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ZHONGSHAN CITY CHANGLONG ELECTRICAL CO., LTD MQG-LED-312B

LumCAT: MQG-LED312B

Luminaire: MQG-LED-312B

Report No:

Voltage(V): 230.000

Test No:

Current(A): 0.164

LampCAT: LED

Power (W): 37.500

Lamp flux(lm)

PF: 0.992

Number of Lamps: 1

Ballast type:

Length(mm): 550

Width(mm): 430

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2988.49

Lumens(lm)/Power(W): 79.69

Central intensity(cd): 1093.956

Maximum intensity(cd): 1100.257

Angle of maximum intensity: C=30.0 γ =0.0

Beam Angle(50%Imax): [H]Left=54.3 Right=54.1

[V]Left=53.2 Right=54.3

Field angle(10%Imax): [H]Left=79.8 Right=79.5

[V]Left=78.5 Right=79.2

Beam angle of C30plane: 107.99

Maximum s/h: C0_180=1.23 C90_270=1.22

Up flux rate of LUM(%): 0.72%

Down flux rate of LUM(%): 99.28%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 79.442%

Equipment: GMS1800B
Temperature(°C): 25.0

Date: 2013-12-16
Humidity(%): 70.0%

Operator: Iris.Zhu
Distance(m): 13.23

ZHONGSHAN CITY CHANGLONG ELECTRICAL CO., LTD MQG-LED-312B

Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1096.960	.000	.000	.000%	.000%
5.0	1091.126	26.158	26.158	.875%	.875%
10.0	1073.258	77.427	103.585	2.591%	3.466%
15.0	1044.436	125.620	229.205	4.203%	7.670%
20.0	1005.316	168.928	398.133	5.653%	13.322%
25.0	955.855	205.691	603.824	6.883%	20.205%
30.0	899.713	234.824	838.648	7.858%	28.063%
35.0	837.299	255.787	1094.435	8.559%	36.622%
40.0	766.775	267.628	1362.062	8.955%	45.577%
45.0	693.407	270.365	1632.427	9.047%	54.624%
50.0	615.780	264.541	1896.968	8.852%	63.476%
55.0	533.632	249.920	2146.888	8.363%	71.839%
60.0	449.455	227.238	2374.126	7.604%	79.442%
65.0	359.780	196.727	2570.852	6.583%	86.025%
70.0	271.491	159.842	2730.694	5.349%	91.374%
75.0	182.136	118.571	2849.265	3.968%	95.341%
80.0	97.858	74.919	2924.184	2.507%	97.848%
85.0	29.260	34.541	2958.725	1.156%	99.004%
90.0	.511	8.151	2966.876	.273%	99.277%
95.0	.656	.320	2967.196	.011%	99.288%
100.0	1.167	.495	2967.691	.017%	99.304%
105.0	1.721	.773	2968.464	.026%	99.330%
110.0	2.144	1.010	2969.474	.034%	99.364%
115.0	2.742	1.237	2970.711	.041%	99.405%
120.0	3.238	1.454	2972.165	.049%	99.454%
125.0	3.763	1.618	2973.783	.054%	99.508%
130.0	4.332	1.760	2975.544	.059%	99.567%
135.0	4.828	1.851	2977.395	.062%	99.629%
140.0	5.339	1.882	2979.277	.063%	99.692%
145.0	5.703	1.842	2981.119	.062%	99.753%
150.0	6.097	1.738	2982.857	.058%	99.812%
155.0	6.432	1.586	2984.442	.053%	99.865%
160.0	6.666	1.374	2985.816	.046%	99.911%
165.0	7.045	1.130	2986.946	.038%	99.948%
170.0	7.191	.844	2987.791	.028%	99.977%
175.0	7.322	.519	2988.310	.017%	99.994%
180.0	7.468	.177	2988.487	.006%	100.000%

Equipment: GMS1800B
Temperature(°C): 25.0

Date: 2013-12-16
Humidity(%): 70.0%

Operator: Iris.Zhu
Distance(m): 13.23

Zonal flux distribution table

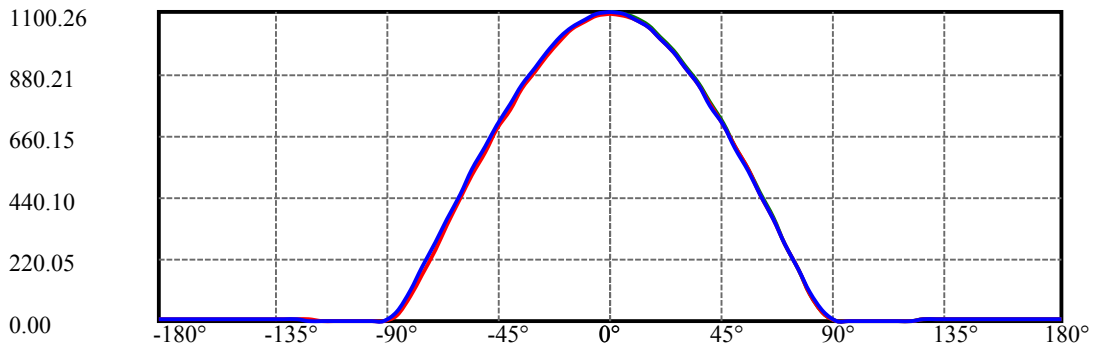
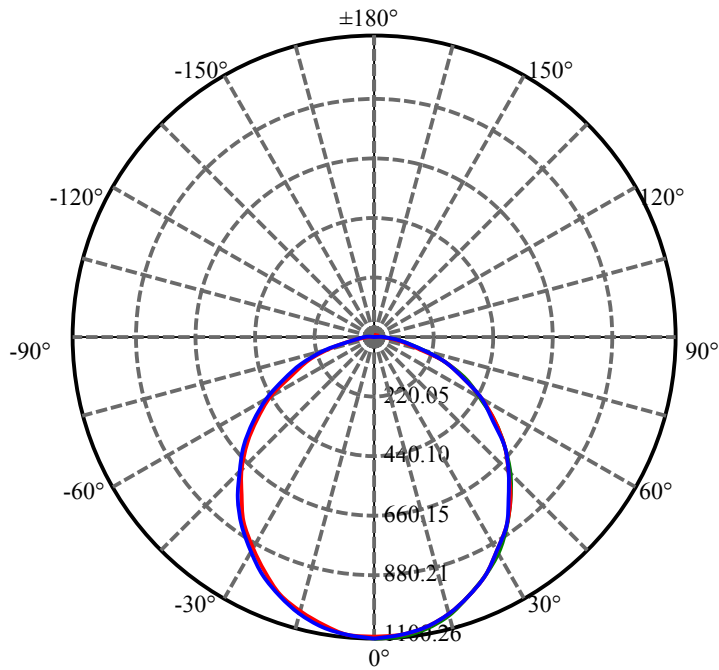
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	838.65	28.06%
0-40	1362.06	45.58%
0-60	2374.13	79.44%
0-90	2966.88	99.28%
90-120	5.29	0.18%
90-130	8.67	0.29%
90-150	15.98	0.53%
90-180	21.43	0.72%
0-180	2988.49	100.00%

ZONAL LUMEN SUMMARY

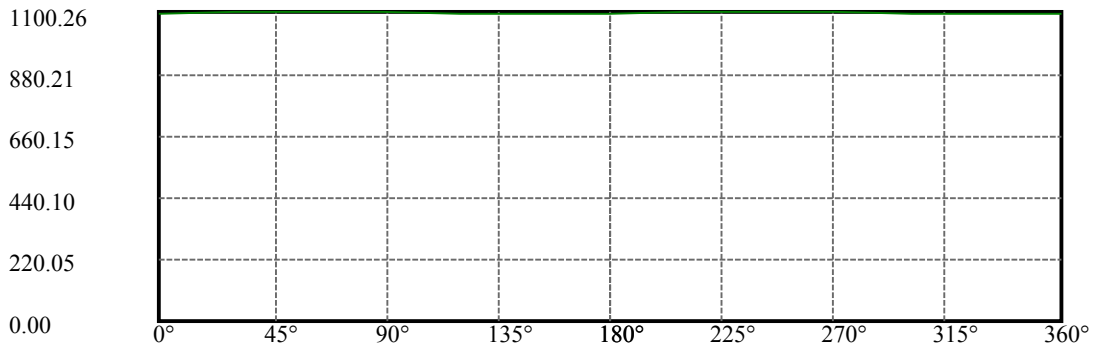
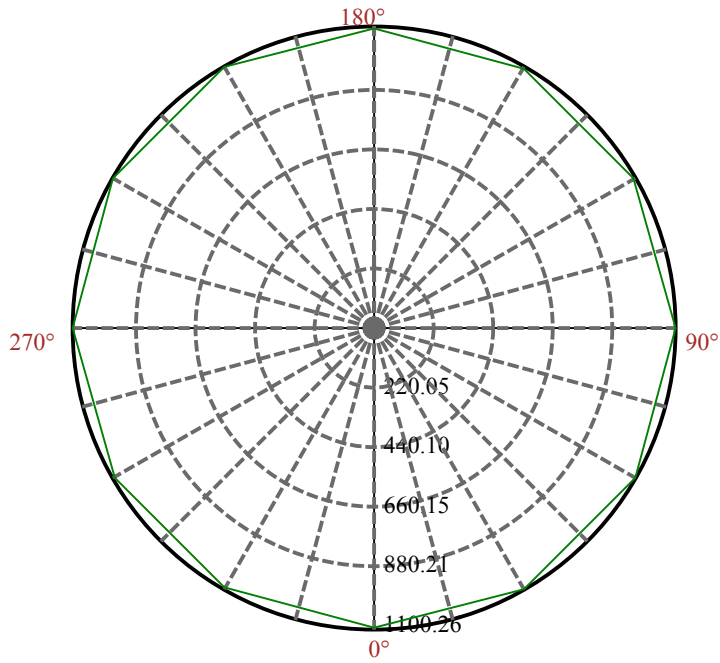
0-10	103.58
10-20	294.55
20-30	440.51
30-40	523.41
40-50	534.91
50-60	477.16
60-70	356.57
70-80	193.49
80-90	42.69
90-100	0.81
100-110	1.78
110-120	2.69
120-130	3.38
130-140	3.73
140-150	3.58
150-160	2.96
160-170	1.97
170-180	0.52

Light Distribution Curve [Unit: cd]



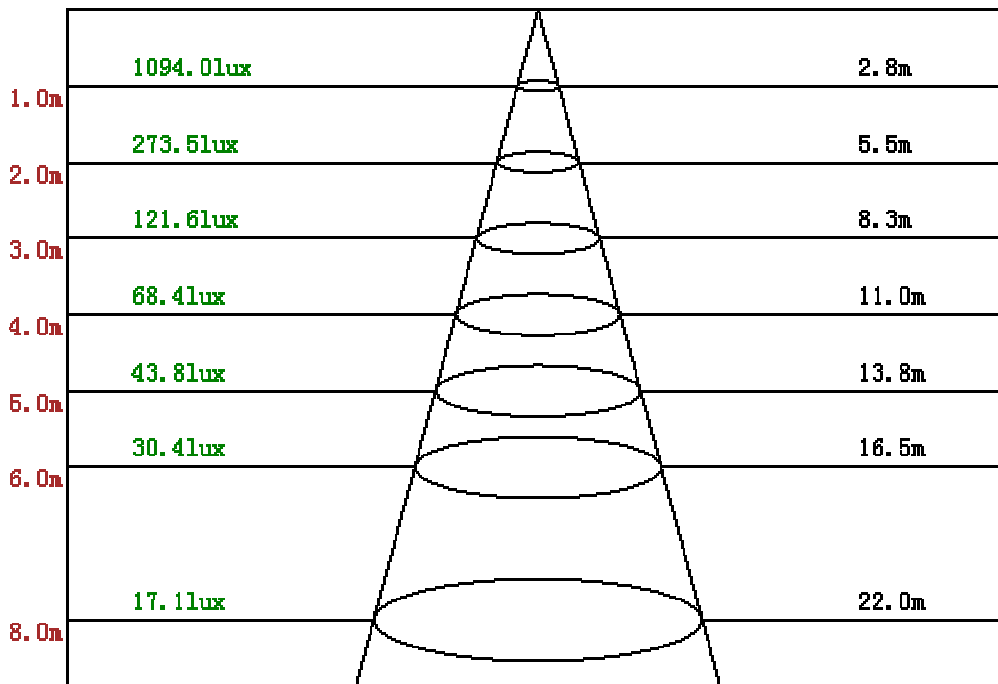
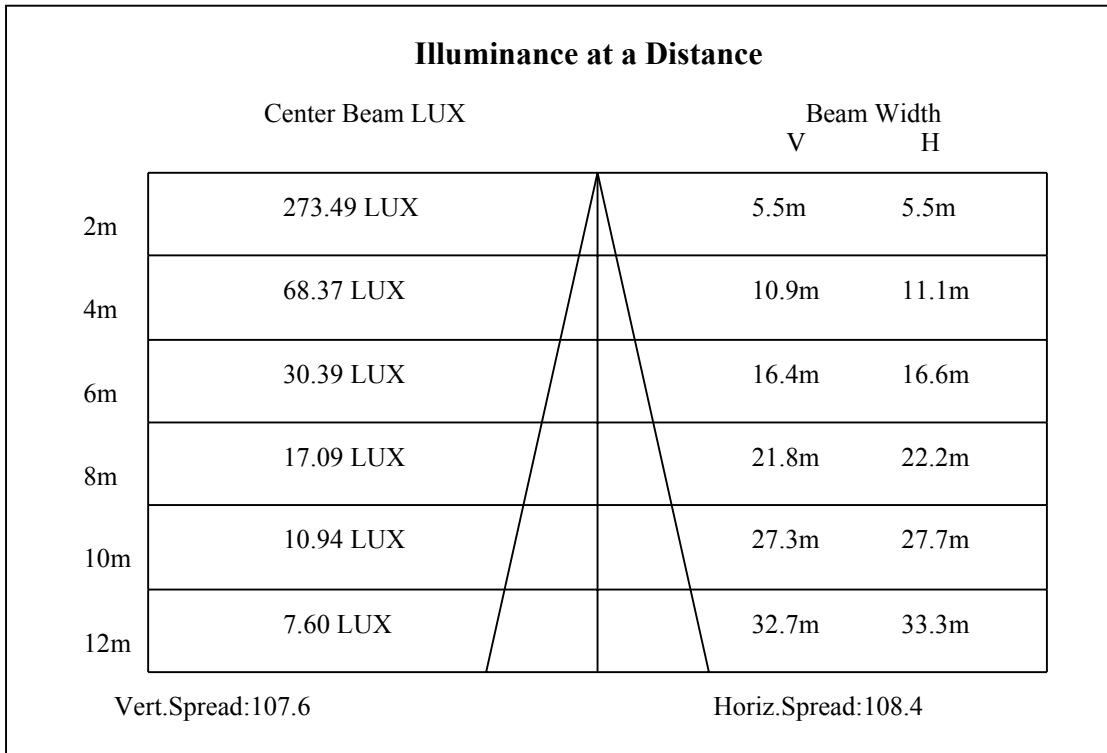
C30(Max): —
 C0/C180: —
 C90/C270: —

Light Distribution Curve [Unit: cd]

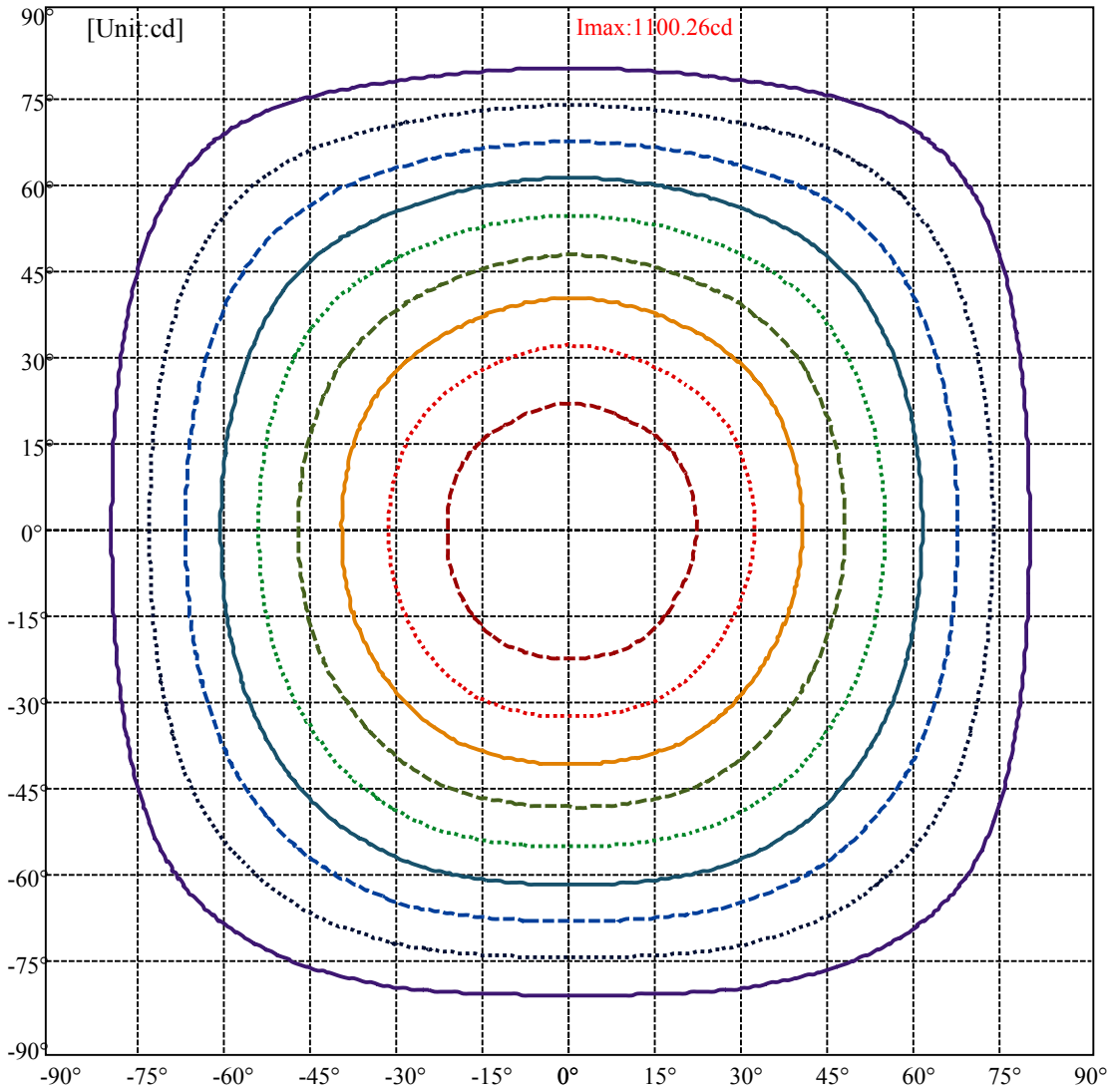


MaxG=0

Lux distance Curve



ISO-Intensity(V-H)



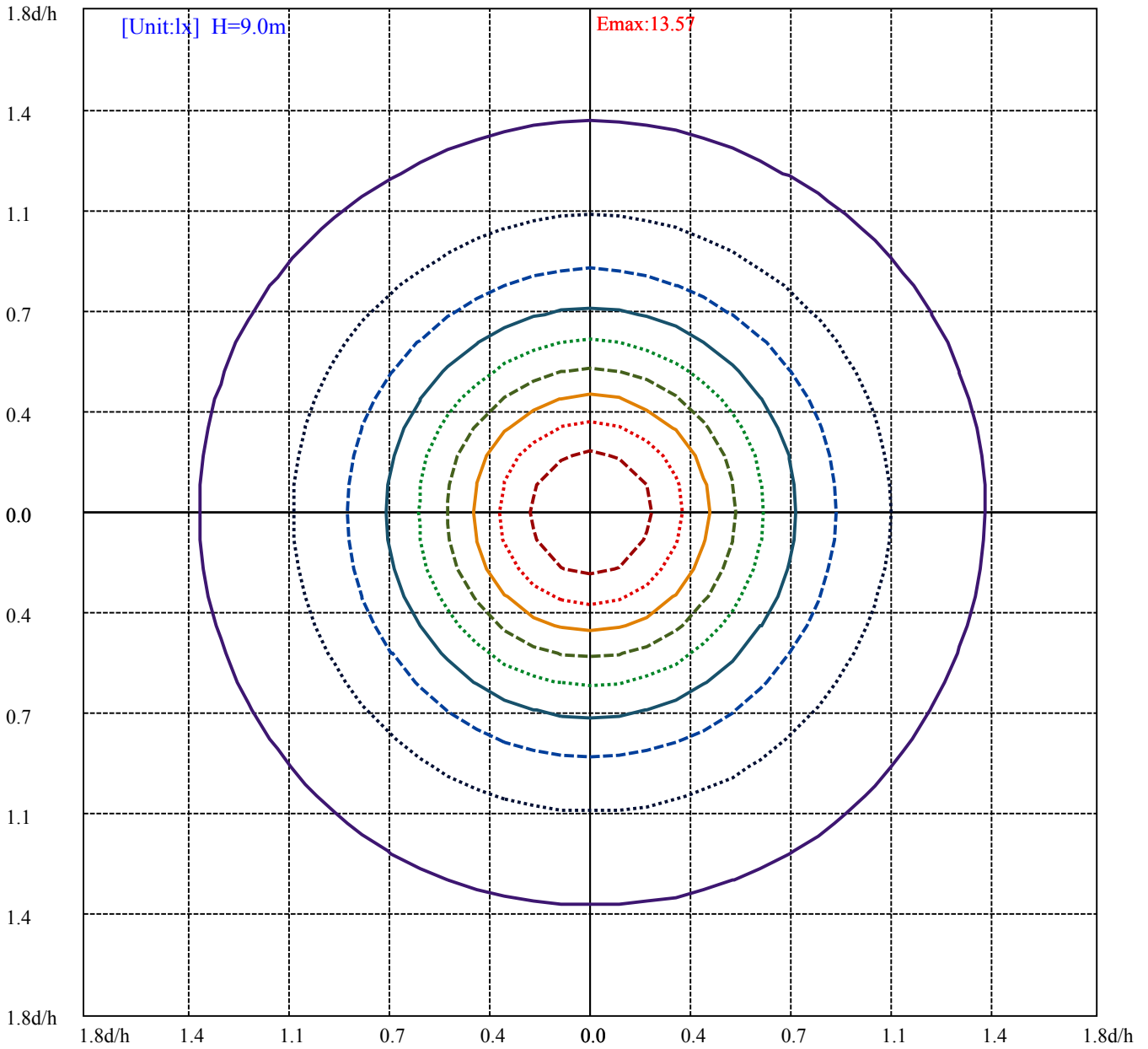
(10%Imax) 109.793	—
(20%Imax) 219.587	⋯
(30%Imax) 329.38	- - -
(40%Imax) 439.174	—
(50%Imax) 548.967	⋯
(60%Imax) 658.761	- - -
(70%Imax) 768.554	—
(80%Imax) 878.348	⋯
(90%Imax) 988.141	- - -

Equipment: GMS1800B
 Temperature(°C): 25.0

Date: 2013-12-16
 Humidity(%): 70.0%

Operator: Iris.Zhu
 Distance(m): 13.23

ISO illuminance diagram



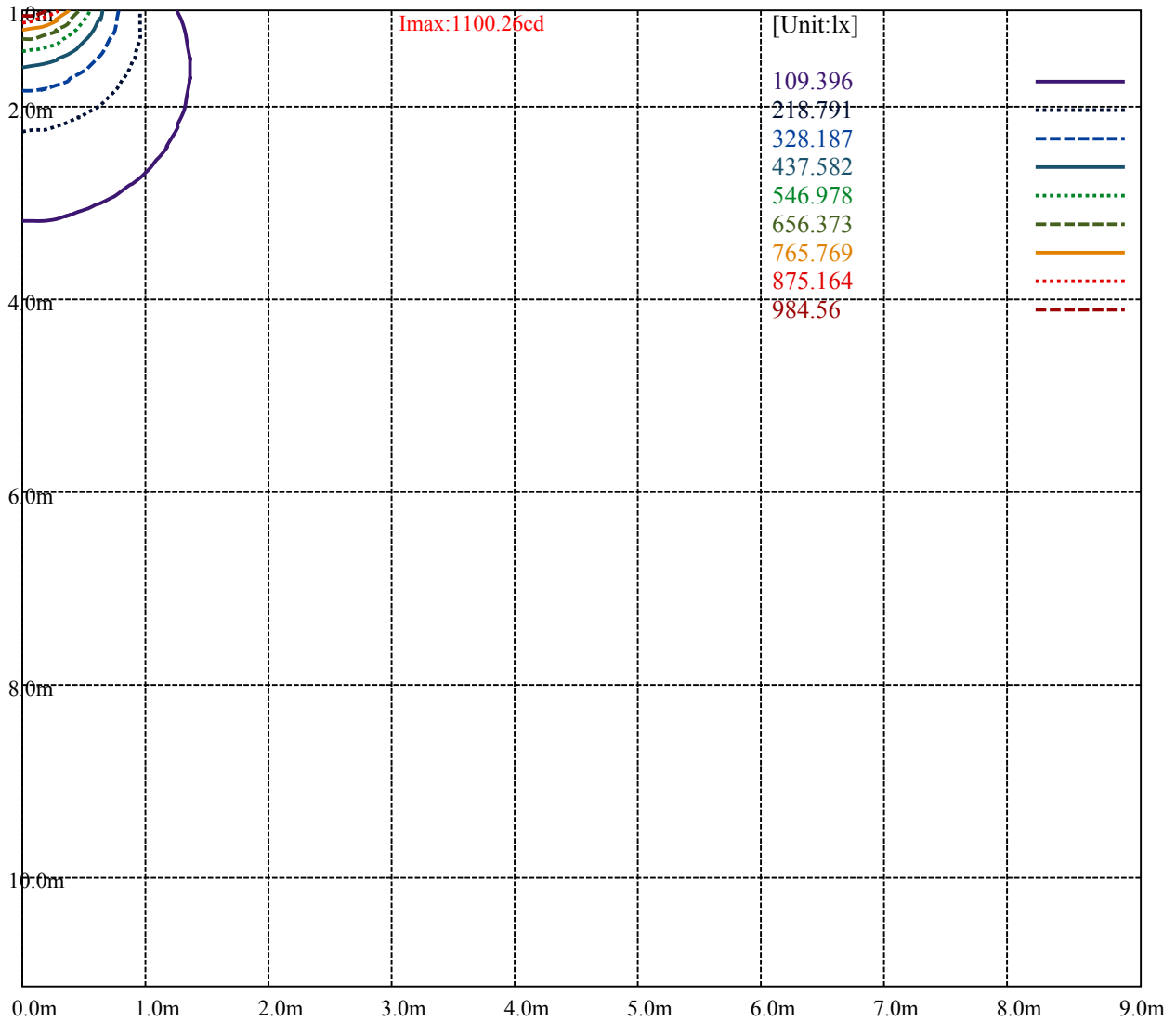
- | | |
|--------------------|-----------|
| (10%Emax) 1.35737 | ——— |
| (20%Emax) 2.714741 | |
| (30%Emax) 4.072111 | - - - - - |
| (40%Emax) 5.429469 | ————— |
| (50%Emax) 6.786839 | |
| (60%Emax) 8.14421 | - - - - - |
| (70%Emax) 9.50158 | ————— |
| (80%Emax) 10.85895 | |
| (90%Emax) 12.21632 | - - - - - |

Equipment: GMS1800B
Temperature(°C): 25.0

Date: 2013-12-16
Humidity(%): 70.0%

Operator: Iris.Zhu
Distance(m): 13.23

Space ISO Lux diagram



Equipment: GMS1800B
 Temperature(°C): 25.0

Date: 2013-12-16
 Humidity(%): 70.0%

Operator: Iris.Zhu
 Distance(m): 13.23

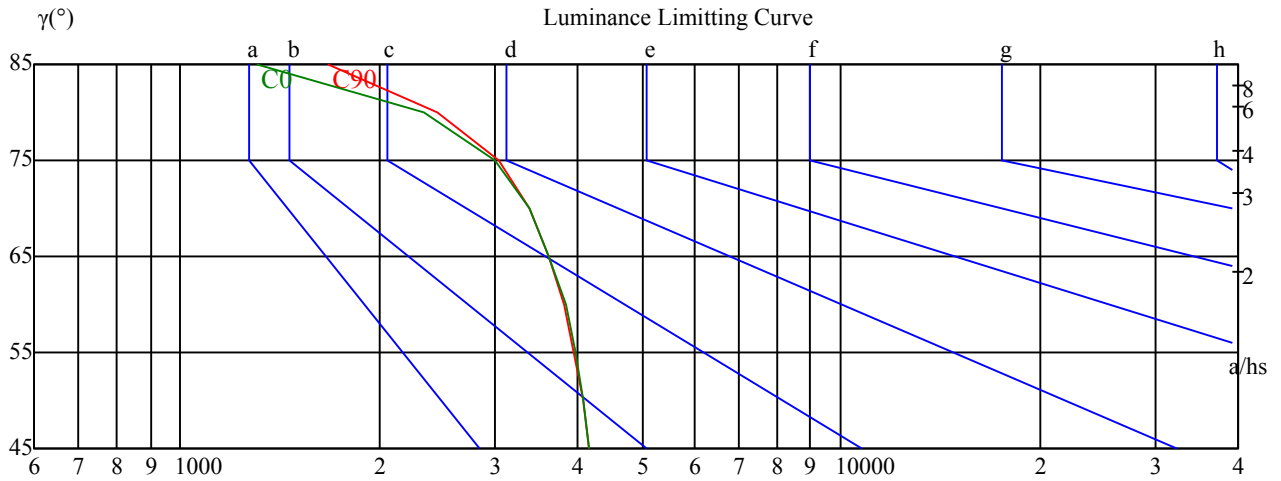
Luminance Limiting Curve(no luminous side)

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	4170	4086	3965	3831	3620	3367	2994	2336	1308
C45	0	0	0	0	0	0	0	0	0
C90	4150	4062	3937	3806	3608	3367	3028	2451	1673

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

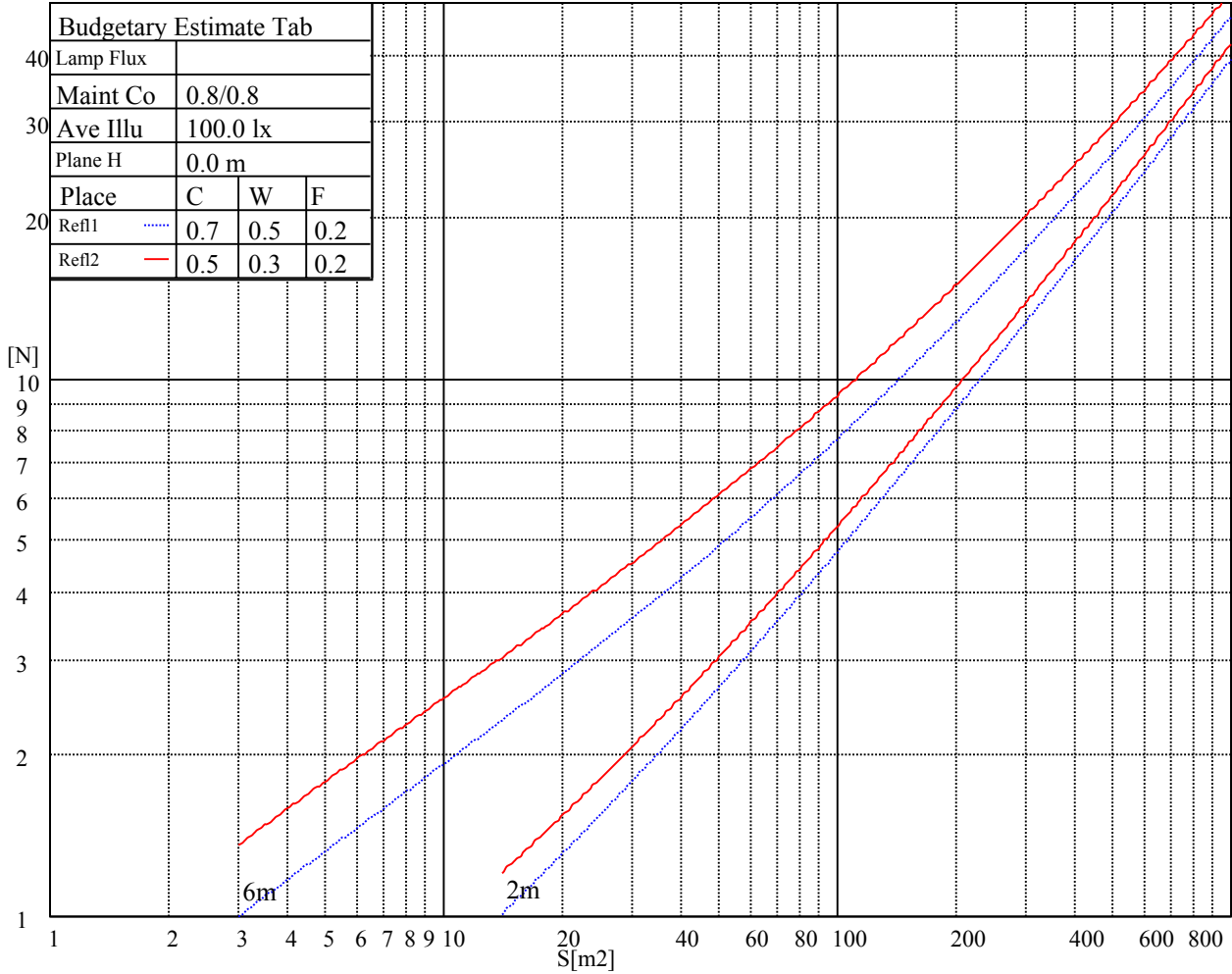


UGR Glare

Illuminatin 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	13.6	15.0	13.9	15.2	15.5	13.5	14.9	13.8	15.1	15.4
	3H	15.2	16.4	15.5	16.7	17.0	15.0	16.3	15.4	16.6	16.8
	4H	15.6	16.6	16.0	16.9	17.3	15.5	16.5	15.9	16.8	17.2
	6H	16.0	17.0	16.4	17.4	17.7	15.9	17.0	16.3	17.3	17.6
	8H	16.1	17.2	16.5	17.5	17.8	16.1	17.1	16.5	17.4	17.8
	12H	16.0	16.8	16.4	17.2	17.6	16.0	16.7	16.4	17.1	17.6
4H	2H	14.1	15.1	14.5	15.5	15.8	14.0	15.0	14.4	15.4	15.7
	3H	15.8	16.6	16.3	17.0	17.4	15.7	16.5	16.1	16.9	17.3
	4H	16.6	17.3	17.0	17.7	18.2	16.5	17.2	16.9	17.6	18.1
	6H	17.1	17.9	17.5	18.3	18.7	17.0	17.8	17.4	18.2	18.6
	8H	17.1	17.5	17.6	18.0	18.5	17.0	17.4	17.5	17.9	18.5
	12H	17.2	17.6	17.7	18.1	18.6	17.1	17.5	17.6	18.0	18.6
8H	4H	16.8	17.2	17.3	17.7	18.2	16.7	17.1	17.2	17.6	18.1
	6H	17.4	17.8	17.9	18.3	18.8	17.3	17.7	17.8	18.2	18.7
	8H	17.6	18.0	18.1	18.5	19.0	17.5	17.9	18.0	18.4	19.0
	12H	17.7	18.2	18.2	18.6	19.2	17.6	18.1	18.2	18.6	19.1
12H	4H	16.8	17.2	17.3	17.7	18.3	16.7	17.1	17.2	17.6	18.2
	6H	17.5	17.9	18.0	18.4	18.9	17.4	17.8	17.9	18.3	18.8
	8H	17.7	18.1	18.2	18.6	19.1	17.6	18.0	18.1	18.5	19.0
Variation with the observer position at spacings:											
S = 1.0H	0.3/-0.6					0.3/-0.6					
S = 1.5H	0.6/-0.6					0.6/-0.6					
S = 2.0H	0.8/-0.8					0.8/-0.8					
Standard tables:	BK3					BK3					
Uncorrected UGR	-1.1					-1.1					
According 1000lm											

Budgetary Estimate Table

Budgetary Estimate Tab			
Lamp Flux			
Maint Co	0.8/0.8		
Ave Illu	100.0 lx		
Plane H	0.0 m		
Place	C	W	F
Ref1	0.7	0.5	0.2
Ref2	0.5	0.3	0.2



ZHONGSHAN CITY CHANGLONG ELECTRICAL CO., LTD MQG-LED-312B

Utilization factor table for indoor luminaire

RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFc=20 CU															
0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.01	1.01	1.01	0.99
1	1.04	1.00	0.96	1.02	0.98	0.95	0.97	0.94	0.91	0.93	0.91	0.89	0.90	0.88	0.86	0.84
2	0.91	0.84	0.79	0.89	0.83	0.78	0.85	0.80	0.76	0.82	0.78	0.74	0.79	0.75	0.72	0.70
3	0.80	0.72	0.65	0.78	0.71	0.65	0.75	0.69	0.64	0.72	0.67	0.62	0.70	0.65	0.61	0.59
4	0.71	0.62	0.55	0.69	0.61	0.55	0.67	0.60	0.54	0.64	0.58	0.53	0.62	0.57	0.53	0.50
5	0.63	0.54	0.48	0.62	0.54	0.48	0.60	0.53	0.47	0.58	0.51	0.46	0.56	0.50	0.46	0.44
6	0.57	0.48	0.42	0.56	0.48	0.42	0.54	0.47	0.41	0.52	0.46	0.41	0.51	0.45	0.40	0.38
7	0.52	0.43	0.37	0.51	0.43	0.37	0.49	0.42	0.36	0.48	0.41	0.36	0.46	0.40	0.36	0.34
8	0.47	0.39	0.33	0.47	0.38	0.33	0.45	0.38	0.33	0.44	0.37	0.32	0.43	0.37	0.32	0.30
9	0.43	0.35	0.30	0.43	0.35	0.30	0.42	0.34	0.29	0.40	0.34	0.29	0.39	0.33	0.29	0.27
10	0.40	0.32	0.27	0.40	0.32	0.27	0.38	0.31	0.27	0.37	0.31	0.27	0.37	0.31	0.26	0.25
RCR	COEFFICIENTS OF UTILIZATION RHOFc=20 WLC															
1	0.30	0.17	0.05	0.29	0.17	0.05	0.28	0.16	0.05	0.27	0.15	0.05	0.26	0.15	0.05	
2	0.29	0.16	0.05	0.28	0.15	0.05	0.27	0.15	0.05	0.26	0.14	0.04	0.25	0.14	0.04	
3	0.27	0.14	0.04	0.26	0.14	0.04	0.25	0.13	0.04	0.24	0.13	0.04	0.23	0.13	0.04	
4	0.25	0.13	0.04	0.24	0.13	0.04	0.23	0.12	0.04	0.22	0.12	0.04	0.21	0.12	0.04	
5	0.23	0.12	0.03	0.22	0.11	0.03	0.21	0.11	0.03	0.21	0.11	0.03	0.20	0.11	0.03	
6	0.21	0.11	0.03	0.21	0.10	0.03	0.20	0.10	0.03	0.19	0.10	0.03	0.19	0.10	0.03	
7	0.20	0.10	0.03	0.19	0.10	0.03	0.19	0.09	0.03	0.18	0.09	0.03	0.17	0.09	0.03	
8	0.18	0.09	0.03	0.18	0.09	0.03	0.17	0.09	0.02	0.17	0.09	0.02	0.16	0.08	0.02	
9	0.17	0.08	0.02	0.17	0.08	0.02	0.16	0.08	0.02	0.16	0.08	0.02	0.15	0.08	0.02	
10	0.16	0.08	0.02	0.16	0.08	0.02	0.15	0.08	0.02	0.15	0.07	0.02	0.15	0.07	0.02	
RCR	COEFFICIENTS OF UTILIZATION RHOFc=20 CCLU															
0	0.20	0.20	0.20	0.17	0.17	0.17	0.11	0.11	0.11	0.07	0.07	0.07	0.02	0.02	0.02	
1	0.16	0.14	0.14	0.14	0.13	0.12	0.10	0.09	0.08	0.06	0.05	0.05	0.02	0.02	0.02	
2	0.12	0.11	0.10	0.11	0.10	0.08	0.09	0.07	0.06	0.06	0.05	0.04	0.02	0.02	0.01	
3	0.10	0.08	0.07	0.10	0.08	0.06	0.08	0.06	0.05	0.05	0.04	0.03	0.02	0.01	0.01	
4	0.09	0.07	0.05	0.09	0.06	0.05	0.07	0.05	0.04	0.05	0.04	0.02	0.02	0.01	0.01	
5	0.08	0.06	0.04	0.08	0.05	0.04	0.07	0.05	0.03	0.05	0.03	0.02	0.02	0.01	0.01	
6	0.07	0.05	0.03	0.07	0.05	0.03	0.06	0.04	0.02	0.05	0.03	0.02	0.02	0.01	0.01	
7	0.06	0.04	0.03	0.06	0.04	0.03	0.06	0.04	0.02	0.04	0.03	0.01	0.02	0.01	0.00	
8	0.05	0.04	0.02	0.06	0.04	0.02	0.06	0.03	0.02	0.04	0.02	0.01	0.02	0.01	0.00	
9	0.05	0.03	0.02	0.05	0.03	0.02	0.05	0.03	0.02	0.04	0.02	0.01	0.02	0.01	0.00	
10	0.05	0.03	0.02	0.05	0.03	0.02	0.05	0.03	0.01	0.04	0.02	0.01	0.02	0.01	0.00	

Equipment: GMS1800B
 Temperature(°C): 25.0

Date: 2013-12-16
 Humidity(%): 70.0%

Operator: Iris.Zhu
 Distance(m): 13.23

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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	1093.96	1089.23	1072.08	1044.07	1006.61	958.83	901.94	840.51	770.32
30.0	1100.26	1095.01	1078.20	1052.47	1010.29	962.16	906.50	844.18	776.80
60.0	1098.68	1090.98	1073.30	1043.02	1001.36	953.05	896.17	833.68	761.74
90.0	1097.46	1091.16	1073.30	1044.95	1006.44	956.55	900.37	838.23	767.87
120.0	1096.06	1088.88	1068.58	1038.47	997.86	946.93	890.22	826.86	754.92
150.0	1095.36	1088.70	1071.03	1041.27	1002.76	952.53	895.99	833.51	762.79
180.0	1093.96	1087.13	1067.35	1037.07	996.81	945.53	888.64	825.46	754.04
210.0	1100.26	1093.43	1074.18	1043.90	1004.51	953.05	895.99	832.81	761.04
240.0	1098.68	1094.66	1077.85	1049.15	1011.69	963.03	907.55	845.93	775.75
270.0	1097.46	1092.21	1075.23	1046.52	1008.01	958.83	903.69	841.21	770.84
300.0	1096.06	1092.21	1076.28	1049.50	1013.09	964.96	910.00	848.73	779.25
330.0	1095.36	1089.93	1071.73	1042.85	1004.34	954.80	899.49	836.48	765.94
360.0	1093.96	1089.23	1072.08	1044.07	1006.61	958.83	901.94	840.51	770.32
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	697.33	621.19	537.88	452.99	361.79	272.35	183.26	95.92	26.96
30.0	701.53	624.34	541.20	456.84	368.97	275.33	186.24	98.89	29.41
60.0	688.23	611.56	528.07	443.88	354.27	265.70	177.31	91.72	26.08
90.0	694.01	617.52	534.03	450.01	360.57	272.35	185.36	100.64	34.48
120.0	681.23	601.59	520.72	437.06	347.79	262.90	172.06	90.84	24.68
150.0	689.63	613.14	530.17	446.33	355.32	266.23	178.01	93.29	26.78
180.0	680.88	601.06	519.67	434.78	343.59	254.32	166.63	85.59	18.38
210.0	687.18	606.49	525.97	441.26	349.72	260.27	171.88	89.97	21.53
240.0	702.76	626.79	546.63	460.69	375.10	287.05	194.99	110.97	38.51
270.0	698.03	620.67	537.35	454.39	364.59	279.70	189.39	107.12	36.23
300.0	706.78	631.17	548.73	465.94	377.20	289.50	200.94	113.25	41.83
330.0	693.31	613.84	533.15	449.31	358.47	272.18	179.58	96.09	26.25
360.0	697.33	621.19	537.88	452.99	361.79	272.35	183.26	95.92	26.96
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.53	0.53	1.23	1.75	2.10	2.45	3.33	3.85	4.03
30.0	0.18	0.70	1.40	1.58	2.10	2.63	2.98	3.85	4.20
60.0	0.18	0.70	1.40	1.93	2.28	2.80	3.15	3.85	4.20
90.0	0.53	0.70	1.05	1.58	1.93	2.80	3.33	3.68	4.20
120.0	0.53	0.53	1.23	1.75	1.93	2.98	3.50	3.50	4.55
150.0	0.70	0.70	1.23	1.75	2.45	2.63	3.33	3.85	4.73
180.0	0.35	0.53	1.05	1.58	2.28	3.33	3.50	4.20	4.73
210.0	0.70	0.53	1.40	1.75	2.28	2.63	3.15	3.85	4.73
240.0	0.53	0.88	0.88	1.93	2.10	2.80	3.33	3.68	4.03
270.0	0.70	0.88	1.40	1.58	1.93	2.45	2.98	3.50	4.03
300.0	0.88	0.53	1.05	1.75	2.10	2.63	2.98	3.85	4.03
330.0	0.35	0.70	0.70	1.75	2.28	2.80	3.33	3.50	4.55
360.0	0.53	0.53	1.23	1.75	2.10	2.45	3.33	3.85	4.03
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	4.90	5.60	5.43	5.78	5.78	6.30	6.83	7.00	7.53
30.0	5.08	5.60	5.78	6.30	6.30	6.65	6.83	7.35	7.35
60.0	4.55	5.43	5.95	6.48	6.65	7.00	7.18	7.00	7.35
90.0	4.55	4.90	5.43	6.30	6.83	6.83	7.35	7.35	7.53
120.0	5.08	5.60	6.13	6.65	6.83	7.00	7.18	7.18	7.53
150.0	5.25	5.78	6.30	6.48	6.83	7.00	7.35	7.00	7.18
180.0	4.90	5.25	5.60	6.13	6.48	6.65	7.00	7.18	7.53
210.0	5.08	5.60	5.78	6.48	6.48	6.83	7.18	7.18	7.18
240.0	4.73	4.90	5.60	5.95	6.30	6.65	7.35	7.53	7.00
270.0	4.55	5.25	5.43	5.78	6.30	6.48	7.00	7.18	7.35
300.0	4.73	4.90	5.43	5.78	6.48	6.48	6.65	7.35	7.00
330.0	4.55	5.25	5.60	5.78	5.95	6.13	6.65	7.00	7.35
360.0	4.90	5.60	5.43	5.78	5.78	6.30	6.83	7.00	7.53

Equipment: GMS1800B
Temperature(°C): 25.0

Date: 2013-12-16
Humidity(%): 70.0%

Operator: Iris.Zhu
Distance(m): 13.23

Intensity data(cd)

C/γ(°)	180.0
0.0	7.35
30.0	7.53
60.0	7.53
90.0	7.35
120.0	7.53
150.0	7.53
180.0	7.35
210.0	7.53
240.0	7.53
270.0	7.35
300.0	7.53
330.0	7.53
360.0	7.35