
ZhongShan Halcon Lighting & Electrical Co., Ltd

Client:

LumCAT: HG-L203-252F-25W

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.990

LampCAT:

Current(A): 0.213

Lamp flux(lm): 3336.2

Power (W): 24.480

Number of Lamps: 1

PF: 0.957

Length(mm): 560

Width(mm): 170

Phm Type: C

Height(mm): 70

Photometric Results

Lumens(lm): 3336.22, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 136.28

Central intensity(cd): 5343.786, Maximum intensity(cd): 5343.786

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=42.6

[C90/270]Total=33.8

Field angle(10%Imax): [C0/180]Total=85.2

[C90/270]Total=65.2

Maximum s/h(1/2): C0_180=0.67 C90_270=0.55

Maximum s/h(1/4): C0_180=0.72 C90_270=0.57

Up flux rate of lamp(%): 2.42%

Down flux rate of lamp(%): 97.58%

Up flux rate of LUM(%): 2.42%

Down flux rate of LUM(%): 97.58%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 90.286%

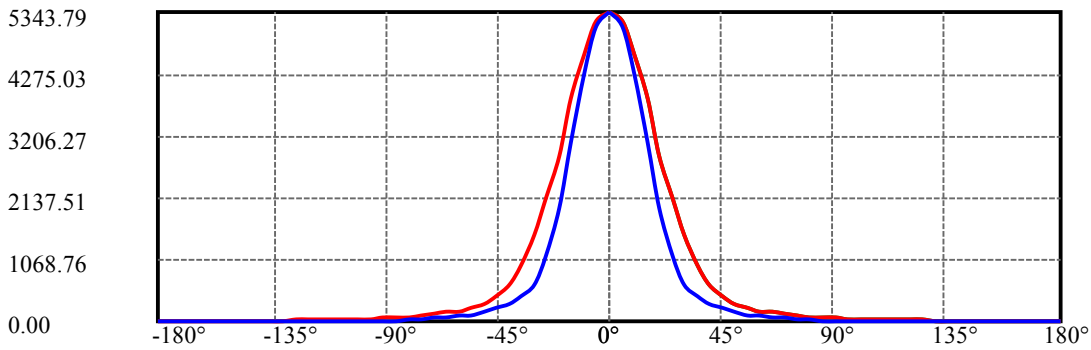
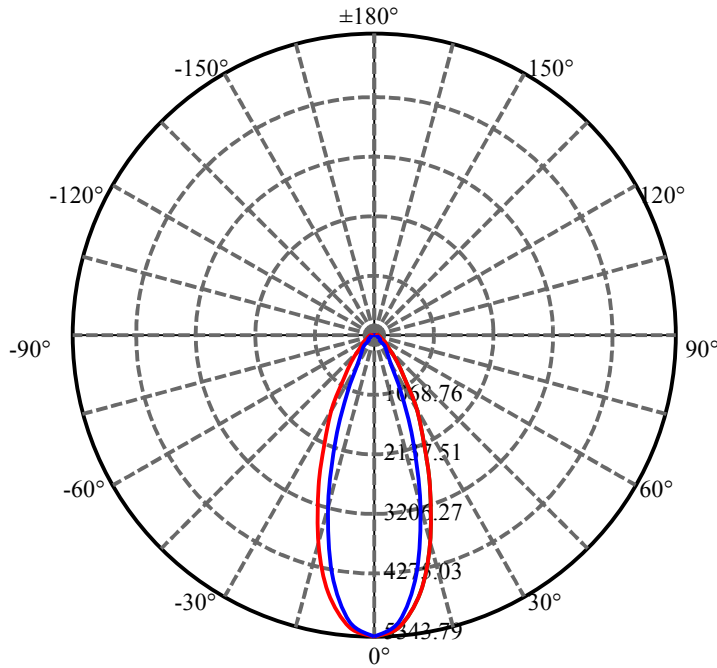
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5343.786	0.000	0	0.00%	0.00%
5.0	5106.289	124.928	124.928	3.74%	3.74%
10.0	4426.478	341.017	465.945	10.22%	13.97%
15.0	3465.073	468.122	934.066	14.03%	28.00%
20.0	2436.082	486.338	1420.404	14.58%	42.58%
25.0	1594.686	422.753	1843.158	12.67%	55.25%
30.0	1021.559	331.088	2174.245	9.92%	65.17%
35.0	647.755	245.818	2420.064	7.37%	72.54%
40.0	437.679	181.096	2601.16	5.43%	77.97%
45.0	312.666	138.932	2740.092	4.16%	82.13%
50.0	229.247	109.502	2849.594	3.28%	85.41%
55.0	178.084	88.567	2938.161	2.65%	88.07%
60.0	141.938	73.972	3012.134	2.22%	90.29%
65.0	115.273	62.529	3074.662	1.87%	92.16%
70.0	93.298	52.812	3127.474	1.58%	93.74%
75.0	74.016	43.733	3171.207	1.31%	95.05%
80.0	57.424	35.170	3206.377	1.05%	96.11%
85.0	44.216	27.618	3233.995	0.83%	96.94%
90.0	34.402	21.526	3255.521	0.65%	97.58%
95.0	27.954	17.073	3272.595	0.51%	98.09%
100.0	21.834	13.529	3286.123	0.41%	98.50%
105.0	15.613	10.020	3296.143	0.30%	98.80%
110.0	11.540	7.097	3303.24	0.21%	99.01%
115.0	9.588	5.350	3308.59	0.16%	99.17%
120.0	9.103	4.544	3313.134	0.14%	99.31%
125.0	8.107	3.978	3317.112	0.12%	99.43%
130.0	6.562	3.189	3320.301	0.10%	99.52%
135.0	5.163	2.369	3322.67	0.07%	99.59%
140.0	5.089	1.898	3324.569	0.06%	99.65%
145.0	5.717	1.803	3326.371	0.05%	99.70%
150.0	7.081	1.884	3328.256	0.06%	99.76%
155.0	8.815	2.012	3330.267	0.06%	99.82%
160.0	10.256	2.000	3332.268	0.06%	99.88%
165.0	10.662	1.724	3333.992	0.05%	99.93%
170.0	10.663	1.265	3335.256	0.04%	99.97%
175.0	10.885	0.771	3336.027	0.02%	99.99%
180.0	5.462	0.195	3336.223	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2174.25	65.17%	65.17%
0-40	2601.16	77.97%	77.97%
0-60	3012.13	90.29%	90.29%
0-90	3255.52	97.58%	97.58%
0-120	3313.13	99.31%	99.31%
0-180	3336.22	100.00%	100.00%
60-90	243.39	7.30%	7.30%
90-120	57.61	1.73%	1.73%
90-130	64.78	1.94%	1.94%
90-150	72.73	2.18%	2.18%
90-180	80.51	2.41%	2.41%
0-42.44	2668.98	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	465.94
10-20	954.46
20-30	753.84
30-40	426.91
40-50	248.43
50-60	162.54
60-70	115.34
70-80	78.90
80-90	49.14
90-100	30.60
100-110	17.12
110-120	9.89
120-130	7.17
130-140	4.27
140-150	3.69
150-160	4.01
160-170	2.99
170-180	0.77



C0(Max): ———

C0/C180: ———

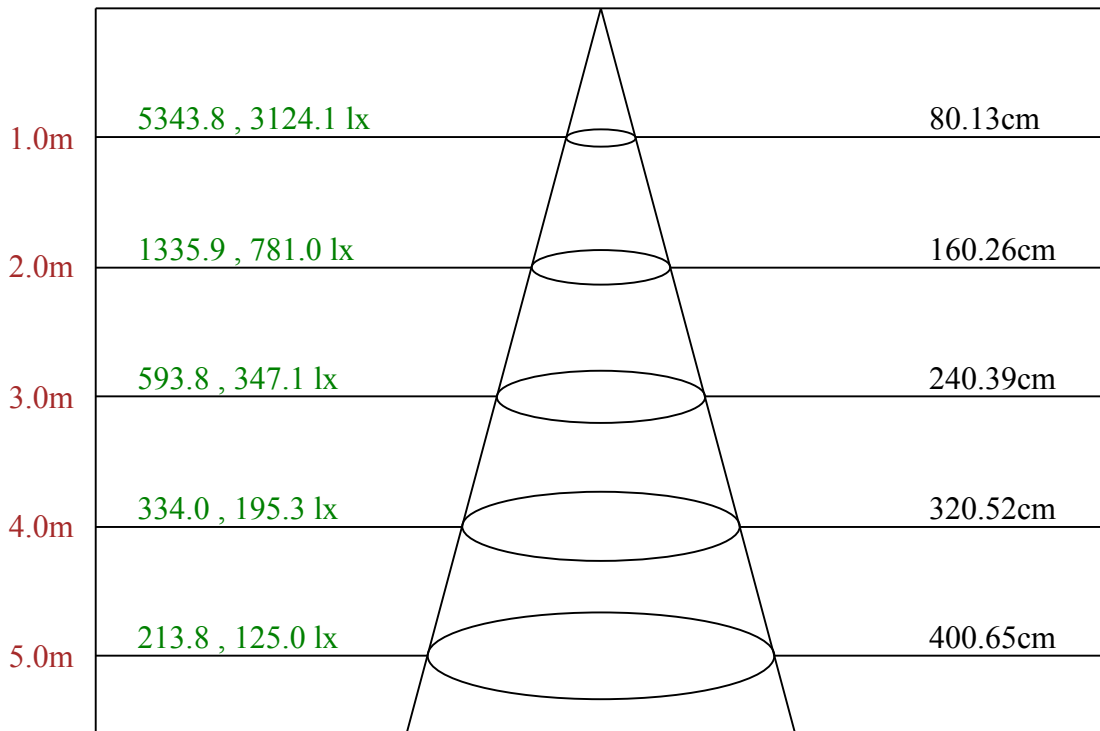
C90/C270: ———

Field angle(10%Imax):C0/180Left:42.6 Right:42.6

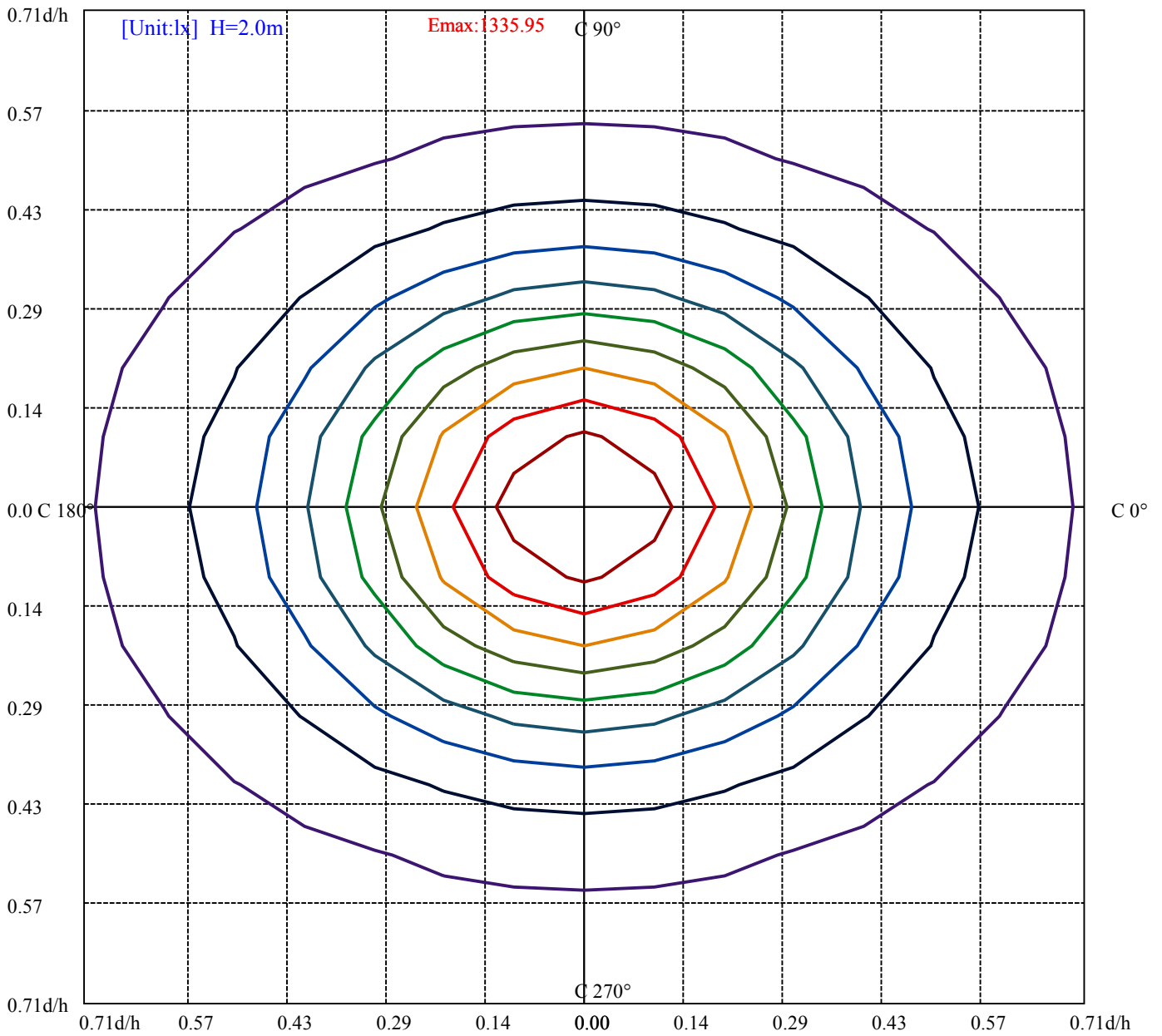
:C90/270Left:32.6 Right:32.6










Beam Angle(50%Imax):C0/180Left:21.3 Right:21.3

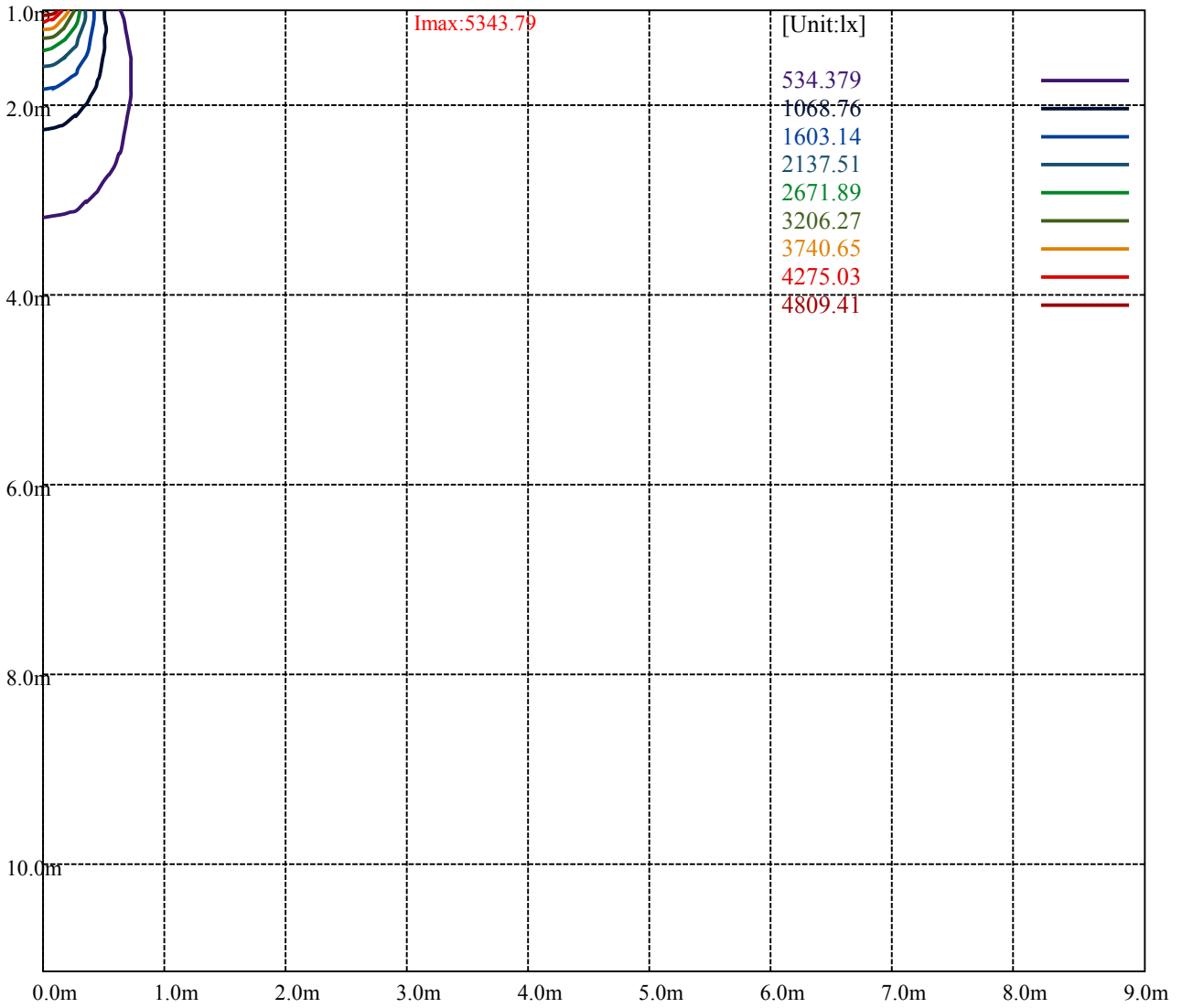
:C90/270Left:16.9 Right:16.9



Max , Ave Beam angle of C0 plane 43.67



(10%Emax) 133.5945	
(20%Emax) 267.19	
(30%Emax) 400.7825	
(40%Emax) 534.3775	
(50%Emax) 667.9725	
(60%Emax) 801.5675	
(70%Emax) 935.1625	
(80%Emax) 1068.755	
(90%Emax) 1202.35	



Luminance Table

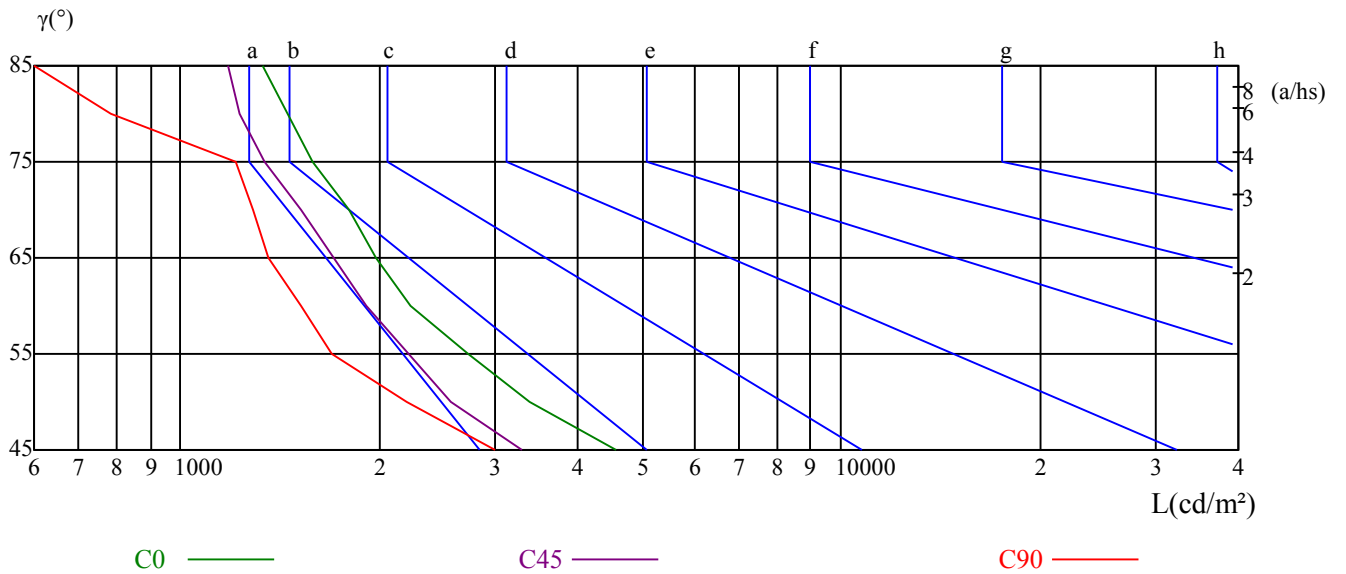
γ	45	50	55	60	65	70	75	80	85
C0	4566	3388	2733	2236	1972	1800	1586	1452	1334
C45	3292	2570	2209	1916	1709	1519	1338	1227	1178
C90	2999	2202	1696	1525	1356	1288	1215	785	418

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3713	1720	3101	4024	1782	3234	7610	1016	6287

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



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	1.18	1.18	1.18	1.15	1.15	1.15	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	0.98
1	1.08	1.05	1.02	1.06	1.03	1.01	1.01	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.89
2	0.99	0.95	0.91	0.98	0.93	0.90	0.94	0.90	0.87	0.90	0.88	0.85	0.87	0.85	0.83	0.81
3	0.92	0.86	0.82	0.90	0.85	0.81	0.87	0.83	0.79	0.85	0.81	0.78	0.82	0.79	0.76	0.75
4	0.86	0.80	0.75	0.84	0.79	0.74	0.82	0.77	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.69
5	0.80	0.74	0.69	0.79	0.73	0.69	0.77	0.72	0.68	0.75	0.70	0.67	0.73	0.69	0.66	0.64
6	0.75	0.69	0.64	0.74	0.68	0.64	0.72	0.67	0.63	0.71	0.66	0.63	0.69	0.65	0.62	0.60
7	0.71	0.64	0.60	0.70	0.64	0.60	0.68	0.63	0.59	0.67	0.62	0.59	0.66	0.62	0.58	0.57
8	0.67	0.61	0.56	0.66	0.60	0.56	0.65	0.60	0.56	0.64	0.59	0.55	0.63	0.58	0.55	0.54
9	0.63	0.57	0.53	0.63	0.57	0.53	0.62	0.56	0.53	0.61	0.56	0.52	0.60	0.55	0.52	0.51
10	0.60	0.54	0.50	0.60	0.54	0.50	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.48

ZhongShan Halcon Lighting & Electrical Co., Ltd HG-L203-252F-25W

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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	5343.79	5664.82	5405.15	4836.89	3885.34	2908.00	2086.29	1333.06	870.62
15.0	5343.79	5632.64	5347.37	4725.71	3834.03	2828.43	2004.93	1316.88	815.43
30.0	5343.79	5596.74	5254.03	4580.39	3687.34	2525.92	1615.65	1060.78	659.13
45.0	5343.79	5530.59	5107.11	4341.77	3152.95	2095.62	1300.35	774.41	487.86
60.0	5343.79	5447.38	4941.11	3955.59	2725.04	1725.11	992.73	575.64	386.46
75.0	5343.79	5321.49	4809.67	3612.16	2411.97	1461.45	784.67	484.18	344.19
90.0	5343.79	5209.81	4623.36	3419.38	2239.37	1333.51	727.53	477.33	334.49
105.0	5343.79	5088.36	4446.72	3285.45	2163.67	1301.71	731.17	473.99	343.20
120.0	5343.79	4990.66	4342.70	3317.25	2187.44	1394.22	834.10	509.68	363.56
135.0	5343.79	4936.87	4300.42	3396.16	2368.45	1514.62	946.86	602.55	420.83
150.0	5343.79	4925.67	4248.71	3396.03	2516.51	1660.36	1056.12	695.13	472.66
165.0	5343.79	4922.38	4271.75	3410.85	2507.73	1761.44	1169.41	794.54	519.64
180.0	5343.79	4720.39	3847.10	2843.97	1847.96	1350.84	921.31	597.61	416.19
195.0	5343.79	4752.62	3868.12	2920.83	2069.52	1385.06	925.77	581.29	407.27
210.0	5343.79	4788.92	3890.43	2970.18	1883.11	1291.07	837.74	544.90	378.98
225.0	5343.79	4809.68	3908.32	2808.37	1895.22	1180.66	742.67	476.07	340.96
240.0	5343.79	4844.72	3845.69	2736.75	1772.85	1064.79	625.18	425.20	309.89
255.0	5343.79	4834.64	3836.86	2683.04	1673.67	923.77	564.43	398.58	301.38
270.0	5343.79	4958.73	3915.35	2770.82	1675.09	916.51	564.28	385.06	288.35
285.0	5343.79	5037.45	4051.73	2874.66	1814.32	1001.52	587.22	392.36	293.17
300.0	5343.79	5054.16	4218.32	3119.82	2068.28	1228.10	707.11	444.45	308.76
315.0	5343.79	5116.85	4456.92	3430.94	2431.92	1529.40	919.03	566.90	382.57
330.0	5343.79	5169.79	4608.83	3797.70	2709.55	1794.54	1471.64	747.07	485.64
345.0	5343.79	5195.56	4689.71	3927.05	2944.64	2095.81	1401.22	888.48	573.07
360.0	5343.79	5664.82	5405.15	4836.89	3885.34	2908.00	2086.29	1333.06	870.62
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	555.81	379.73	285.46	215.21	176.97	149.40	119.17	96.93	74.70
15.0	519.40	349.85	261.94	206.32	168.65	141.74	121.10	97.78	77.15
30.0	435.19	301.01	230.29	183.14	147.78	126.02	103.36	81.60	68.00
45.0	335.52	247.56	200.40	159.60	128.77	104.28	81.61	65.29	52.59
60.0	279.26	215.30	163.95	125.22	99.09	76.57	58.55	45.94	34.23
75.0	255.91	180.12	125.73	91.84	75.79	56.18	41.02	32.10	20.51
90.0	247.54	169.46	114.45	90.50	72.75	54.12	47.91	26.62	10.65
105.0	257.18	188.72	138.69	103.58	85.14	63.20	42.13	30.72	20.19
120.0	275.71	217.44	173.08	137.42	113.07	87.85	66.97	53.06	39.14
135.0	303.45	233.02	193.89	155.64	129.55	105.21	84.34	65.21	53.91
150.0	340.21	256.24	205.16	167.07	133.31	106.48	87.43	69.25	56.27
165.0	370.56	276.63	215.44	169.77	137.02	112.89	93.07	72.39	59.46
180.0	312.14	238.33	188.53	149.40	121.83	100.49	79.15	63.14	51.58
195.0	299.62	232.34	192.87	154.29	126.49	104.96	85.22	68.18	54.72
210.0	282.87	223.04	176.80	147.78	122.40	100.64	83.41	67.09	54.40
225.0	268.41	213.10	174.11	146.90	122.42	99.75	77.99	64.38	52.59
240.0	253.14	194.58	160.35	128.82	102.70	81.98	63.06	47.74	36.03
255.0	224.70	161.39	123.94	98.08	76.68	53.50	40.13	29.43	16.05
270.0	206.72	140.18	103.81	86.06	65.66	58.56	39.93	17.74	6.21
285.0	217.68	151.85	108.84	88.65	71.10	51.79	43.89	29.84	17.56
300.0	240.92	187.87	145.25	126.11	91.32	70.45	54.79	41.75	33.05
315.0	315.62	219.98	175.63	142.59	118.25	94.77	74.77	60.86	49.56
330.0	330.69	249.31	197.37	158.42	135.04	111.67	87.43	71.85	57.13
345.0	375.73	274.90	218.03	174.08	144.78	126.68	99.96	79.28	65.49
360.0	555.81	379.73	285.46	215.21	176.97	149.40	119.17	96.93	74.70

Intensity data(cd)									
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	63.14	56.92	48.02	35.57	26.68	23.12	24.01	24.01	18.68
15.0	65.49	57.41	49.34	36.78	22.43	19.74	18.84	18.84	15.25
30.0	55.31	47.15	38.99	27.20	15.41	12.69	10.88	9.97	8.16
45.0	42.62	34.46	29.02	20.86	12.70	9.97	6.35	6.35	5.44
60.0	25.22	19.82	17.12	13.51	8.11	5.41	4.50	4.50	4.50
75.0	10.70	5.35	2.68	3.57	3.57	2.68	2.68	2.68	2.68
90.0	3.55	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.89
105.0	11.41	6.14	3.51	3.51	3.51	2.63	2.63	2.63	2.63
120.0	29.57	22.61	18.26	13.05	7.83	5.22	4.35	4.35	4.35
135.0	41.73	33.04	24.35	16.52	11.30	6.96	6.96	6.09	6.09
150.0	44.15	34.63	27.70	16.45	12.99	10.39	10.39	9.52	7.79
165.0	47.40	37.92	30.16	20.68	17.24	16.37	16.37	15.51	11.20
180.0	41.80	35.57	26.68	22.23	20.45	20.45	20.45	14.23	9.78
195.0	44.85	35.88	25.12	20.63	18.84	17.94	17.04	13.46	9.87
210.0	41.71	35.36	23.57	16.32	13.60	11.79	10.88	8.16	7.25
225.0	40.81	34.46	24.48	15.42	10.88	8.16	7.25	6.35	5.44
240.0	27.03	20.72	16.22	11.71	7.21	5.41	5.41	4.50	3.60
255.0	7.13	4.46	3.57	3.57	3.57	2.68	2.68	2.68	2.68
270.0	2.66	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
285.0	9.66	5.27	4.39	4.39	3.51	3.51	2.63	2.63	2.63
300.0	26.09	20.87	17.40	13.05	7.83	5.22	5.22	4.35	3.48
315.0	40.00	33.04	26.08	16.52	12.17	7.83	6.96	6.09	5.22
330.0	47.61	38.96	28.57	18.18	14.72	12.12	11.25	9.52	6.93
345.0	56.01	49.98	37.92	24.13	21.54	18.96	18.96	16.37	12.06
360.0	63.14	56.92	48.02	35.57	26.68	23.12	24.01	24.01	18.68
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	12.45	8.00	7.11	9.78	10.67	12.45	12.45	11.56	11.56
15.0	10.76	7.18	7.18	9.87	10.76	12.56	12.56	11.66	11.66
30.0	6.35	6.35	6.35	8.16	10.88	11.79	12.69	11.79	11.79
45.0	4.53	5.44	5.44	7.25	9.97	11.79	11.79	11.79	11.79
60.0	3.60	3.60	5.41	6.31	8.11	10.81	11.71	11.71	11.71
75.0	2.68	2.68	4.46	6.24	8.03	10.70	11.59	11.59	11.59
90.0	1.77	1.77	3.55	5.32	7.10	9.76	10.65	10.65	10.65
105.0	2.63	3.51	4.39	6.14	7.90	10.53	10.53	10.53	10.53
120.0	3.48	4.35	5.22	6.96	9.57	10.44	11.31	11.31	10.44
135.0	5.22	5.22	6.09	7.83	10.43	11.30	11.30	11.30	10.43
150.0	6.06	6.06	6.93	7.79	10.39	11.25	12.12	11.25	11.25
165.0	7.76	6.89	7.76	9.48	10.34	12.06	12.06	11.20	10.34
180.0	6.23	6.23	7.11	8.00	9.78	10.67	9.78	10.67	10.67
195.0	7.18	7.18	7.18	8.07	9.87	10.76	10.76	10.76	10.76
210.0	6.35	6.35	7.25	7.25	9.97	9.97	10.88	10.88	10.88
225.0	4.53	5.44	6.35	7.25	8.16	9.97	9.97	9.97	10.88
240.0	3.60	4.50	5.41	6.31	7.21	9.91	9.91	9.91	10.81
255.0	2.68	3.57	4.46	5.35	7.13	8.03	8.03	9.81	10.70
270.0	1.77	2.66	3.55	4.44	6.21	7.10	7.99	9.76	10.65
285.0	2.63	2.63	3.51	5.27	7.02	7.90	9.66	9.66	10.53
300.0	3.48	4.35	4.35	6.09	6.96	7.83	9.57	9.57	10.44
315.0	4.35	5.22	5.22	6.09	7.83	9.56	9.56	9.56	10.43
330.0	6.06	6.06	6.06	6.93	7.79	9.52	9.52	9.52	10.39
345.0	7.76	6.89	6.89	7.76	9.48	9.48	9.48	9.48	10.34
360.0	12.45	8.00	7.11	9.78	10.67	12.45	12.45	11.56	11.56

Intensity data(cd)

C/γ(°)	180.0
0.0	11.56
15.0	11.66
30.0	11.79
45.0	11.79
60.0	10.81
75.0	10.70
90.0	10.65
105.0	10.53
120.0	10.44
135.0	10.43
150.0	10.39
165.0	10.34
180.0	0.00
195.0	0.00
210.0	0.00
225.0	0.00
240.0	0.00
255.0	0.00
270.0	0.00
285.0	0.00
300.0	0.00
315.0	0.00
330.0	0.00
345.0	0.00
360.0	11.56