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

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Client:
LumCAT:
Luminaire:
Report No:
Ballast type:
Test No:
LampCAT:
Lamp flux(lm): -1.0
Number of Lamps: 1
Length(mm): 520
Phm Type: C

Voltage(V): 119.97
Current(A): 0.2310
Power (W): 27.61
PF: 0.9969
Width(mm): 520
Height(mm): 0

Photometric Results

Lumens(lm): 3461.63, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 125.37
Central intensity(cd): 1195.086, Maximum intensity(cd): 1195.086
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=112.8
[C90/270]Total=113.3
Field angle(10%Imax): [C0/180]Total=163.4
[C90/270]Total=162.9
Maximum s/h(1/2): C0_180=1.27 C90_270=1.28
Maximum s/h(1/4): C0_180=1.39 C90_270=1.40
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 0.00%
Up flux rate of LUM(%): 0.15%
Down flux rate of LUM(%): 99.85%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 77.951%

Equipment: GMS-3000
Temperature(°C): 25
Date:
Humidity(%): 59%
Operator: jarvis

Zonal flux distribution table

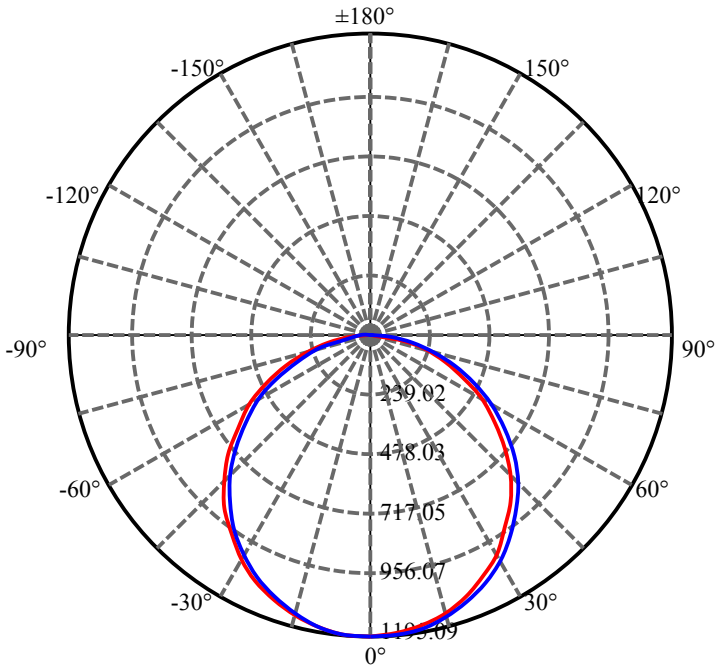
γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1195.086	0.000	0	0.00%	0.00%
5.0	1189.805	28.511	28.511	0.00%	0.82%
10.0	1174.246	84.570	113.08	0.00%	3.27%
15.0	1148.096	137.760	250.84	0.00%	7.25%
20.0	1112.472	186.303	437.143	0.00%	12.63%
25.0	1066.914	228.577	665.72	0.00%	19.23%
30.0	1012.525	263.155	928.875	0.00%	26.83%
35.0	949.095	288.862	1217.737	0.00%	35.18%
40.0	878.398	304.903	1522.64	0.00%	43.99%
45.0	800.133	310.794	1833.434	0.00%	52.96%
50.0	715.244	306.204	2139.638	0.00%	61.81%
55.0	625.362	291.493	2431.13	0.00%	70.23%
60.0	530.737	267.229	2698.359	0.00%	77.95%
65.0	433.549	234.420	2932.779	0.00%	84.72%
70.0	334.757	194.540	3127.319	0.00%	90.34%
75.0	238.765	149.910	3277.229	0.00%	94.67%
80.0	147.346	103.313	3380.541	0.00%	97.66%
85.0	63.548	57.305	3437.846	0.00%	99.31%
90.0	4.428	18.612	3456.459	0.00%	99.85%
95.0	0.158	1.256	3457.714	0.00%	99.89%
100.0	0.145	0.082	3457.796	0.00%	99.89%
105.0	0.197	0.091	3457.888	0.00%	99.89%
110.0	0.289	0.127	3458.015	0.00%	99.90%
115.0	0.407	0.176	3458.191	0.00%	99.90%
120.0	0.499	0.220	3458.412	0.00%	99.91%
125.0	0.736	0.286	3458.697	0.00%	99.92%
130.0	0.789	0.331	3459.029	0.00%	99.92%
135.0	0.920	0.345	3459.374	0.00%	99.93%
140.0	1.091	0.372	3459.746	0.00%	99.95%
145.0	1.196	0.381	3460.128	0.00%	99.96%
150.0	1.301	0.368	3460.496	0.00%	99.97%
155.0	1.314	0.331	3460.827	0.00%	99.98%
160.0	1.367	0.281	3461.108	0.00%	99.98%
165.0	1.406	0.229	3461.336	0.00%	99.99%
170.0	1.367	0.164	3461.501	0.00%	100.00%
175.0	1.367	0.098	3461.599	0.00%	100.00%
180.0	1.484	0.034	3461.633	0.00%	100.00%

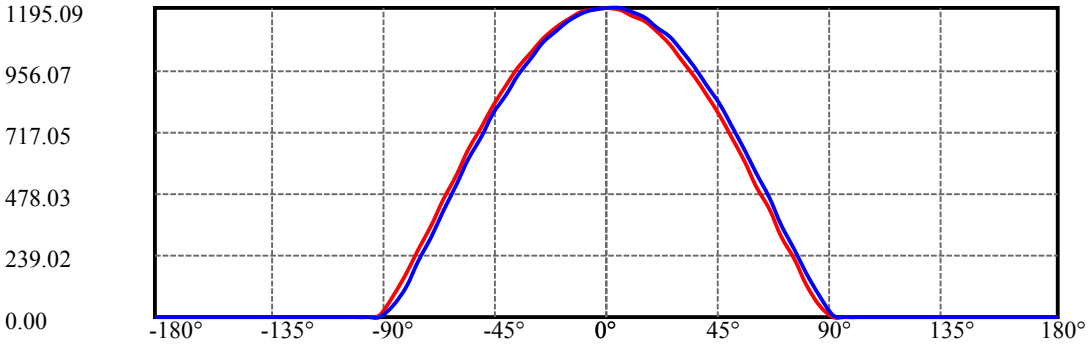
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	928.87	N.A.	26.83%
0-40	1522.64	N.A.	43.99%
0-60	2698.36	N.A.	77.95%
0-90	3456.46	N.A.	99.85%
0-120	3458.41	N.A.	99.91%
0-180	3461.63	N.A.	100.00%
60-90	758.10	N.A.	21.90%
90-120	1.95	N.A.	0.06%
90-130	2.57	N.A.	0.07%
90-150	4.04	N.A.	0.12%
90-180	5.14	N.A.	0.15%
0-61.51	2769.31	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	113.08
10-20	324.06
20-30	491.73
30-40	593.77
40-50	617.00
50-60	558.72
60-70	428.96
70-80	253.22
80-90	75.92
90-100	1.34
100-110	0.22
110-120	0.40
120-130	0.62
130-140	0.72
140-150	0.75
150-160	0.61
160-170	0.39
170-180	0.10



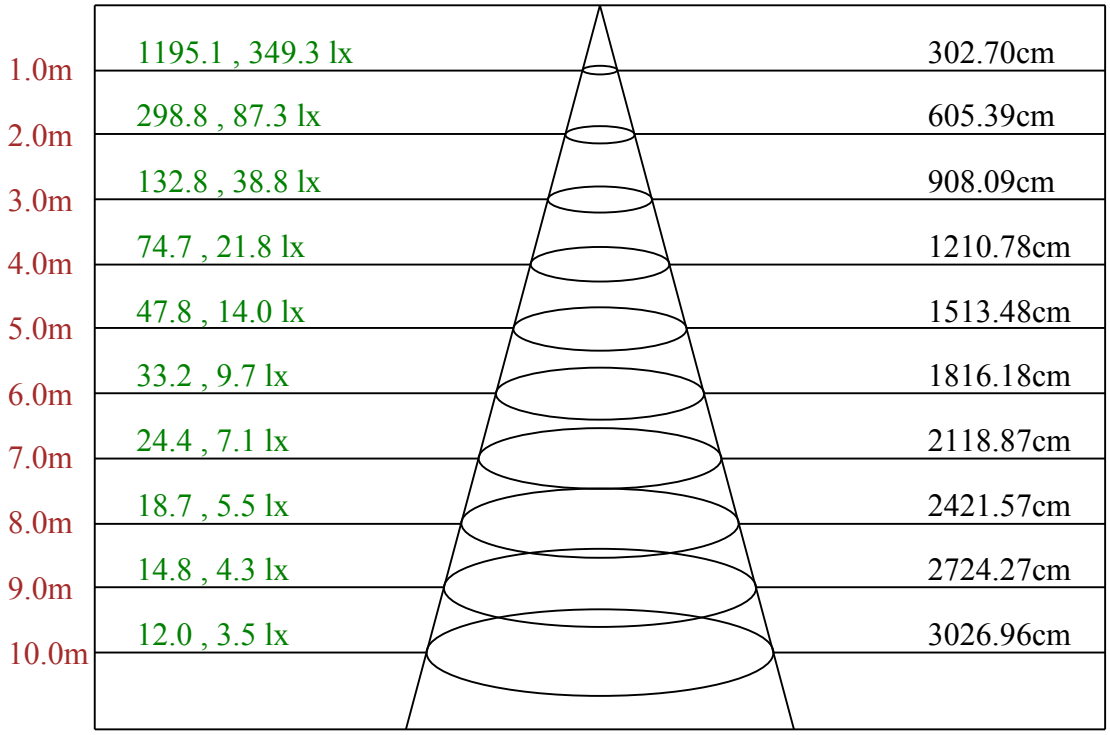


C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:82.9 Right:80.5
:C90/270Left:80.0 Right:82.9

Beam Angle(50%Imax):C0/180Left:57.5 Right:55.3
:C90/270Left:55.5 Right:57.8



Max , Ave

Beam angle of C0 plane 113.09

Luminance Limitting Curve(no luminous side)

Luminance Table

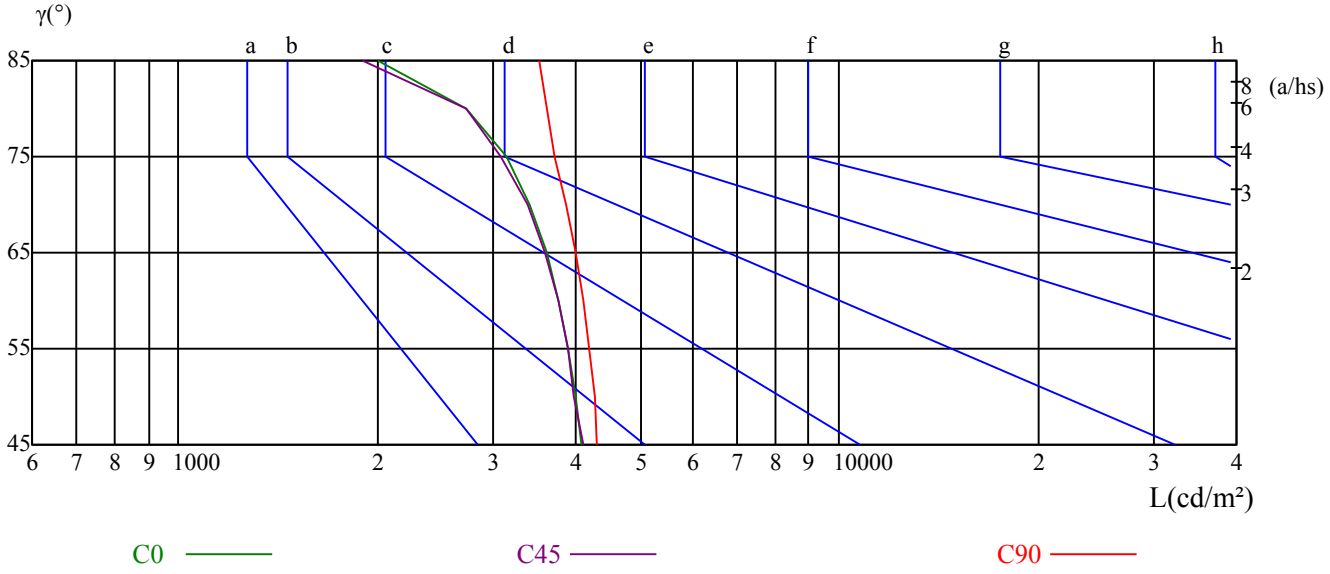
γ	45	50	55	60	65	70	75	80	85
C0	4084	4003	3895	3760	3619	3403	3133	2731	2007
C45	4090	3980	3881	3762	3595	3371	3085	2722	1900
C90	4307	4268	4188	4109	4005	3865	3710	3605	3515

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3799	3797	3798	3443	3383	3411	2766	2636	2694

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	16.75	18.40	17.11	18.72	19.04	16.84	18.49	17.20	18.80	19.12
	3H	18.52	20.02	18.90	20.36	20.70	18.73	20.23	19.12	20.57	20.91
	4H	19.18	20.59	19.58	20.94	21.31	19.49	20.90	19.89	21.25	21.62
	6H	19.67	20.99	20.08	21.35	21.75	20.12	21.44	20.53	21.80	22.20
	8H	19.80	21.07	20.21	21.45	21.85	20.35	21.61	20.76	21.99	22.39
	12H	19.86	21.08	20.28	21.46	21.87	20.50	21.72	20.92	22.11	22.52
4H	2H	17.36	18.77	17.75	19.12	19.48	17.42	18.83	17.82	19.19	19.55
	3H	19.32	20.53	19.74	20.92	21.33	19.48	20.68	19.89	21.07	21.48
	4H	20.17	21.24	20.60	21.66	22.10	20.37	21.45	20.81	21.86	22.30
	6H	20.74	21.70	21.20	22.14	22.58	21.06	22.02	21.52	22.46	22.90
	8H	20.94	21.84	21.41	22.28	22.74	21.36	22.25	21.83	22.70	23.16
	12H	21.05	21.89	21.53	22.33	22.83	21.58	22.42	22.06	22.86	23.36
8H	4H	20.44	21.34	20.91	21.78	22.24	20.62	21.52	21.10	21.97	22.43
	6H	21.13	21.88	21.62	22.35	22.85	21.40	22.15	21.89	22.62	23.12
	8H	21.45	22.11	21.96	22.61	23.10	21.79	22.45	22.30	22.96	23.45
	12H	21.61	22.17	22.13	22.68	23.19	22.07	22.63	22.59	23.14	23.64
12H	4H	20.47	21.30	20.94	21.74	22.24	20.65	21.48	21.13	21.92	22.43
	6H	21.24	21.89	21.75	22.40	22.89	21.50	22.16	22.01	22.67	23.16
	8H	21.54	22.10	22.06	22.61	23.12	21.88	22.43	22.40	22.94	23.45

Variation with the observer position at spacings:		
S = 1.0H	0.2/-0.6	0.3/-0.6
S = 1.5H	0.6/-0.5	0.6/-0.6
S = 2.0H	0.8/-0.7	0.8/-0.8
Standard tables:	BK3	BK3
Uncorrected UGR	3.1	2.8

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	1195.09	1186.65	1168.15	1140.19	1102.97	1053.98	997.64	931.20	860.13
22.5	1195.09	1185.81	1168.99	1140.19	1101.92	1053.35	998.90	933.09	860.13
45.0	1195.09	1187.49	1169.83	1141.03	1103.81	1056.72	999.74	933.93	862.45
67.5	1195.09	1187.07	1169.62	1141.03	1102.34	1055.88	999.11	933.51	859.92
90.0	1195.09	1194.22	1181.19	1157.22	1123.58	1081.74	1029.80	968.41	899.03
112.5	1195.09	1191.49	1178.03	1153.64	1121.47	1077.53	1025.18	963.37	895.88
135.0	1195.09	1192.75	1178.45	1155.96	1122.10	1078.16	1026.86	964.84	895.24
157.5	1195.09	1192.33	1179.50	1155.74	1121.47	1077.11	1025.60	963.16	893.14
180.0	1195.09	1190.86	1177.61	1153.01	1120.42	1076.48	1024.13	962.10	895.88
202.5	1195.09	1191.70	1177.40	1154.06	1120.42	1076.90	1023.71	964.00	893.98
225.0	1195.09	1191.91	1178.66	1154.48	1120.42	1077.74	1025.60	963.58	893.56
247.5	1195.09	1192.12	1178.87	1155.11	1121.89	1078.79	1024.97	963.58	895.88
270.0	1195.09	1190.02	1171.93	1142.92	1105.49	1057.77	1000.79	937.30	863.92
292.5	1195.09	1186.86	1168.57	1140.40	1102.55	1055.04	998.06	932.67	861.39
315.0	1195.09	1187.91	1171.09	1142.29	1104.44	1057.98	1001.42	935.19	861.82
337.5	1195.09	1187.70	1170.04	1142.29	1104.23	1055.46	998.90	935.61	862.03
360.0	1195.09	1186.65	1168.15	1140.19	1102.97	1053.98	997.64	931.20	860.13

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	780.87	695.72	604.05	508.38	413.56	314.74	219.29	128.25	47.31
22.5	780.03	693.41	605.31	506.28	411.25	315.38	219.50	128.88	45.41
45.0	781.92	691.72	601.95	508.60	410.83	311.80	215.93	127.83	44.78
67.5	781.50	694.46	602.16	505.65	410.20	310.54	214.67	123.63	43.94
90.0	823.55	741.76	649.46	555.48	457.71	357.43	259.66	169.25	82.84
112.5	818.92	735.03	647.99	556.53	455.61	355.95	261.55	169.04	82.21
135.0	818.08	736.30	646.94	553.38	455.82	359.95	262.81	169.46	85.15
157.5	818.71	734.61	645.05	554.22	456.66	358.06	261.34	171.14	84.52
180.0	817.87	734.19	644.42	551.70	454.77	355.74	262.60	169.25	83.05
202.5	816.61	732.30	646.10	550.86	453.72	358.06	260.50	167.15	83.89
225.0	816.19	734.82	645.47	550.86	456.24	359.95	258.82	167.57	81.16
247.5	818.29	735.03	647.36	552.54	454.98	355.53	259.45	168.20	79.47
270.0	783.18	696.35	607.20	509.44	409.99	308.44	213.82	119.63	41.42
292.5	781.50	694.25	602.16	509.23	410.20	307.18	212.77	122.58	42.89
315.0	783.81	696.56	604.47	508.38	413.35	314.11	217.40	126.15	42.89
337.5	781.08	697.40	605.73	510.28	411.88	313.27	220.13	129.51	45.83
360.0	780.87	695.72	604.05	508.38	413.56	314.74	219.29	128.25	47.31

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.21	0.42	0.42	0.42	0.42	0.63	0.84	0.84	0.84
22.5	0.21	0.21	0.42	0.42	0.63	0.84	0.84	1.05	0.84
45.0	0.21	0.21	0.21	0.21	0.63	0.63	0.84	1.05	1.26
67.5	0.42	0.21	0.00	0.42	0.63	0.63	0.63	0.84	1.05
90.0	9.67	0.00	0.00	0.00	0.21	0.42	0.63	1.05	1.05
112.5	8.83	0.00	0.00	0.00	0.00	0.21	0.42	0.63	0.84
135.0	9.88	0.00	0.00	0.00	0.00	0.21	0.42	0.63	0.63
157.5	8.62	0.00	0.00	0.00	0.00	0.21	0.00	0.42	0.63
180.0	7.78	0.00	0.00	0.00	0.00	0.21	0.21	0.63	0.63
202.5	8.62	0.00	0.00	0.00	0.00	0.00	0.42	0.21	0.42
225.0	7.78	0.00	0.00	0.00	0.21	0.00	0.21	0.21	0.63
247.5	7.57	0.00	0.00	0.00	0.00	0.21	0.21	0.63	0.42
270.0	0.21	0.42	0.63	0.63	0.63	0.63	0.84	1.05	1.26
292.5	0.42	0.21	0.21	0.42	0.42	0.63	0.63	1.05	0.84
315.0	0.21	0.42	0.21	0.42	0.42	0.42	0.21	0.84	0.63
337.5	0.21	0.42	0.21	0.21	0.42	0.63	0.63	0.63	0.63
360.0	0.21	0.42	0.42	0.42	0.42	0.63	0.84	0.84	0.84

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	0.84	1.05	1.47	1.47	1.26	1.47	1.47	1.47	1.26
22.5	0.84	1.05	1.47	1.47	1.47	1.47	1.68	1.47	1.26
45.0	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.68	1.47
67.5	1.05	1.47	1.47	1.68	1.47	1.47	1.47	1.26	1.47
90.0	1.26	1.47	1.47	1.47	1.68	1.68	1.89	1.47	1.26
112.5	0.84	1.05	1.47	1.47	1.47	1.47	1.47	1.47	1.47
135.0	1.05	1.05	1.05	1.26	1.47	1.47	1.47	1.47	1.47
157.5	0.63	0.84	1.05	1.05	1.26	1.47	1.68	1.47	1.47
180.0	0.84	1.05	0.84	1.05	1.05	1.26	1.47	1.26	1.47
202.5	0.84	0.63	1.05	1.26	1.05	1.05	1.05	1.26	1.26
225.0	0.63	1.05	0.84	0.84	1.05	1.26	1.26	1.26	1.26
247.5	0.42	0.63	0.63	1.26	1.26	1.26	1.26	1.26	1.26
270.0	1.26	1.26	1.47	1.89	1.68	1.47	1.89	1.68	1.47
292.5	1.05	1.26	1.26	1.26	1.26	1.47	1.26	1.05	1.26
315.0	0.84	1.05	1.05	0.84	1.05	1.05	0.84	1.05	1.47
337.5	0.84	1.05	1.05	1.05	1.05	1.05	0.84	1.26	1.26
360.0	0.84	1.05	1.47	1.47	1.26	1.47	1.47	1.47	1.26

C/γ(°)	180.0
0.0	1.48
22.5	1.48
45.0	1.48
67.5	1.48
90.0	1.48
112.5	1.48
135.0	1.48
157.5	1.48
180.0	1.48
202.5	1.48
225.0	1.48
247.5	1.48
270.0	1.48
292.5	1.48
315.0	1.48
337.5	1.48
360.0	1.48