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

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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): 120.11
LampCAT:	Current(A): 0.2950
Lamp flux(lm): -1.0	Power (W): 35.27
Number of Lamps: 1	PF: 0.9953
Length(mm): 540	Width(mm): 520
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 4426.31, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 125.50
Central intensity(cd): 1952.346, Maximum intensity(cd): 1999.837
Angle of maximum intensity: C=90.0 γ=5.0
Beam Angle(50%Imax): [C0/180]Total=103.0
[C90/270]Total=84.1
Field angle(10%Imax): [C0/180]Total=158.5
[C90/270]Total=137.9
Maximum s/h(1/2): C0_180=1.21 C90_270=1.19
Maximum s/h(1/4): C0_180=1.34 C90_270=1.20
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 0.00%
Up flux rate of LUM(%): 0.18%
Down flux rate of LUM(%): 99.82%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 84.991%

Zonal flux distribution table

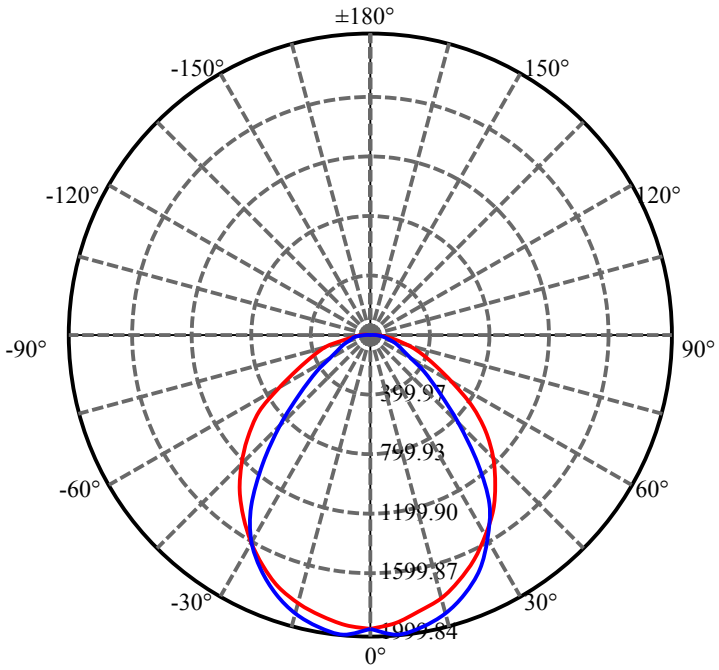
γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1952.346	0.000	0	0.00%	0.00%
5.0	1941.315	46.548	46.548	0.00%	1.05%
10.0	1906.972	137.665	184.213	0.00%	4.16%
15.0	1849.843	222.852	407.065	0.00%	9.20%
20.0	1770.902	298.400	705.465	0.00%	15.94%
25.0	1669.966	360.884	1066.348	0.00%	24.09%
30.0	1548.803	407.338	1473.686	0.00%	33.29%
35.0	1405.537	435.047	1908.734	0.00%	43.12%
40.0	1237.650	440.996	2349.729	0.00%	53.09%
45.0	1048.552	423.309	2773.038	0.00%	62.65%
50.0	854.777	384.595	3157.634	0.00%	71.34%
55.0	672.032	331.979	3489.613	0.00%	78.84%
60.0	506.213	272.348	3761.96	0.00%	84.99%
65.0	372.668	213.658	3975.618	0.00%	89.82%
70.0	275.226	164.051	4139.669	0.00%	93.52%
75.0	201.479	124.603	4264.272	0.00%	96.34%
80.0	130.368	88.793	4353.065	0.00%	98.35%
85.0	54.003	50.098	4403.163	0.00%	99.48%
90.0	1.059	15.076	4418.24	0.00%	99.82%
95.0	0.450	0.413	4418.653	0.00%	99.83%
100.0	0.542	0.270	4418.922	0.00%	99.83%
105.0	0.592	0.303	4419.226	0.00%	99.84%
110.0	0.759	0.353	4419.579	0.00%	99.85%
115.0	0.909	0.422	4420.001	0.00%	99.86%
120.0	1.109	0.491	4420.491	0.00%	99.87%
125.0	1.317	0.561	4421.052	0.00%	99.88%
130.0	1.492	0.611	4421.663	0.00%	99.90%
135.0	1.701	0.645	4422.308	0.00%	99.91%
140.0	1.893	0.665	4422.974	0.00%	99.92%
145.0	2.109	0.668	4423.641	0.00%	99.94%
150.0	2.226	0.638	4424.28	0.00%	99.95%
155.0	2.410	0.587	4424.866	0.00%	99.97%
160.0	2.443	0.509	4425.375	0.00%	99.98%
165.0	2.460	0.404	4425.779	0.00%	99.99%
170.0	2.435	0.290	4426.07	0.00%	99.99%
175.0	2.493	0.176	4426.246	0.00%	100.00%
180.0	2.551	0.060	4426.306	0.00%	100.00%

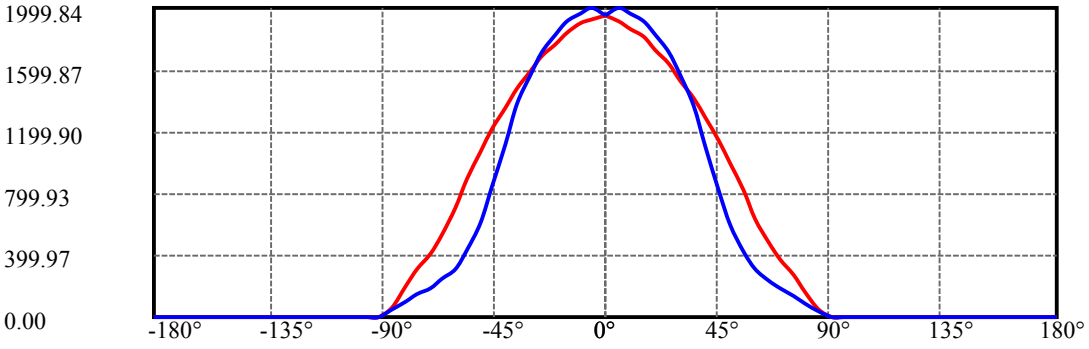
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1473.69	N.A.	33.29%
0-40	2349.73	N.A.	53.09%
0-60	3761.96	N.A.	84.99%
0-90	4418.24	N.A.	99.82%
0-120	4420.49	N.A.	99.87%
0-180	4426.31	N.A.	100.00%
60-90	656.28	N.A.	14.83%
90-120	2.25	N.A.	0.05%
90-130	3.42	N.A.	0.08%
90-150	6.04	N.A.	0.14%
90-180	8.01	N.A.	0.18%
0-55.94	3541.05	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	184.21
10-20	521.25
20-30	768.22
30-40	876.04
40-50	807.90
50-60	604.33
60-70	377.71
70-80	213.40
80-90	65.17
90-100	0.68
100-110	0.66
110-120	0.91
120-130	1.17
130-140	1.31
140-150	1.31
150-160	1.10
160-170	0.69
170-180	0.18



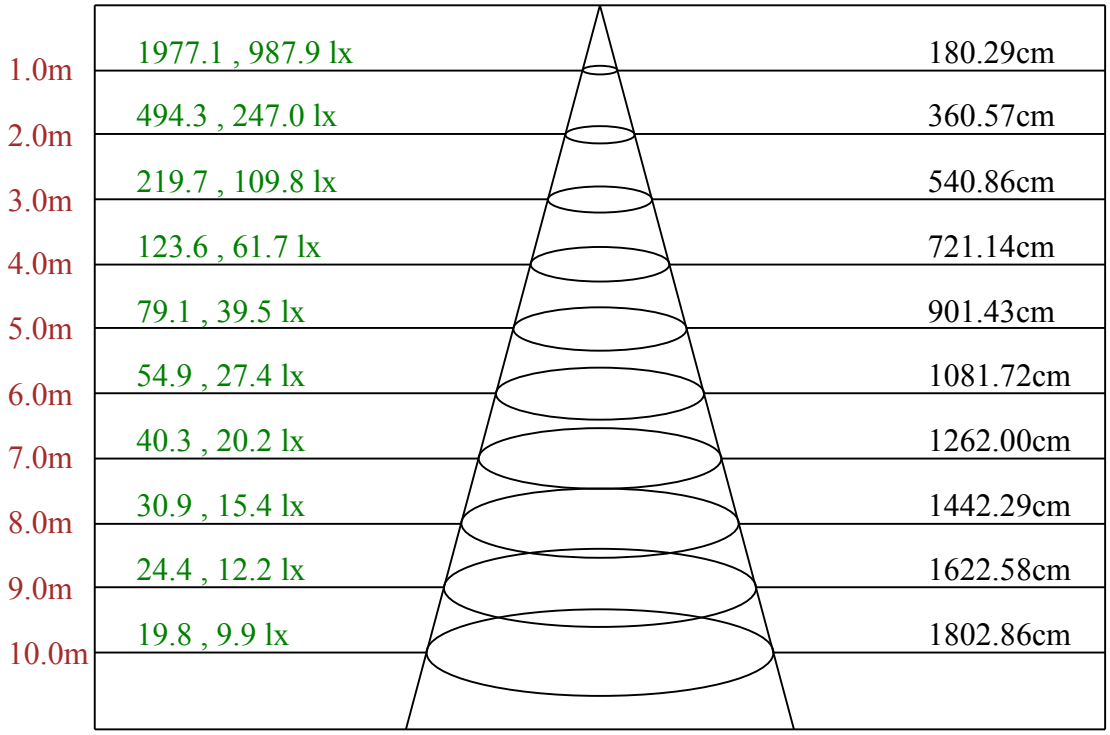


C0/C180:

C90/C270:

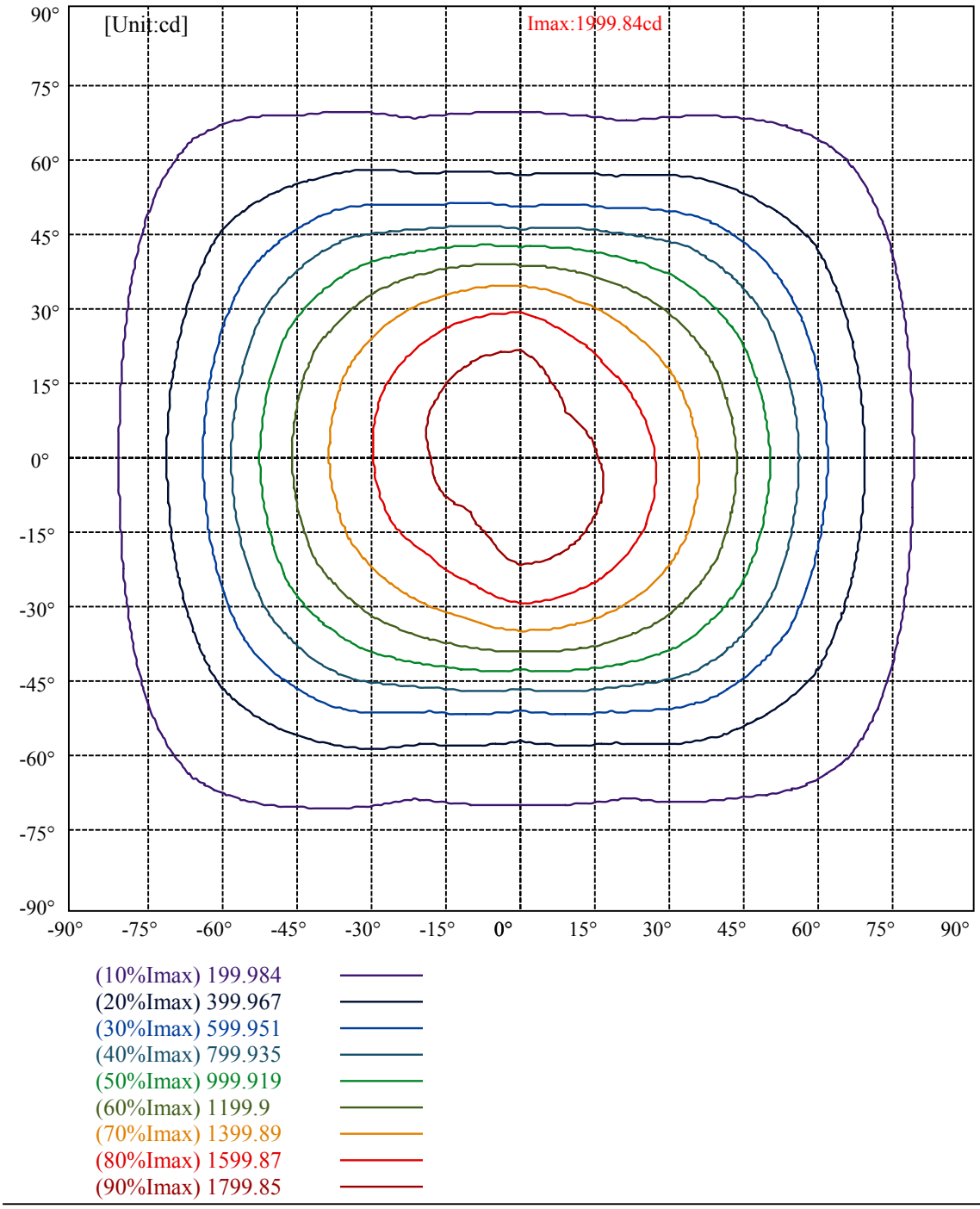
Field angle(10%Imax):C0/180Left:80.1 Right:78.4
:C90/270Left:69.2 Right:68.7

Beam Angle(50%Imax):C0/180Left:52.6 Right:50.4
:C90/270Left:42.2 Right:41.9

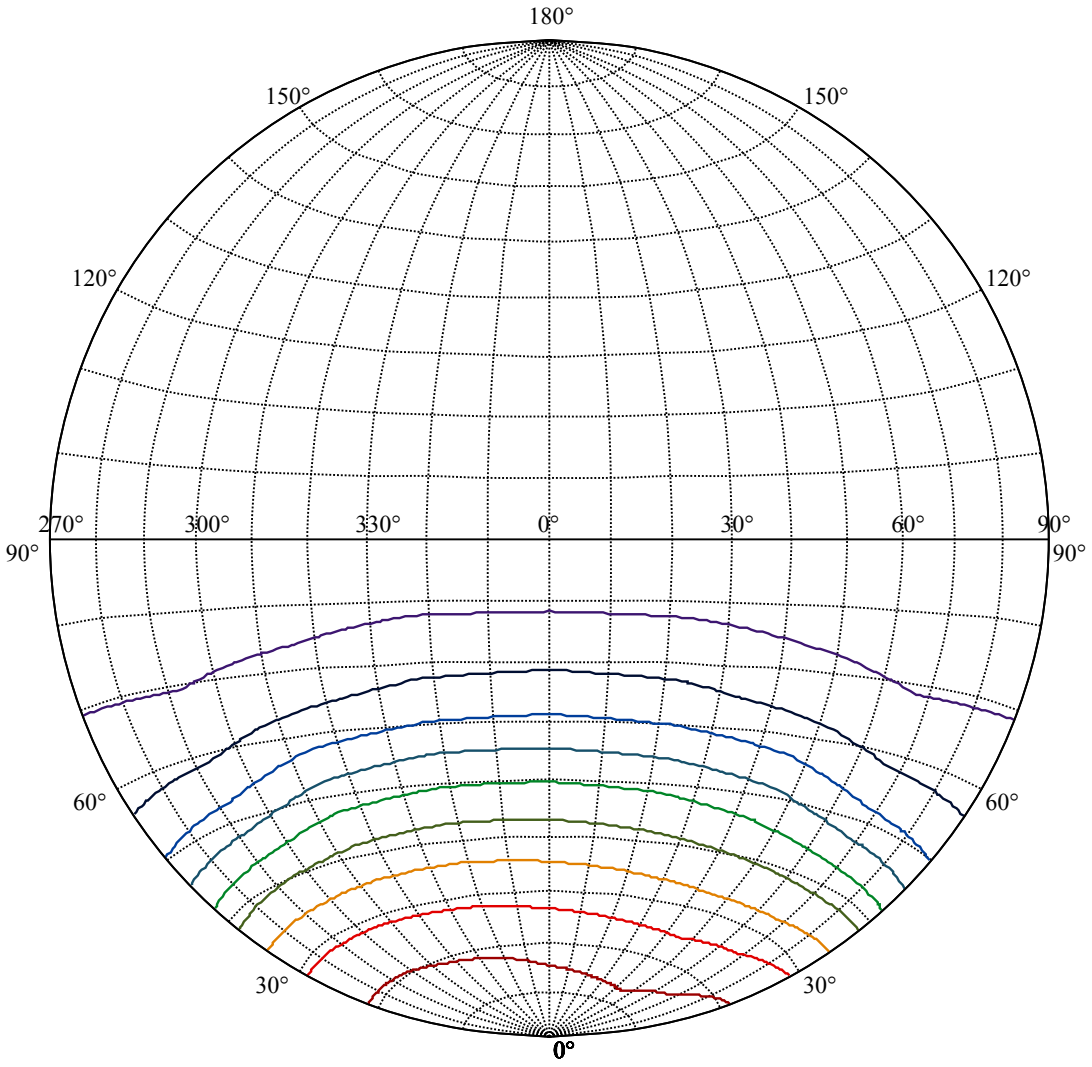


Max , Ave

Beam angle of C90 plane 84.06


[Unit:cd]
Imax:1999.84cd
90°
75°
60°
45°
30°
15°
0°
-15°
-30°
-45°
-60°
-75°
-90°
-90° -75° -60° -45° -30° -15° 0° 15° 30° 45° 60° 75° 90°
(10%Imax) 199.984
(20%Imax) 399.967
(30%Imax) 599.951
(40%Imax) 799.935
(50%Imax) 999.919
(60%Imax) 1199.9
(70%Imax) 1399.89
(80%Imax) 1599.87
(90%Imax) 1799.85

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1999.84

(10%Imax) 199.984
(20%Imax) 399.967
(30%Imax) 599.951
(40%Imax) 799.935
(50%Imax) 999.919
(60%Imax) 1199.9
(70%Imax) 1399.89
(80%Imax) 1599.87
(90%Imax) 1799.85

Luminance Limitting Curve(no luminous side)

Luminance Table

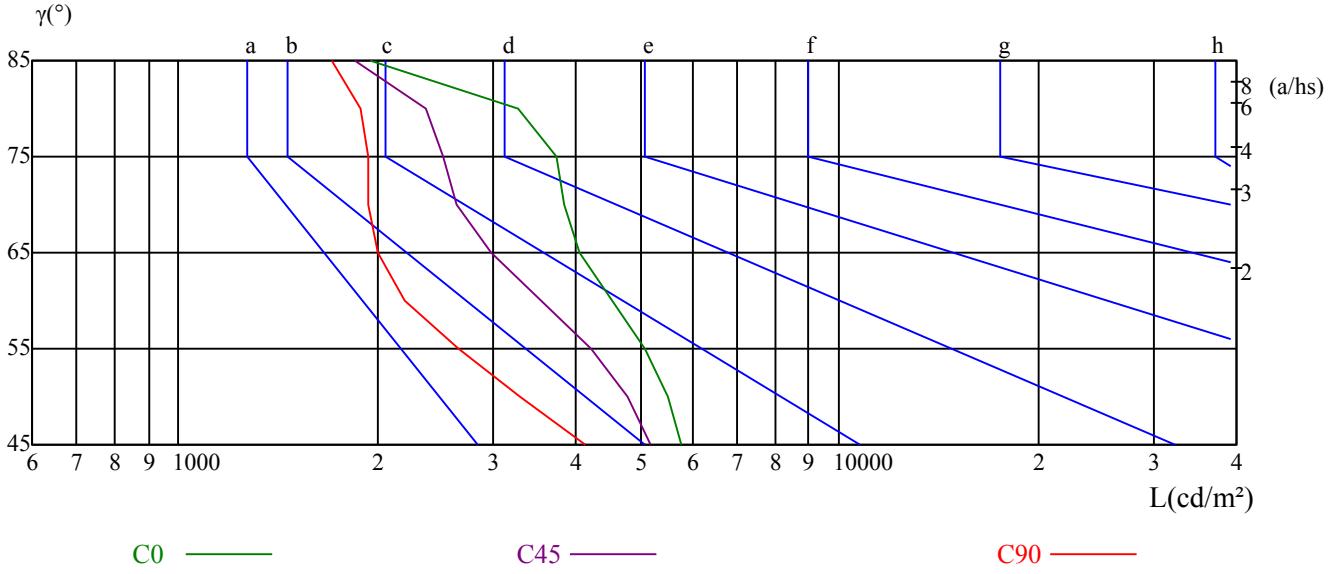
γ	45	50	55	60	65	70	75	80	85
C0	5762	5491	5070	4532	4051	3837	3745	3278	1957
C45	5199	4780	4204	3550	2981	2636	2518	2375	1853
C90	4135	3287	2660	2201	2009	1942	1931	1888	1712

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4298	2033	3164	3987	1977	2601	2374	1761	2283

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	17.46	18.98	17.82	19.30	19.62	13.74	15.26	14.10	15.58	15.90
	3H	18.94	20.31	19.32	20.65	21.00	14.93	16.31	15.32	16.65	16.99
	4H	19.59	20.87	19.98	21.23	21.59	15.48	16.77	15.88	17.12	17.49
	6H	20.09	21.29	20.50	21.66	22.05	15.98	17.18	16.39	17.55	17.95
	8H	20.22	21.37	20.63	21.75	22.15	16.16	17.31	16.57	17.69	18.09
	12H	20.26	21.36	20.68	21.75	22.16	16.27	17.37	16.69	17.76	18.17
4H	2H	17.66	18.95	18.06	19.30	19.67	14.62	15.91	15.02	16.27	16.63
	3H	19.37	20.45	19.79	20.84	21.26	15.97	17.05	16.39	17.44	17.86
	4H	20.24	21.20	20.67	21.62	22.06	16.62	17.58	17.05	18.00	18.44
	6H	20.86	21.71	21.32	22.16	22.61	17.16	18.02	17.62	18.46	18.91
	8H	21.07	21.87	21.54	22.32	22.78	17.40	18.20	17.87	18.65	19.11
	12H	21.17	21.91	21.65	22.35	22.86	17.57	18.31	18.05	18.76	19.26
8H	4H	20.32	21.12	20.80	21.57	22.04	17.12	17.91	17.59	18.36	18.83
	6H	21.07	21.74	21.56	22.21	22.71	17.77	18.44	18.27	18.91	19.42
	8H	21.40	21.98	21.92	22.50	22.99	18.12	18.70	18.64	19.22	19.71
	12H	21.55	22.04	22.08	22.55	23.07	18.35	18.84	18.88	19.36	19.87
12H	4H	20.31	21.06	20.80	21.50	22.01	17.21	17.95	17.69	18.40	18.90
	6H	21.13	21.71	21.64	22.22	22.72	17.96	18.54	18.48	19.06	19.55
	8H	21.44	21.94	21.97	22.45	22.96	18.31	18.80	18.83	19.31	19.82

Variation with the observer position at spacings:		
S = 1.0H	0.3/-0.8	0.3/-0.6
S = 1.5H	0.8/-1.4	0.5/-0.8
S = 2.0H	1.6/-1.6	1.1/-0.9
Standard tables:	BK4	BK3
Uncorrected UGR	1.0	2.9

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	1952.35	1913.26	1868.57	1807.87	1731.43	1638.18	1531.86	1414.20	1289.20
22.5	1952.35	1897.12	1851.76	1786.79	1706.49	1611.10	1502.91	1382.45	1253.18
45.0	1952.35	1869.90	1832.55	1774.12	1691.94	1590.96	1477.03	1345.36	1196.75
67.5	1952.35	1905.66	1872.57	1815.88	1738.24	1630.71	1494.51	1334.96	1139.39
90.0	1952.35	1999.84	1966.35	1912.19	1829.08	1712.62	1564.95	1366.31	1110.98
112.5	1952.35	1995.70	1965.82	1910.59	1831.75	1720.63	1578.82	1402.59	1197.29
135.0	1952.35	1977.29	1945.54	1892.05	1812.41	1710.89	1592.29	1453.69	1296.94
157.5	1952.35	1965.15	1934.47	1877.64	1800.40	1709.95	1604.43	1488.77	1349.37
180.0	1952.35	1925.53	1894.45	1840.15	1769.32	1684.34	1585.62	1476.37	1352.30
202.5	1952.35	1910.19	1882.44	1830.28	1759.31	1671.67	1572.55	1456.62	1328.42
225.0	1952.35	1875.77	1848.83	1794.80	1721.83	1628.44	1521.86	1399.26	1256.52
247.5	1952.35	1908.32	1878.97	1825.75	1749.71	1644.19	1511.45	1352.03	1167.94
270.0	1952.35	1999.84	1968.62	1912.86	1829.08	1714.89	1568.81	1376.58	1118.45
292.5	1952.35	1991.83	1956.35	1897.38	1813.74	1701.82	1561.48	1390.05	1192.22
315.0	1952.35	1970.36	1932.87	1869.90	1784.93	1682.87	1559.74	1417.94	1260.25
337.5	1952.35	1955.28	1911.39	1849.23	1764.78	1666.20	1552.54	1431.41	1293.20
360.0	1952.35	1913.26	1868.57	1807.87	1731.43	1638.18	1531.86	1414.20	1289.20

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1144.06	991.18	816.56	636.33	480.78	368.46	272.14	159.82	47.89
22.5	1111.11	952.89	778.27	598.44	451.70	340.04	247.33	151.15	50.03
45.0	1032.27	862.71	677.02	498.39	353.78	253.20	183.03	115.79	45.36
67.5	911.14	673.15	486.92	347.25	249.46	180.09	129.40	88.18	42.02
90.0	820.96	593.37	428.49	308.96	238.39	186.50	140.34	92.05	41.89
112.5	947.43	694.36	496.92	358.85	258.13	187.83	135.54	90.98	48.43
135.0	1121.52	930.62	736.78	545.62	379.66	266.81	187.83	126.07	61.37
157.5	1207.56	1046.28	864.85	673.28	505.20	375.66	279.35	182.50	72.44
180.0	1215.30	1062.55	895.66	709.84	539.21	408.88	307.36	198.37	68.30
202.5	1191.82	1036.54	862.85	682.49	510.27	381.53	281.08	185.03	71.50
225.0	1098.84	926.08	746.65	558.69	398.47	280.15	203.17	133.54	61.23
247.5	944.62	707.83	507.20	369.66	264.14	191.30	137.00	93.78	51.36
270.0	842.84	608.72	433.03	316.03	244.13	192.10	147.01	98.05	44.29
292.5	952.09	705.70	509.86	363.52	259.20	190.37	137.94	92.58	47.49
315.0	1091.10	904.20	706.63	518.00	369.79	257.73	181.96	121.66	55.50
337.5	1144.19	980.24	804.82	614.05	460.37	342.98	253.20	156.35	54.96
360.0	1144.06	991.18	816.56	636.33	480.78	368.46	272.14	159.82	47.89

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.80	0.93	0.80	0.93	0.93	1.20	1.60	1.73	1.73
22.5	0.80	0.67	0.67	0.93	1.20	1.07	1.20	1.47	1.73
45.0	0.67	0.67	0.67	0.80	0.93	1.07	1.07	1.33	1.47
67.5	0.67	0.67	0.53	0.67	0.80	0.93	1.07	1.33	1.47
90.0	0.40	0.13	0.13	0.13	0.27	0.27	0.80	0.93	1.20
112.5	0.53	0.27	0.27	0.40	0.40	0.53	0.67	0.80	1.20
135.0	1.33	0.13	0.40	0.27	0.40	0.80	0.93	1.07	1.07
157.5	1.33	0.13	0.40	0.40	0.67	0.80	0.93	1.07	1.33
180.0	1.47	0.40	0.53	0.53	0.67	0.93	1.07	1.33	1.47
202.5	1.33	0.40	0.53	0.67	0.80	0.93	1.20	1.33	1.47
225.0	1.33	0.40	0.40	0.53	0.67	0.93	0.93	1.47	1.47
247.5	1.60	0.27	0.53	0.27	0.67	0.67	1.07	1.33	1.47
270.0	0.80	0.40	0.67	0.80	0.93	1.07	1.07	1.47	1.60
292.5	1.47	0.40	0.67	0.40	0.80	0.93	1.20	1.33	1.60
315.0	1.47	0.53	0.67	0.67	0.80	1.07	1.33	1.47	1.73
337.5	0.93	0.80	0.80	1.07	1.20	1.33	1.60	1.60	1.87
360.0	0.80	0.93	0.80	0.93	0.93	1.20	1.60	1.73	1.73

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	1.87	2.00	2.27	2.40	2.40	2.40	2.54	2.40	2.40
22.5	2.00	1.87	2.13	2.27	2.40	2.54	2.54	2.40	2.54
45.0	1.73	1.87	2.13	2.27	2.54	2.67	2.67	2.27	2.54
67.5	1.60	1.87	2.13	2.27	2.54	2.40	2.54	2.54	2.54
90.0	1.47	1.60	2.00	2.13	2.40	2.27	2.54	2.40	2.54
112.5	1.20	1.73	1.73	2.00	2.13	2.27	2.27	2.40	2.40
135.0	1.47	1.73	1.87	2.00	2.27	2.27	2.40	2.27	2.40
157.5	1.47	1.73	1.87	2.13	2.40	2.27	2.27	2.27	2.40
180.0	1.60	2.00	2.00	2.13	2.40	2.40	2.27	2.40	2.40
202.5	1.87	1.73	2.00	2.13	2.27	2.27	2.40	2.40	2.40
225.0	1.73	1.73	2.40	2.13	2.27	2.40	2.27	2.40	2.80
247.5	1.73	1.73	2.00	2.27	2.40	2.40	2.54	2.40	2.54
270.0	1.73	2.40	2.40	2.67	2.67	2.94	2.80	2.80	2.67
292.5	1.87	2.00	2.27	2.27	2.54	2.67	2.40	2.54	2.40
315.0	1.87	2.00	2.13	2.27	2.54	2.54	2.54	2.54	2.40
337.5	2.00	2.27	2.40	2.27	2.40	2.40	2.40	2.54	2.54
360.0	1.87	2.00	2.27	2.40	2.40	2.40	2.54	2.40	2.40

C/γ(°)	180.0
0.0	2.55
22.5	2.55
45.0	2.55
67.5	2.55
90.0	2.55
112.5	2.55
135.0	2.55
157.5	2.55
180.0	2.55
202.5	2.55
225.0	2.55
247.5	2.55
270.0	2.55
292.5	2.55
315.0	2.55
337.5	2.55
360.0	2.55