
Nata

Client:

LumCAT: 2-1678-M4

Luminaire: 92.70.125.00+92.70.152.00

Report No: 200915-B017

Test No: 200914-C017

LampCAT: Vesta DW LES9 Gen2 PD

Lamp flux(lm): 1286.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 34.8300

Current(A): 0.3700

Power (W): 12.8870

PF: 0.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 1078.80, Efficiency(%): 83.89% , Luminous Efficacy(lm/W): 83.71

Central intensity(cd): 7361.859, Maximum intensity(cd): 7361.859

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=13.2

[C90/270]Total=13.2

Field angle(10%Imax): [C0/180]Total=34.8

[C90/270]Total=34.8

Maximum s/h(1/2): C0_180=0.23 C90_270=0.23

Maximum s/h(1/4): C0_180=0.24 C90_270=0.24

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 83.89%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.587%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7361.859	0.000	0	.000%	.000%
1.0	7261.031	6.997	6.997	.544%	.649%
2.0	6938.930	20.381	27.378	1.585%	2.538%
3.0	6381.070	31.857	59.235	2.477%	5.491%
4.0	5716.547	40.495	99.73	3.149%	9.244%
5.0	4997.320	46.090	145.82	3.584%	13.517%
6.0	4132.266	47.978	193.798	3.731%	17.964%
7.0	3384.141	46.654	240.453	3.628%	22.289%
8.0	2790.211	44.189	284.641	3.436%	26.385%
9.0	2246.625	40.821	325.462	3.174%	30.169%
10.0	1826.156	36.857	362.319	2.866%	33.585%
11.0	1548.773	33.722	396.042	2.622%	36.711%
12.0	1315.617	31.312	427.354	2.435%	39.614%
13.0	1134.190	29.073	456.427	2.261%	42.309%
14.0	1018.821	27.558	483.985	2.143%	44.863%
15.0	919.448	26.609	510.595	2.069%	47.330%
16.0	832.669	25.673	536.268	1.996%	49.710%
17.0	759.783	24.799	561.067	1.928%	52.008%
18.0	704.285	24.139	585.206	1.877%	54.246%
19.0	655.826	23.663	608.869	1.840%	56.439%
20.0	617.189	23.300	632.169	1.812%	58.599%
21.0	581.815	23.023	655.192	1.790%	60.733%
22.0	552.220	22.789	677.981	1.772%	62.846%
23.0	528.848	22.684	700.665	1.764%	64.948%
24.0	505.238	22.609	723.274	1.758%	67.044%
25.0	485.198	22.520	745.794	1.751%	69.132%
26.0	468.457	22.511	768.305	1.750%	71.218%
27.0	453.473	22.555	790.86	1.754%	73.309%
28.0	435.396	22.504	813.365	1.750%	75.395%
29.0	421.432	22.417	835.782	1.743%	77.473%
30.0	406.863	22.364	858.145	1.739%	79.546%
31.0	390.980	22.203	880.348	1.727%	81.604%
32.0	377.276	22.010	902.358	1.711%	83.644%
33.0	360.640	21.739	924.097	1.690%	85.660%
34.0	336.382	21.094	945.191	1.640%	87.615%
35.0	303.005	19.857	965.048	1.544%	89.456%
36.0	274.275	18.381	983.429	1.429%	91.159%
37.0	223.917	16.248	999.677	1.263%	92.665%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	182.974	13.581	1013.259	1.056%	93.924%
39.0	141.272	11.067	1024.326	.861%	94.950%
40.0	103.697	8.544	1032.87	.664%	95.742%
41.0	77.414	6.449	1039.319	.501%	96.340%
42.0	57.930	4.917	1044.236	.382%	96.796%
43.0	42.195	3.709	1047.945	.288%	97.140%
44.0	32.738	2.828	1050.773	.220%	97.402%
45.0	25.847	2.251	1053.025	.175%	97.611%
46.0	19.371	1.768	1054.793	.138%	97.774%
47.0	15.124	1.372	1056.165	.107%	97.902%
48.0	11.658	1.083	1057.248	.084%	98.002%
49.0	8.719	0.837	1058.084	.065%	98.080%
50.0	6.736	0.644	1058.729	.050%	98.139%
51.0	6.026	0.540	1059.269	.042%	98.189%
52.0	5.780	0.507	1059.775	.039%	98.236%
53.0	5.435	0.488	1060.263	.038%	98.282%
54.0	5.266	0.472	1060.735	.037%	98.325%
55.0	5.210	0.468	1061.203	.036%	98.369%
56.0	5.147	0.468	1061.671	.036%	98.412%
57.0	5.105	0.469	1062.139	.036%	98.455%
58.0	5.070	0.470	1062.61	.037%	98.499%
59.0	5.027	0.472	1063.082	.037%	98.543%
60.0	4.978	0.473	1063.554	.037%	98.587%
61.0	4.957	0.474	1064.029	.037%	98.631%
62.0	4.929	0.476	1064.505	.037%	98.675%
63.0	4.915	0.479	1064.984	.037%	98.719%
64.0	4.894	0.481	1065.465	.037%	98.764%
65.0	4.887	0.484	1065.949	.038%	98.809%
66.0	4.873	0.487	1066.436	.038%	98.854%
67.0	4.859	0.489	1066.925	.038%	98.899%
68.0	4.845	0.492	1067.417	.038%	98.945%
69.0	4.845	0.494	1067.911	.038%	98.990%
70.0	4.838	0.497	1068.408	.039%	99.037%
71.0	4.838	0.500	1068.908	.039%	99.083%
72.0	4.830	0.503	1069.411	.039%	99.129%
73.0	4.838	0.506	1069.917	.039%	99.176%
74.0	4.838	0.509	1070.425	.040%	99.223%
75.0	4.830	0.511	1070.936	.040%	99.271%

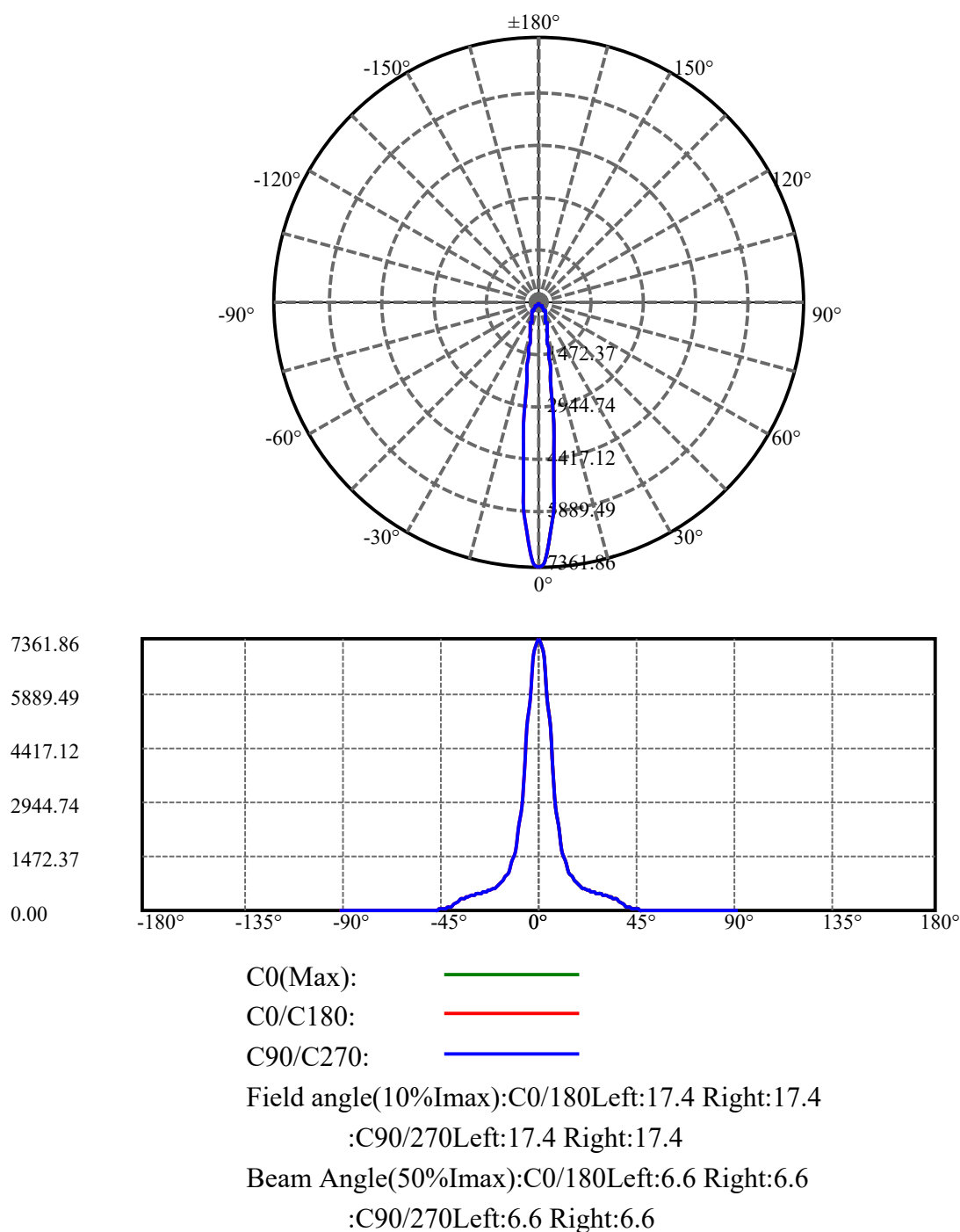
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.845	0.514	1071.45	.040%	99.318%
77.0	4.845	0.517	1071.966	.040%	99.366%
78.0	4.859	0.519	1072.486	.040%	99.414%
79.0	4.866	0.522	1073.008	.041%	99.463%
80.0	4.880	0.525	1073.534	.041%	99.512%
81.0	4.894	0.529	1074.062	.041%	99.561%
82.0	4.936	0.533	1074.595	.041%	99.610%
83.0	4.971	0.539	1075.134	.042%	99.660%
84.0	4.978	0.542	1075.676	.042%	99.710%
85.0	4.936	0.541	1076.217	.042%	99.760%
86.0	4.823	0.533	1076.75	.041%	99.810%
87.0	4.662	0.519	1077.269	.040%	99.858%
88.0	4.669	0.511	1077.781	.040%	99.905%
89.0	4.655	0.511	1078.292	.040%	99.953%
90.0	4.662	0.511	1078.802	.040%	100.000%

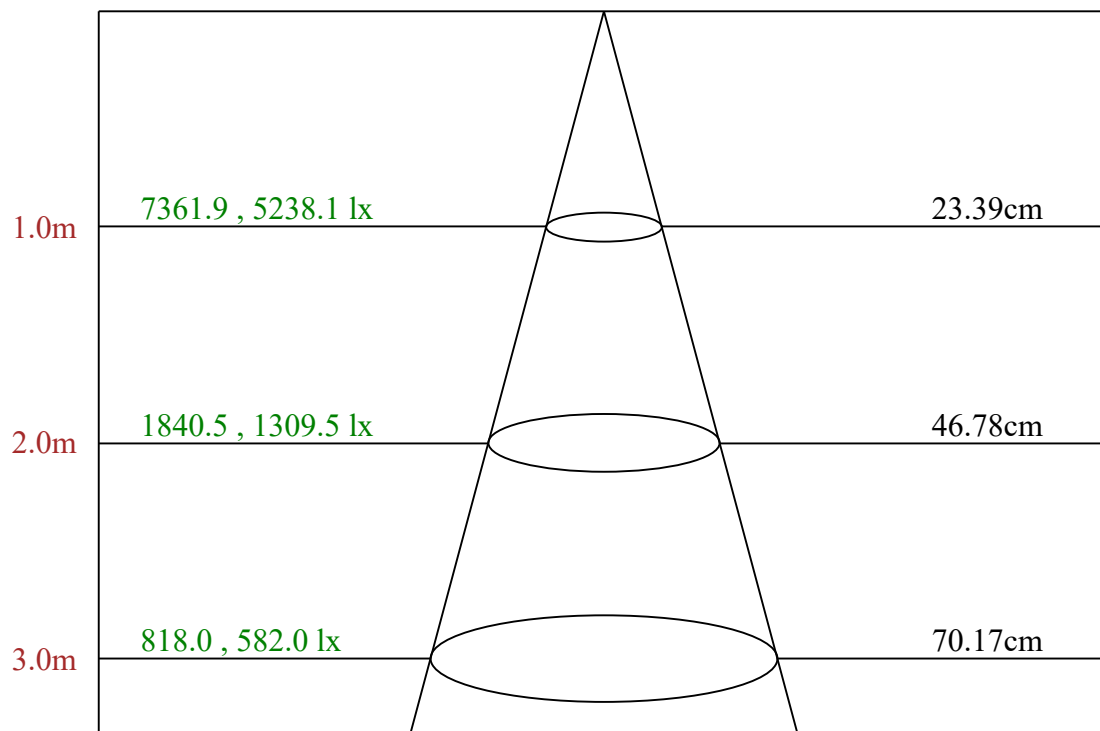
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	858.15	66.73%	79.55%
0-40	1032.87	80.32%	95.74%
0-60	1063.55	82.70%	98.59%
0-90	1078.29	83.85%	99.95%
0-120	1078.29	83.85%	99.95%
0-180	1078.80	83.89%	100.00%
60-90	15.21	1.18%	1.41%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-30.22	863.04	67.11%	80.00%

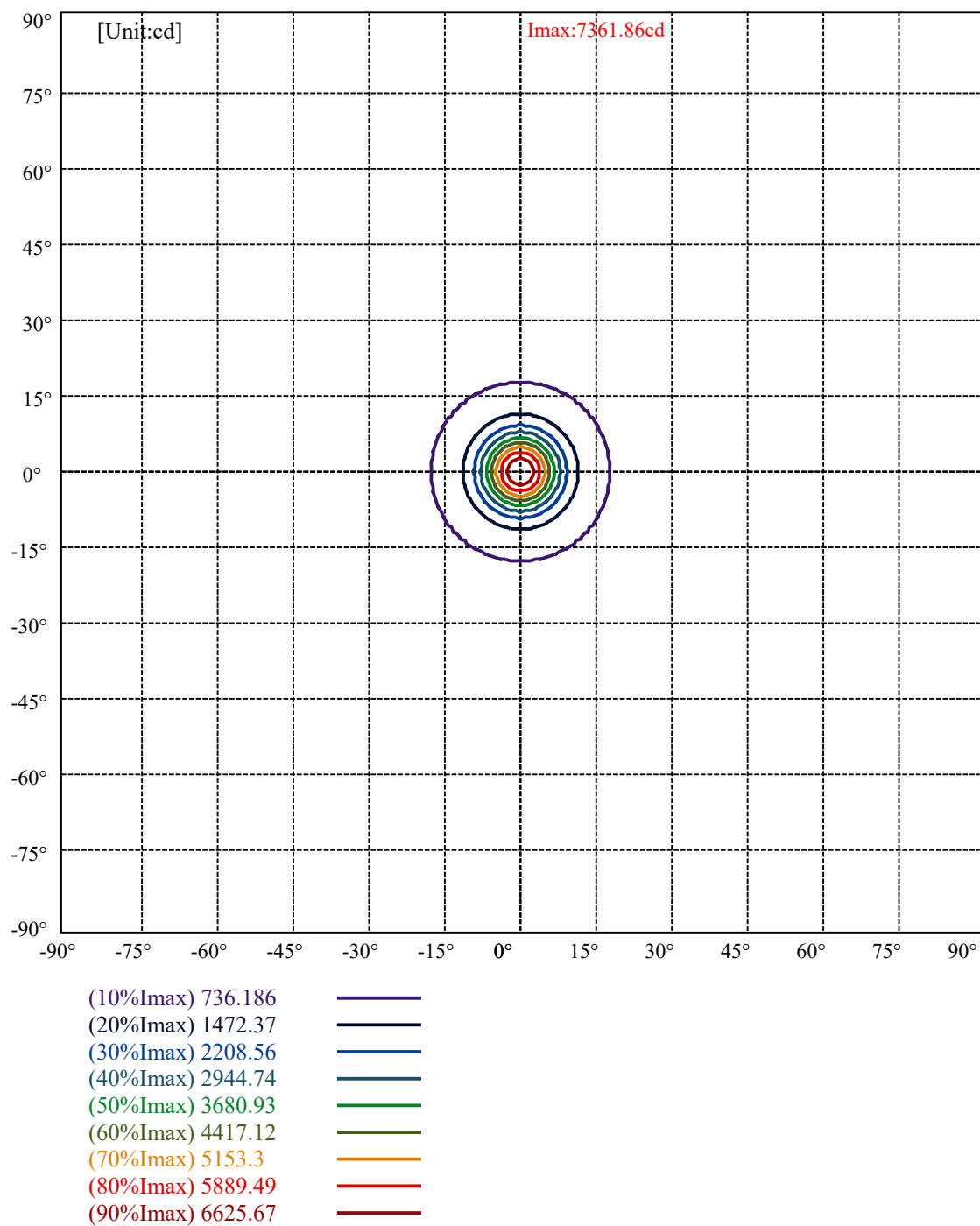
ZONAL LUMEN SUMMARY

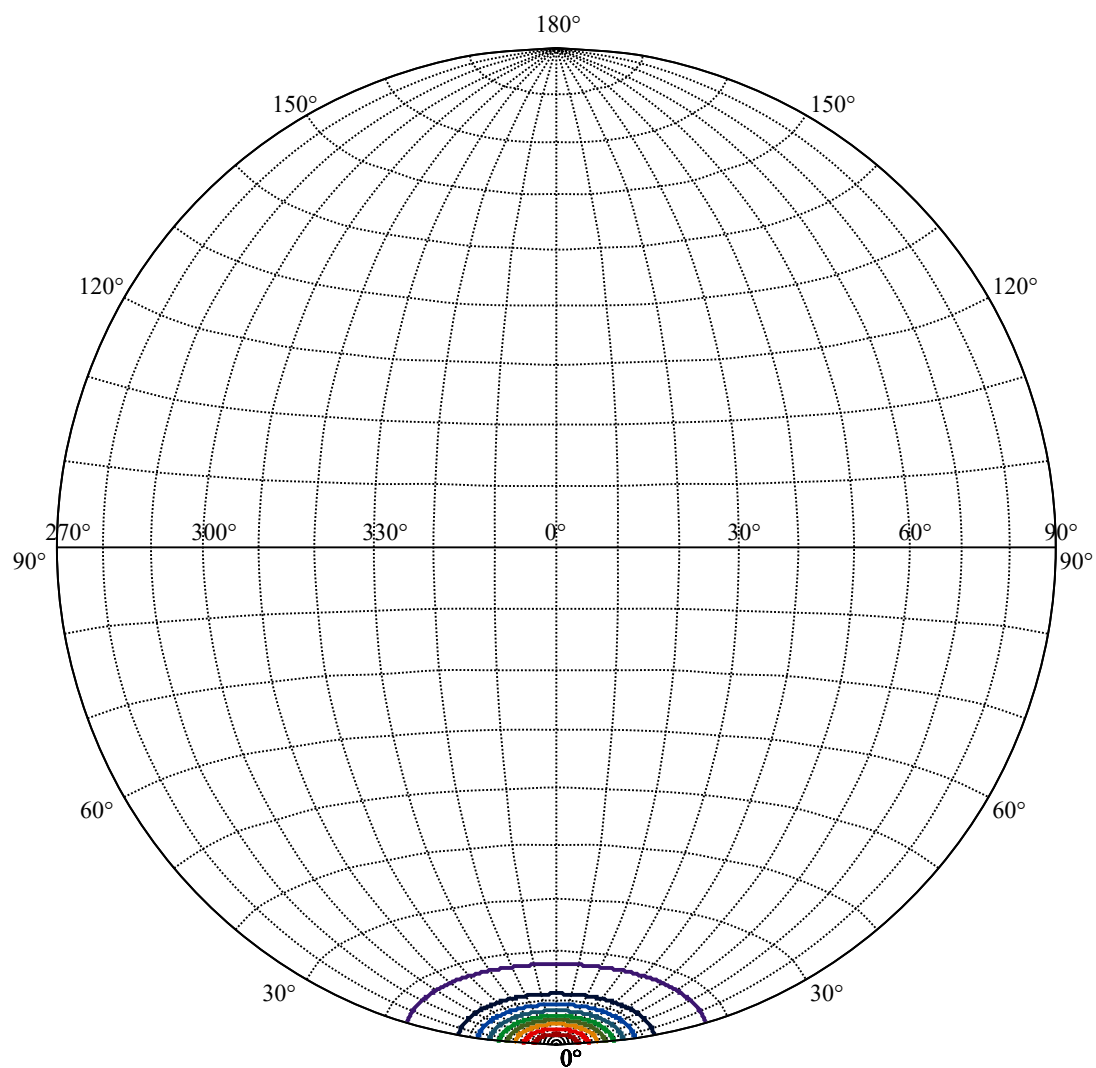
0-10	362.32
10-20	269.85
20-30	225.98
30-40	174.72
40-50	25.86
50-60	4.83
60-70	4.85
70-80	5.13
80-90	4.76
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00





Max , Ave Beam angle of C0 plane 13.34





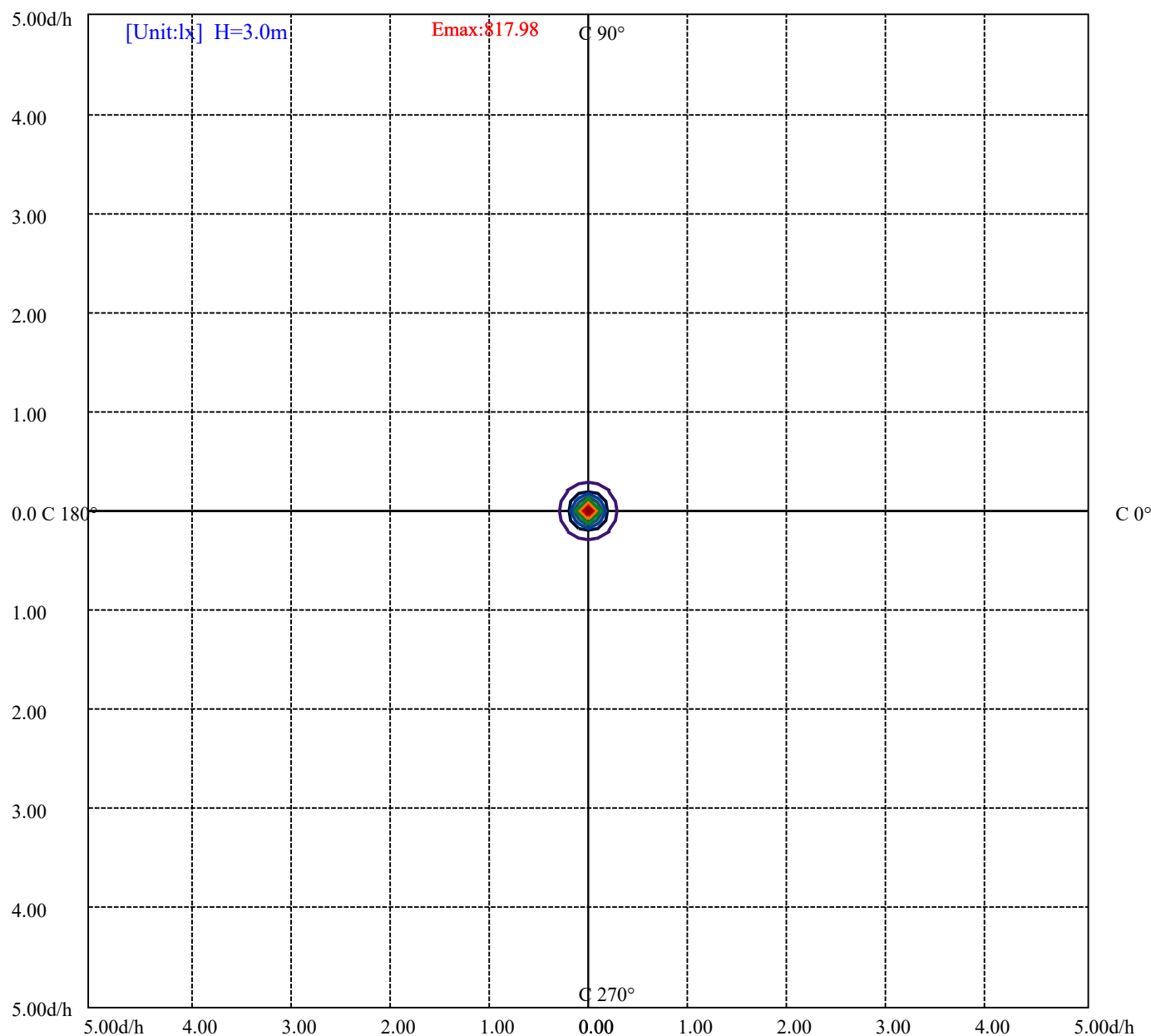
House

[Unit:cd]

Road

Imax:7361.86

(10%Imax)	736.186	—
(20%Imax)	1472.37	—
(30%Imax)	2208.56	—
(40%Imax)	2944.74	—
(50%Imax)	3680.93	—
(60%Imax)	4417.12	—
(70%Imax)	5153.3	—
(80%Imax)	5889.49	—
(90%Imax)	6625.67	—



(10%Emax)	81.79823	—
(20%Emax)	163.5967	—
(30%Emax)	245.3945	—
(40%Emax)	327.1933	—
(50%Emax)	408.9911	—
(60%Emax)	490.79	—
(70%Emax)	572.5878	—
(80%Emax)	654.3867	—
(90%Emax)	736.1844	—

Luminance Table

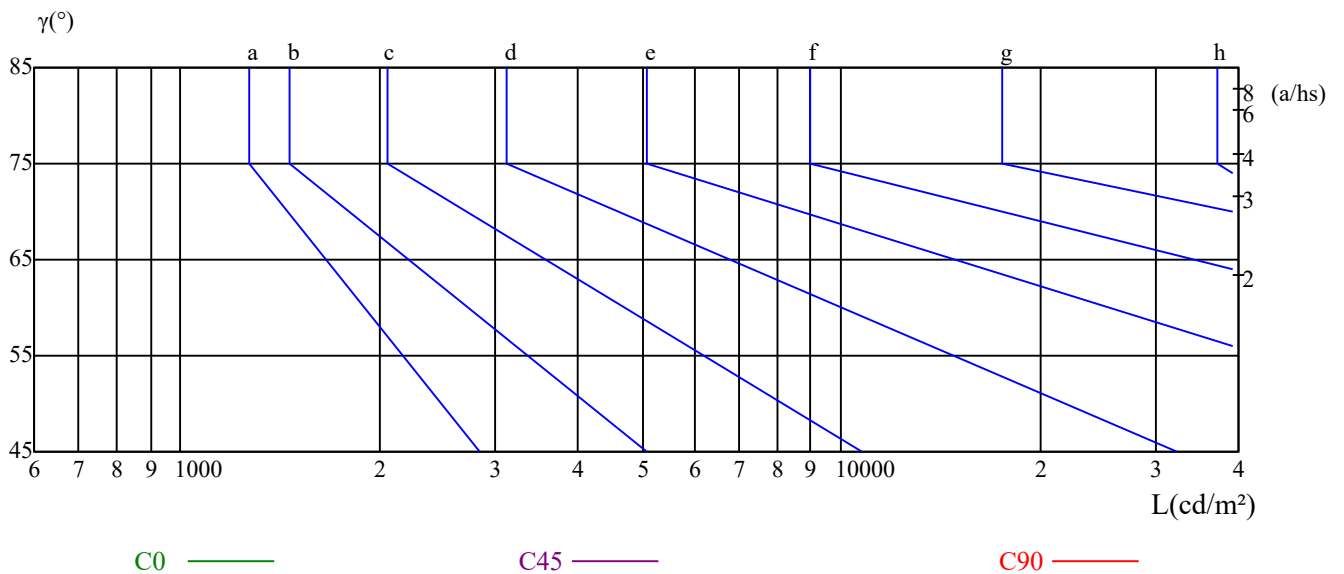
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

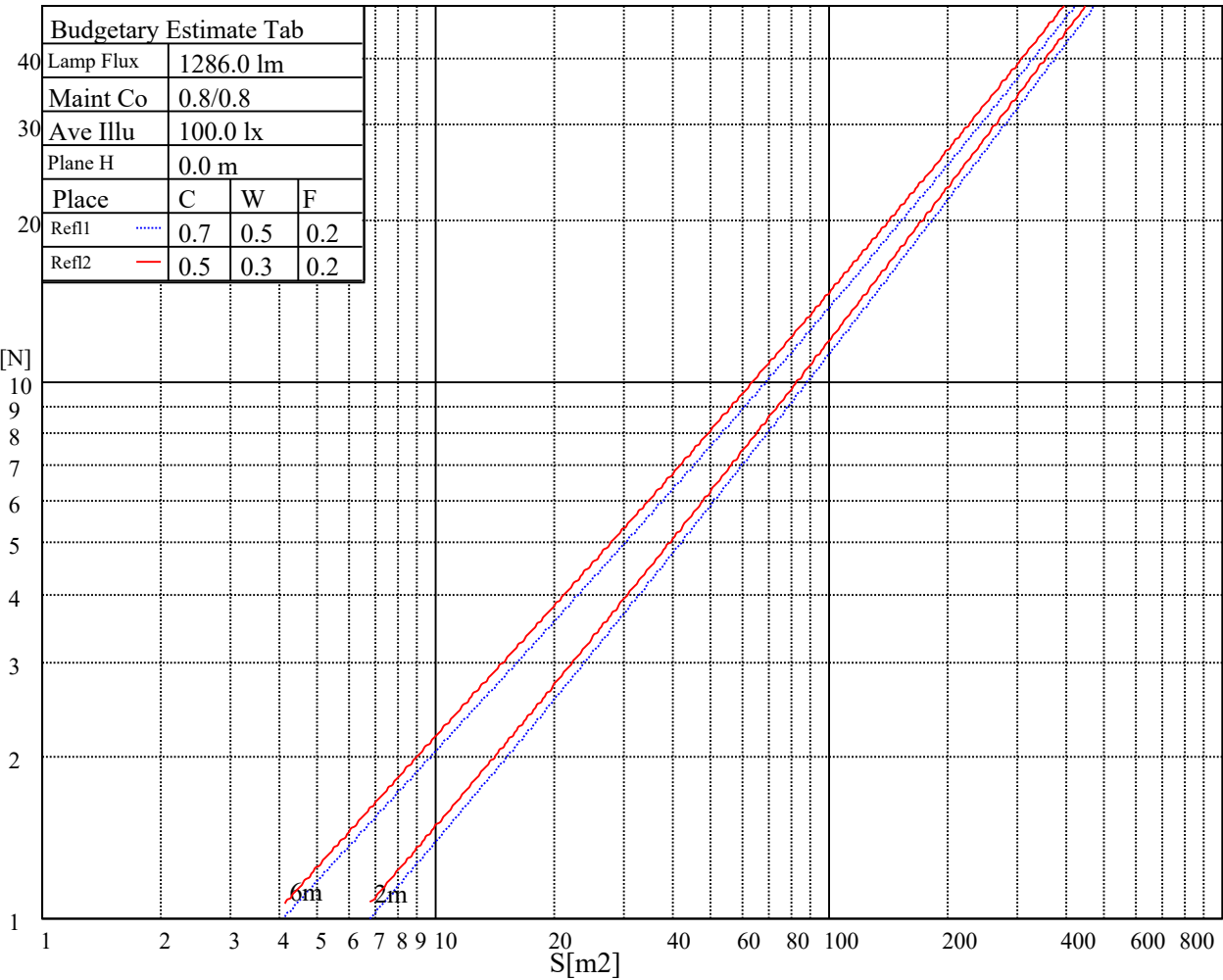
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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	1.00	1.00	1.00	0.98	0.98	0.98	0.93	0.93	0.93	0.89	0.89	0.89	0.86	0.86	0.86	0.84
1	0.94	0.92	0.90	0.92	0.90	0.89	0.89	0.87	0.86	0.85	0.84	0.83	0.83	0.82	0.81	0.80
2	0.88	0.85	0.83	0.87	0.84	0.82	0.84	0.82	0.80	0.82	0.80	0.79	0.80	0.78	0.77	0.76
3	0.84	0.80	0.77	0.83	0.79	0.77	0.80	0.78	0.76	0.79	0.76	0.74	0.77	0.75	0.73	0.72
4	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.74	0.72	0.70	0.69
5	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.70	0.68	0.72	0.70	0.67	0.71	0.69	0.67	0.66
6	0.73	0.68	0.66	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
7	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.61
8	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.58
9	0.64	0.60	0.58	0.64	0.60	0.58	0.63	0.60	0.57	0.63	0.60	0.57	0.62	0.59	0.57	0.56
10	0.62	0.58	0.56	0.62	0.58	0.56	0.61	0.58	0.55	0.61	0.58	0.55	0.60	0.57	0.55	0.54

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	7401.38	7243.31	6835.50	6214.50	5526.00	4774.50	3879.00	3240.00	2700.00
45.0	7384.50	7191.56	6788.81	6259.50	5533.31	4800.38	3950.44	3153.38	2587.50
90.0	7331.63	7138.13	6769.69	6108.19	5459.63	4730.63	3778.88	3084.19	2507.06
135.0	7329.94	7349.63	7106.06	6756.19	6078.38	5415.75	4709.81	3815.44	3180.94
180.0	7401.38	7341.75	7086.94	6579.56	5885.44	5180.06	4445.44	3562.31	2929.50
225.0	7384.50	7351.31	7123.50	6578.44	5986.69	5279.06	4321.69	3587.63	2942.44
270.0	7331.63	7340.06	7095.38	6663.38	5990.63	5276.25	4425.19	3608.44	2970.00
315.0	7329.94	7132.50	6705.56	5888.81	5272.31	4521.94	3547.69	3021.75	2504.25
360.0	7401.38	7243.31	6835.50	6214.50	5526.00	4774.50	3879.00	3240.00	2700.00
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2153.81	1818.56	1555.88	1325.25	1145.81	1019.25	907.88	828.00	756.00
45.0	2098.69	1732.50	1491.75	1308.94	1131.19	1016.44	923.63	835.88	767.25
90.0	1959.19	1656.00	1435.50	1200.38	1093.22	984.04	894.49	810.73	742.73
135.0	2622.94	2048.06	1692.56	1424.81	1188.00	1051.88	945.00	851.63	773.44
180.0	2392.31	1860.19	1551.94	1325.25	1106.94	1002.54	909.06	822.49	749.08
225.0	2316.94	1852.88	1551.38	1314.56	1108.35	1021.16	916.43	836.83	762.36
270.0	2379.94	1930.50	1636.31	1409.63	1197.56	1065.94	959.63	860.06	780.19
315.0	2049.19	1710.56	1474.88	1216.13	1102.44	989.33	899.49	815.74	747.23
360.0	2153.81	1818.56	1555.88	1325.25	1145.81	1019.25	907.88	828.00	756.00
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	698.63	656.44	617.06	581.06	555.19	531.56	506.25	487.13	469.13
45.0	711.56	664.31	622.69	588.38	559.13	533.81	509.63	488.81	472.50
90.0	691.76	643.78	608.12	573.58	544.16	522.34	499.61	479.87	463.78
135.0	714.38	663.75	620.44	586.69	555.75	531.00	507.94	488.25	471.94
180.0	694.35	638.44	607.11	572.01	539.94	521.38	502.54	481.05	466.37
225.0	703.41	658.58	620.16	579.32	550.58	525.60	497.76	480.26	462.15
270.0	722.81	671.06	627.19	594.56	563.63	539.44	514.69	493.31	475.31
315.0	697.39	650.25	614.76	578.93	549.39	525.66	503.49	482.91	466.48
360.0	698.63	656.44	617.06	581.06	555.19	531.56	506.25	487.13	469.13
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	454.50	436.50	421.31	407.25	390.38	376.31	359.44	335.25	302.63
45.0	456.75	437.63	422.44	406.13	389.81	377.44	362.25	340.31	304.31
90.0	448.65	431.89	416.19	402.41	387.90	373.89	356.57	332.10	295.31
135.0	458.44	441.00	429.75	415.13	398.25	386.44	371.25	343.69	314.44
180.0	451.46	433.63	422.66	408.71	393.41	379.80	360.51	337.28	305.72
225.0	446.57	428.51	414.84	399.83	385.03	369.62	355.84	334.46	301.73
270.0	459.56	440.44	425.81	410.63	393.19	379.69	365.63	343.69	313.31
315.0	451.86	433.58	418.44	404.83	389.87	375.02	353.64	324.28	286.59
360.0	454.50	436.50	421.31	407.25	390.38	376.31	359.44	335.25	302.63
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	285.19	219.38	178.65	139.73	98.16	73.69	55.58	39.88	31.28
45.0	287.44	224.66	176.29	131.85	98.04	69.58	50.18	38.25	28.91
90.0	258.58	213.64	174.15	132.24	95.46	70.71	53.72	38.64	30.09
135.0	285.75	239.79	198.62	159.69	117.23	87.98	65.64	47.48	36.11
180.0	272.19	229.05	187.26	142.88	103.95	77.57	58.84	42.08	32.57
225.0	268.99	227.14	188.66	146.42	109.35	82.80	63.06	45.62	35.49
270.0	287.44	233.27	194.68	153.17	115.76	88.20	64.24	47.87	37.69
315.0	248.63	204.41	165.49	124.20	91.63	68.79	52.20	37.74	29.76
360.0	285.19	219.38	178.65	139.73	98.16	73.69	55.58	39.88	31.28

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	24.81	18.68	14.74	11.48	8.61	6.81	6.19	5.85	5.40
45.0	22.84	17.61	13.44	10.46	7.93	6.41	5.96	5.74	5.34
90.0	23.68	17.49	13.50	10.35	7.82	6.30	5.85	5.63	5.29
135.0	28.58	21.26	16.65	12.88	9.45	7.31	6.24	5.96	5.68
180.0	25.48	19.01	14.96	11.59	8.89	6.75	5.96	5.79	5.51
225.0	27.84	20.64	16.09	12.26	8.89	6.64	5.85	5.68	5.40
270.0	29.70	22.28	17.55	13.50	10.13	7.20	6.02	5.85	5.51
315.0	23.85	18.00	14.06	10.74	8.04	6.47	6.13	5.74	5.34
360.0	24.81	18.68	14.74	11.48	8.61	6.81	6.19	5.85	5.40
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.34	5.23	5.18	5.12	5.12	5.06	5.01	5.01	4.95
45.0	5.23	5.23	5.18	5.12	5.06	5.06	5.01	4.95	4.95
90.0	5.23	5.18	5.18	5.06	5.06	5.01	5.01	4.95	4.95
135.0	5.34	5.29	5.18	5.18	5.12	5.06	5.01	5.01	4.95
180.0	5.23	5.18	5.12	5.06	5.06	5.01	4.95	4.95	4.89
225.0	5.18	5.18	5.06	5.06	5.01	4.95	4.89	4.89	4.84
270.0	5.29	5.23	5.18	5.12	5.06	5.06	5.01	4.95	4.95
315.0	5.29	5.18	5.12	5.12	5.06	5.01	4.95	4.95	4.95
360.0	5.34	5.23	5.18	5.12	5.12	5.06	5.01	5.01	4.95
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.89	4.89	4.89	4.89	4.89	4.84	4.84	4.84	4.84
45.0	4.95	4.95	4.95	4.89	4.89	4.89	4.89	4.89	4.89
90.0	4.95	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.95
135.0	4.95	4.95	4.89	4.89	4.89	4.84	4.84	4.84	4.84
180.0	4.89	4.84	4.84	4.84	4.78	4.78	4.78	4.78	4.78
225.0	4.84	4.84	4.84	4.78	4.78	4.78	4.78	4.73	4.73
270.0	4.95	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89
315.0	4.89	4.89	4.89	4.89	4.84	4.84	4.84	4.84	4.78
360.0	4.89	4.89	4.89	4.89	4.89	4.84	4.84	4.84	4.84
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.84	4.84	4.84	4.84	4.84	4.84	4.89	4.89	4.89
45.0	4.89	4.89	4.89	4.84	4.89	4.89	4.89	4.89	4.95
90.0	4.95	4.95	4.95	4.95	5.01	5.01	5.01	5.01	5.01
135.0	4.78	4.78	4.84	4.78	4.78	4.78	4.78	4.78	4.78
180.0	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73
225.0	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.78	4.78
270.0	4.89	4.95	4.95	4.95	4.95	4.95	5.01	5.01	5.01
315.0	4.84	4.84	4.78	4.84	4.84	4.84	4.84	4.84	4.89
360.0	4.84	4.84	4.84	4.84	4.84	4.84	4.89	4.89	4.89
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.95	5.01	5.12	5.18	5.23	5.29	4.67	4.67	4.61
45.0	5.01	5.06	5.12	5.18	5.29	4.89	4.67	4.67	4.67
90.0	5.01	5.06	5.01	4.89	4.73	4.67	4.67	4.67	4.61
135.0	4.78	4.84	4.84	4.84	4.67	4.67	4.67	4.67	4.67
180.0	4.73	4.73	4.73	4.73	4.67	4.67	4.67	4.67	4.67
225.0	4.78	4.78	4.84	4.84	4.78	4.67	4.67	4.67	4.67
270.0	5.01	5.06	5.06	5.01	4.95	4.73	4.67	4.67	4.67
315.0	4.89	4.95	5.06	5.18	5.18	5.01	4.61	4.67	4.67
360.0	4.95	5.01	5.12	5.18	5.23	5.29	4.67	4.67	4.61

Intensity data(cd)

C/ $\gamma(^{\circ})$	90.0
0.0	4.67
45.0	4.67
90.0	4.67
135.0	4.67
180.0	4.67
225.0	4.67
270.0	4.67
315.0	4.61
360.0	4.67