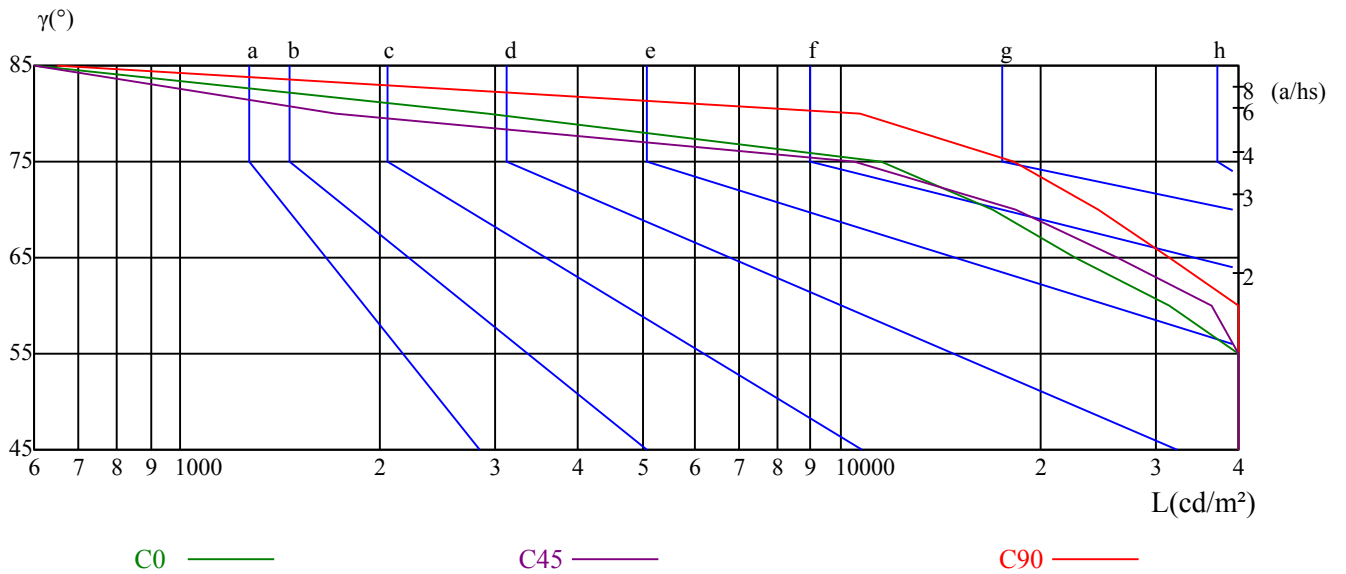
γ	45	50	55	60	65	70	75	80	85
C0	83194	56468	44540	31328	22691	16978	11522	2913	294
C45	84361	65941	48589	36541	26222	18360	10502	1720	294
C90	106238	83877	61435	44375	31509	24507	18285	10703	652

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
28683	30383	31605	16448	17382	17200	1956	494	1735

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	22.35	23.74	22.72	24.05	24.38	23.29	24.67	23.65	24.99	25.31
	3H	22.90	24.13	23.29	24.47	24.82	23.93	25.16	24.32	25.50	25.85
	4H	22.99	24.14	23.39	24.49	24.86	24.09	25.23	24.49	25.59	25.96
	6H	22.98	24.03	23.39	24.41	24.81	24.14	25.19	24.55	25.57	25.97
	8H	22.91	23.93	23.33	24.31	24.72	24.10	25.11	24.51	25.49	25.90
	12H	22.85	23.82	23.28	24.21	24.63	24.04	25.01	24.46	25.40	25.82
4H	2H	22.61	23.75	23.01	24.11	24.48	23.44	24.58	23.83	24.94	25.31
	3H	23.24	24.20	23.67	24.59	25.01	24.14	25.09	24.56	25.49	25.90
	4H	23.40	24.23	23.84	24.65	25.10	24.35	25.18	24.79	25.61	26.05
	6H	23.35	24.08	23.82	24.53	24.98	24.37	25.10	24.84	25.55	26.00
	8H	23.30	23.99	23.79	24.44	24.91	24.34	25.03	24.83	25.48	25.95
	12H	23.27	23.90	23.75	24.35	24.86	24.31	24.94	24.80	25.39	25.91
8H	4H	23.34	24.02	23.82	24.48	24.95	24.27	24.95	24.75	25.41	25.88
	6H	23.27	23.84	23.77	24.31	24.82	24.26	24.83	24.76	25.31	25.82
	8H	23.27	23.76	23.80	24.28	24.78	24.28	24.78	24.81	25.29	25.79
	12H	23.23	23.63	23.76	24.15	24.67	24.24	24.65	24.78	25.17	25.69
12H	4H	23.30	23.94	23.79	24.38	24.90	24.23	24.86	24.72	25.31	25.83
	6H	23.27	23.76	23.79	24.28	24.78	24.26	24.75	24.79	25.27	25.77
	8H	23.23	23.64	23.76	24.15	24.67	24.24	24.65	24.77	25.16	25.68
Variation with the observer position at spacings:											
S = 1.0H	0.5/-1.3					0.8/-1.6					
S = 1.5H	2.0/-3.0					2.0/-3.3					
S = 2.0H	4.2/-4.7					4.1/-4.5					
Standard tables:	BK1					BK1					
Uncorrected UGR	8.0					7.2					

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	15122.46	14890.38	14554.42	13974.46	13310.04	12540.51	11466.92	10121.18	8276.19
22.5	15122.46	14862.23	14385.50	13854.34	13195.54	12375.34	11425.63	9927.86	8118.53
45.0	15122.46	14732.73	14409.90	13811.17	13169.27	12429.77	11350.55	9933.49	8234.90
67.5	15122.46	14730.85	14302.92	13784.89	13131.73	12358.45	11358.06	10031.09	8263.05
90.0	15122.46	15380.26	14987.99	14484.97	13854.34	13107.33	12219.56	11078.40	9676.36
112.5	15122.46	15160.66	14856.60	14287.90	13702.31	13047.27	12189.53	11187.26	9747.68
135.0	15122.46	15034.91	14800.29	14261.62	13619.72	12959.05	12056.27	11040.86	9725.16
157.5	15122.46	15053.68	14700.82	14220.33	13546.53	12891.49	12054.39	10986.43	9636.94
180.0	15122.46	14980.48	14734.60	14130.24	13548.40	12838.93	11960.54	10939.51	9584.39
202.5	15122.46	14950.45	14661.40	14126.49	13608.46	12833.30	11953.04	10911.36	9657.59
225.0	15122.46	14892.26	14627.62	14169.66	13595.32	12876.47	12039.37	11052.13	9830.26
247.5	15122.46	14879.12	14618.24	14192.18	13604.71	12902.75	12084.42	11102.80	9865.92
270.0	15122.46	15399.03	15021.77	14548.79	13918.15	13159.88	12236.45	11033.36	9434.24
292.5	15122.46	15138.14	14798.42	14293.53	13657.26	12996.59	12135.10	10918.87	9212.76
315.0	15122.46	15016.14	14713.96	14164.02	13559.66	12846.44	11816.02	10597.92	8792.34
337.5	15122.46	14989.86	14569.43	14038.27	13426.40	12593.06	11658.36	10428.99	8599.02
360.0	15122.46	14890.38	14554.42	13974.46	13310.04	12540.51	11466.92	10121.18	8276.19
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	6023.91	3716.83	2616.02	1604.00	981.99	594.60	305.37	51.80	2.63
22.5	6042.68	3717.95	2582.61	1662.56	1032.67	594.79	266.33	36.41	2.44
45.0	6108.37	4340.33	2853.83	1870.89	1134.77	643.03	278.34	30.59	2.63
67.5	6106.49	4359.10	2826.24	1799.38	1066.08	621.82	283.60	31.34	2.63
90.0	7692.47	5520.90	3608.34	2271.99	1363.57	858.31	484.62	190.32	5.82
112.5	7902.69	5684.19	3812.92	2561.03	1663.87	975.05	523.47	209.65	9.76
135.0	7853.89	5719.85	3910.52	2363.96	1429.26	935.64	534.17	212.09	14.08
157.5	7778.81	5665.42	3867.35	2731.83	1815.90	1123.33	618.44	259.95	22.34
180.0	7692.47	5605.36	3784.77	2452.17	1500.58	943.14	566.45	256.39	32.28
202.5	7859.52	5721.73	3754.74	2459.68	1620.70	1016.34	590.85	267.83	35.85
225.0	8094.13	5950.71	4154.52	2786.26	1834.67	1134.59	658.42	318.70	42.42
247.5	8206.74	6108.37	4115.10	2731.83	1767.10	1072.65	636.27	304.06	39.98
270.0	7223.25	4955.95	3234.09	2052.20	1266.16	767.28	436.76	135.89	3.00
292.5	6983.01	4803.93	3284.20	2249.28	1437.14	815.33	396.96	97.79	3.19
315.0	6712.73	4657.53	2935.28	1779.49	1072.27	647.91	352.48	81.08	2.82
337.5	6245.39	4293.41	3000.22	2025.36	1245.89	698.39	341.41	56.68	2.82
360.0	6023.91	3716.83	2616.02	1604.00	981.99	594.60	305.37	51.80	2.63
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	2.44	2.07	2.25	3.19	4.51	5.82	8.07	10.70	13.33
22.5	2.25	2.25	2.44	3.00	4.51	6.19	8.07	10.89	13.51
45.0	2.44	2.07	2.63	3.38	4.69	6.57	8.26	11.07	13.89
67.5	2.07	2.25	2.63	3.57	5.07	6.38	8.63	11.07	13.89
90.0	2.44	2.07	2.25	2.63	3.94	5.07	7.32	9.76	12.20
112.5	2.44	2.07	2.25	2.63	3.57	5.07	6.95	9.20	11.82
135.0	2.63	1.88	2.07	2.44	3.57	4.69	6.95	9.20	11.64
157.5	2.82	2.07	2.44	2.82	3.38	4.69	6.38	8.45	11.26
180.0	2.63	2.25	2.25	2.44	3.38	4.51	6.01	8.07	10.89
202.5	2.82	1.88	2.07	2.44	3.00	4.32	5.63	8.26	10.51
225.0	2.82	2.07	2.07	2.44	3.19	4.32	6.01	8.07	10.51
247.5	2.63	2.07	2.25	2.44	3.38	4.51	6.01	8.26	10.89
270.0	2.25	2.25	2.25	3.00	4.13	5.63	7.70	10.32	13.33
292.5	2.63	2.44	2.25	3.00	4.32	5.82	8.07	10.51	13.14
315.0	2.44	2.44	2.63	3.19	4.13	6.01	8.07	10.51	13.33
337.5	2.44	2.44	2.44	3.57	4.32	5.82	8.26	10.51	12.95
360.0	2.44	2.07	2.25	3.19	4.51	5.82	8.07	10.70	13.33

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	16.33	19.14	22.15	24.96	27.03	28.34	28.72	29.47	30.97
22.5	16.89	19.33	22.52	25.15	27.22	28.34	29.09	29.84	31.34
45.0	16.89	20.27	23.09	25.53	27.78	29.09	29.66	29.66	31.34
67.5	16.89	20.08	23.27	25.90	28.15	29.09	29.84	29.47	31.16
90.0	15.39	18.58	21.77	25.15	27.59	29.09	29.66	29.66	29.66
112.5	14.83	18.21	21.40	24.78	27.22	28.72	29.09	29.28	29.47
135.0	14.45	17.46	20.46	23.65	26.28	27.97	28.53	29.28	29.47
157.5	14.08	17.08	20.08	23.09	26.09	27.59	28.34	28.72	28.90
180.0	13.51	16.52	19.52	22.71	25.53	27.40	27.97	28.34	29.28
202.5	13.33	16.14	19.33	22.15	24.96	26.46	27.59	27.78	28.72
225.0	12.95	15.95	19.14	22.15	24.96	26.84	27.59	28.15	28.72
247.5	13.33	16.33	19.33	22.52	25.34	27.40	27.97	28.34	29.09
270.0	16.14	19.52	22.90	25.90	28.15	29.09	30.03	30.22	31.91
292.5	16.33	19.33	22.52	25.34	27.78	28.90	29.47	29.66	31.53
315.0	16.33	19.14	21.96	24.78	26.84	27.97	28.90	29.47	31.34
337.5	16.14	18.96	21.96	24.59	26.84	27.97	28.72	29.47	31.16
360.0	16.33	19.14	22.15	24.96	27.03	28.34	28.72	29.47	30.97
C/γ(°)	180.0								
0.0	31.80								
22.5	31.80								
45.0	31.80								
67.5	31.80								
90.0	31.80								
112.5	31.80								
135.0	31.80								
157.5	31.80								
180.0	31.80								
202.5	31.80								
225.0	31.80								
247.5	31.80								
270.0	31.80								
292.5	31.80								
315.0	31.80								
337.5	31.80								
360.0	31.80								