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:
LampCAT:
Lamp flux(lm): -1.0
Number of Lamps: 1
Length(mm): 280
Phm Type: C

Voltage(V): 120.09
Current(A): 1.2290
Power (W): 147.12
PF: 0.9968
Width(mm): 280
Height(mm): 0

Photometric Results

Lumens(lm): 20814.46, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 141.48
Central intensity(cd): 11294.800, Maximum intensity(cd): 11498.830
Angle of maximum intensity: C=90.0 γ=5.0
Beam Angle(50%Imax): [C0/180]Total=85.4
[C90/270]Total=86.2
Field angle(10%Imax): [C0/180]Total=128.1
[C90/270]Total=128.6
Maximum s/h(1/2): C0_180=1.14 C90_270=1.19
Maximum s/h(1/4): C0_180=1.21 C90_270=1.26
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 0.00%
Up flux rate of LUM(%): 0.25%
Down flux rate of LUM(%): 99.75%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 92.557%

Equipment: GMS-3000
Temperature(°C): 25
Date:
Humidity(%): 58%
Operator: Sam

Zonal flux distribution table

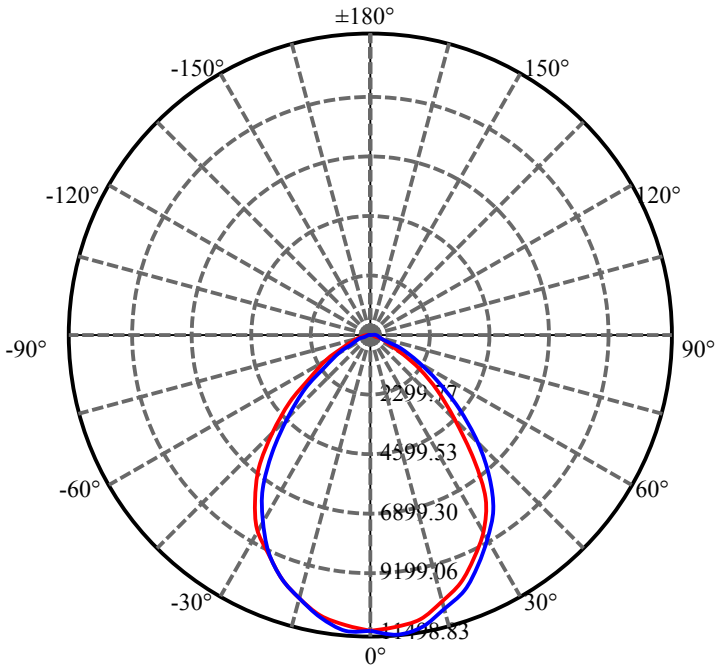
γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11294.800	0.000	0	0.00%	0.00%
5.0	11203.098	268.956	268.956	0.00%	1.29%
10.0	10904.789	790.869	1059.825	0.00%	5.09%
15.0	10460.314	1267.363	2327.188	0.00%	11.18%
20.0	9938.302	1681.133	4008.321	0.00%	19.26%
25.0	9287.956	2016.480	6024.8	0.00%	28.95%
30.0	8524.410	2254.170	8278.97	0.00%	39.78%
35.0	7561.091	2368.703	10647.673	0.00%	51.16%
40.0	6381.225	2326.170	12973.843	0.00%	62.33%
45.0	5025.165	2111.986	15085.828	0.00%	72.48%
50.0	3749.084	1772.965	16858.794	0.00%	81.00%
55.0	2649.033	1391.164	18249.957	0.00%	87.68%
60.0	1743.182	1015.248	19265.206	0.00%	92.56%
65.0	1054.431	680.105	19945.311	0.00%	95.82%
70.0	615.905	422.940	20368.25	0.00%	97.86%
75.0	321.102	244.919	20613.169	0.00%	99.03%
80.0	109.564	115.234	20728.403	0.00%	99.59%
85.0	8.364	32.044	20760.447	0.00%	99.74%
90.0	1.994	2.836	20763.283	0.00%	99.75%
95.0	2.006	1.095	20764.379	0.00%	99.76%
100.0	1.982	1.084	20765.462	0.00%	99.76%
105.0	2.358	1.161	20766.624	0.00%	99.77%
110.0	3.144	1.438	20768.062	0.00%	99.78%
115.0	4.223	1.865	20769.927	0.00%	99.79%
120.0	5.654	2.401	20772.328	0.00%	99.80%
125.0	7.285	2.991	20775.319	0.00%	99.81%
130.0	9.115	3.566	20778.885	0.00%	99.83%
135.0	11.285	4.122	20783.007	0.00%	99.85%
140.0	13.432	4.576	20787.583	0.00%	99.87%
145.0	15.684	4.858	20792.441	0.00%	99.89%
150.0	17.772	4.927	20797.368	0.00%	99.92%
155.0	19.543	4.722	20802.09	0.00%	99.94%
160.0	20.681	4.219	20806.309	0.00%	99.96%
165.0	21.362	3.465	20809.774	0.00%	99.98%
170.0	21.725	2.556	20812.33	0.00%	99.99%
175.0	22.535	1.583	20813.913	0.00%	100.00%
180.0	23.627	0.552	20814.465	0.00%	100.00%

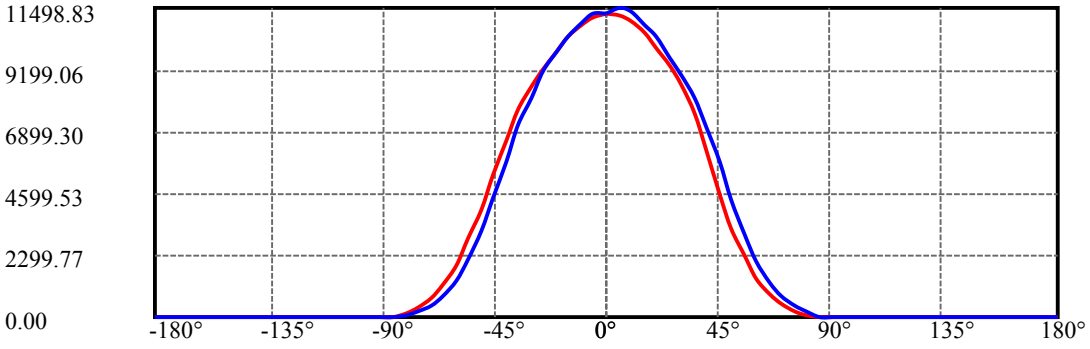
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	8278.97	N.A.	39.78%
0-40	12973.84	N.A.	62.33%
0-60	19265.21	N.A.	92.56%
0-90	20763.28	N.A.	99.75%
0-120	20772.33	N.A.	99.80%
0-180	20814.46	N.A.	100.00%
60-90	1498.08	N.A.	7.20%
90-120	9.04	N.A.	0.04%
90-130	15.60	N.A.	0.07%
90-150	34.08	N.A.	0.16%
90-180	50.63	N.A.	0.24%
0-49.42	16651.57	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	1059.82
10-20	2948.50
20-30	4270.65
30-40	4694.87
40-50	3884.95
50-60	2406.41
60-70	1103.04
70-80	360.15
80-90	34.88
90-100	2.18
100-110	2.60
110-120	4.27
120-130	6.56
130-140	8.70
140-150	9.78
150-160	8.94
160-170	6.02
170-180	1.58



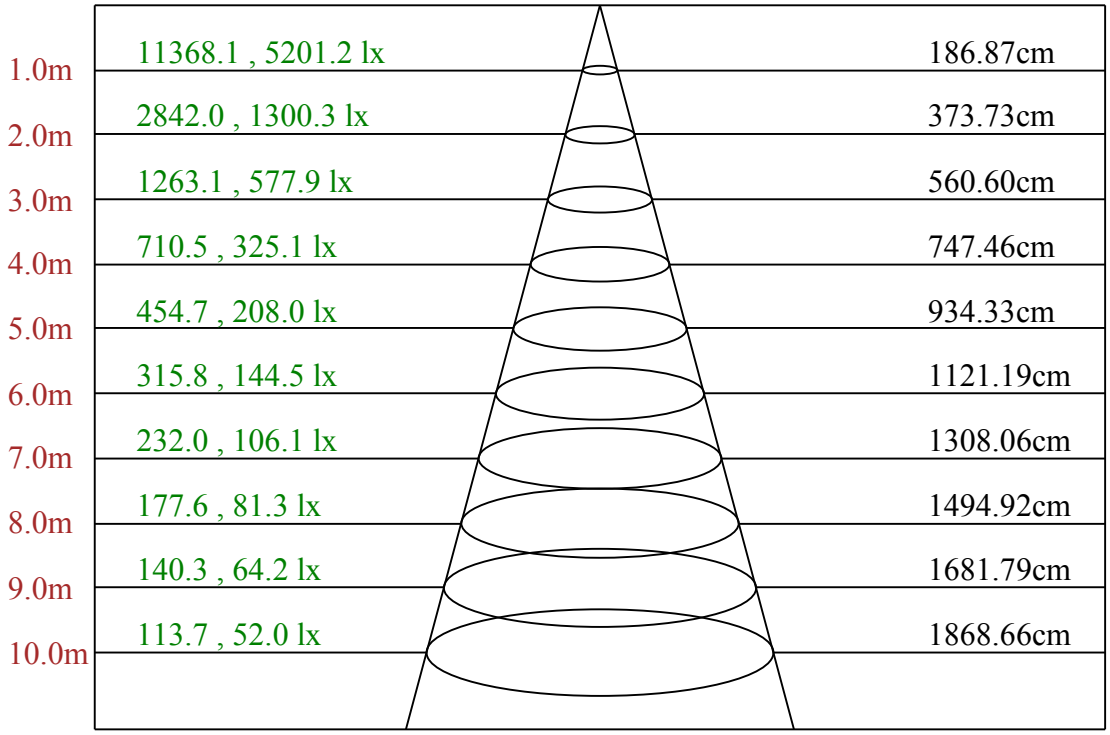


C0/C180:

C90/C270:

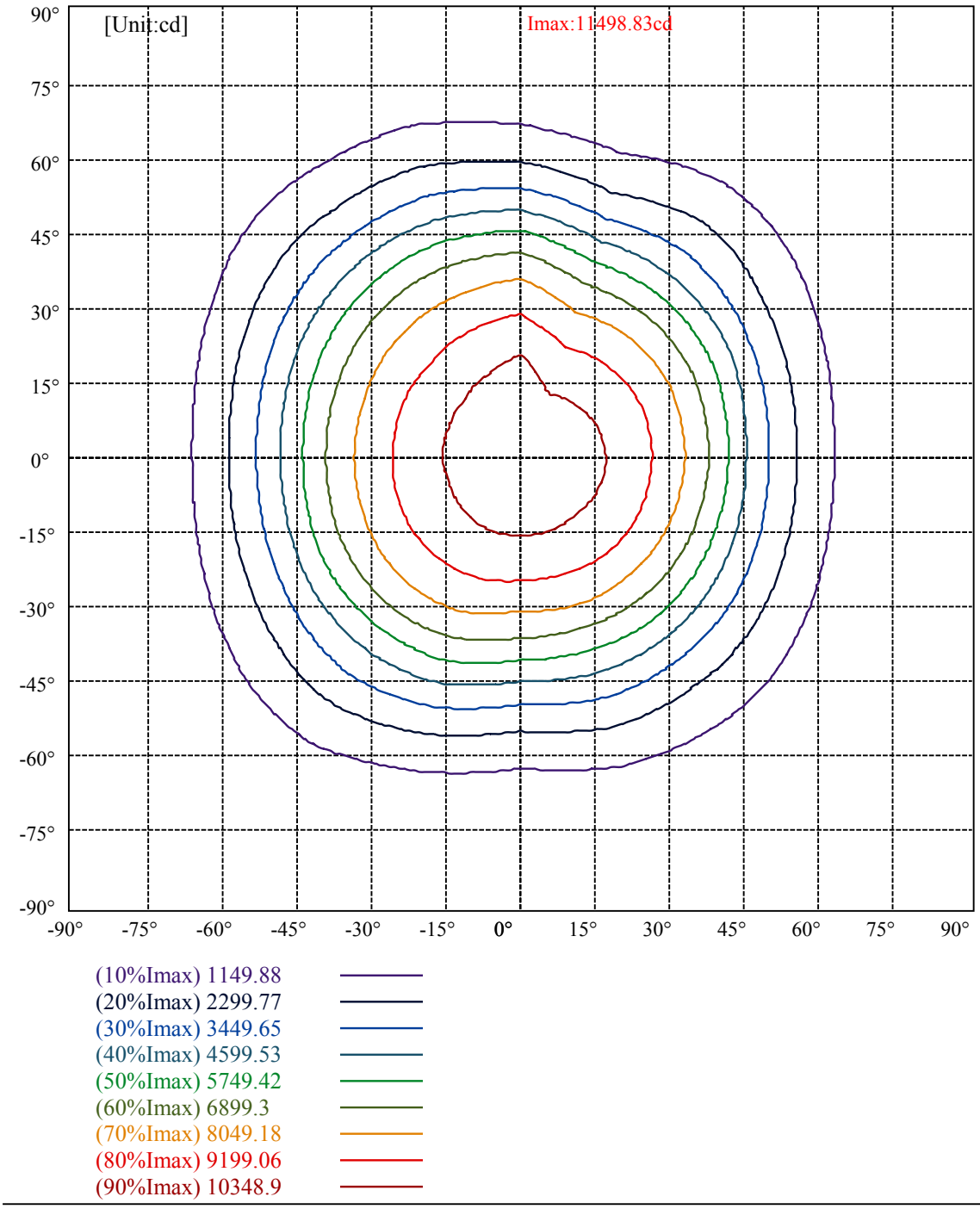
Field angle(10%Imax):C0/180Left:65.5 Right:62.6
:C90/270Left:62.0 Right:66.6

Beam Angle(50%Imax):C0/180Left:43.7 Right:41.7
:C90/270Left:40.6 Right:45.6



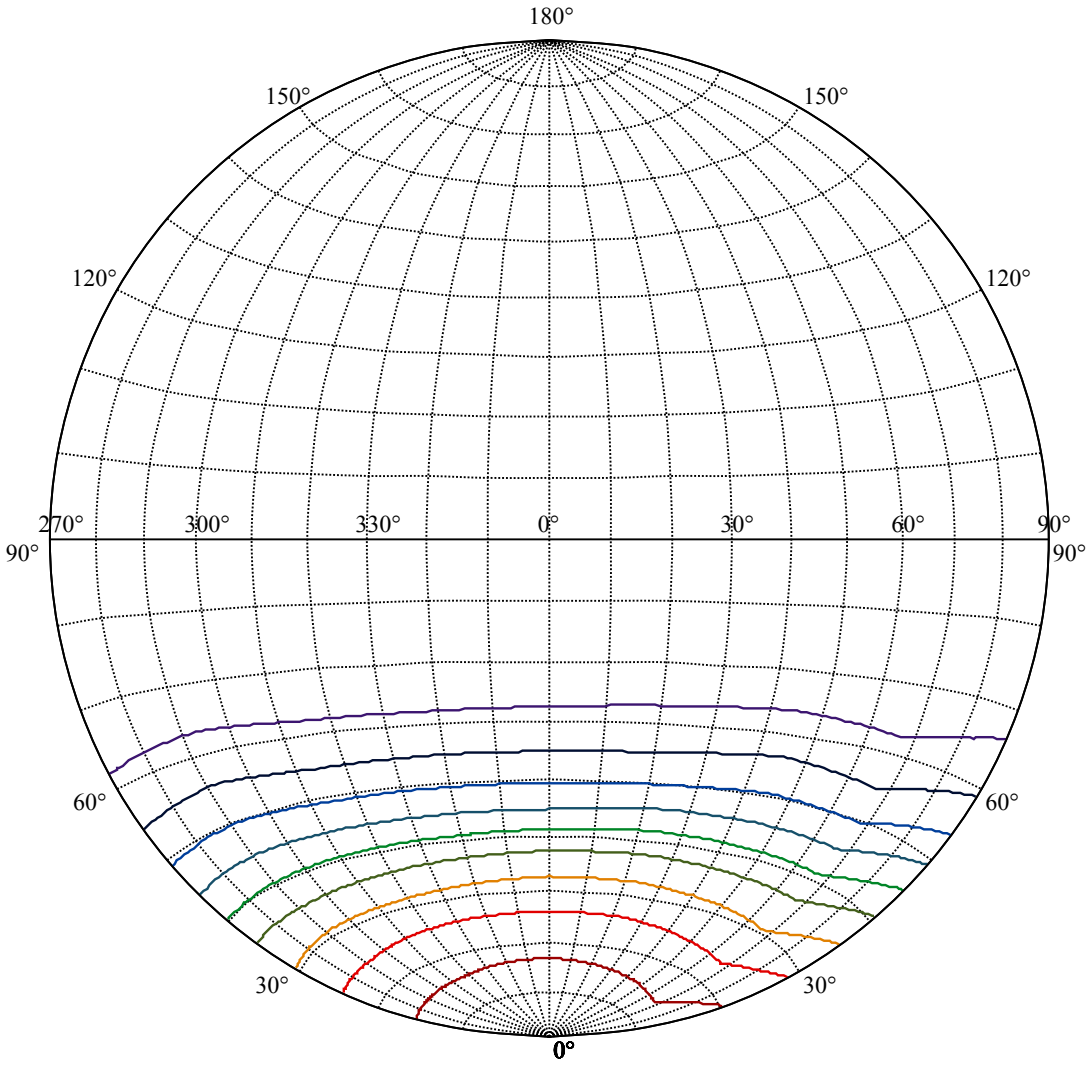
Max , Ave

Beam angle of C90 plane 86.11



Equipment: GMS-3000 Date: Operator: Sam
Temperature(°C): 25 Humidity(%): 58%

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:11498.83

(10%Imax) 1149.88
(20%Imax) 2299.77
(30%Imax) 3449.65
(40%Imax) 4599.53
(50%Imax) 5749.42
(60%Imax) 6899.3
(70%Imax) 8049.18
(80%Imax) 9199.06
(90%Imax) 10348.9

Luminance Limitting Curve(no luminous side)

Luminance Table

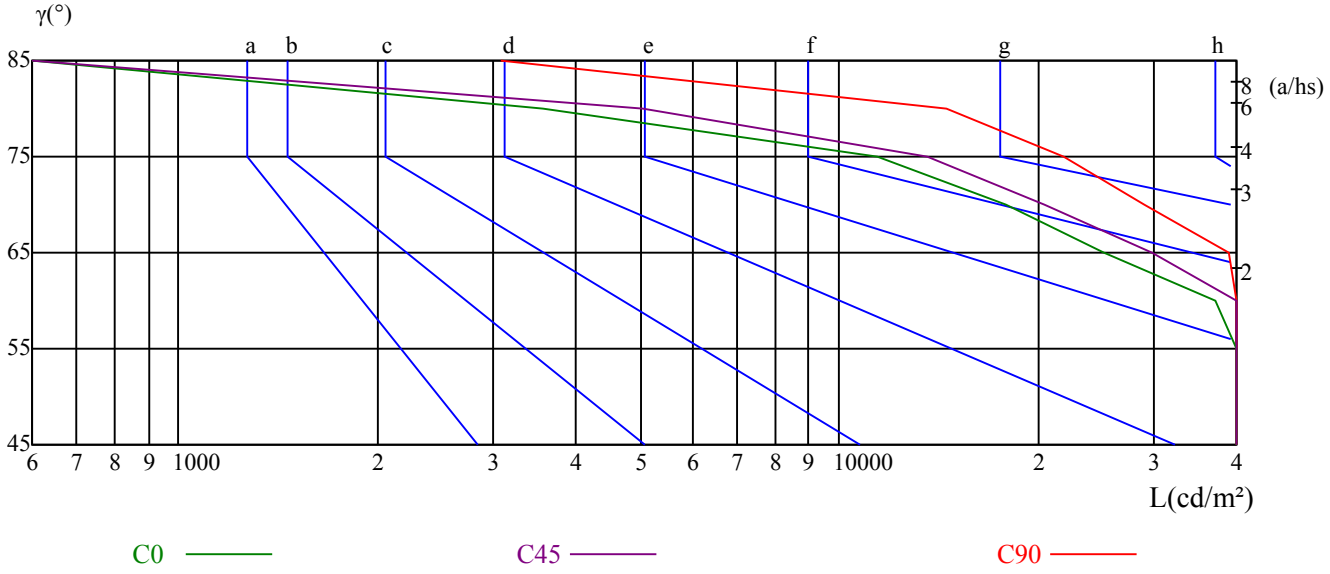
γ	45	50	55	60	65	70	75	80	85
C0	82491	65881	50937	37121	25242	17891	11423	3557	330
C45	86080	70704	57557	43159	29802	20467	13634	5032	357
C90	104972	86797	69056	52979	38945	29006	21848	14503	3076

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
30451	31467	32634	15026	15933	16023	1030	1689	1270

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 Limitting 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	23.71	25.10	24.08	25.42	25.74	23.91	25.29	24.27	25.61	25.93
	3H	24.19	25.42	24.57	25.76	26.11	24.66	25.89	25.04	26.24	26.59
	4H	24.25	25.40	24.65	25.76	26.13	24.86	26.01	25.26	26.37	26.74
	6H	24.23	25.29	24.65	25.67	26.07	24.96	26.02	25.37	26.39	26.79
	8H	24.17	25.19	24.59	25.57	25.98	24.93	25.95	25.35	26.33	26.74
	12H	24.11	25.08	24.54	25.48	25.89	24.88	25.85	25.30	26.24	26.66
4H	2H	23.93	25.08	24.33	25.44	25.81	24.10	25.25	24.50	25.61	25.98
	3H	24.50	25.46	24.92	25.85	26.27	24.91	25.86	25.33	26.26	26.67
	4H	24.65	25.48	25.08	25.90	26.35	25.17	26.00	25.61	26.42	26.87
	6H	24.60	25.33	25.07	25.78	26.23	25.23	25.97	25.70	26.42	26.87
	8H	24.56	25.24	25.04	25.70	26.17	25.23	25.92	25.71	26.37	26.85
	12H	24.52	25.15	25.00	25.60	26.12	25.21	25.84	25.69	26.29	26.81
8H	4H	24.60	25.28	25.08	25.74	26.21	25.11	25.79	25.59	26.25	26.72
	6H	24.54	25.11	25.04	25.59	26.10	25.16	25.73	25.66	26.21	26.72
	8H	24.55	25.04	25.07	25.56	26.05	25.21	25.70	25.73	26.22	26.71
	12H	24.50	24.91	25.03	25.43	25.95	25.17	25.58	25.71	26.10	26.62
12H	4H	24.56	25.20	25.05	25.65	26.16	25.07	25.71	25.56	26.15	26.67
	6H	24.54	25.04	25.07	25.56	26.05	25.16	25.66	25.69	26.17	26.67
	8H	24.51	24.92	25.04	25.43	25.95	25.16	25.57	25.70	26.09	26.61

Variation with the observer position at spacings:		
S = 1.0H	0.4/-1.1	0.7/-1.3
S = 1.5H	1.6/-2.8	1.5/-3.0
S = 2.0H	3.9/-4.3	3.8/-4.4
Standard tables:	BK1	BK1
Uncorrected UGR	8.6	8.0

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	11294.80	11202.28	10978.93	10567.88	10027.34	9381.68	8621.54	7600.51	6190.95
22.5	11294.80	11170.37	10875.70	10490.93	9978.54	9361.04	8597.14	7566.72	6311.08
45.0	11294.80	11044.62	10779.97	10370.81	9862.17	9177.10	8418.83	7379.03	6189.08
67.5	11294.80	11037.11	10706.78	10237.55	9706.39	9015.69	8174.84	7272.05	6037.05
90.0	11294.80	11498.83	11320.52	10873.82	10404.59	9676.36	8995.04	8157.95	7086.24
112.5	11294.80	11356.18	11065.26	10644.84	10076.14	9486.79	8771.69	7936.47	6981.13
135.0	11294.80	11269.84	10909.48	10455.27	9933.49	9276.58	8627.17	7812.60	6815.96
157.5	11294.80	11181.63	10894.46	10398.96	9890.32	9284.09	8535.20	7728.14	6665.81
180.0	11294.80	11119.69	10821.27	10398.96	9869.68	9246.55	8574.62	7722.51	6602.00
202.5	11294.80	11132.83	10813.76	10346.41	9843.40	9289.72	8600.89	7688.72	6635.78
225.0	11294.80	11084.03	10802.50	10397.09	9856.54	9270.95	8595.26	7711.24	6547.57
247.5	11294.80	11117.82	10851.30	10413.98	9879.06	9259.69	8535.20	7593.00	6421.81
270.0	11294.80	11307.38	10937.63	10402.72	9890.32	9109.53	8148.56	7118.14	5798.68
292.5	11294.80	11260.46	10886.96	10412.10	9877.19	9137.69	8332.50	7089.99	5854.99
315.0	11294.80	11224.80	10877.57	10445.89	9884.69	9263.44	8366.28	7181.96	5946.96
337.5	11294.80	11241.69	10954.53	10507.82	10032.97	9370.42	8495.79	7418.45	6014.53
360.0	11294.80	11202.28	10978.93	10567.88	10027.34	9381.68	8621.54	7600.51	6190.95

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	4573.07	3320.05	2290.57	1455.16	836.35	479.74	231.80	48.42	2.25
22.5	4817.06	3414.27	2340.87	1531.18	923.06	518.96	252.44	57.62	2.44
45.0	4772.02	3563.11	2588.25	1691.84	987.44	548.81	276.66	68.51	2.44
67.5	4665.04	3375.79	2264.86	1425.88	867.69	514.27	261.45	64.38	2.63
90.0	5819.33	4374.12	3105.33	2076.79	1290.37	777.79	443.32	197.45	21.02
112.5	5764.90	4475.47	3291.14	2294.51	1451.78	930.00	472.98	192.38	19.52
135.0	5579.09	4248.36	3017.12	2061.77	1260.34	747.95	423.80	200.45	20.65
157.5	5449.58	4135.75	2987.09	2039.25	1241.57	733.12	415.55	167.80	14.64
180.0	5299.43	4026.89	2900.75	1905.99	1181.51	693.14	378.01	155.60	11.82
202.5	5301.30	3949.94	2821.92	1915.38	1174.00	684.13	379.32	158.97	10.70
225.0	5171.80	4036.27	2987.09	2026.11	1232.19	721.11	374.44	141.52	9.38
247.5	5111.74	3859.85	2684.91	1723.93	1038.86	606.99	345.73	141.89	7.51
270.0	4451.07	3220.76	2175.14	1349.87	794.87	451.77	203.27	38.10	2.07
292.5	4567.44	3428.16	2424.77	1585.42	928.69	503.76	225.04	36.04	2.25
315.0	4531.78	3266.37	2234.07	1403.17	845.17	480.11	225.60	42.79	2.25
337.5	4528.02	3290.21	2270.67	1404.67	817.02	462.84	228.23	41.10	2.25
360.0	4573.07	3320.05	2290.57	1455.16	836.35	479.74	231.80	48.42	2.25

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1.88	1.88	2.25	2.63	3.38	4.51	6.01	7.88	9.76
22.5	2.07	1.88	2.25	2.63	3.38	4.51	6.01	7.88	9.76
45.0	2.07	1.69	2.25	2.44	3.19	4.69	6.01	7.51	9.38
67.5	2.07	1.88	2.07	2.44	3.38	4.32	6.01	7.70	9.57
90.0	2.07	1.69	1.50	2.07	2.82	3.75	5.07	6.38	8.26
112.5	2.25	1.69	1.69	2.07	2.82	3.94	4.88	6.38	8.07
135.0	2.07	1.88	1.69	2.07	2.82	3.75	5.07	6.38	8.26
157.5	2.07	1.50	1.69	2.25	2.63	3.57	5.07	6.57	8.26
180.0	1.88	1.69	1.69	2.07	2.82	3.94	4.88	6.76	8.63
202.5	1.88	1.88	1.88	2.07	3.00	3.75	5.07	6.57	8.63
225.0	2.07	2.07	1.88	2.25	2.82	3.75	5.44	6.76	8.45
247.5	2.07	2.07	2.07	2.07	2.82	3.75	5.26	6.95	8.45
270.0	1.88	2.63	2.25	2.63	3.57	4.88	6.76	8.63	10.70
292.5	1.88	2.82	2.25	2.82	3.75	5.07	6.38	8.26	10.14
315.0	1.69	2.82	2.25	2.82	3.57	4.69	6.38	8.07	9.95
337.5	2.07	2.07	2.07	2.44	3.57	4.69	6.19	7.88	9.57
360.0	1.88	1.88	2.25	2.63	3.38	4.51	6.01	7.88	9.76

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	11.64	13.70	15.77	17.83	19.52	20.46	21.21	21.77	22.90
22.5	11.64	13.89	15.95	17.64	19.33	20.46	21.40	21.96	23.09
45.0	11.82	13.89	16.14	18.21	20.08	21.21	21.77	21.96	23.27
67.5	11.64	14.08	16.33	18.39	20.08	21.21	21.77	21.96	23.27
90.0	10.51	12.76	15.02	17.46	19.33	20.65	21.21	21.77	21.96
112.5	10.32	12.58	14.83	17.08	19.14	20.65	21.40	21.40	21.96
135.0	10.51	12.39	14.83	16.89	18.96	20.27	21.02	21.58	21.96
157.5	10.32	12.58	14.83	17.08	18.77	20.08	20.83	21.40	21.40
180.0	10.70	12.39	14.83	17.08	18.96	20.08	20.83	21.40	21.58
202.5	10.51	12.76	14.83	17.27	18.96	20.08	20.65	21.02	21.77
225.0	10.70	12.95	15.20	17.27	19.33	20.65	21.02	21.40	21.96
247.5	10.89	12.95	15.39	17.27	19.14	20.65	21.40	21.58	21.77
270.0	12.95	15.39	17.83	19.90	21.40	21.96	22.71	22.71	23.65
292.5	12.39	14.83	16.89	18.77	20.27	21.40	21.96	22.15	23.65
315.0	12.20	13.89	16.33	18.21	19.90	20.83	21.40	21.77	23.27
337.5	11.82	13.89	15.95	18.02	19.52	20.27	21.21	21.77	23.09
360.0	11.64	13.70	15.77	17.83	19.52	20.46	21.21	21.77	22.90

C/γ(°)	180.0
0.0	23.63
22.5	23.63
45.0	23.63
67.5	23.63
90.0	23.63
112.5	23.63
135.0	23.63
157.5	23.63
180.0	23.63
202.5	23.63
225.0	23.63
247.5	23.63
270.0	23.63
292.5	23.63
315.0	23.63
337.5	23.63
360.0	23.63