



Shenzhen BST Technology Co., Ltd.
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s.r.o WD104

LumCAT: WD104	Luminaire: LED PANEL LIGHT
Report No:	Voltage(V): 220.500
Test No:	Current(A): 0.066
LampCAT: LED	Power (W): 6.400
Lamp flux(lm)	PF: 0.535
Number of Lamps: 1	Ballast type:
Length(mm): 60	Width(mm): 60
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 392.17
Lumens(lm)/Power(W): 61.28
Central intensity(cd): 143.782
Maximum intensity(cd): 146.258
Angle of maximum intensity: C=30.0 γ =0.0
Beam Angle(50%Imax): [H]Left=55.3 Right=52.2
 [V]Left=59.0 Right=48.2
Field angle(10%Imax): [H]Left=79.3 Right=76.7
 [V]Left=83.4 Right=72.0
Beam angle of C30plane: 108.88

Equipment: GMS1800B
Temperature(°C): 25.0

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

Operator: Jason Zhan
Distance(m): 13.80

Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	144.734	.000	.000	.000%	.000%
5.0	144.068	3.453	3.453	.880%	.880%
10.0	142.037	10.235	13.687	2.610%	3.490%
15.0	138.656	16.651	30.338	4.246%	7.736%
20.0	133.943	22.466	52.804	5.729%	13.464%
25.0	128.246	27.499	80.303	7.012%	20.476%
30.0	121.120	31.557	111.860	8.047%	28.523%
35.0	112.979	34.473	146.333	8.790%	37.313%
40.0	103.885	36.182	182.515	9.226%	46.539%
45.0	93.617	36.569	219.084	9.325%	55.864%
50.0	82.318	35.550	254.634	9.065%	64.929%
55.0	70.193	33.161	287.795	8.456%	73.385%
60.0	57.449	29.504	317.299	7.523%	80.908%
65.0	44.658	24.823	342.122	6.329%	87.238%
70.0	31.692	19.332	361.454	4.930%	92.167%
75.0	19.964	13.502	374.956	3.443%	95.610%
80.0	10.871	8.251	383.207	2.104%	97.714%
85.0	4.698	4.230	387.437	1.079%	98.793%
90.0	1.159	1.603	389.041	.409%	99.201%
95.0	.079	.339	389.380	.086%	99.288%
100.0	.127	.056	389.436	.014%	99.302%
105.0	.238	.098	389.533	.025%	99.327%
110.0	.206	.116	389.650	.030%	99.357%
115.0	.413	.157	389.806	.040%	99.397%
120.0	.444	.208	390.015	.053%	99.450%
125.0	.540	.227	390.242	.058%	99.508%
130.0	.508	.228	390.470	.058%	99.566%
135.0	.682	.241	390.710	.061%	99.627%
140.0	.635	.244	390.954	.062%	99.689%
145.0	.682	.220	391.174	.056%	99.745%
150.0	.809	.220	391.394	.056%	99.801%
155.0	.968	.225	391.619	.057%	99.859%
160.0	.920	.198	391.817	.051%	99.909%
165.0	.889	.149	391.966	.038%	99.947%
170.0	1.000	.112	392.078	.029%	99.976%
175.0	1.032	.073	392.150	.019%	99.994%
180.0	.825	.022	392.173	.006%	100.000%

Zonal flux distribution table

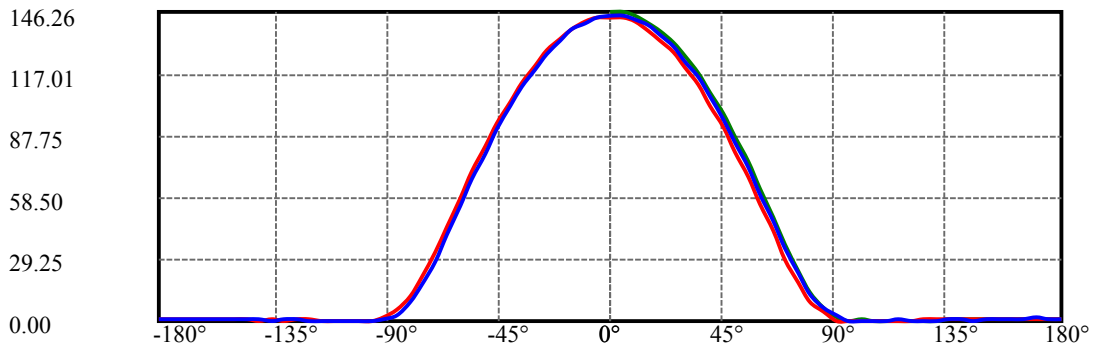
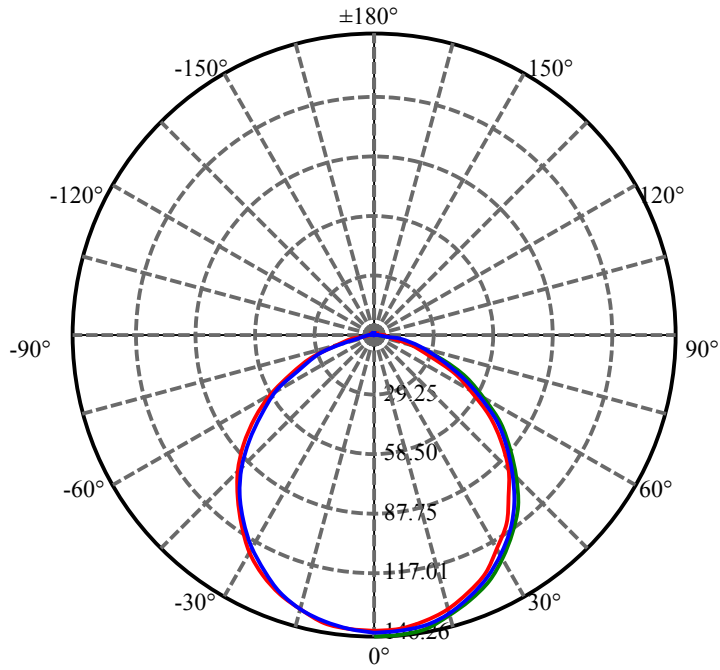
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	111.86	28.52%
0-40	182.51	46.54%
0-60	317.30	80.91%
0-90	389.04	99.20%
90-120	0.97	0.25%
90-130	1.43	0.36%
90-150	2.35	0.60%
90-180	3.11	0.79%
0-180	392.17	100.00%

ZONAL LUMEN SUMMARY

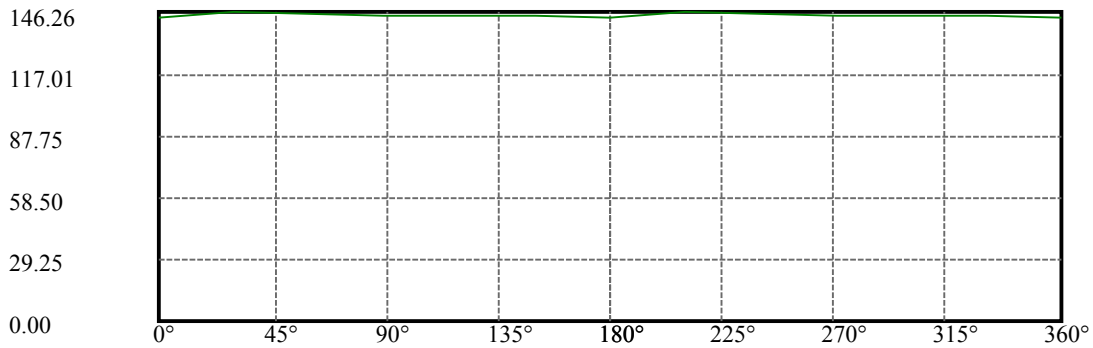
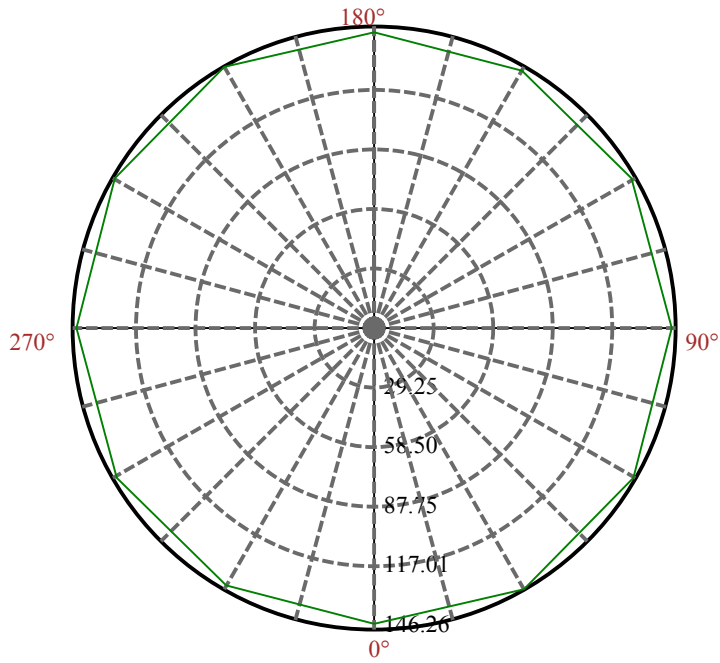
0-10	13.69
10-20	39.12
20-30	59.06
30-40	70.65
40-50	72.12
50-60	62.67
60-70	44.16
70-80	21.75
80-90	5.83
90-100	0.39
100-110	0.21
110-120	0.37
120-130	0.46
130-140	0.48
140-150	0.44
150-160	0.42
160-170	0.26
170-180	0.07

Light Distribution Curve [Unit: cd]



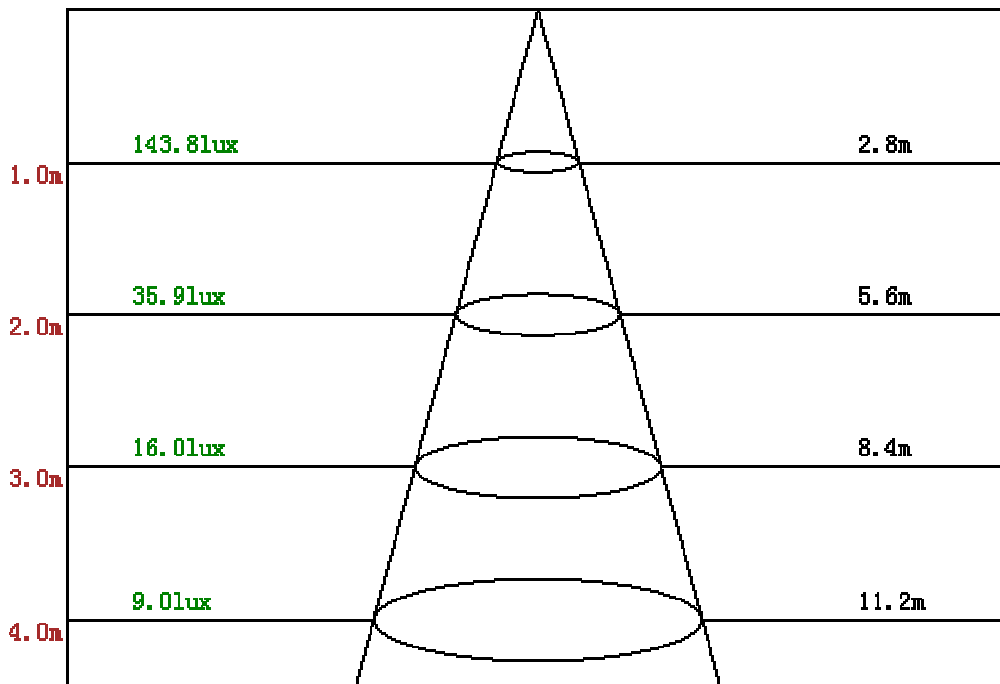
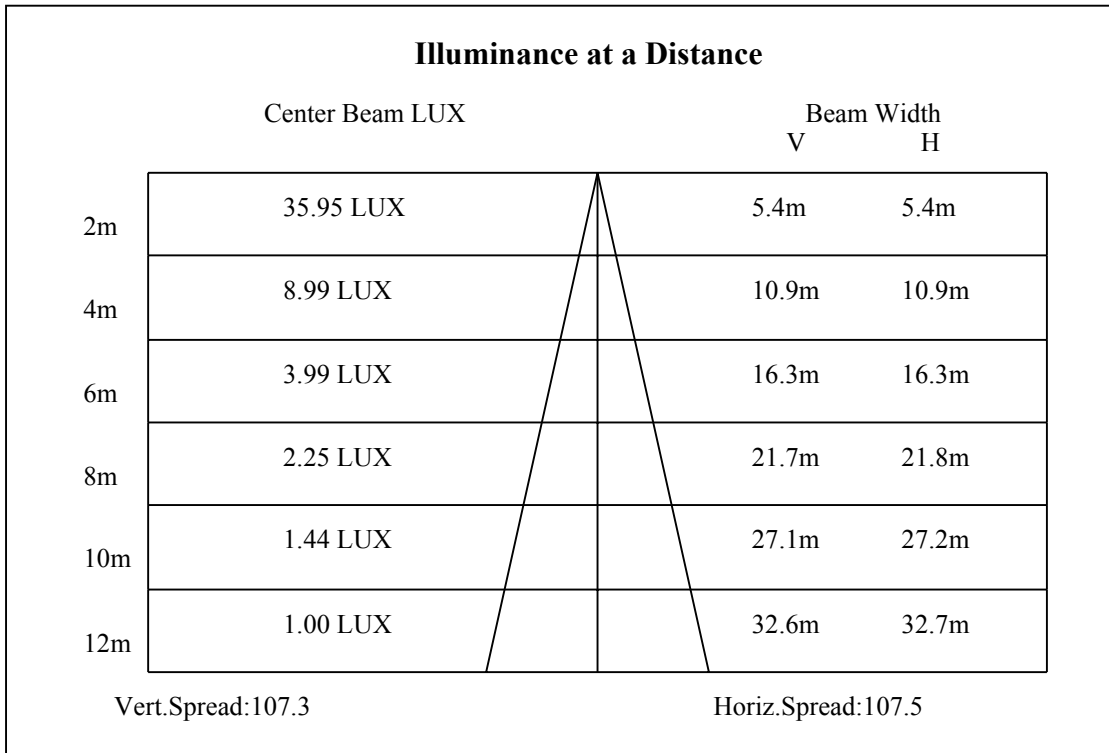
C30(Max): —
C0/C180: —
C90/C270: —

Light Distribution Curve [Unit: cd]

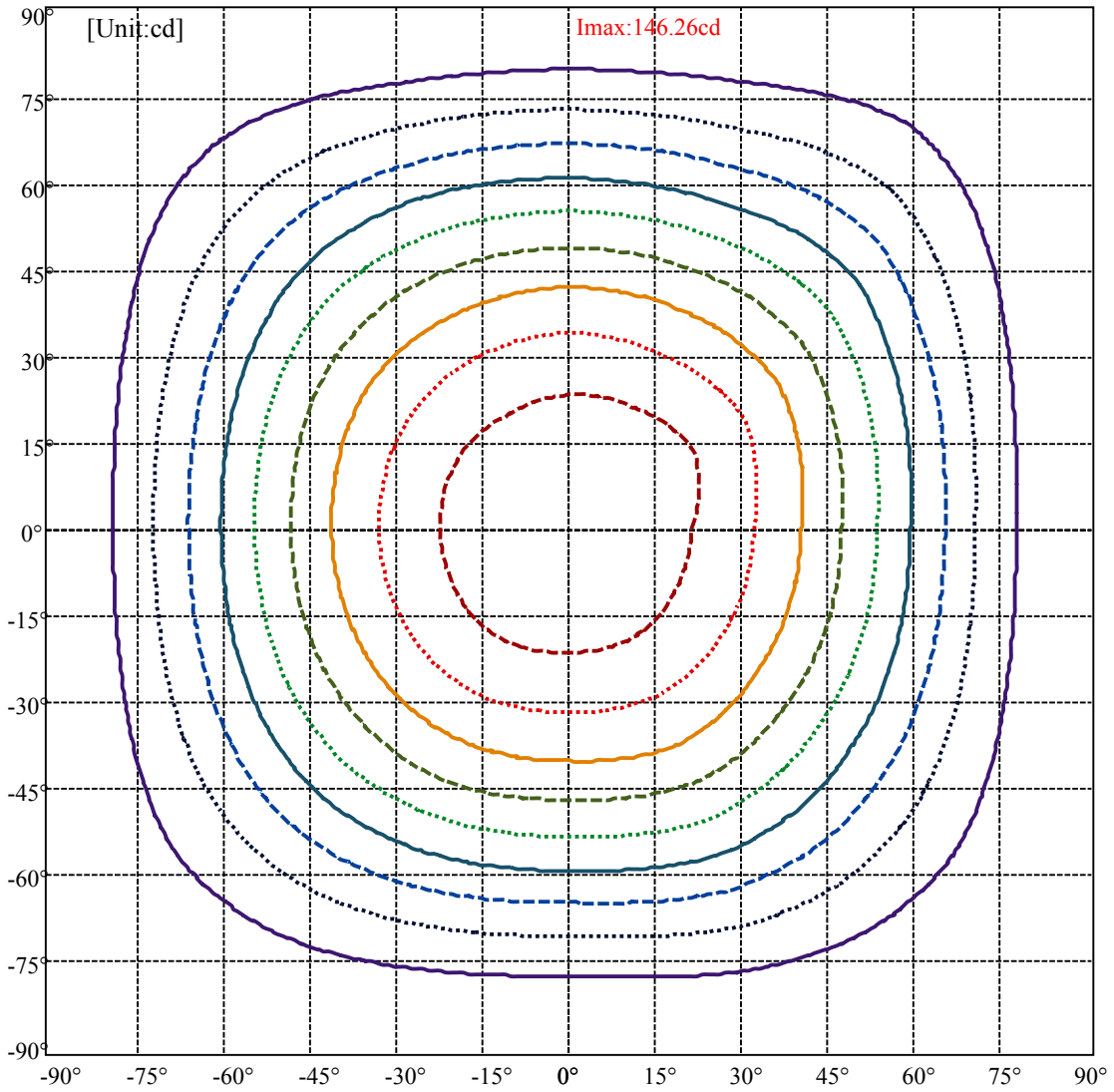


MaxG=0 —————

Lux distance Curve



ISO-Intensity(V-H)



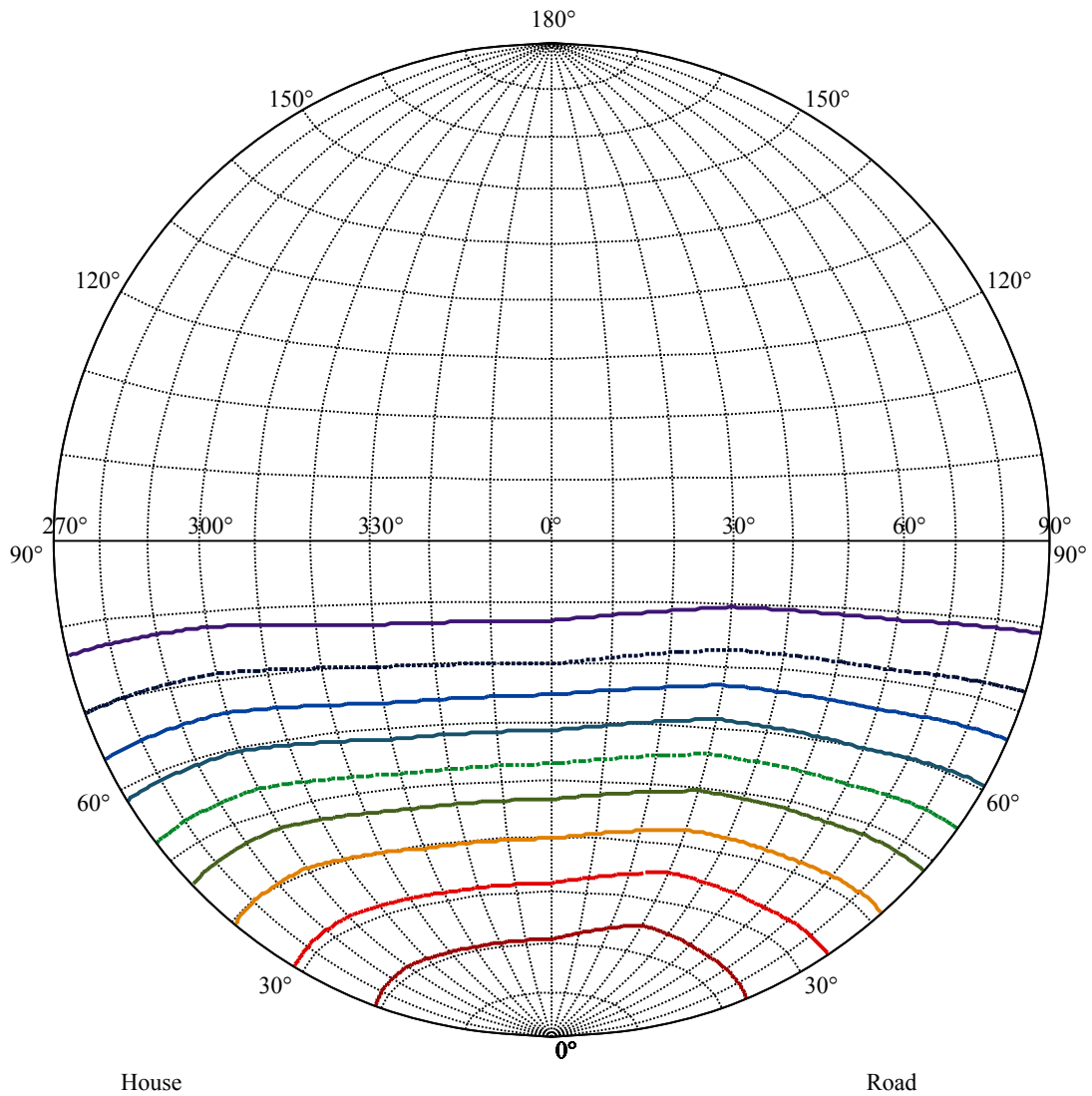
(10%Imax)	14.5981	—
(20%Imax)	29.1962	⋯
(30%Imax)	43.7944	- - -
(40%Imax)	58.3925	—
(50%Imax)	72.9906	⋯
(60%Imax)	87.5887	- - -
(70%Imax)	102.187	—
(80%Imax)	116.785	⋯
(90%Imax)	131.383	- - -

Equipment: GMS1800B
Temperature(°C): 25.0

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

Operator: Jason Zhan
Distance(m): 13.80

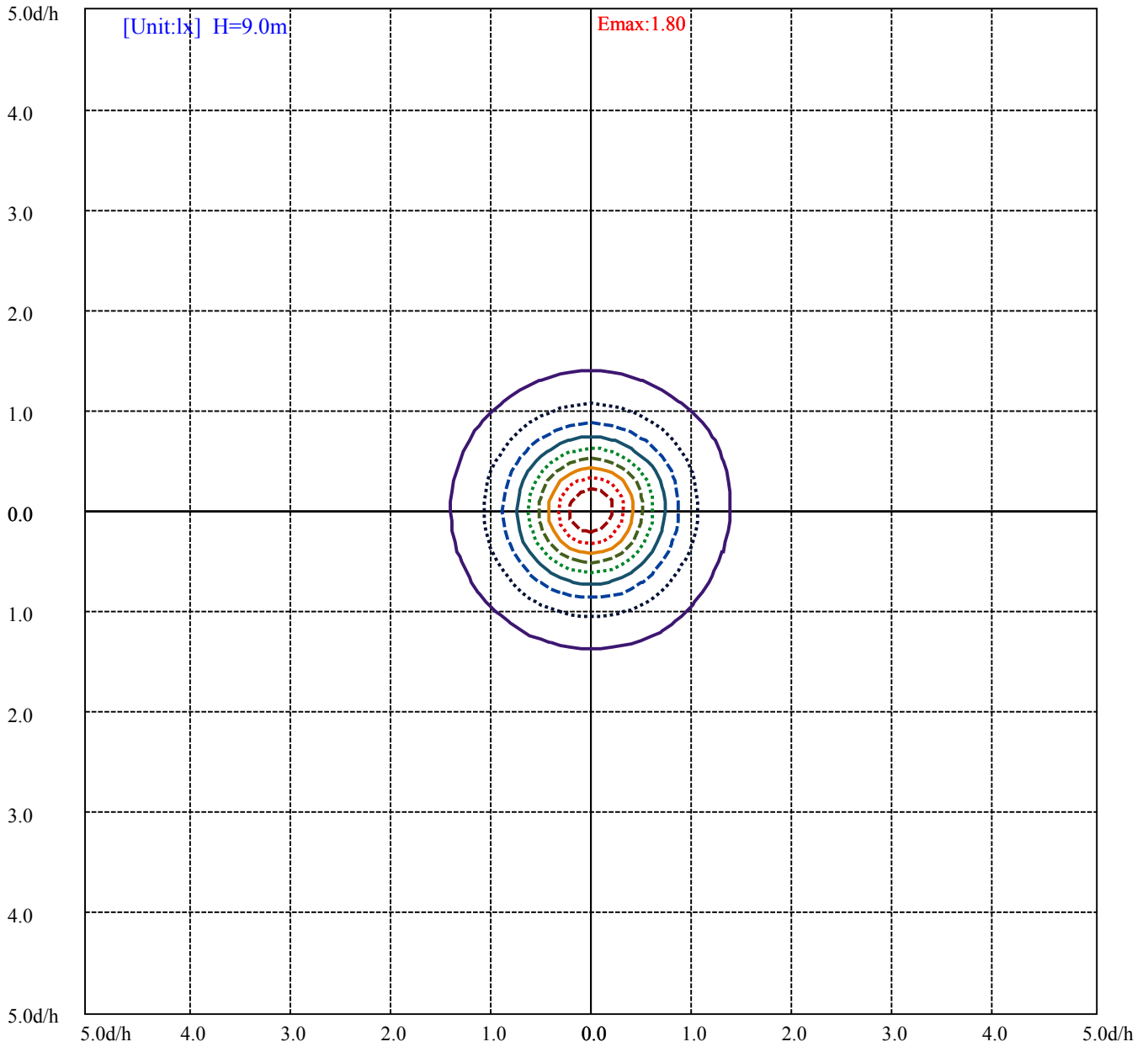
ISO candela diagram on circular web



I_{max}:146.26cd

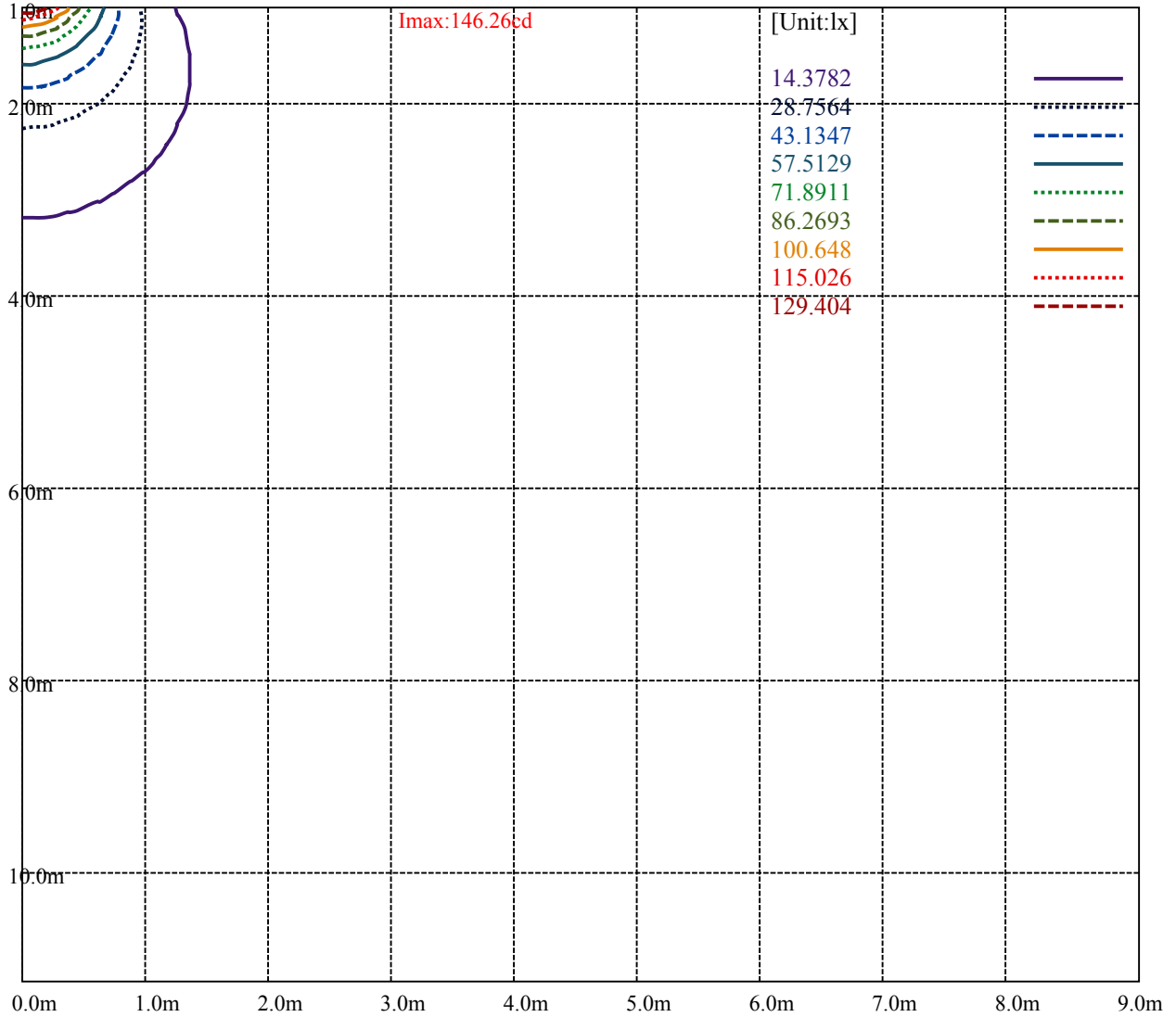
(10%I _{max}) 14.6258	—
(20%I _{max}) 29.2516	·····
(30%I _{max}) 43.8774	- - - - -
(40%I _{max}) 58.5032	—
(50%I _{max}) 73.129	·····
(60%I _{max}) 87.7548	- - - - -
(70%I _{max}) 102.381	—
(80%I _{max}) 117.006	·····
(90%I _{max}) 131.632	- - - - -

ISO illuminance diagram



- (10%Emax) 0.1798593
- (20%Emax) 0.3597198
- (30%Emax) 0.539579
- (40%Emax) 0.7194395
- (50%Emax) 0.8992988
- (60%Emax) 1.079159
- (70%Emax) 1.259025
- (80%Emax) 1.438877
- (90%Emax) 1.618741

Space ISO Lux diagram



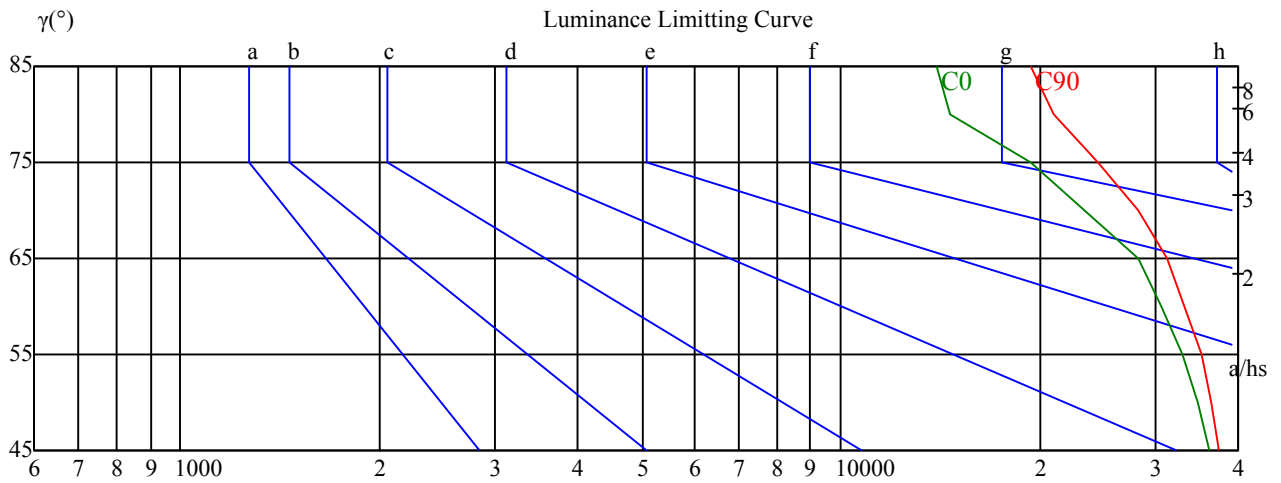
Luminance Limiting Curve(no luminous side)

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	36134	34730	33018	30576	28289	23355	19417	14623	13960
C45	0	0	0	0	0	0	0	0	0
C90	37406	36458	35139	33115	31168	28150	24527	21020	19423

Glare Table

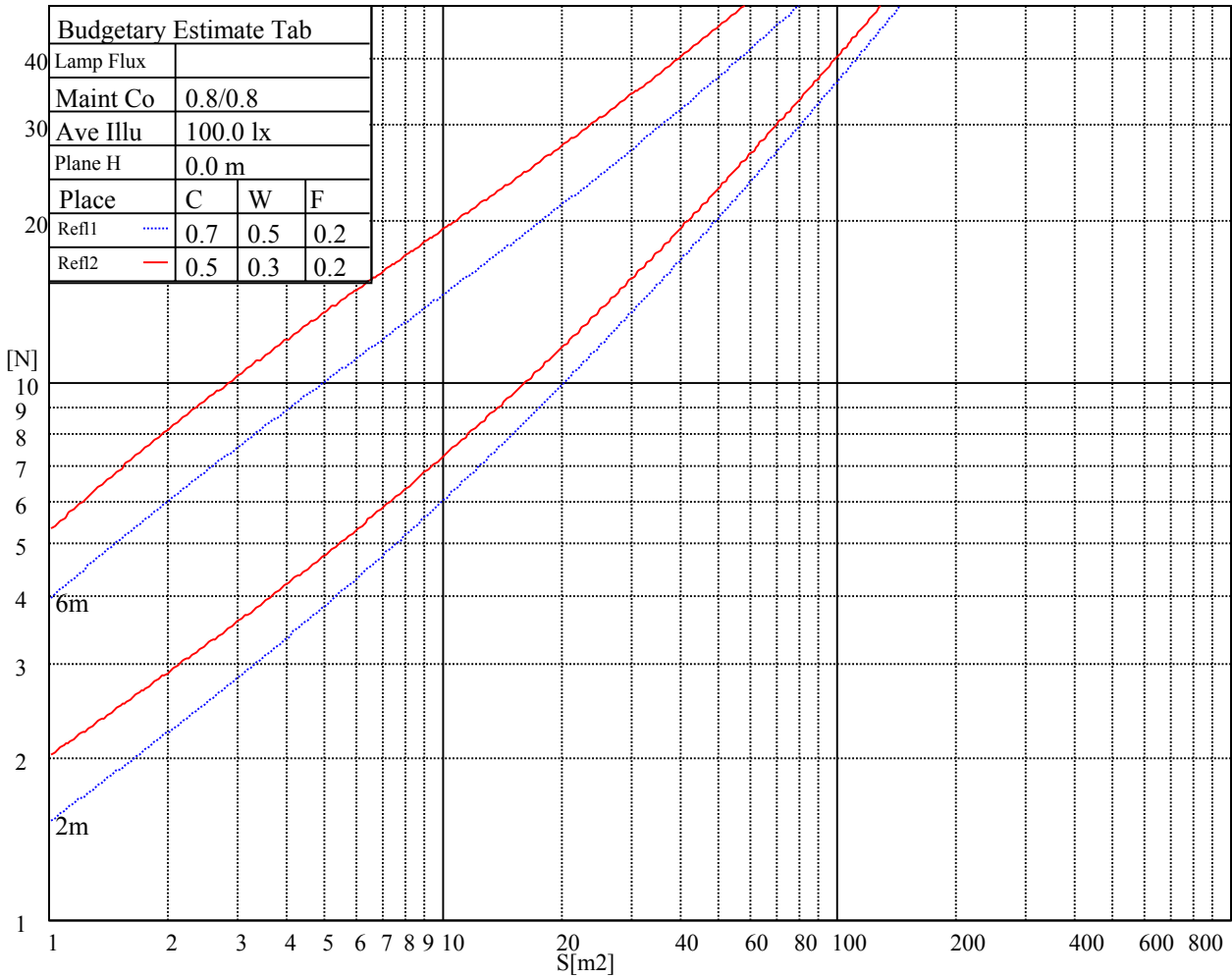
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h



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	28.2	29.6	28.5	29.8	30.1	28.2	29.6	28.5	29.8	30.1
	3H	29.5	30.7	29.8	31.0	31.3	29.6	30.8	30.0	31.1	31.4
	4H	29.8	30.8	30.1	31.1	31.5	30.0	31.0	30.4	31.4	31.7
	6H	30.1	31.1	30.4	31.4	31.8	30.4	31.4	30.8	31.8	32.1
	8H	30.2	31.2	30.6	31.5	31.9	30.6	31.6	31.0	31.9	32.3
	12H	30.1	30.8	30.5	31.2	31.6	30.5	31.3	31.0	31.7	32.1
4H	2H	28.7	29.7	29.1	30.1	30.4	28.7	29.7	29.1	30.1	30.4
	3H	30.2	31.0	30.7	31.4	31.8	30.3	31.0	30.7	31.4	31.9
	4H	30.8	31.6	31.3	32.0	32.4	30.9	31.7	31.4	32.1	32.5
	6H	31.2	32.0	31.7	32.4	32.8	31.4	32.2	31.9	32.6	33.0
	8H	31.2	31.6	31.7	32.1	32.6	31.5	31.9	32.0	32.4	32.9
	12H	31.3	31.7	31.8	32.2	32.7	31.6	32.1	32.2	32.6	33.1
8H	4H	31.0	31.4	31.5	31.9	32.5	31.1	31.5	31.6	32.0	32.6
	6H	31.6	32.0	32.1	32.5	33.0	31.7	32.2	32.2	32.7	33.2
	8H	31.8	32.2	32.3	32.7	33.2	32.0	32.4	32.5	32.9	33.4
	12H	32.0	32.4	32.5	32.9	33.4	32.2	32.7	32.7	33.1	33.7
12H	4H	31.1	31.5	31.6	32.0	32.5	31.2	31.6	31.7	32.1	32.6
	6H	31.6	32.1	32.2	32.6	33.1	31.8	32.3	32.3	32.7	33.3
	8H	31.9	32.3	32.4	32.8	33.4	32.1	32.6	32.6	33.0	33.6
Variation with the observer position at spacings:											
S = 1.0H	0.4/-0.5					0.3/-0.5					
S = 1.5H	0.6/-0.8					0.6/-0.7					
S = 2.0H	1.0/-1.2					0.9/-0.9					
Standard tables:	BK3					BK3					
Uncorrected UGR	13.4					13.5					
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	0.97	1.02	0.98	0.95	0.98	0.95	0.92	0.94	0.91	0.89	0.90	0.88	0.86	0.84
2	0.91	0.85	0.79	0.89	0.83	0.78	0.86	0.81	0.76	0.82	0.78	0.74	0.79	0.76	0.73	0.71
3	0.81	0.73	0.66	0.79	0.72	0.66	0.76	0.70	0.64	0.73	0.68	0.63	0.70	0.66	0.62	0.60
4	0.71	0.63	0.56	0.70	0.62	0.56	0.68	0.61	0.55	0.65	0.59	0.54	0.63	0.58	0.53	0.51
5	0.64	0.55	0.49	0.63	0.54	0.48	0.61	0.53	0.48	0.59	0.52	0.47	0.57	0.51	0.47	0.44
6	0.58	0.49	0.42	0.57	0.48	0.42	0.55	0.47	0.42	0.53	0.46	0.41	0.51	0.46	0.41	0.39
7	0.52	0.44	0.38	0.51	0.43	0.37	0.50	0.42	0.37	0.48	0.42	0.37	0.47	0.41	0.36	0.34
8	0.48	0.39	0.34	0.47	0.39	0.33	0.46	0.38	0.33	0.44	0.38	0.33	0.43	0.37	0.33	0.31
9	0.44	0.36	0.30	0.43	0.35	0.30	0.42	0.35	0.30	0.41	0.34	0.30	0.40	0.34	0.29	0.28
10	0.40	0.33	0.27	0.40	0.32	0.27	0.39	0.32	0.27	0.38	0.31	0.27	0.37	0.31	0.27	0.25
RCR	COEFFICIENTS OF UTILIZATION RHOFc=20 WLC															
1	0.30	0.17	0.05	0.29	0.16	0.05	0.27	0.16	0.05	0.26	0.15	0.05	0.25	0.15	0.05	
2	0.28	0.15	0.05	0.27	0.15	0.05	0.26	0.15	0.05	0.25	0.14	0.04	0.24	0.14	0.04	
3	0.26	0.14	0.04	0.26	0.14	0.04	0.24	0.13	0.04	0.24	0.13	0.04	0.23	0.13	0.04	
4	0.24	0.13	0.04	0.24	0.12	0.04	0.23	0.12	0.04	0.22	0.12	0.04	0.21	0.11	0.03	
5	0.22	0.11	0.03	0.22	0.11	0.03	0.21	0.11	0.03	0.20	0.11	0.03	0.20	0.11	0.03	
6	0.21	0.10	0.03	0.21	0.10	0.03	0.20	0.10	0.03	0.19	0.10	0.03	0.18	0.10	0.03	
7	0.20	0.10	0.03	0.19	0.10	0.03	0.18	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	0.02	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	0.14	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	0.09	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	0.02	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	

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	143.78	143.40	141.31	137.50	132.55	127.21	119.60	111.79	102.08
30.0	146.26	146.07	144.54	141.12	137.12	131.78	124.93	117.31	108.17
60.0	145.12	144.92	143.02	140.16	135.40	130.07	122.83	114.64	105.69
90.0	144.54	144.16	142.64	139.78	135.02	129.50	123.02	115.03	105.88
120.0	144.54	143.59	141.69	138.64	133.88	128.36	121.88	113.88	104.55
150.0	144.16	143.78	141.88	138.64	134.26	128.55	121.69	113.50	105.12
180.0	143.78	143.21	141.50	138.26	133.50	128.17	121.12	112.74	103.60
210.0	146.26	145.31	142.64	138.83	133.88	127.59	120.36	111.79	102.46
240.0	145.12	144.16	142.07	138.07	133.50	127.59	119.79	111.79	102.27
270.0	144.54	143.40	140.93	137.69	132.55	126.26	118.83	110.46	101.50
300.0	144.54	143.40	141.50	137.69	133.12	127.40	119.98	111.98	103.79
330.0	144.16	143.40	140.74	137.50	132.55	126.45	119.41	110.84	101.50
360.0	143.78	143.40	141.31	137.50	132.55	127.21	119.60	111.79	102.08
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	91.98	80.37	68.18	55.04	43.04	28.76	18.09	9.14	4.38
30.0	98.08	86.84	75.03	62.46	49.32	36.18	23.61	13.71	6.47
60.0	95.60	84.17	71.80	58.47	45.90	33.14	21.14	12.38	5.90
90.0	95.22	84.36	72.56	59.61	47.42	34.66	22.85	13.14	6.09
120.0	94.65	83.79	71.99	59.80	46.66	33.52	21.52	11.62	4.57
150.0	94.84	84.17	71.99	59.04	46.28	33.14	21.33	12.19	5.71
180.0	93.51	82.46	70.46	57.70	44.56	32.37	20.57	11.62	5.90
210.0	92.36	80.94	68.37	55.80	43.04	29.71	17.71	9.33	3.81
240.0	92.36	80.37	67.99	55.42	42.47	29.52	18.09	9.14	4.00
270.0	90.46	79.03	67.42	54.47	40.94	28.38	17.33	8.76	2.86
300.0	93.32	81.89	70.27	57.51	44.75	31.80	19.81	10.47	3.43
330.0	91.03	79.41	66.27	54.08	41.52	29.14	17.52	8.95	3.24
360.0	91.98	80.37	68.18	55.04	43.04	28.76	18.09	9.14	4.38
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.19	0.19	0.19	0.19	0.38	0.38	0.38	0.57	0.57
30.0	1.90	0.19	0.57	0.38	0.00	0.38	0.38	0.38	0.38
60.0	1.52	0.00	0.00	0.57	0.19	0.76	0.38	0.57	0.38
90.0	2.29	0.38	0.19	0.19	0.38	0.57	0.19	0.38	0.38
120.0	0.76	0.00	0.00	0.19	0.19	0.57	0.57	0.57	0.57
150.0	1.71	0.00	0.00	0.00	0.38	0.38	0.38	0.38	0.95
180.0	1.90	-0.19	0.19	0.00	0.00	0.19	0.57	0.76	0.38
210.0	1.14	0.00	0.38	0.38	0.19	0.38	0.57	0.38	0.57
240.0	0.57	-0.19	0.00	0.38	0.38	0.38	0.38	0.57	0.57
270.0	0.95	0.19	0.19	0.38	0.00	0.38	0.19	0.57	0.76
300.0	0.19	0.19	-0.19	-0.19	0.19	0.38	0.57	0.57	0.19
330.0	0.76	0.19	0.00	0.38	0.19	0.19	0.76	0.76	0.38
360.0	0.19	0.19	0.19	0.19	0.38	0.38	0.38	0.57	0.57
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.57	0.76	0.57	1.14	0.76	0.95	0.76	0.57	1.33
30.0	0.57	0.57	1.14	1.14	1.14	0.95	0.76	0.95	0.76
60.0	0.57	0.38	0.57	0.38	0.76	0.76	0.76	0.76	0.95
90.0	0.76	0.95	0.38	0.76	1.14	0.95	1.14	1.52	0.95
120.0	0.76	0.57	0.95	0.38	1.14	0.95	1.14	0.95	0.95
150.0	0.57	0.57	0.57	0.76	0.76	0.76	0.57	1.14	1.14
180.0	0.95	0.38	0.95	0.76	0.95	0.76	0.76	0.95	0.95
210.0	0.95	0.57	0.76	0.95	0.95	0.95	0.76	0.95	1.14
240.0	0.76	0.76	0.57	1.33	0.95	1.14	0.95	1.14	1.14
270.0	0.38	0.57	0.57	0.76	1.33	0.95	0.95	0.95	0.95
300.0	0.76	0.76	0.38	0.76	0.76	1.14	1.14	1.14	1.14
330.0	0.57	0.76	0.76	0.57	0.95	0.76	0.95	0.95	0.95
360.0	0.57	0.76	0.57	1.14	0.76	0.95	0.76	0.57	1.33

Intensity data(cd)

C/γ(°)	180.0
0.0	0.76
30.0	0.76
60.0	0.95
90.0	0.95
120.0	0.95
150.0	0.57
180.0	0.76
210.0	0.76
240.0	0.95
270.0	0.95
300.0	0.95
330.0	0.57
360.0	0.76