



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): 120.11

LampCAT:

Current(A): 1.3200

Lamp flux(lm): -1.0

Power (W): 158.10

Number of Lamps: 1

PF: 0.9967

Length(mm): 565

Width(mm): 310

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 25362.49, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 160.42

Central intensity(cd): 11044.620, Maximum intensity(cd): 11268.550

Angle of maximum intensity: C=90.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=90.7

[C90/270]Total=93.5

Field angle(10%Imax): [C0/180]Total=147.2

[C90/270]Total=149.1

Maximum s/h(1/2): C0_180=1.30 C90_270=1.32

Maximum s/h(1/4): C0_180=1.33 C90_270=1.37

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 0.00%

Up flux rate of LUM(%): 0.31%

Down flux rate of LUM(%): 99.69%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 85.954%

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	11044.620	0.000	0	0.00%	0.00%
5.0	10995.761	263.486	263.486	0.00%	1.04%
10.0	10858.235	781.786	1045.273	0.00%	4.12%
15.0	10616.646	1273.875	2319.148	0.00%	9.14%
20.0	10303.418	1724.107	4043.255	0.00%	15.94%
25.0	9899.723	2118.937	6162.192	0.00%	24.30%
30.0	9357.283	2436.990	8599.182	0.00%	33.91%
35.0	8624.674	2647.969	11247.151	0.00%	44.35%
40.0	7524.976	2694.447	13941.598	0.00%	54.97%
45.0	6048.602	2513.258	16454.856	0.00%	64.88%
50.0	4614.427	2154.621	18609.477	0.00%	73.37%
55.0	3539.463	1772.927	20382.404	0.00%	80.36%
60.0	2593.712	1417.666	21800.07	0.00%	85.95%
65.0	1928.315	1099.313	22899.384	0.00%	90.29%
70.0	1477.891	862.473	23761.857	0.00%	93.69%
75.0	1084.080	669.658	24431.515	0.00%	96.33%
80.0	703.151	478.213	24909.728	0.00%	98.21%
85.0	319.991	278.012	25187.741	0.00%	99.31%
90.0	33.833	96.880	25284.621	0.00%	99.69%
95.0	4.968	10.624	25295.245	0.00%	99.73%
100.0	4.968	2.700	25297.944	0.00%	99.75%
105.0	5.351	2.761	25300.705	0.00%	99.76%
110.0	6.345	3.057	25303.763	0.00%	99.77%
115.0	7.704	3.557	25307.32	0.00%	99.78%
120.0	9.308	4.136	25311.456	0.00%	99.80%
125.0	11.156	4.730	25316.186	0.00%	99.82%
130.0	13.021	5.257	25321.442	0.00%	99.84%
135.0	14.886	5.639	25327.081	0.00%	99.86%
140.0	16.733	5.855	25332.936	0.00%	99.88%
145.0	18.424	5.866	25338.802	0.00%	99.91%
150.0	20.028	5.662	25344.464	0.00%	99.93%
155.0	21.143	5.210	25349.674	0.00%	99.95%
160.0	21.736	4.497	25354.171	0.00%	99.97%
165.0	21.719	3.581	25357.753	0.00%	99.98%
170.0	21.963	2.591	25360.344	0.00%	99.99%
175.0	22.625	1.595	25361.939	0.00%	100.00%
180.0	23.624	0.553	25362.492	0.00%	100.00%

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

Date:
Humidity(%): 58%

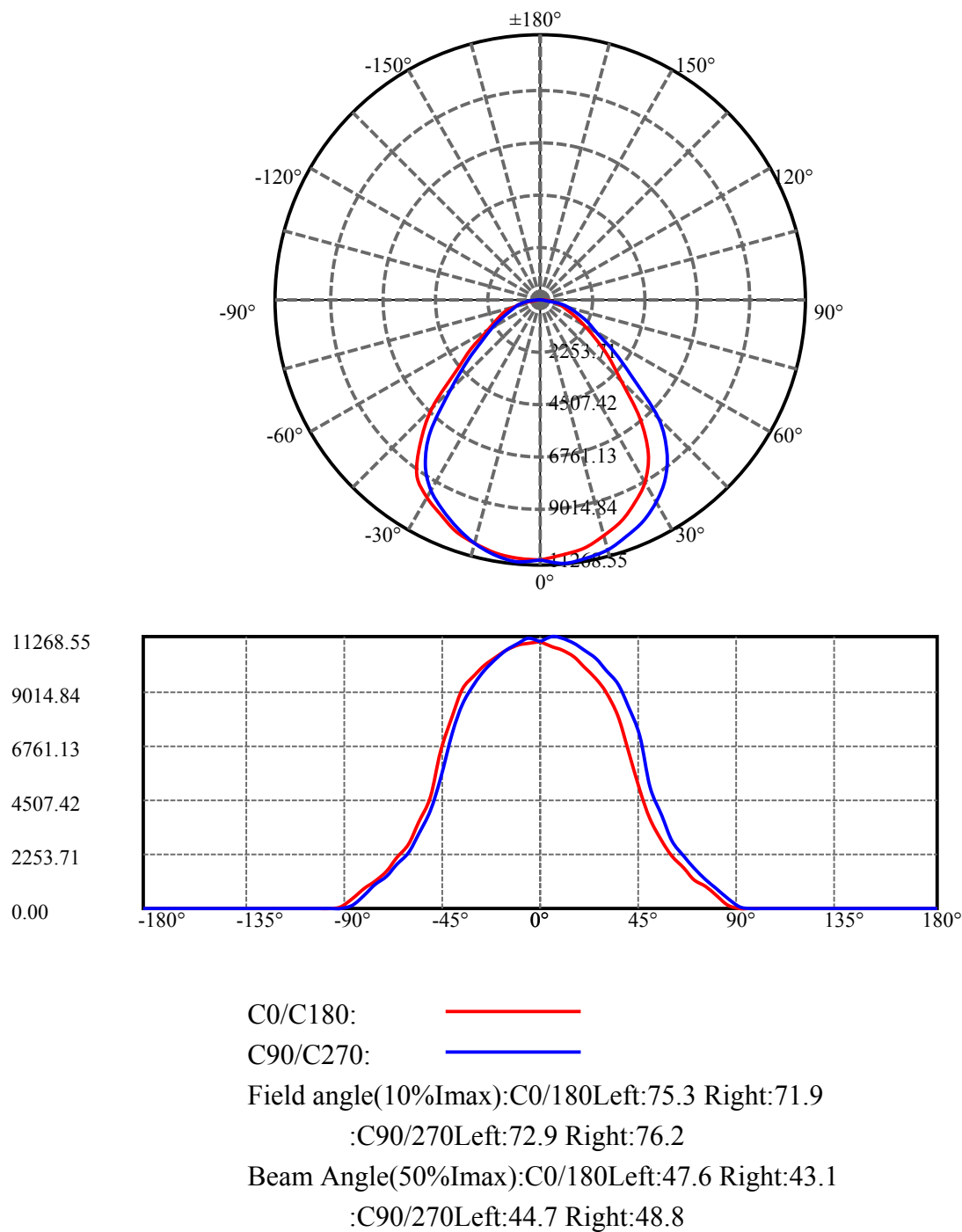
Operator: Sam

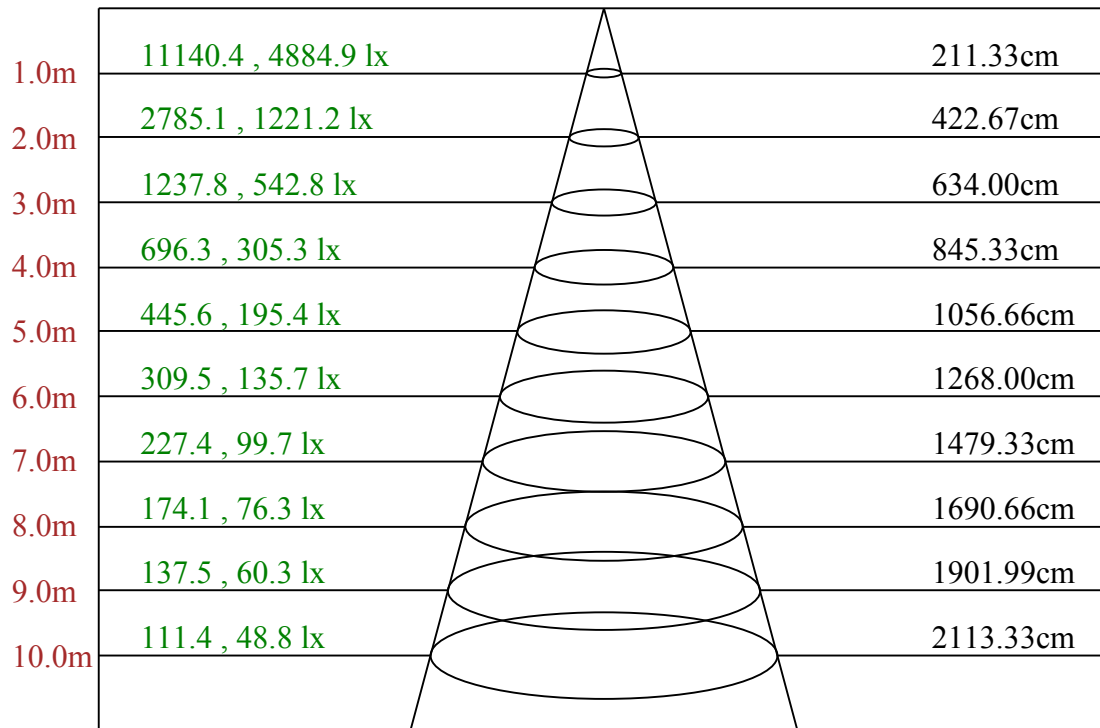
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	8599.18	N.A.	33.91%
0-40	13941.60	N.A.	54.97%
0-60	21800.07	N.A.	85.95%
0-90	25284.62	N.A.	99.69%
0-120	25311.46	N.A.	99.80%
0-180	25362.49	N.A.	100.00%
60-90	3484.55	N.A.	13.74%
90-120	26.83	N.A.	0.11%
90-130	36.82	N.A.	0.15%
90-150	59.84	N.A.	0.24%
90-180	77.32	N.A.	0.30%
0-54.74	20289.99	N.A.	80.00%

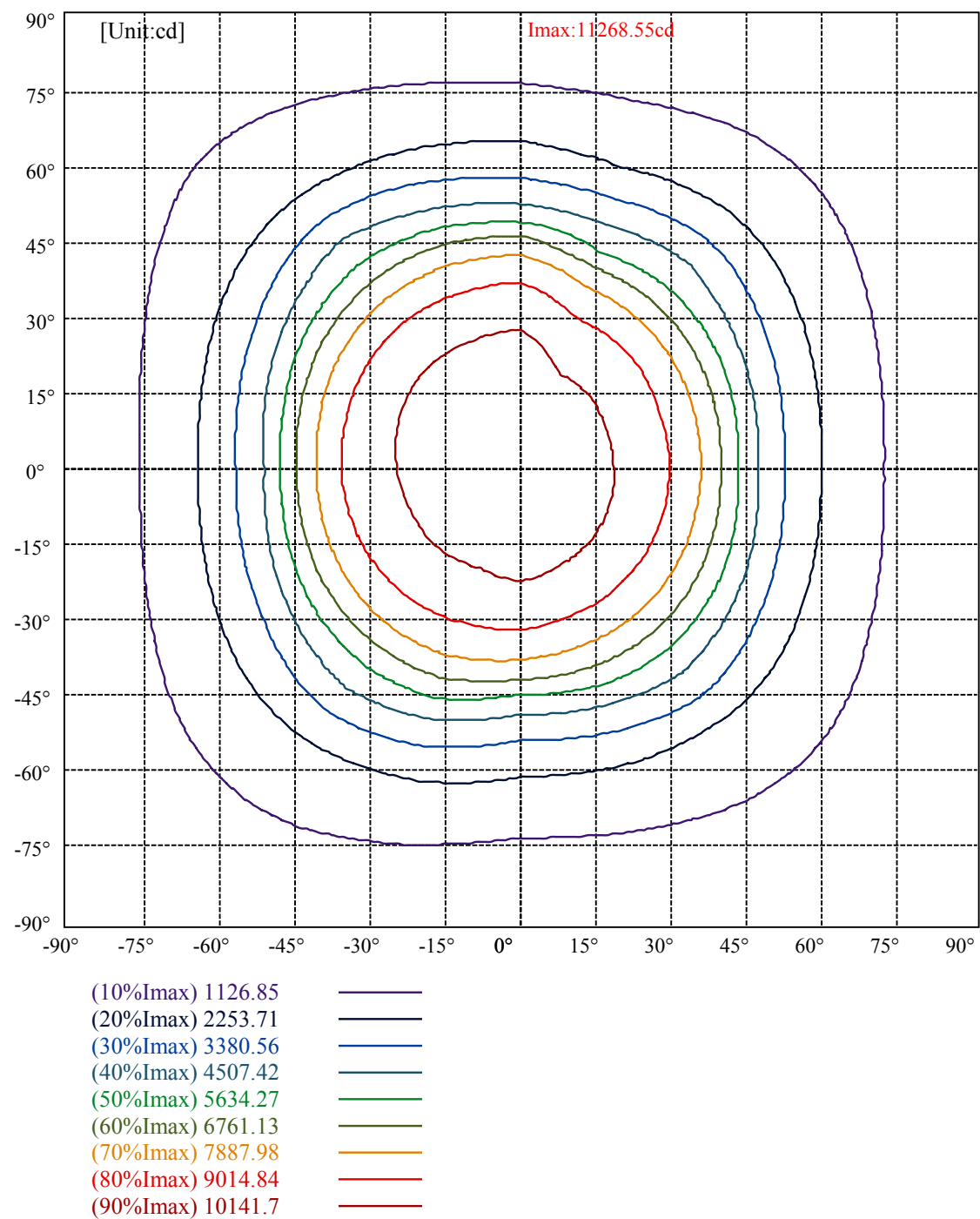
ZONAL LUMEN SUMMARY

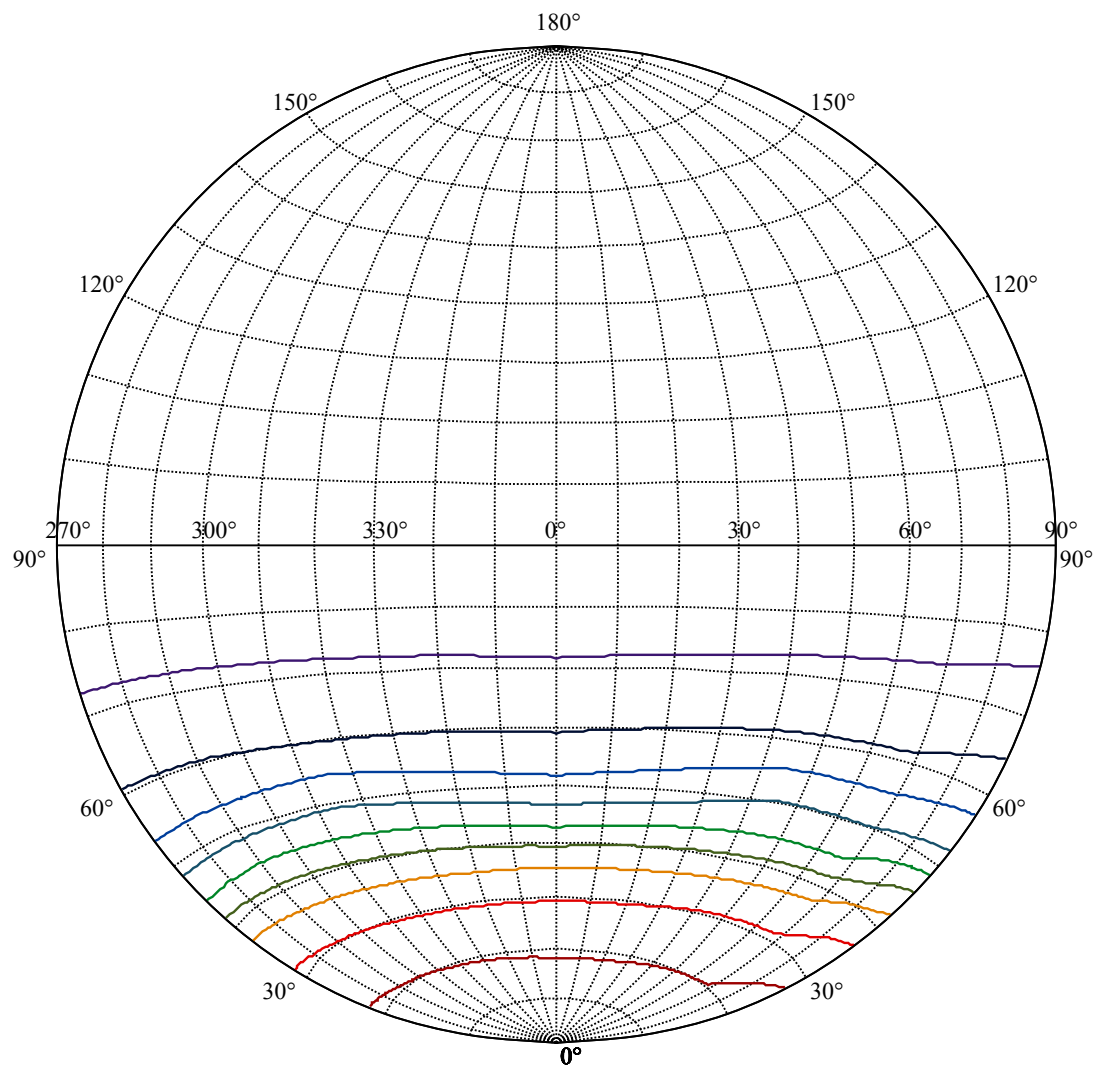
0-10	1045.27
10-20	2997.98
20-30	4555.93
30-40	5342.42
40-50	4667.88
50-60	3190.59
60-70	1961.79
70-80	1147.87
80-90	374.89
90-100	13.32
100-110	5.82
110-120	7.69
120-130	9.99
130-140	11.49
140-150	11.53
150-160	9.71
160-170	6.17
170-180	1.60





Max , Ave Beam angle of C90 plane 93.16





House

[Unit:cd]

Road

Imax:11268.55	
(10%Imax)	1126.85
(20%Imax)	2253.71
(30%Imax)	3380.56
(40%Imax)	4507.42
(50%Imax)	5634.27
(60%Imax)	6761.13
(70%Imax)	7887.98
(80%Imax)	9014.84
(90%Imax)	10141.7

Luminance Limiting Curve(no luminous side)

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Luminance Table

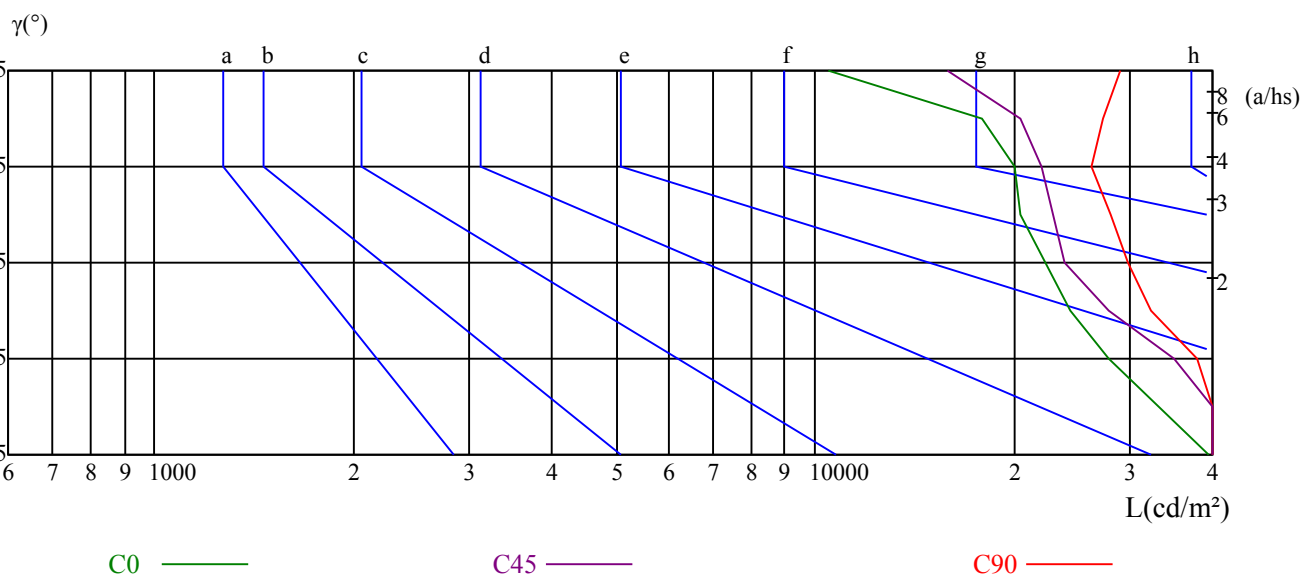
γ	45	50	55	60	65	70	75	80	85
C0	39531	33060	27769	24410	22297	20443	20087	17954	10487
C45	44677	40801	34965	27942	23925	22984	21988	20494	15840
C90	57546	44552	38018	32276	29746	27957	26220	27271	29067

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
25230	27027	25752	22428	23578	24444	19466	20224	22339

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



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

Date:
Humidity(%): 58%

Operator: Sam

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	22.40	23.89	22.76	24.21	24.54	23.20	24.70	23.57	25.02	25.34
	3H	23.73	25.08	24.12	25.42	25.77	24.70	26.05	25.09	26.39	26.74
	4H	24.30	25.56	24.69	25.91	26.28	25.35	26.61	25.75	26.97	27.34
	6H	24.74	25.91	25.15	26.28	26.68	25.95	27.12	26.36	27.49	27.89
	8H	24.85	25.97	25.26	26.36	26.76	26.18	27.31	26.60	27.69	28.10
	12H	24.87	25.95	25.30	26.34	26.76	26.36	27.44	26.78	27.83	28.25
4H	2H	22.86	24.12	23.26	24.48	24.85	23.54	24.80	23.94	25.15	25.52
	3H	24.45	25.51	24.87	25.91	26.32	25.24	26.31	25.67	26.70	27.12
	4H	25.20	26.14	25.64	26.56	27.01	26.08	27.02	26.52	27.44	27.88
	6H	25.73	26.57	26.20	27.01	27.47	26.76	27.60	27.23	28.04	28.49
	8H	25.91	26.69	26.39	27.14	27.61	27.07	27.85	27.55	28.31	28.78
	12H	25.99	26.71	26.47	27.16	27.67	27.33	28.05	27.81	28.50	29.01
8H	4H	25.49	26.27	25.96	26.72	27.19	26.27	27.05	26.75	27.50	27.97
	6H	26.15	26.80	26.64	27.27	27.78	27.06	27.71	27.56	28.19	28.69
	8H	26.44	27.01	26.96	27.52	28.02	27.48	28.05	28.00	28.56	29.06
	12H	26.56	27.04	27.09	27.55	28.07	27.78	28.27	28.31	28.78	29.30
12H	4H	25.52	26.25	26.00	26.69	27.20	26.28	27.01	26.77	27.46	27.97
	6H	26.26	26.83	26.78	27.35	27.85	27.15	27.72	27.66	28.23	28.73
	8H	26.55	27.03	27.08	27.54	28.06	27.55	28.03	28.08	28.54	29.06
Variation with the observer position at spacings:											
S = 1.0H		0.2/-0.5					0.3/-0.7				
S = 1.5H		0.7/-1.0					0.8/-1.2				
S = 2.0H		1.6/-1.2					1.6/-1.4				
Standard tables:		BK3					BK3				
Uncorrected UGR		9.4					8.4				

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

Intensity data(cd)

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C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	11044.62	10880.89	10702.40	10398.41	10005.18	9519.91	8931.45	8011.12	6588.78
22.5	11044.62	10883.68	10671.73	10376.10	10035.86	9570.11	8939.82	8097.57	6795.16
45.0	11044.62	10850.22	10682.88	10437.46	10111.16	9701.19	9112.73	8295.58	7035.00
67.5	11044.62	10830.69	10685.67	10468.14	10161.36	9770.91	9213.13	8485.23	7391.98
90.0	11044.62	11268.55	11179.31	10981.29	10716.35	10367.74	9899.20	9305.17	8426.66
112.5	11044.62	11148.63	11081.70	10900.42	10638.26	10309.17	9862.95	9238.23	8401.56
135.0	11044.62	11101.22	11025.92	10844.64	10590.85	10306.38	9849.00	9232.65	8345.78
157.5	11044.62	11073.33	10995.24	10813.96	10576.90	10217.13	9759.76	9165.72	8184.03
180.0	11044.62	11011.97	10922.73	10735.87	10456.98	10094.42	9667.72	9096.00	7960.92
202.5	11044.62	10964.56	10864.16	10649.42	10362.16	9994.02	9525.49	8917.51	7860.52
225.0	11044.62	10908.78	10788.86	10585.27	10289.65	9938.25	9441.82	8761.33	7779.64
247.5	11044.62	10869.74	10741.45	10512.76	10219.92	9849.00	9307.95	8630.25	7690.39
270.0	11044.62	11179.31	10998.03	10710.77	10339.85	9857.37	9285.64	8488.02	7308.31
292.5	11044.62	11053.80	10861.37	10557.38	10183.67	9712.35	9068.11	8214.71	7035.00
315.0	11044.62	10964.56	10772.13	10448.61	10108.37	9620.31	8939.82	8075.26	6864.88
337.5	11044.62	10942.25	10758.18	10445.83	10058.17	9567.32	8911.93	7980.44	6731.01
360.0	11044.62	10880.89	10702.40	10398.41	10005.18	9519.91	8931.45	8011.12	6588.78

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	4895.91	3722.07	2789.74	2137.69	1650.47	1224.61	910.58	546.07	160.08
22.5	5277.44	3955.78	3118.27	2308.93	1789.08	1315.80	939.02	578.98	192.99
45.0	5533.18	4593.60	3512.62	2446.98	1770.95	1376.88	996.75	623.32	241.80
67.5	5551.31	4535.87	3434.53	2426.34	1791.59	1416.20	1038.59	638.10	232.32
90.0	7127.03	5015.84	3819.40	2826.55	2201.84	1674.74	1188.63	829.42	443.71
112.5	7149.35	5445.33	3986.73	3099.86	2229.73	1719.36	1262.26	868.46	469.65
135.0	6973.65	5509.47	4474.79	3203.05	2171.16	1618.96	1285.68	885.76	509.53
157.5	6792.37	5163.65	3855.65	2952.05	2151.64	1727.72	1351.22	849.78	478.58
180.0	6530.21	4600.29	3582.34	2659.22	2084.70	1565.97	1122.81	818.54	434.23
202.5	6471.64	4879.18	3654.85	2776.35	2070.76	1632.90	1156.56	768.06	436.18
225.0	6371.24	5060.46	4120.60	2868.38	2042.87	1543.66	1202.02	816.03	434.23
247.5	6346.14	4856.87	3707.84	2748.46	1989.88	1535.29	1143.17	761.37	400.77
270.0	5405.17	4058.69	3075.32	2313.67	1799.40	1319.15	949.06	574.51	173.75
292.5	5556.88	4126.18	3169.59	2303.35	1740.00	1348.43	946.00	557.50	169.57
315.0	5503.06	4376.34	3307.91	2221.64	1639.87	1314.41	947.95	584.55	178.49
337.5	5293.05	3931.23	3021.22	2206.86	1729.12	1312.18	905.00	549.97	163.99
360.0	4895.91	3722.07	2789.74	2137.69	1650.47	1224.61	910.58	546.07	160.08

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	5.30	4.74	5.02	5.30	6.41	8.09	9.76	11.71	13.39
22.5	5.86	5.02	5.30	5.86	6.41	7.81	10.04	11.71	13.67
45.0	6.14	5.02	5.30	5.86	6.69	8.09	10.04	11.71	13.39
67.5	5.86	5.02	5.30	5.30	6.69	7.81	9.48	11.16	13.39
90.0	54.38	4.74	4.46	5.02	5.58	7.53	8.92	10.60	12.55
112.5	72.23	5.02	5.02	5.02	6.14	6.97	8.37	10.04	12.27
135.0	86.46	5.58	4.46	5.58	6.41	6.97	8.65	10.60	12.83
157.5	84.50	5.02	5.02	5.02	5.86	7.53	8.09	10.04	11.99
180.0	66.38	5.30	4.74	4.74	5.58	6.69	8.09	9.76	11.71
202.5	60.80	5.02	4.74	4.46	5.58	6.69	8.09	9.76	11.71
225.0	44.34	4.74	4.74	5.30	6.14	6.97	8.37	10.32	11.43
247.5	26.22	4.74	4.46	5.30	5.86	7.53	9.20	11.16	12.27
270.0	5.58	4.74	5.02	5.86	6.97	8.65	10.88	12.83	15.06
292.5	5.58	5.02	5.02	5.86	7.25	8.65	10.88	12.55	15.06
315.0	5.86	5.02	5.30	5.58	7.25	8.92	10.32	12.55	13.95
337.5	5.86	4.74	5.58	5.58	6.69	8.37	9.76	11.99	13.67
360.0	5.30	4.74	5.02	5.30	6.41	8.09	9.76	11.71	13.39

Intensity data(cd)									Appendix Page: 11 Total:11	
C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0	
0.0	15.06	17.01	18.69	19.80	20.92	21.75	21.48	21.75	23.15	
22.5	15.06	17.01	18.41	20.36	21.20	21.20	21.75	21.75	23.15	
45.0	15.34	17.01	18.69	20.08	21.20	21.75	22.03	22.31	23.15	
67.5	15.34	17.29	19.24	20.36	21.48	22.03	22.03	22.31	22.87	
90.0	15.06	17.01	18.97	20.36	22.03	22.87	22.31	22.59	22.59	
112.5	14.22	16.73	18.13	20.08	21.20	22.03	21.75	22.31	22.31	
135.0	13.67	15.90	17.85	19.24	20.92	21.20	21.75	22.03	22.03	
157.5	13.95	15.62	17.29	18.97	20.36	21.20	20.92	21.75	21.75	
180.0	13.39	15.06	16.73	18.69	19.52	20.64	20.64	21.20	21.48	
202.5	13.39	15.34	16.73	18.13	19.80	20.36	20.64	20.92	21.48	
225.0	13.67	15.06	17.01	18.97	19.80	20.92	21.20	21.48	21.75	
247.5	14.50	16.73	17.85	20.08	21.20	21.75	21.48	21.48	22.03	
270.0	17.29	18.97	20.92	22.03	23.15	23.43	23.15	22.87	23.99	
292.5	17.01	18.41	20.08	22.03	22.31	22.87	22.59	22.59	23.71	
315.0	15.90	17.57	19.52	20.92	21.75	22.31	22.03	22.31	23.43	
337.5	15.34	17.01	18.69	20.36	21.48	21.48	21.75	21.75	23.15	
360.0	15.06	17.01	18.69	19.80	20.92	21.75	21.48	21.75	23.15	
C/ γ (°)	180.0									
0.0	23.62									
22.5	23.62									
45.0	23.62									
67.5	23.62									
90.0	23.62									
112.5	23.62									
135.0	23.62									
157.5	23.62									
180.0	23.62									
202.5	23.62									
225.0	23.62									
247.5	23.62									
270.0	23.62									
292.5	23.62									
315.0	23.62									
337.5	23.62									
360.0	23.62									