



Shenzhen BST Technology Co., Ltd.
http://www.bst-lab.com
Email:christina@bst-lab.com

Address:Building No.23-24, Zhiheng Industrial Park, Guankouer Road, Nantou,Nanshan District,Shenzhen,Guangdong,China

s.r.o WD112

LumCAT: WD112	Luminaire: LED PANEL LIGHT
Report No:	Voltage(V): 220.400
Test No:	Current(A): 0.174
LampCAT: LED	Power (W): 18.100
Lamp flux(lm)	PF: 0.520
Number of Lamps: 1	Ballast type:
Length(mm): 150	Width(mm): 150
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1493.42
Lumens(lm)/Power(W): 82.51
Central intensity(cd): 522.668
Maximum intensity(cd): 537.163
Angle of maximum intensity: C=30.0 γ =0.0
Beam Angle(50%Imax): [H]Left=55.5 Right=54.4
[V]Left=58.8 Right=50.7
Field angle(10%Imax): [H]Left=80.4 Right=80.0
[V]Left=84.1 Right=76.3
Beam angle of C30plane: 111.15

Equipment: GMS1800B
Temperature(°C): 25.0

Date: 2016-5-31
Humidity(%): 60.0%

Operator: Jason Zhan
Distance(m): 14.60

Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	527.855	.000	.000	.000%	.000%
5.0	525.368	12.591	12.591	.843%	.843%
10.0	518.352	37.337	49.928	2.500%	3.343%
15.0	506.415	60.788	110.717	4.070%	7.414%
20.0	490.215	82.136	192.853	5.500%	12.914%
25.0	469.520	100.659	293.511	6.740%	19.654%
30.0	444.350	115.651	409.162	7.744%	27.398%
35.0	415.378	126.601	535.763	8.477%	35.875%
40.0	383.351	133.262	669.025	8.923%	44.798%
45.0	348.161	135.445	804.471	9.069%	53.868%
50.0	309.118	132.813	937.283	8.893%	62.761%
55.0	267.285	125.329	1062.612	8.392%	71.153%
60.0	224.049	113.570	1176.183	7.605%	78.758%
65.0	179.907	98.202	1274.385	6.576%	85.334%
70.0	134.593	79.633	1354.019	5.332%	90.666%
75.0	91.854	59.190	1413.208	3.963%	94.629%
80.0	54.125	39.060	1452.268	2.615%	97.245%
85.0	22.737	20.885	1473.153	1.398%	98.643%
90.0	4.121	7.354	1480.507	.492%	99.136%
95.0	.657	1.308	1481.816	.088%	99.223%
100.0	.693	.367	1482.183	.025%	99.248%
105.0	1.030	.461	1482.644	.031%	99.279%
110.0	1.368	.627	1483.271	.042%	99.321%
115.0	1.332	.684	1483.954	.046%	99.366%
120.0	1.812	.764	1484.719	.051%	99.418%
125.0	2.061	.895	1485.614	.060%	99.478%
130.0	2.274	.942	1486.556	.063%	99.541%
135.0	2.558	.976	1487.532	.065%	99.606%
140.0	2.842	1.000	1488.532	.067%	99.673%
145.0	3.055	.984	1489.516	.066%	99.739%
150.0	3.251	.929	1490.445	.062%	99.801%
155.0	3.304	.829	1491.274	.056%	99.857%
160.0	3.553	.719	1491.993	.048%	99.905%
165.0	3.659	.594	1492.588	.040%	99.944%
170.0	3.908	.449	1493.036	.030%	99.975%
175.0	4.015	.283	1493.320	.019%	99.994%
180.0	4.157	.098	1493.418	.007%	100.000%

Zonal flux distribution table

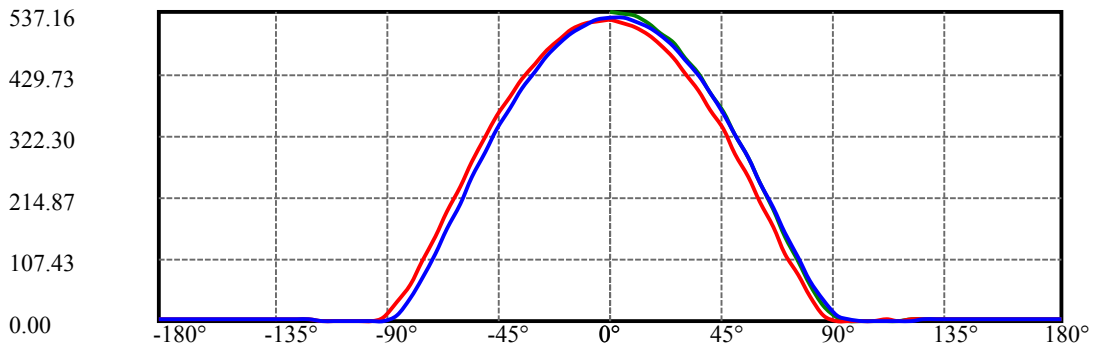
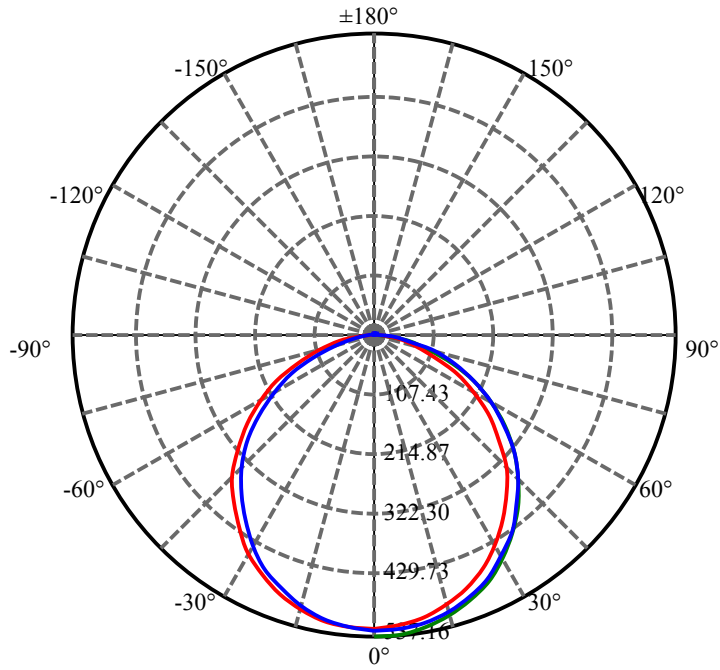
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	409.16	27.40%
0-40	669.03	44.80%
0-60	1176.18	78.76%
0-90	1480.51	99.14%
90-120	4.21	0.28%
90-130	6.05	0.41%
90-150	9.94	0.67%
90-180	12.81	0.86%
0-180	1493.42	100.00%

ZONAL LUMEN SUMMARY

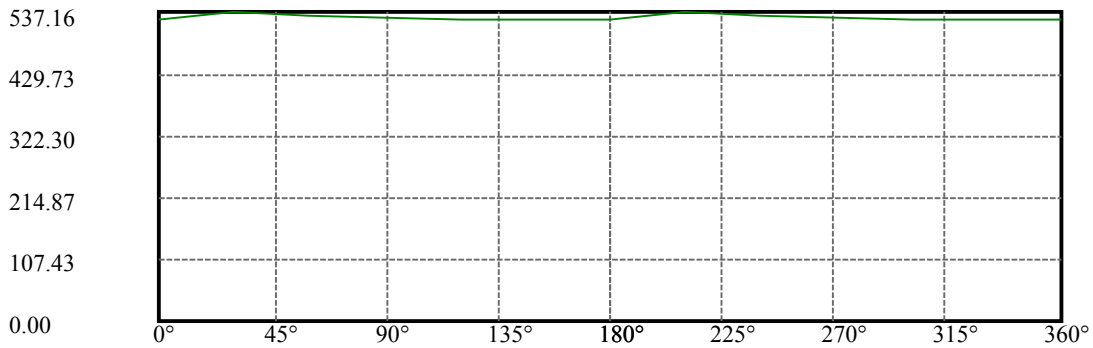
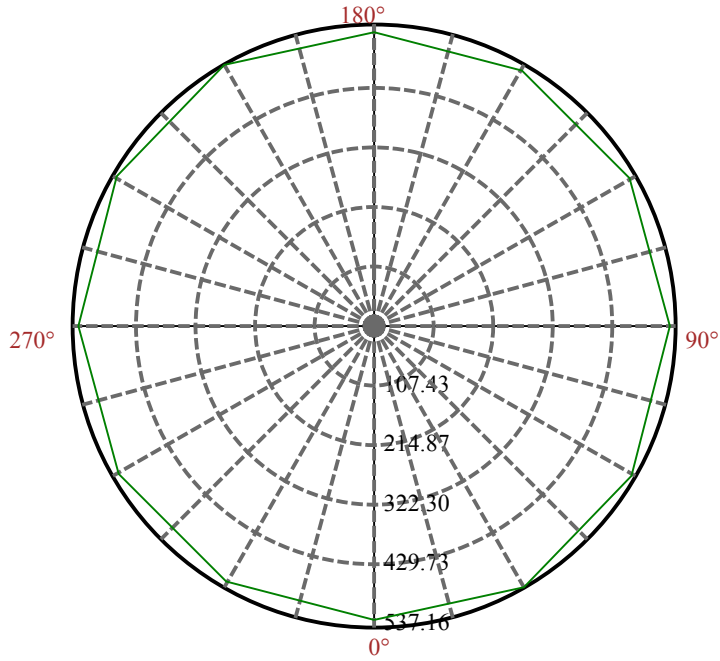
0-10	49.93
10-20	142.92
20-30	216.31
30-40	259.86
40-50	268.26
50-60	238.90
60-70	177.84
70-80	98.25
80-90	28.24
90-100	1.68
100-110	1.09
110-120	1.45
120-130	1.84
130-140	1.98
140-150	1.91
150-160	1.55
160-170	1.04
170-180	0.28

Light Distribution Curve [Unit: cd]

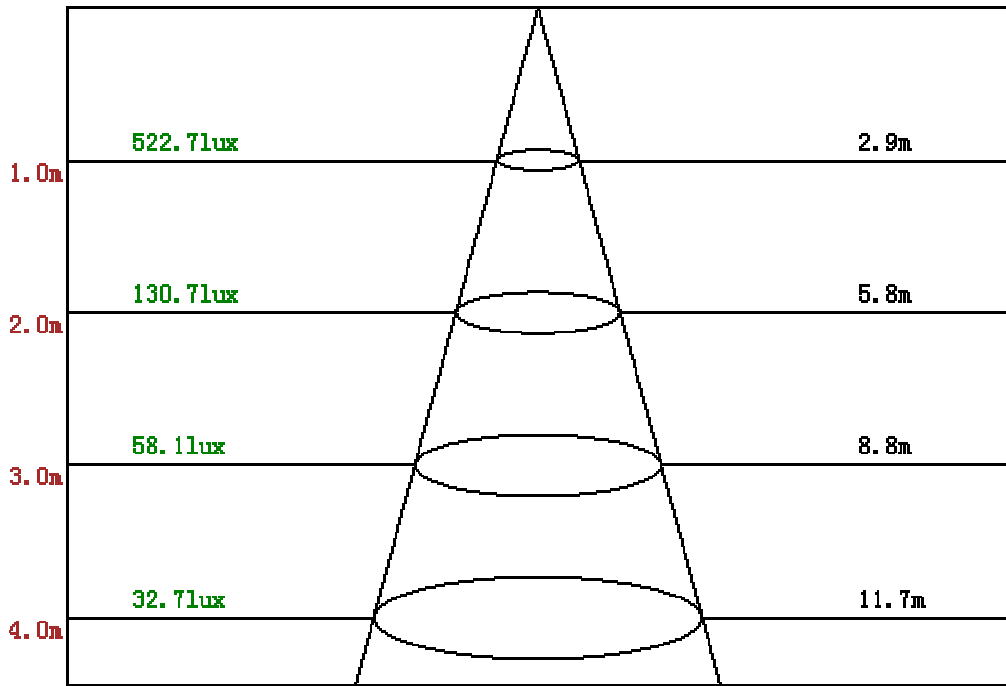
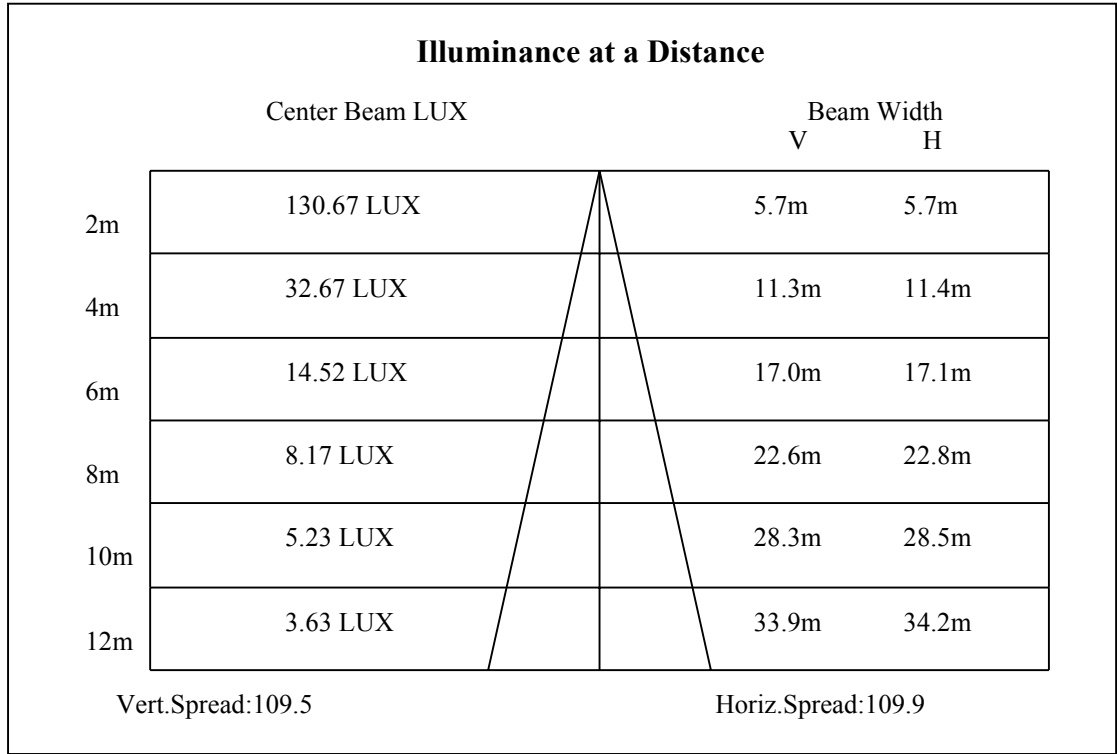


C30(Max): —
C0/C180: —
C90/C270: —

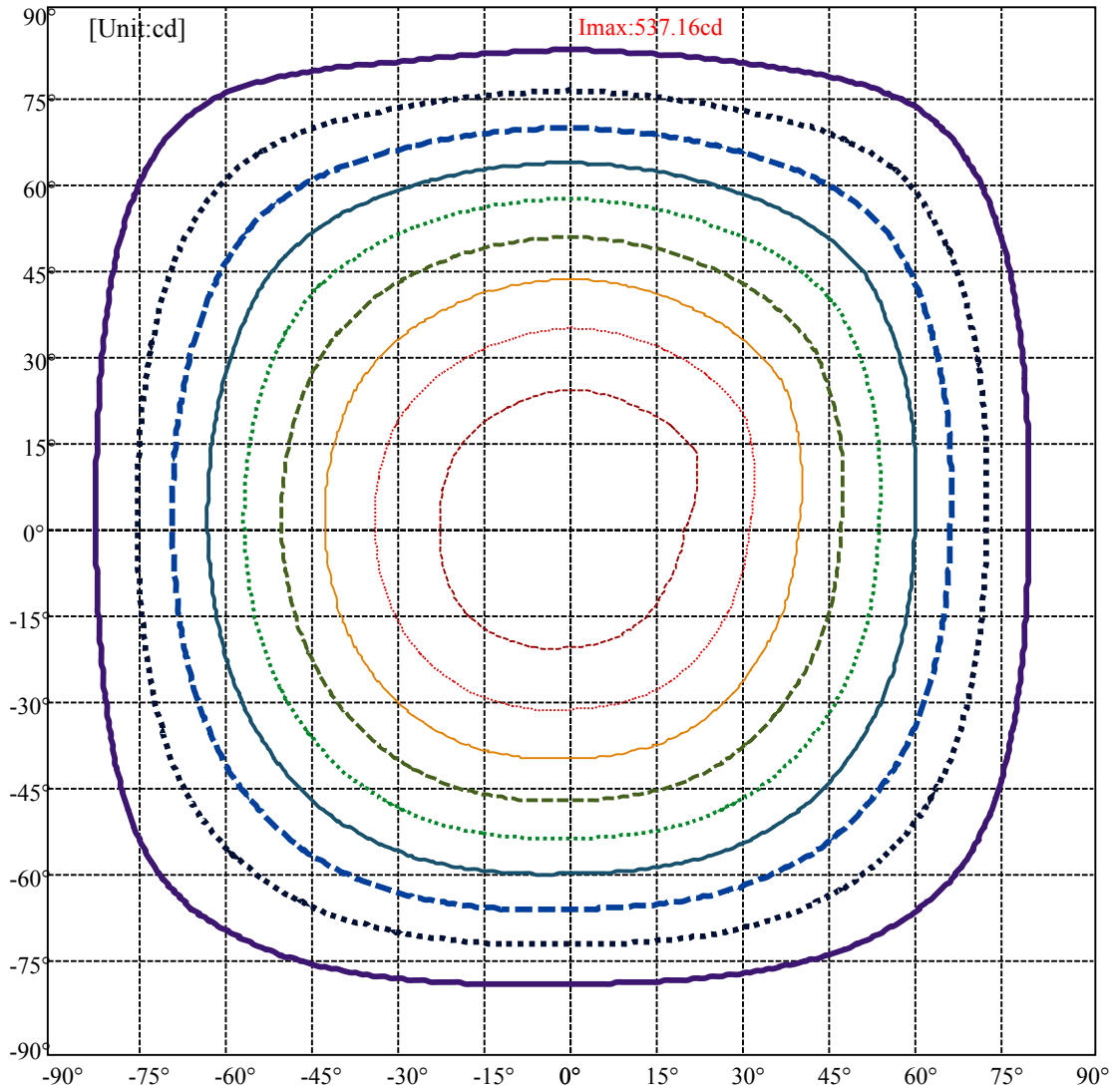
Light Distribution Curve [Unit: cd]



Lux distance Curve



ISO-Intensity(V-H)



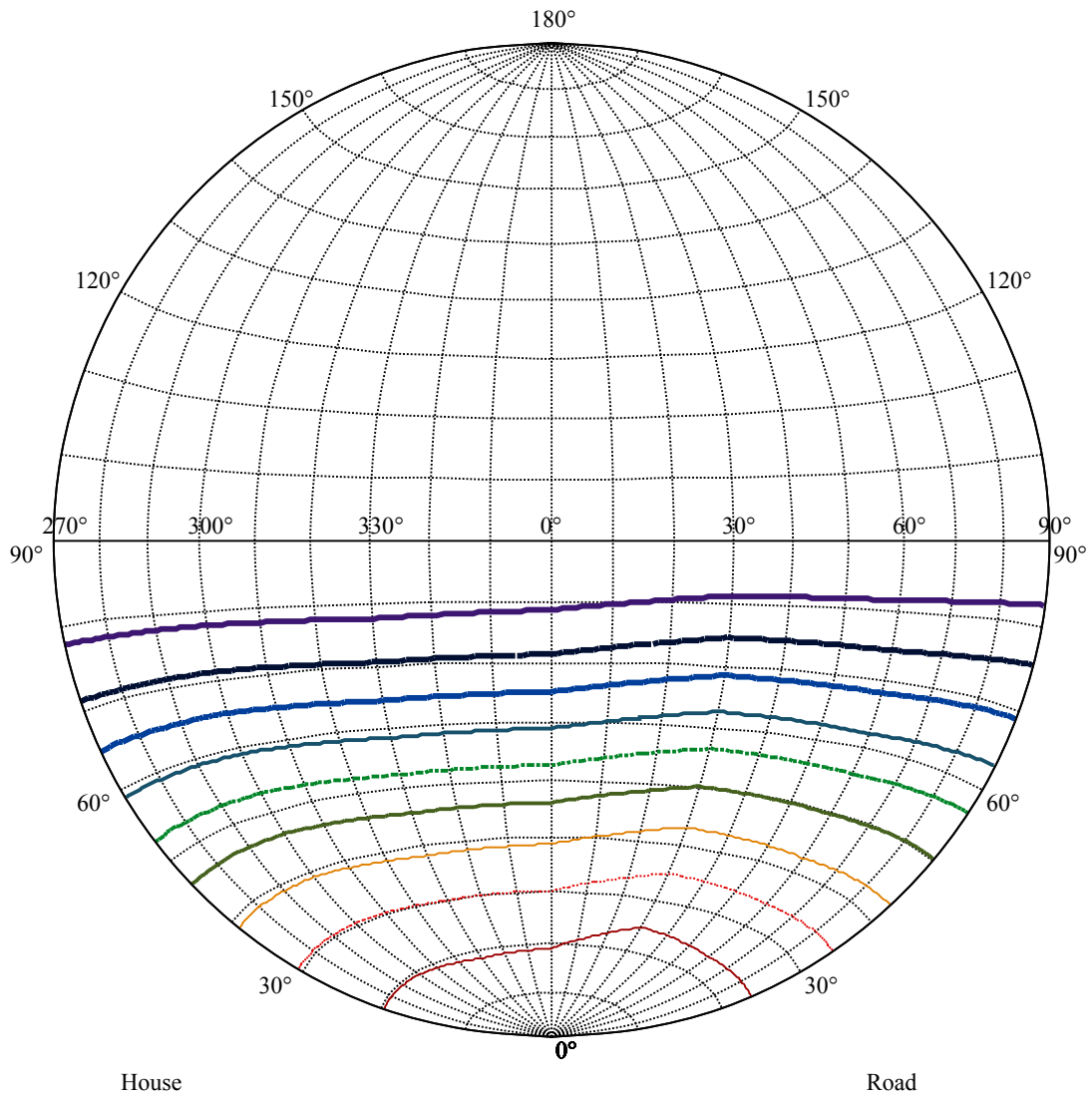
- (10%I_{max}) 53.5224
- (20%I_{max}) 107.045
- (30%I_{max}) 160.567
- (40%I_{max}) 214.09
- (50%I_{max}) 267.612
- (60%I_{max}) 321.135
- (70%I_{max}) 374.657
- (80%I_{max}) 428.179
- (90%I_{max}) 481.702

Equipment: GMS1800B
Temperature(°C): 25.0

Date: 2016-5-31
Humidity(%): 60.0%

Operator: Jason Zhan
Distance(m): 14.60

ISO candela diagram on circular web



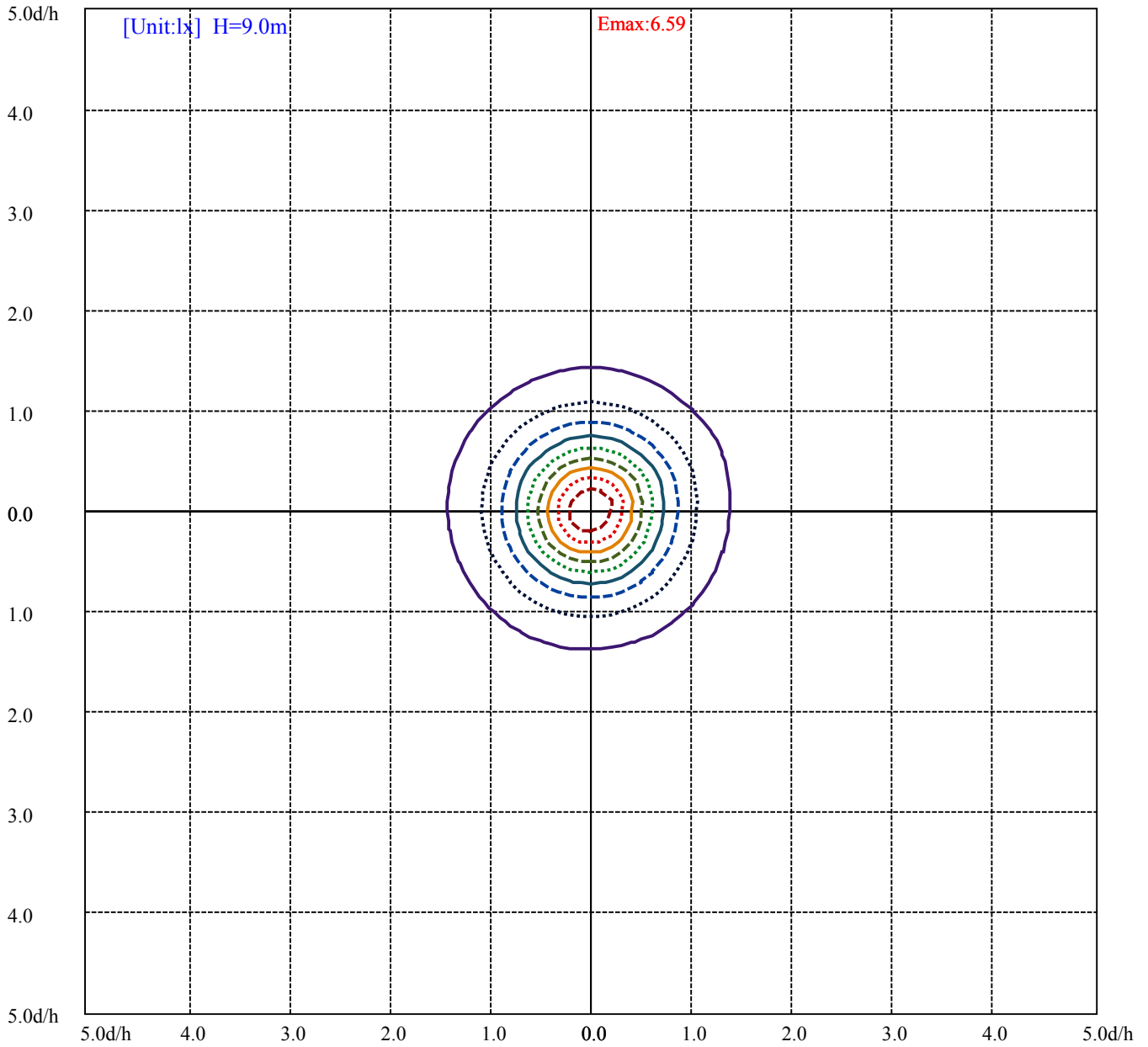
House

Road

I_{max}:537.16cd

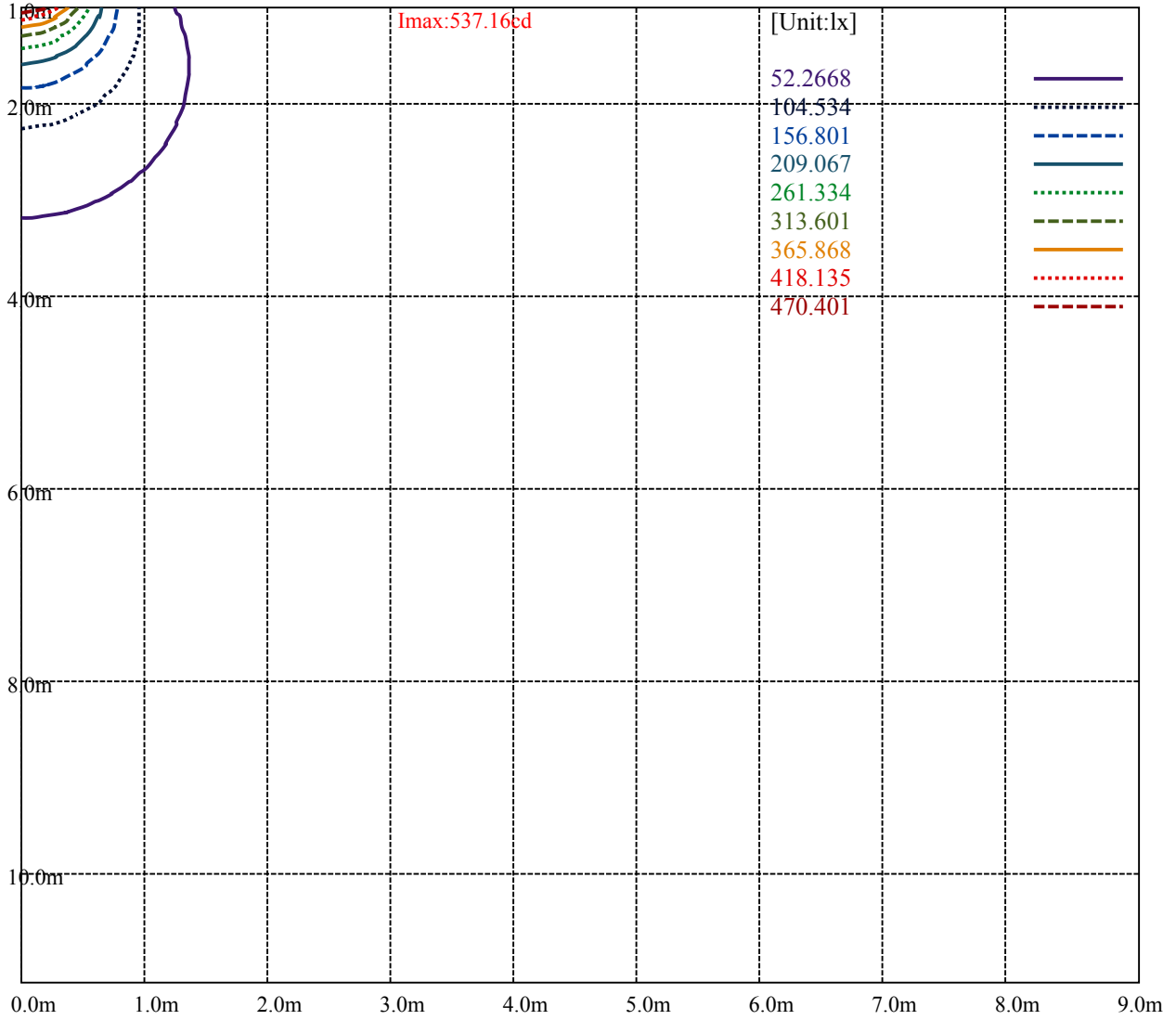
(10%I _{max}) 53.7163	—
(20%I _{max}) 107.433	⋯
(30%I _{max}) 161.149	- - -
(40%I _{max}) 214.865	—
(50%I _{max}) 268.582	⋯
(60%I _{max}) 322.298	- - -
(70%I _{max}) 376.014	—
(80%I _{max}) 429.731	⋯
(90%I _{max}) 483.447	- - -

ISO illuminance diagram



- (10%Emax) 0.659479
- (20%Emax) 1.318963
- (30%Emax) 1.978432
- (40%Emax) 2.637914
- (50%Emax) 3.297395
- (60%Emax) 3.956877
- (70%Emax) 4.616358
- (80%Emax) 5.275839
- (90%Emax) 5.935309

Space ISO Lux diagram



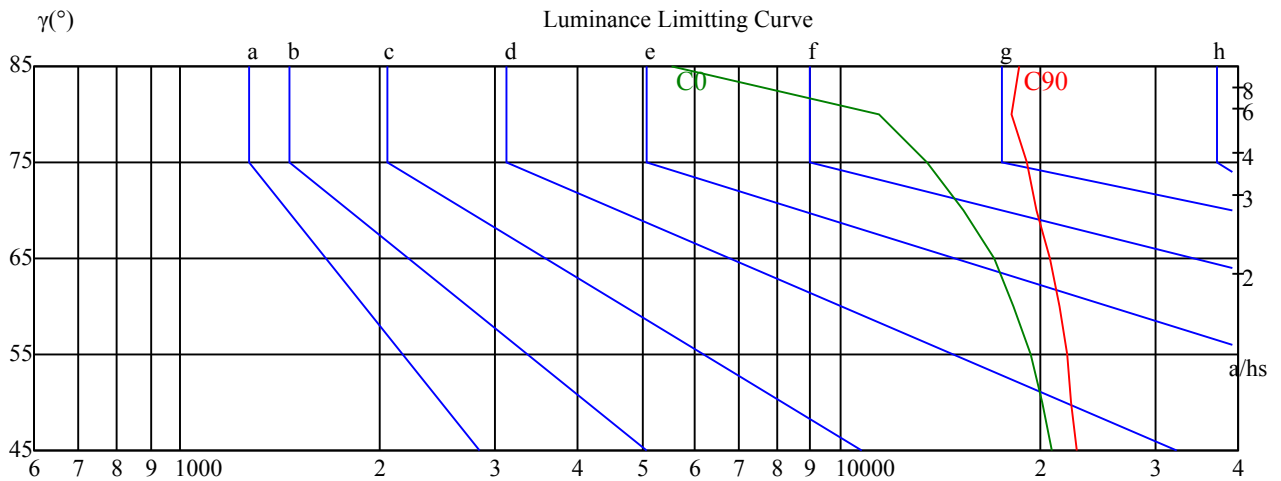
Luminance Limiting Curve(no luminous side)

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	20887	20162	19358	18322	17104	15373	13543	11457	5544
C45	0	0	0	0	0	0	0	0	0
C90	22750	22403	22001	21487	20803	19833	19107	18168	18696

Glare Table

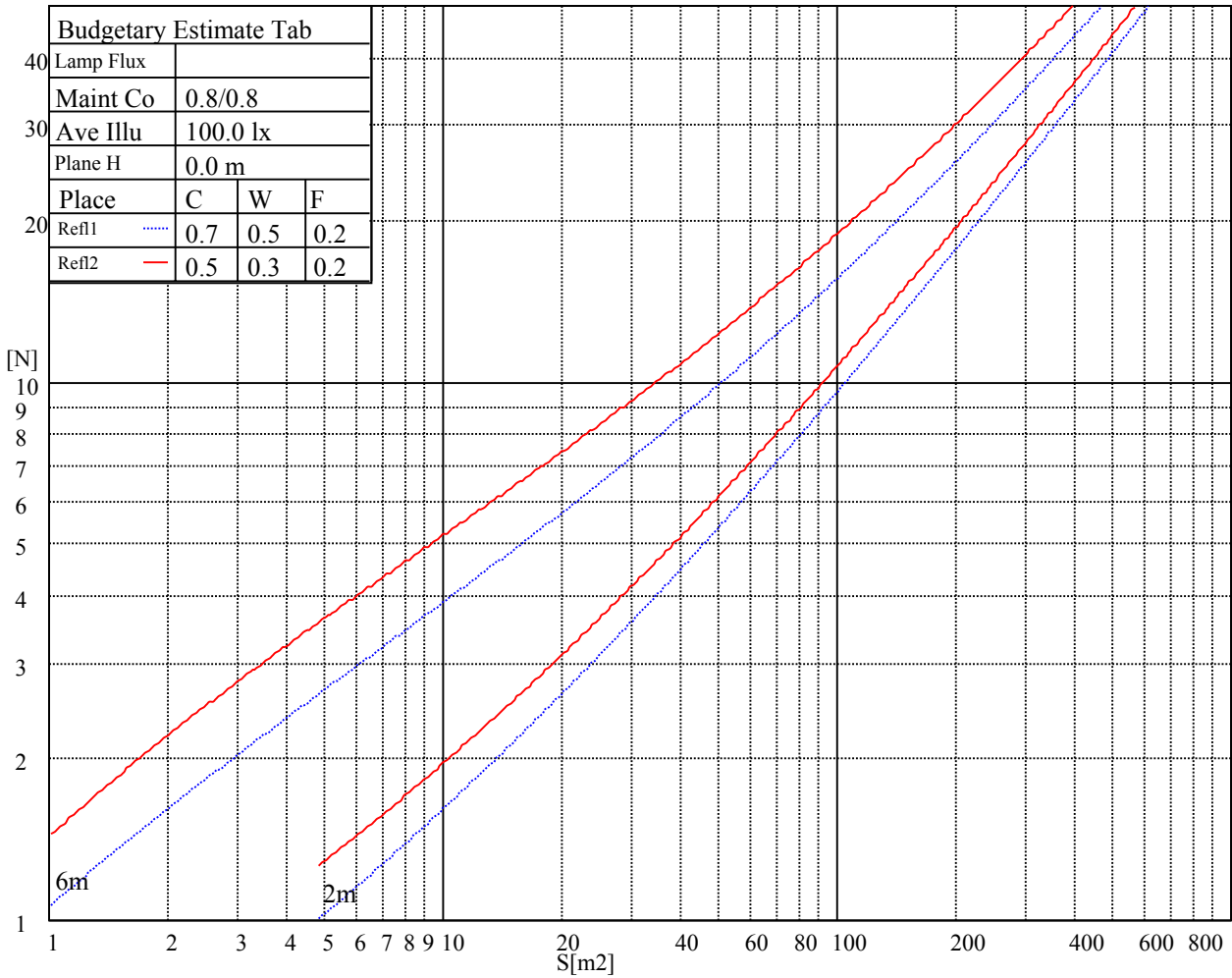
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h



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	21.8	23.1	22.1	23.4	23.6	22.1	23.4	22.4	23.7	23.9
	3H	23.2	24.4	23.5	24.7	25.0	23.7	24.9	24.1	25.2	25.5
	4H	23.5	24.6	23.9	24.9	25.3	24.3	25.3	24.6	25.6	26.0
	6H	24.0	25.0	24.3	25.3	25.7	24.9	25.9	25.3	26.3	26.6
	8H	24.1	25.1	24.5	25.5	25.8	25.1	26.2	25.5	26.5	26.9
	12H	23.9	24.7	24.4	25.1	25.6	25.1	25.9	25.6	26.3	26.8
4H	2H	22.3	23.4	22.7	23.7	24.1	22.6	23.6	23.0	23.9	24.3
	3H	24.0	24.8	24.4	25.2	25.6	24.4	25.2	24.8	25.6	26.0
	4H	24.7	25.5	25.2	25.9	26.3	25.3	26.0	25.7	26.4	26.9
	6H	25.3	26.0	25.7	26.4	26.9	26.0	26.8	26.4	27.2	27.6
	8H	25.3	25.7	25.8	26.2	26.7	26.1	26.6	26.7	27.1	27.6
	12H	25.3	25.8	25.9	26.3	26.8	26.4	26.8	26.9	27.3	27.9
8H	4H	25.0	25.5	25.5	26.0	26.5	25.5	25.9	26.0	26.4	27.0
	6H	25.7	26.2	26.2	26.7	27.2	26.4	26.8	26.9	27.3	27.8
	8H	26.0	26.4	26.5	26.9	27.4	26.8	27.2	27.3	27.7	28.2
	12H	26.1	26.6	26.6	27.1	27.6	27.1	27.6	27.6	28.0	28.6
12H	4H	25.1	25.5	25.6	26.0	26.6	25.5	26.0	26.1	26.5	27.0
	6H	25.8	26.3	26.4	26.8	27.3	26.5	26.9	27.0	27.4	27.9
	8H	26.1	26.6	26.7	27.1	27.6	26.9	27.3	27.4	27.8	28.4
Variation with the observer position at spacings:											
S = 1.0H	0.3/-0.6					0.2/-0.6					
S = 1.5H	0.6/-0.7					0.6/-0.6					
S = 2.0H	0.8/-1.0					0.7/-0.7					
Standard tables:	BK4					BKBF					
Uncorrected UGR	7.7					11.2					
According 1000lm											

Budgetary Estimate Table



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	1.01	0.98	0.94	0.97	0.94	0.91	0.93	0.90	0.88	0.89	0.87	0.85	0.83
2	0.91	0.84	0.78	0.89	0.82	0.77	0.85	0.80	0.75	0.81	0.77	0.73	0.78	0.75	0.71	0.69
3	0.80	0.71	0.65	0.78	0.70	0.64	0.75	0.68	0.63	0.72	0.66	0.62	0.69	0.65	0.61	0.58
4	0.70	0.62	0.55	0.69	0.61	0.55	0.66	0.59	0.54	0.64	0.58	0.53	0.62	0.56	0.52	0.50
5	0.63	0.54	0.47	0.62	0.53	0.47	0.60	0.52	0.46	0.57	0.51	0.46	0.56	0.50	0.45	0.43
6	0.57	0.48	0.41	0.56	0.47	0.41	0.54	0.46	0.41	0.52	0.45	0.40	0.50	0.44	0.40	0.38
7	0.51	0.43	0.36	0.51	0.42	0.36	0.49	0.41	0.36	0.47	0.41	0.36	0.46	0.40	0.35	0.33
8	0.47	0.38	0.33	0.46	0.38	0.32	0.45	0.37	0.32	0.43	0.37	0.32	0.42	0.36	0.32	0.30
9	0.43	0.35	0.29	0.42	0.35	0.29	0.41	0.34	0.29	0.40	0.33	0.29	0.39	0.33	0.29	0.27
10	0.40	0.32	0.27	0.39	0.32	0.26	0.38	0.31	0.26	0.37	0.31	0.26	0.36	0.30	0.26	0.24
RCR	COEFFICIENTS OF UTILIZATION RHOFc=20 WLC															
1	0.31	0.17	0.06	0.30	0.17	0.05	0.29	0.16	0.05	0.27	0.16	0.05	0.26	0.15	0.05	
2	0.29	0.16	0.05	0.28	0.16	0.05	0.27	0.15	0.05	0.26	0.15	0.05	0.25	0.14	0.04	
3	0.27	0.14	0.04	0.26	0.14	0.04	0.25	0.14	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	0.22	0.12	0.04	
5	0.23	0.12	0.03	0.22	0.12	0.03	0.22	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	0.11	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	0.18	0.09	0.03	
8	0.18	0.09	0.03	0.18	0.09	0.03	0.18	0.09	0.03	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	0.16	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	0.15	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	0.13	0.11	0.10	0.12	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	0.09	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	0.07	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	0.06	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	0.01	
8	0.06	0.04	0.02	0.06	0.04	0.02	0.06	0.03	0.02	0.04	0.03	0.01	0.02	0.01	0.00	
9	0.05	0.03	0.02	0.06	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	0.02	0.04	0.02	0.01	0.02	0.01	0.00	

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	522.67	518.62	509.88	497.09	480.04	458.08	431.44	401.59	368.34
30.0	537.16	535.46	529.06	517.98	501.99	482.59	457.65	429.73	398.18
60.0	531.19	529.70	523.73	512.65	497.52	477.27	453.60	425.47	392.64
90.0	527.57	526.93	521.60	510.94	496.88	478.33	454.03	426.75	396.48
120.0	525.01	524.16	518.62	508.81	494.74	475.99	450.83	422.91	393.49
150.0	523.52	523.31	518.19	509.24	494.74	476.41	452.97	426.32	396.48
180.0	522.67	521.82	516.49	506.26	491.33	471.51	448.28	420.35	389.87
210.0	537.16	533.33	525.44	512.01	494.74	472.58	447.00	416.51	383.69
240.0	531.19	528.21	519.90	507.11	488.99	467.46	440.81	411.83	378.15
270.0	527.57	523.31	514.36	500.29	482.17	459.15	432.93	402.45	368.98
300.0	525.01	520.96	512.65	498.79	481.53	459.57	433.14	403.09	370.05
330.0	523.52	518.62	510.31	495.81	477.90	455.31	429.52	397.54	363.86
360.0	522.67	518.62	509.88	497.09	480.04	458.08	431.44	401.59	368.34
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	332.32	291.60	249.82	206.13	162.64	118.30	78.87	44.76	10.87
30.0	364.08	324.43	283.29	239.38	194.62	148.15	104.45	63.52	25.79
60.0	358.11	319.53	277.75	234.26	189.71	145.38	101.68	63.10	31.76
90.0	361.95	324.00	283.93	241.72	197.81	152.62	111.27	70.98	36.66
120.0	359.81	321.23	281.37	239.17	195.25	148.57	105.30	65.44	30.06
150.0	362.80	325.07	285.42	244.28	200.80	154.97	110.20	70.98	35.81
180.0	355.76	318.67	276.89	234.90	190.78	146.65	102.53	63.31	32.61
210.0	347.45	306.95	263.68	219.13	173.94	128.75	85.05	47.75	18.33
240.0	342.12	301.62	259.84	215.93	172.45	122.78	80.79	44.76	16.84
270.0	332.32	293.10	248.97	205.06	160.94	117.02	74.82	38.37	11.51
300.0	333.38	295.01	251.32	207.40	163.07	118.52	75.25	38.80	11.30
330.0	327.84	288.19	245.13	201.22	156.89	113.40	72.05	37.73	11.30
360.0	332.32	291.60	249.82	206.13	162.64	118.30	78.87	44.76	10.87
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.85	0.85	0.43	1.28	1.71	1.28	1.71	2.34	2.34
30.0	6.39	0.85	0.64	0.85	1.07	1.28	1.71	2.13	2.13
60.0	7.67	0.64	0.43	0.64	1.28	1.28	1.71	1.71	2.34
90.0	10.23	1.71	0.64	1.07	1.07	1.28	1.49	1.92	2.13
120.0	5.54	0.85	0.85	0.85	1.28	1.07	1.92	1.49	2.13
150.0	7.46	0.43	0.64	0.85	1.71	1.49	1.71	1.92	2.34
180.0	7.89	0.43	0.64	0.85	1.07	1.28	1.71	2.34	2.13
210.0	1.07	0.21	0.85	1.07	1.71	1.28	2.13	2.13	2.56
240.0	0.85	0.85	0.64	1.28	1.07	1.49	1.92	2.13	2.34
270.0	0.43	0.43	0.85	1.28	1.49	1.28	1.92	2.13	2.34
300.0	0.43	0.00	0.43	1.28	1.71	1.28	1.92	2.34	2.13
330.0	0.64	0.64	1.28	1.07	1.28	1.71	1.92	2.13	2.34
360.0	0.85	0.85	0.43	1.28	1.71	1.28	1.71	2.34	2.34
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	2.77	2.98	2.98	3.62	3.41	3.62	3.84	3.84	3.84
30.0	2.34	2.56	2.98	3.20	3.20	3.62	3.84	4.05	4.26
60.0	2.56	2.98	2.98	3.20	3.41	3.20	3.84	4.05	4.05
90.0	2.56	2.34	3.20	3.41	3.20	3.62	3.62	3.84	3.62
120.0	2.13	2.56	2.77	2.98	3.20	3.41	3.62	3.62	3.84
150.0	2.34	2.56	3.20	3.41	3.20	3.62	3.62	3.84	4.26
180.0	2.34	2.98	2.98	3.20	2.98	3.41	3.41	3.62	4.05
210.0	2.77	2.98	2.98	3.41	3.41	3.62	3.84	4.05	4.26
240.0	2.77	3.20	3.20	2.77	3.62	3.62	3.84	4.26	4.05
270.0	2.56	2.98	3.20	3.20	3.41	3.62	3.62	3.84	4.05
300.0	2.77	2.77	2.77	3.41	3.20	3.84	3.62	3.62	4.05
330.0	2.77	3.20	3.41	3.20	3.41	3.41	3.20	4.26	3.84
360.0	2.77	2.98	2.98	3.62	3.41	3.62	3.84	3.84	3.84

Equipment: GMS1800B
 Temperature(°C): 25.0

Date: 2016-5-31
 Humidity(%): 60.0%

Operator: Jason Zhan
 Distance(m): 14.60

Intensity data(cd)

C/ γ ($^{\circ}$)	180.0
0.0	3.84
30.0	4.48
60.0	4.05
90.0	4.48
120.0	4.26
150.0	3.84
180.0	3.84
210.0	4.48
240.0	4.05
270.0	4.48
300.0	4.26
330.0	3.84
360.0	3.84