
Nata

Client:

LumCAT: 1709-M2

Luminaire: 92.70.125.00+92.70.152.00

Report No: 200915-B005

Voltage(V): 17.4800

Test No: 200915-C005

Current(A): 0.3430

LampCAT: Vesta DW LES6 Gen2 PD

Power (W): 5.9950

Lamp flux(lm): 573.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 493.48, Efficiency(%): 86.12% , Luminous Efficacy(lm/W): 82.31

Central intensity(cd): 1304.156, Maximum intensity(cd): 1304.156

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=19.8

[C90/270]Total=19.8

Field angle(10%Imax): [C0/180]Total=79.2

[C90/270]Total=79.2

Maximum s/h(1/2): C0_180=0.33 C90_270=0.33

Maximum s/h(1/4): C0_180=0.42 C90_270=0.42

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.12%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.432%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1304.156	0.000	0	.000%	.000%
1.0	1292.344	1.242	1.242	.217%	.252%
2.0	1250.255	3.649	4.892	.637%	.991%
3.0	1194.905	5.848	10.74	1.021%	2.176%
4.0	1127.292	7.773	18.513	1.357%	3.752%
5.0	1042.502	9.334	27.847	1.629%	5.643%
6.0	954.450	10.495	38.342	1.832%	7.770%
7.0	871.298	11.332	49.674	1.978%	10.066%
8.0	791.276	11.899	61.573	2.077%	12.477%
9.0	712.948	12.191	73.764	2.128%	14.948%
10.0	643.036	12.271	86.035	2.142%	17.434%
11.0	584.121	12.262	98.297	2.140%	19.919%
12.0	533.088	12.213	110.509	2.131%	22.394%
13.0	485.114	12.083	122.593	2.109%	24.843%
14.0	447.518	11.938	134.531	2.083%	27.262%
15.0	414.907	11.840	146.37	2.066%	29.661%
16.0	387.675	11.760	158.13	2.052%	32.044%
17.0	358.671	11.623	169.753	2.028%	34.399%
18.0	337.310	11.475	181.228	2.003%	36.725%
19.0	320.393	11.443	192.671	1.997%	39.043%
20.0	303.905	11.426	204.097	1.994%	41.359%
21.0	288.345	11.372	215.47	1.985%	43.663%
22.0	277.643	11.374	226.843	1.985%	45.968%
23.0	264.227	11.370	238.213	1.984%	48.272%
24.0	253.132	11.311	249.525	1.974%	50.564%
25.0	243.323	11.288	260.813	1.970%	52.852%
26.0	233.606	11.258	272.071	1.965%	55.133%
27.0	224.262	11.202	283.273	1.955%	57.403%
28.0	214.523	11.109	294.382	1.939%	59.654%
29.0	206.191	11.007	305.389	1.921%	61.885%
30.0	198.942	10.939	316.328	1.909%	64.102%
31.0	192.080	10.882	327.209	1.899%	66.307%
32.0	185.618	10.821	338.03	1.888%	68.499%
33.0	179.845	10.767	348.796	1.879%	70.681%
34.0	173.749	10.701	359.497	1.868%	72.850%
35.0	167.140	10.587	370.084	1.848%	74.995%
36.0	160.777	10.441	380.525	1.822%	77.111%
37.0	153.689	10.256	390.781	1.790%	79.189%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	145.990	10.003	400.784	1.746%	81.216%
39.0	136.048	9.627	410.411	1.680%	83.167%
40.0	125.986	9.139	419.549	1.595%	85.019%
41.0	115.284	8.592	428.141	1.499%	86.760%
42.0	102.769	7.922	436.063	1.383%	88.365%
43.0	90.338	7.153	443.216	1.248%	89.815%
44.0	78.996	6.391	449.607	1.115%	91.110%
45.0	67.338	5.624	455.231	.981%	92.249%
46.0	55.884	4.819	460.05	.841%	93.226%
47.0	47.032	4.093	464.143	.714%	94.056%
48.0	39.087	3.481	467.625	.608%	94.761%
49.0	32.984	2.960	470.584	.517%	95.361%
50.0	27.281	2.513	473.097	.439%	95.870%
51.0	23.189	2.135	475.232	.373%	96.303%
52.0	20.123	1.859	477.091	.324%	96.679%
53.0	17.297	1.628	478.719	.284%	97.009%
54.0	14.913	1.420	480.138	.248%	97.297%
55.0	13.120	1.251	481.39	.218%	97.550%
56.0	11.489	1.112	482.502	.194%	97.776%
57.0	9.851	0.976	483.478	.170%	97.973%
58.0	8.606	0.854	484.331	.149%	98.146%
59.0	7.502	0.753	485.084	.131%	98.299%
60.0	6.413	0.657	485.742	.115%	98.432%
61.0	5.442	0.566	486.307	.099%	98.547%
62.0	4.613	0.484	486.792	.085%	98.645%
63.0	3.867	0.412	487.204	.072%	98.729%
64.0	3.178	0.346	487.55	.060%	98.799%
65.0	2.693	0.291	487.84	.051%	98.858%
66.0	2.391	0.254	488.094	.044%	98.909%
67.0	2.243	0.233	488.327	.041%	98.956%
68.0	2.152	0.223	488.55	.039%	99.001%
69.0	2.116	0.218	488.767	.038%	99.045%
70.0	2.116	0.217	488.985	.038%	99.089%
71.0	2.116	0.219	489.204	.038%	99.134%
72.0	2.095	0.219	489.423	.038%	99.178%
73.0	2.116	0.220	489.643	.038%	99.223%
74.0	2.088	0.221	489.864	.039%	99.268%
75.0	2.102	0.221	490.085	.039%	99.312%

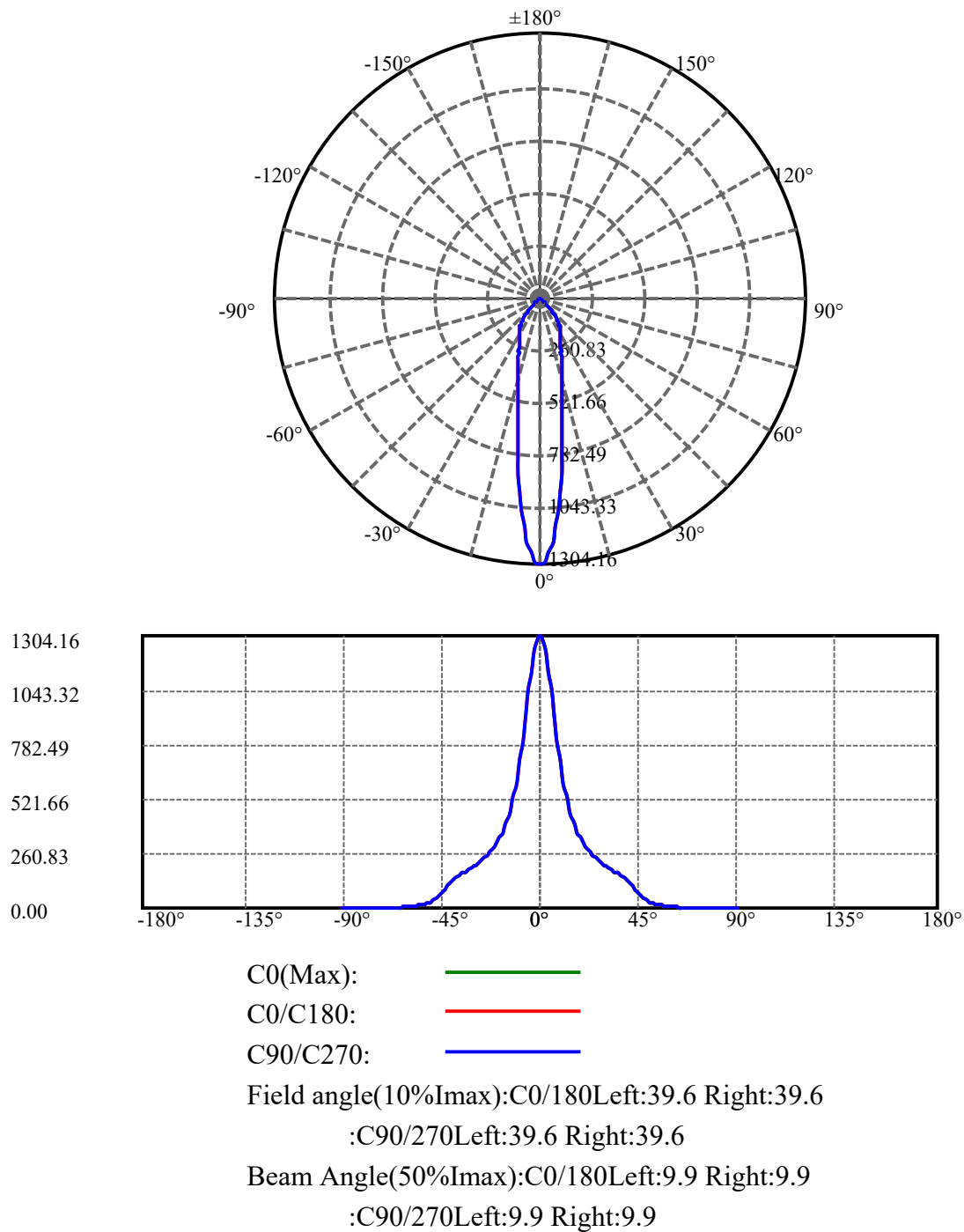
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.102	0.223	490.309	.039%	99.358%
77.0	2.102	0.224	490.533	.039%	99.403%
78.0	2.116	0.226	490.759	.039%	99.449%
79.0	2.095	0.226	490.985	.039%	99.495%
80.0	2.102	0.226	491.211	.039%	99.541%
81.0	2.102	0.227	491.439	.040%	99.587%
82.0	2.109	0.228	491.667	.040%	99.633%
83.0	2.130	0.230	491.897	.040%	99.680%
84.0	2.116	0.231	492.129	.040%	99.727%
85.0	2.123	0.231	492.36	.040%	99.773%
86.0	2.067	0.229	492.589	.040%	99.820%
87.0	2.025	0.224	492.813	.039%	99.865%
88.0	2.018	0.221	493.035	.039%	99.910%
89.0	2.025	0.222	493.256	.039%	99.955%
90.0	2.025	0.222	493.478	.039%	100.000%

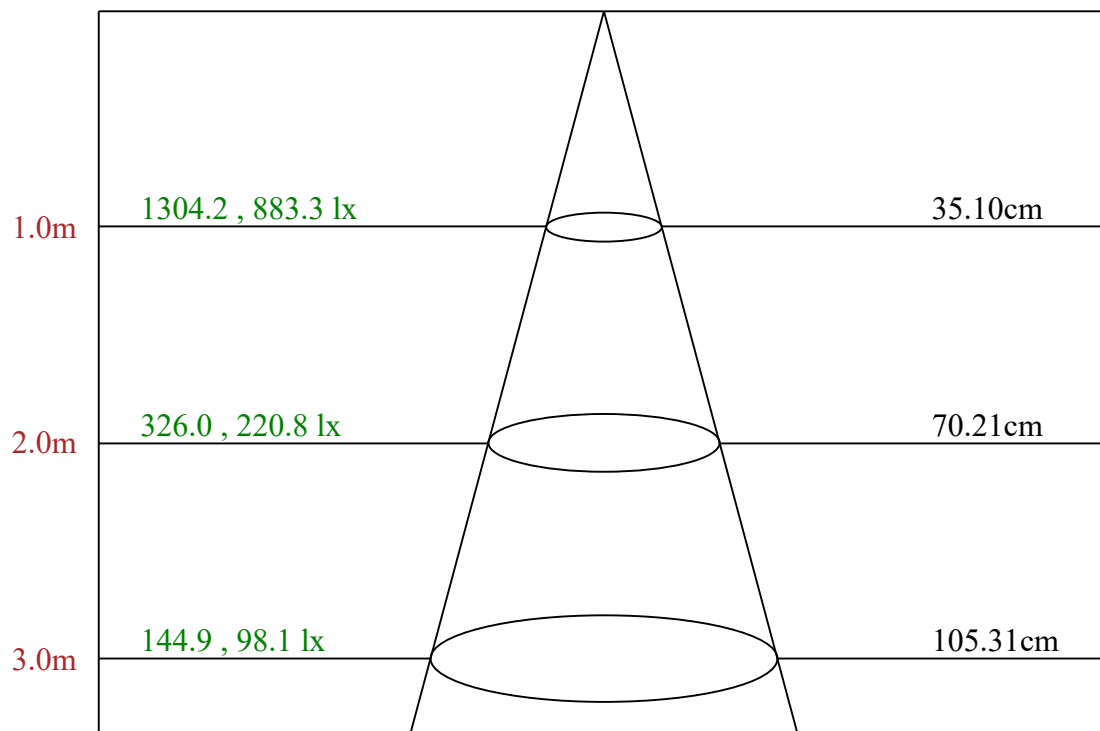
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	316.33	55.21%	64.10%
0-40	419.55	73.22%	85.02%
0-60	485.74	84.77%	98.43%
0-90	493.26	86.08%	99.96%
0-120	493.26	86.08%	99.96%
0-180	493.48	86.12%	100.00%
60-90	8.17	1.43%	1.66%
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%
0-37.40	394.78	68.90%	80.00%

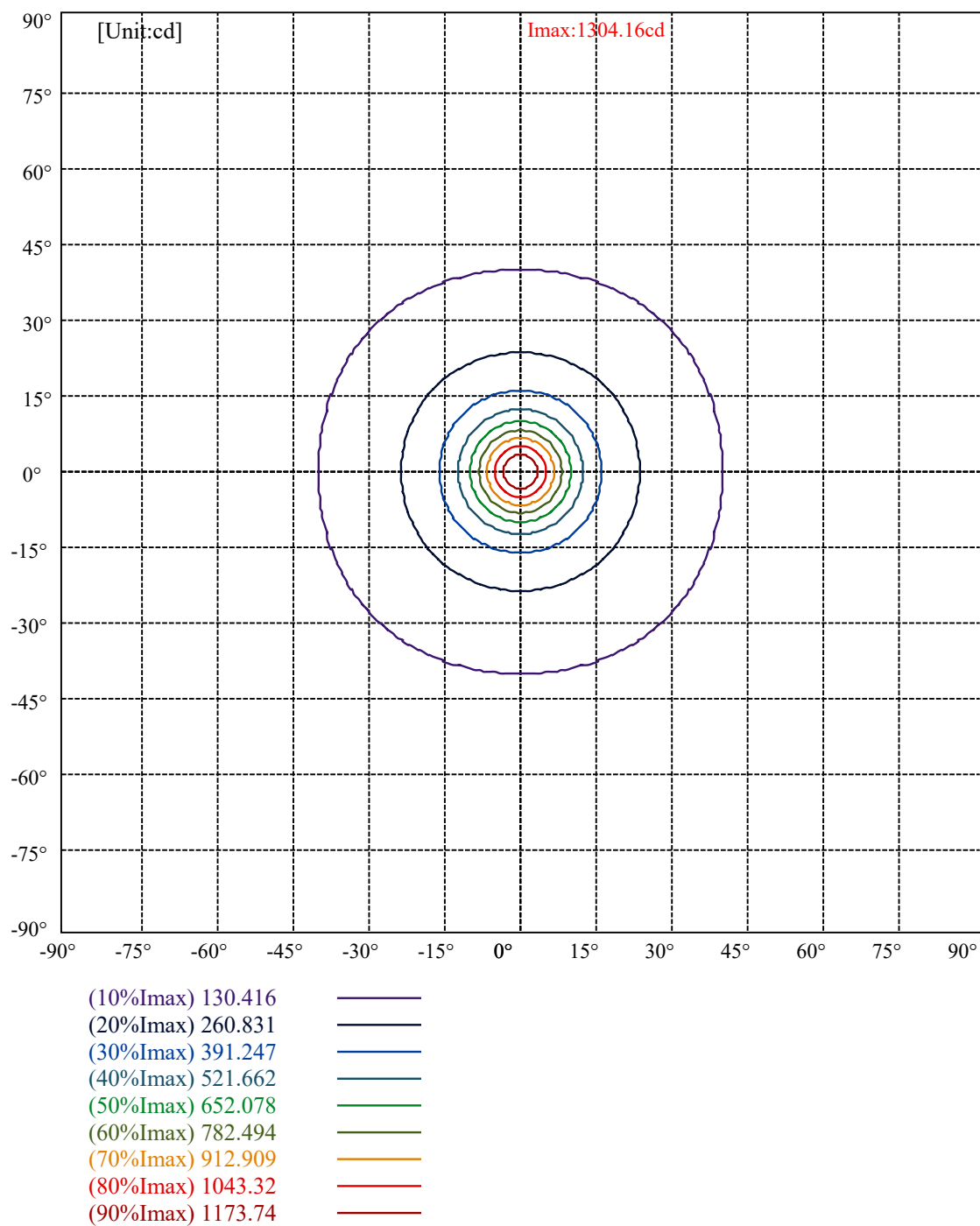
ZONAL LUMEN SUMMARY

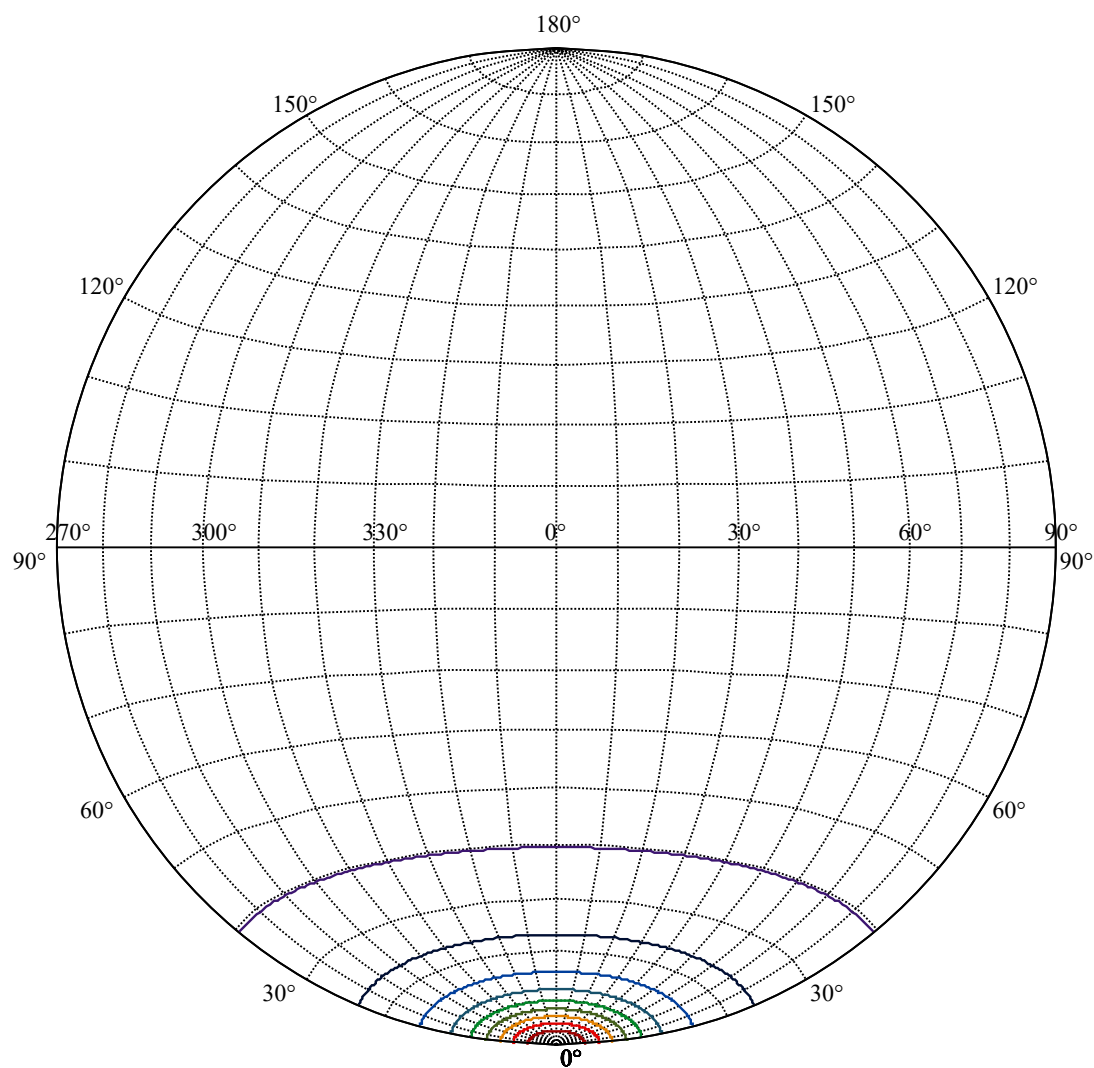
0-10	86.03
10-20	118.06
20-30	112.23
30-40	103.22
40-50	53.55
50-60	12.64
60-70	3.24
70-80	2.23
80-90	2.05
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00





Max , Ave Beam angle of C0 plane 19.91





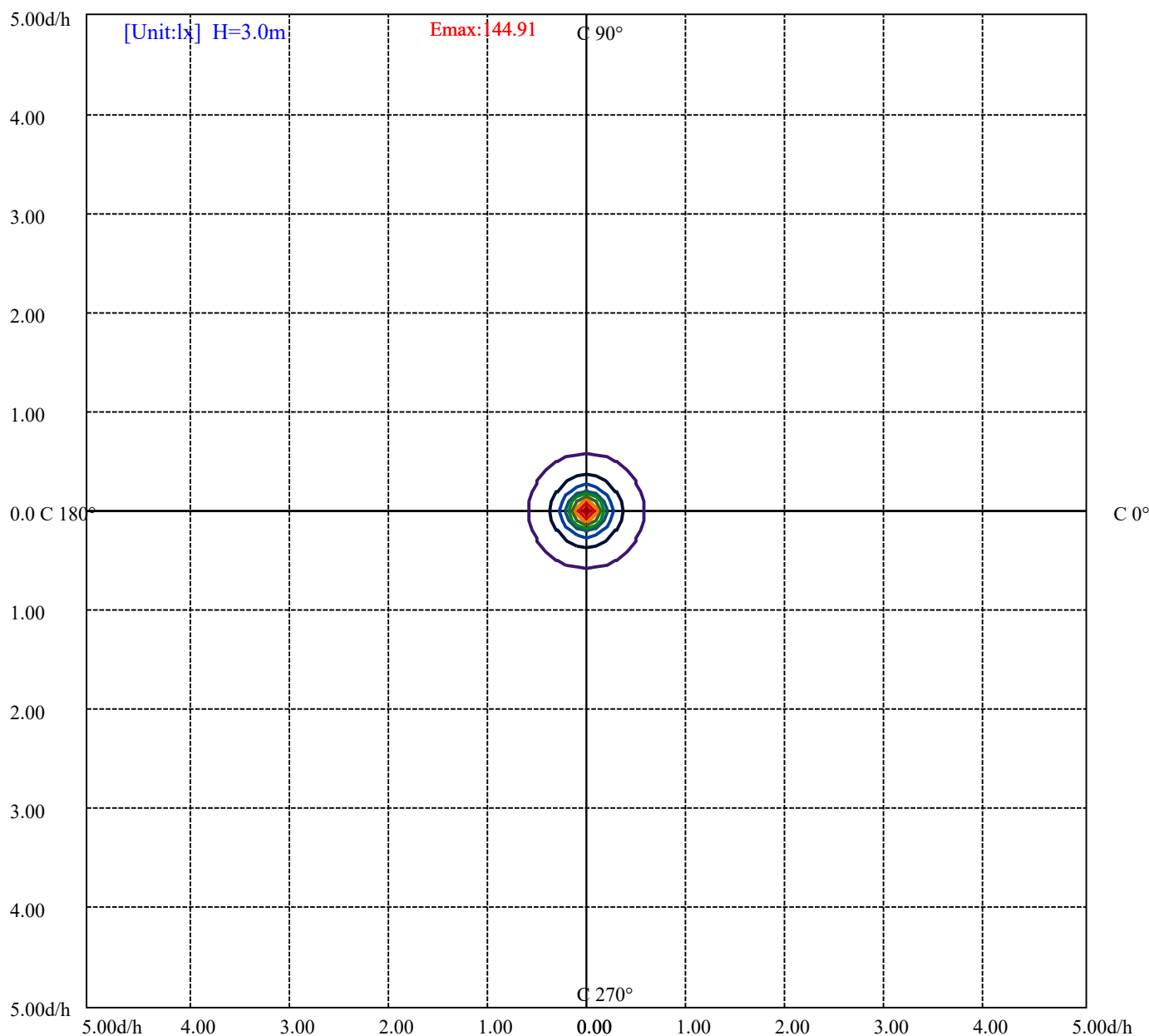
House

[Unit:cd]

Road

I_{max}:1304.16

(10%I _{max})	130.416	—
(20%I _{max})	260.831	—
(30%I _{max})	391.247	—
(40%I _{max})	521.662	—
(50%I _{max})	652.078	—
(60%I _{max})	782.494	—
(70%I _{max})	912.909	—
(80%I _{max})	1043.32	—
(90%I _{max})	1173.74	—



(10%Emax)	14.49055	—
(20%Emax)	28.98122	—
(30%Emax)	43.47178	—
(40%Emax)	57.96244	—
(50%Emax)	72.453	—
(60%Emax)	86.94366	—
(70%Emax)	101.4342	—
(80%Emax)	115.9244	—
(90%Emax)	130.4156	—

Luminance Table

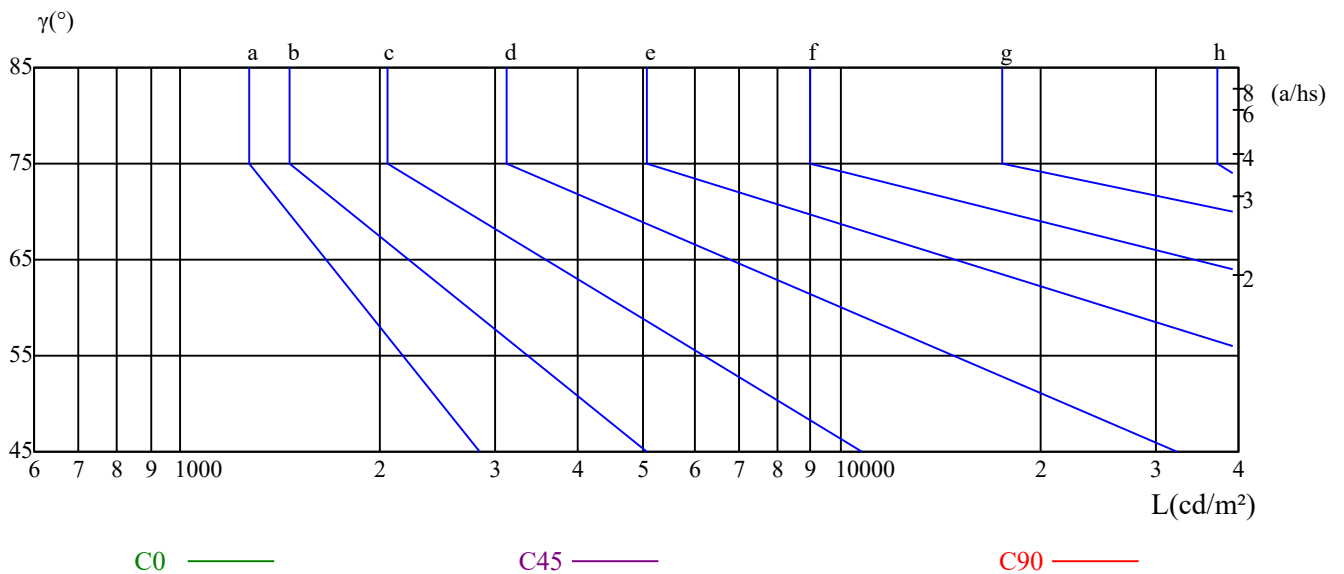
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

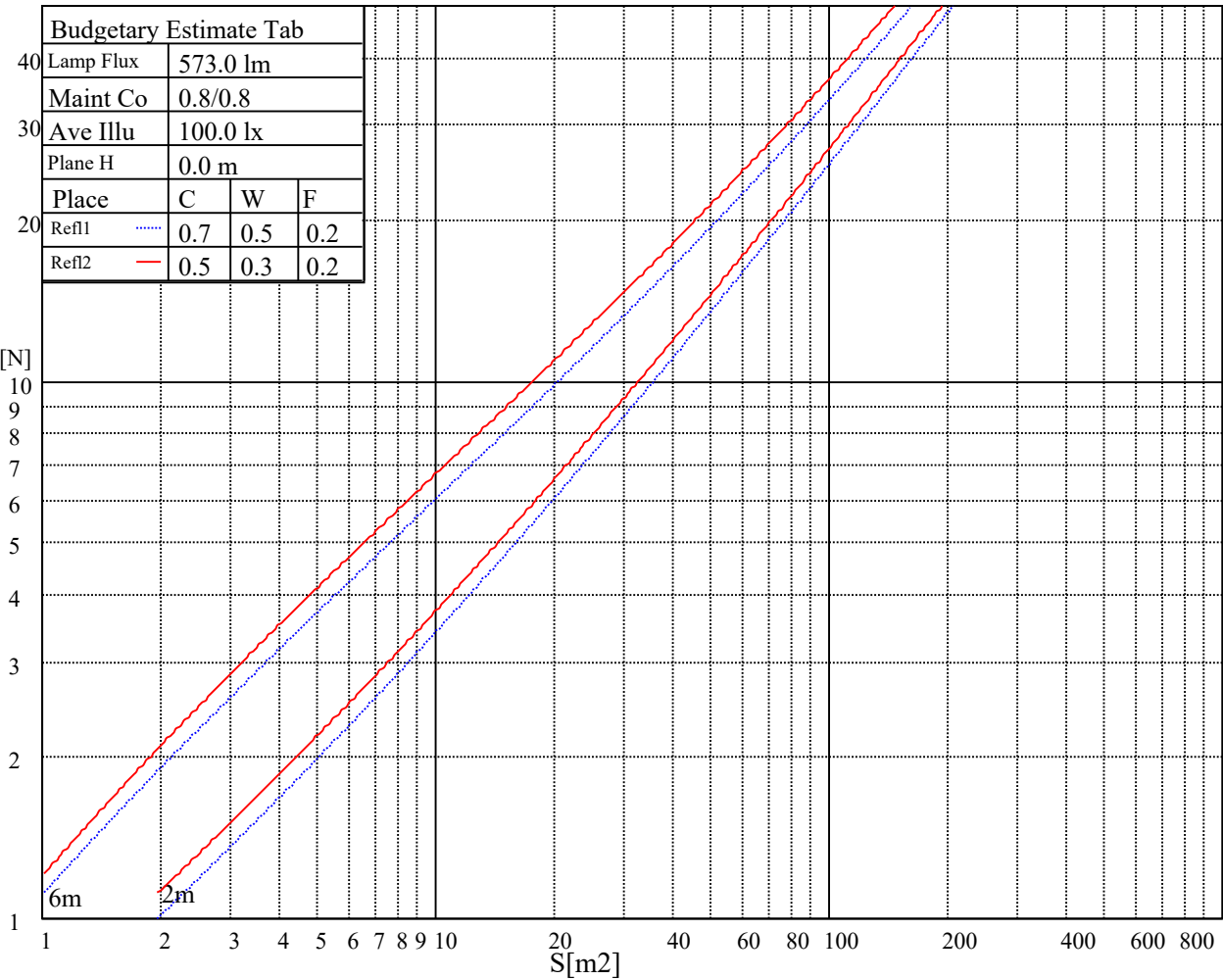
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.95	0.93	0.91	0.93	0.91	0.89	0.90	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.82	0.80
2	0.88	0.85	0.82	0.87	0.83	0.81	0.84	0.81	0.79	0.81	0.79	0.77	0.79	0.77	0.76	0.74
3	0.82	0.78	0.74	0.81	0.77	0.74	0.79	0.75	0.72	0.76	0.74	0.71	0.75	0.72	0.70	0.69
4	0.77	0.72	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.72	0.69	0.66	0.70	0.68	0.65	0.64
5	0.72	0.67	0.63	0.71	0.66	0.63	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.63	0.61	0.60
6	0.67	0.62	0.58	0.67	0.62	0.58	0.65	0.61	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.56
7	0.63	0.58	0.55	0.63	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.52
8	0.60	0.55	0.51	0.59	0.55	0.51	0.58	0.54	0.51	0.58	0.54	0.51	0.57	0.53	0.50	0.49
9	0.57	0.52	0.48	0.56	0.51	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.48	0.47
10	0.54	0.49	0.46	0.54	0.49	0.46	0.53	0.48	0.45	0.52	0.48	0.45	0.52	0.48	0.45	0.44

Nata 1709-M2

Intensity data(cd)										Appendix Page: 14 Total:16	
C/ γ (°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0		
0.0	1313.44	1272.94	1206.56	1132.88	1037.25	946.69	845.44	751.50	675.56		
45.0	1300.50	1289.81	1252.13	1192.50	1123.88	1047.38	944.44	861.19	782.44		
90.0	1311.75	1321.31	1306.13	1261.69	1206.56	1108.69	1042.03	959.79	872.21		
135.0	1290.94	1329.19	1346.06	1329.75	1293.19	1234.13	1153.13	1071.56	977.06		
180.0	1313.44	1326.94	1317.38	1275.75	1220.63	1121.34	1051.31	965.36	881.89		
225.0	1300.50	1285.31	1248.19	1175.63	1109.08	1035.17	948.60	862.48	789.75		
270.0	1311.75	1280.25	1211.06	1140.75	1064.25	970.88	879.75	803.81	724.50		
315.0	1290.94	1233.00	1114.54	1050.30	963.51	875.76	770.91	694.69	626.79		
360.0	1313.44	1272.94	1206.56	1132.88	1037.25	946.69	845.44	751.50	675.56		
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0		
0.0	601.31	537.19	488.81	448.31	408.38	380.81	358.88	339.75	319.50		
45.0	695.81	631.69	576.56	523.69	479.25	445.50	412.31	387.00	361.69		
90.0	799.43	723.21	655.54	603.39	551.87	506.19	469.07	435.60	399.15		
135.0	883.69	803.81	721.13	655.31	591.75	537.75	495.00	461.81	416.25		
180.0	790.59	705.09	636.53	570.26	514.80	472.33	432.11	401.79	371.76		
225.0	720.68	641.93	587.76	538.93	485.66	450.06	417.21	384.30	355.16		
270.0	652.50	597.38	543.94	501.19	458.44	420.75	390.94	365.63	338.63		
315.0	559.58	504.00	462.71	423.62	390.77	366.75	343.74	325.52	307.24		
360.0	601.31	537.19	488.81	448.31	408.38	380.81	358.88	339.75	319.50		
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0		
0.0	305.44	293.63	284.63	267.08	258.58	246.94	237.94	230.68	221.01		
45.0	338.06	320.63	303.75	288.00	284.63	262.86	254.14	243.11	234.79		
90.0	373.67	351.96	332.61	313.26	299.19	284.96	272.70	261.73	251.04		
135.0	387.56	366.75	337.50	317.81	303.75	284.06	268.54	257.46	245.98		
180.0	346.22	327.94	311.51	293.46	281.42	270.17	257.96	248.96	240.53		
225.0	334.18	314.66	299.93	286.31	274.95	266.06	256.78	246.43	237.32		
270.0	321.19	307.13	291.94	284.06	271.29	260.55	248.79	237.26	223.82		
315.0	292.16	280.46	269.38	256.78	247.33	238.22	228.21	220.95	214.37		
360.0	305.44	293.63	284.63	267.08	258.58	246.94	237.94	230.68	221.01		
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0		
0.0	213.30	206.33	198.51	192.94	187.76	181.63	176.63	171.23	163.52		
45.0	226.35	216.34	208.52	200.70	192.26	186.08	180.34	173.70	167.01		
90.0	238.22	226.01	213.86	204.58	196.82	189.45	182.81	177.13	171.28		
135.0	236.70	227.31	218.31	210.99	202.84	195.86	189.73	183.99	177.30		
180.0	231.19	223.43	216.62	209.31	203.23	196.76	191.59	186.64	181.24		
225.0	227.59	214.76	206.10	198.11	190.69	184.16	178.09	171.34	165.77		
270.0	213.64	201.83	193.16	186.30	179.49	173.19	168.02	162.56	156.04		
315.0	207.11	200.19	194.46	188.61	183.54	177.81	171.56	163.41	154.97		
360.0	213.30	206.33	198.51	192.94	187.76	181.63	176.63	171.23	163.52		
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0		
0.0	157.39	149.29	138.83	127.35	115.99	103.28	90.17	78.64	66.21		
45.0	159.75	151.65	143.94	133.93	122.34	110.81	97.88	84.49	73.01		
90.0	165.43	160.14	153.90	146.81	139.22	128.76	115.59	102.15	90.39		
135.0	172.18	167.06	159.02	150.75	143.66	134.10	124.31	114.24	101.59		
180.0	175.73	169.82	163.46	155.25	146.25	136.13	122.79	110.59	98.72		
225.0	159.13	150.24	143.89	135.17	123.13	114.13	102.83	87.47	77.63		
270.0	150.02	143.55	136.52	124.09	113.46	102.32	88.59	77.40	66.66		
315.0	146.59	137.76	128.36	115.03	103.84	92.76	79.99	67.73	57.77		
360.0	157.39	149.29	138.83	127.35	115.99	103.28	90.17	78.64	66.21		

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	56.53	46.74	38.53	32.91	28.18	23.40	20.53	18.00	15.30
45.0	62.44	50.91	42.64	35.83	30.04	25.20	21.77	18.68	16.09
90.0	76.39	63.11	52.88	43.09	35.72	29.48	24.81	21.49	18.79
135.0	90.23	77.29	64.97	54.84	46.18	36.96	30.94	26.49	21.77
180.0	83.08	70.99	59.79	48.15	41.18	33.75	27.84	24.36	21.04
225.0	66.49	52.71	45.39	38.03	31.56	26.55	22.95	19.74	17.33
270.0	55.57	46.07	38.76	31.95	27.06	22.50	19.07	16.76	14.46
315.0	47.98	39.26	33.30	27.90	23.96	20.42	17.61	15.47	13.61
360.0	56.53	46.74	38.53	32.91	28.18	23.40	20.53	18.00	15.30

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	13.50	11.93	10.24	8.78	7.59	6.47	5.40	4.56	3.77
45.0	14.12	12.32	10.91	9.56	8.27	7.31	6.30	5.46	4.67
90.0	16.14	14.29	12.71	11.03	9.79	8.61	7.43	6.30	5.46
135.0	18.84	16.54	14.29	12.43	10.97	9.51	8.27	7.26	6.19
180.0	17.49	15.53	13.61	11.31	10.01	8.72	7.43	6.30	5.40
225.0	14.96	12.99	11.36	9.79	8.38	7.31	6.36	5.23	4.39
270.0	12.71	11.25	9.96	8.49	7.37	6.47	5.46	4.56	3.83
315.0	11.53	10.13	8.83	7.43	6.47	5.63	4.67	3.88	3.21
360.0	13.50	11.93	10.24	8.78	7.59	6.47	5.40	4.56	3.77

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.15	2.64	2.31	2.19	2.19	2.14	2.14	2.14	2.14
45.0	3.94	3.09	2.59	2.31	2.19	2.19	2.14	2.19	2.14
90.0	4.50	3.71	3.09	2.53	2.25	2.14	2.14	2.14	2.08
135.0	5.40	4.50	3.60	3.04	2.59	2.25	2.08	2.08	2.08
180.0	4.50	3.66	2.98	2.53	2.25	2.14	2.08	2.08	2.08
225.0	3.71	2.98	2.53	2.31	2.19	2.14	2.14	2.14	2.19
270.0	3.09	2.53	2.31	2.14	2.14	2.14	2.14	2.08	2.14
315.0	2.64	2.31	2.14	2.08	2.14	2.08	2.08	2.08	2.08
360.0	3.15	2.64	2.31	2.19	2.19	2.14	2.14	2.14	2.14

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.14	2.14	2.08	2.08	2.14	2.08	2.14	2.14	2.14
45.0	2.14	2.14	2.14	2.14	2.14	2.14	2.19	2.14	2.14
90.0	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08
135.0	2.08	2.08	2.03	2.08	2.08	2.03	2.03	2.03	2.03
180.0	2.03	2.08	2.08	2.08	2.08	2.08	2.08	2.03	2.03
225.0	2.14	2.19	2.14	2.14	2.14	2.19	2.19	2.14	2.19
270.0	2.08	2.14	2.08	2.14	2.08	2.14	2.14	2.14	2.14
315.0	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08
360.0	2.14	2.14	2.08	2.08	2.14	2.08	2.14	2.14	2.14

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.14	2.19	2.19	2.19	2.25	2.31	2.03	2.03	2.03
45.0	2.14	2.14	2.19	2.14	2.14	2.08	2.03	2.03	2.03
90.0	2.08	2.08	2.14	2.08	2.08	2.03	2.03	2.03	2.03
135.0	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03
180.0	2.03	2.03	2.03	2.03	2.03	1.97	2.03	2.03	2.03
225.0	2.19	2.19	2.19	2.14	2.08	2.03	2.03	2.03	2.03
270.0	2.14	2.14	2.14	2.19	2.19	2.03	2.03	2.03	2.03
315.0	2.08	2.08	2.14	2.14	2.19	2.08	2.03	1.97	2.03
360.0	2.14	2.19	2.19	2.19	2.25	2.31	2.03	2.03	2.03

Intensity data(cd)

Appendix Page: 16 Total:16

C/ $\gamma(^{\circ})$	90.0
0.0	2.03
45.0	2.03
90.0	2.03
135.0	2.03
180.0	2.03
225.0	2.03
270.0	2.03
315.0	2.03
360.0	2.03